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Archaeological Excavation Report
E3887 - Coldwood/Foorkill, Co. Galway

Burnt mound

Ceart agus Cóir

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Final Archaeological Excavation Report

Coldwood/Foorkill

Co. Galway

Burnt Mound

Date:	**October 2010**
Client:	**Galway County Council and National Roads Authority**
Project:	**N18 Oranmore - Gort**
E No:	**E3887**
Excavation Director:	**Enda O'Mahony**
Written by:	**Enda O'Mahony & Finn Delaney**

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iii Summary

The excavation uncovered the disturbed remains of, an undated, burnt mound with no other associated archaeological features. The burnt mound was disturbed by land improvement works which were undertaken during the 1980s. A small assemblage of animal bone was recovered from the burnt mound. Two chert flakes and a barbed-and-tanged flint arrowhead were recovered from possible buried topsoil which survived in places below the burnt mound deposit.

Townland	Coldwood/Foorkill
Parish	Athenry
Barony	Dunkellin
County	Galway
Ministerial Order Number	A045
E Number	E3887
OS Map Sheet	GA096
National Grid Reference	145908/224401
Elevation	14m O.D.
Site Type	Burnt Mound

Table 1: Site Location Details

iv Acknowledgements

The excavation director was Enda O'Mahony and the site supervisors were Mike Duffin, David O'Reilly and Tomaz Wasowski. The field crew included Thomas Conway, John Patrick Lehane, Anna Marciniak, Mirek Mazurek, Anna Okoniewska, Izabella Polchlopek, Elaine Roche, Pádraig O'Reily and Ignacio Gomez Lastrez. The senior archaeologist was Finn Delaney and the post-excavation manager was Jacinta Kiely. Choryna Kiely, Fillip Debniak and Fiona Greene were involved with the administration of the project. Illustrations are by Ben Blakeman and Maurizio Toscano. Specialist analysis of the animal bone was undertaken by Margaret McCarthy and the lithics was undertaken by Farina Sternke. Joseph O'Brien was the resident engineer for consultant engineers Hyder Tobins. The project was commissioned by Galway County Council and was funded by the National Roads Authority. The Project Archaeologist was Jerry O'Sullivan.

1 Introduction

This report constitutes the final excavation report for a disturbed burnt mound in the townland of Coldwood/Foorkill, Co. Galway (Fig 1). The site was excavated as part of the archaeological excavation programme in advance of construction for N18 Gort to Oranmore Road scheme. The site was found within the Compulsory Purchase Order (CPO) area for the scheme during Phase 1 archaeological testing. The site consisted of the very disturbed remains of a burnt mound. A barbed-and-tanged flint arrowhead was uncovered during the excavation.

2 Background to the scheme

The N18 Oranmore to Gort (Glenbrack to Rathmorrissey) national road scheme was approved by An Bórd Pleanála on 7 June 2007. The development will consist of approximately 27 km of dual carriageway, and all associated works. The area of archaeological investigations lies within the footprint of the proposed scheme as defined by the Compulsory Purchase Order (CPO) published by Galway County Council on 1 August 2006. Eachtra Archaeological Projects was commissioned by Galway County Council and the National Roads Authority to undertake Phase 1 archaeological testing and Phase 2 excavation of sites directly impacted by the proposed development.

3 Topography, geology and hydrology

The underlying geology in the surrounding area is Carboniferous limestone of the Burren and Tubber formations bordered by Namurian shales and sandstones to the west, in County Clare, and Devonian old red sandstone to the east, in the Slieve Aughty uplands. Glacial till overlies the bedrock to varying depths (0–5 m) and the soils derived from the till are generally deep, well drained brown earths. The topsoils are characteristically deep and dry and, enriched by the limestone parent material, support moderately good grass pastures. There are boulder fields and expanses of bedrock exposure typical of karst limestone country.

Although a degree of soil variability higher than expected has been recorded on the landscape near the burnt mounds examined, Coldwood is located on a region of relative low soil variability (Fig 6). Within a radius of 500 metres around the site there is a prevalence of deep, well-drained mineral soil, with 20% of shallow well drained soil. The site is located in an area of interface between the two soil types.

Turloughs and swallow-holes are features of areas with karst limestone bedrock, which enables the ground water and water table to produce sometimes perplexing drainage systems. A large turlough is shown on the Ordnance Survey first edition map in the south-western portion of Coldwood townland and encompasses parts of the townlands of Moyveela and Ballinillaun. Two small lakes are also shown, namely Pollnakirka and

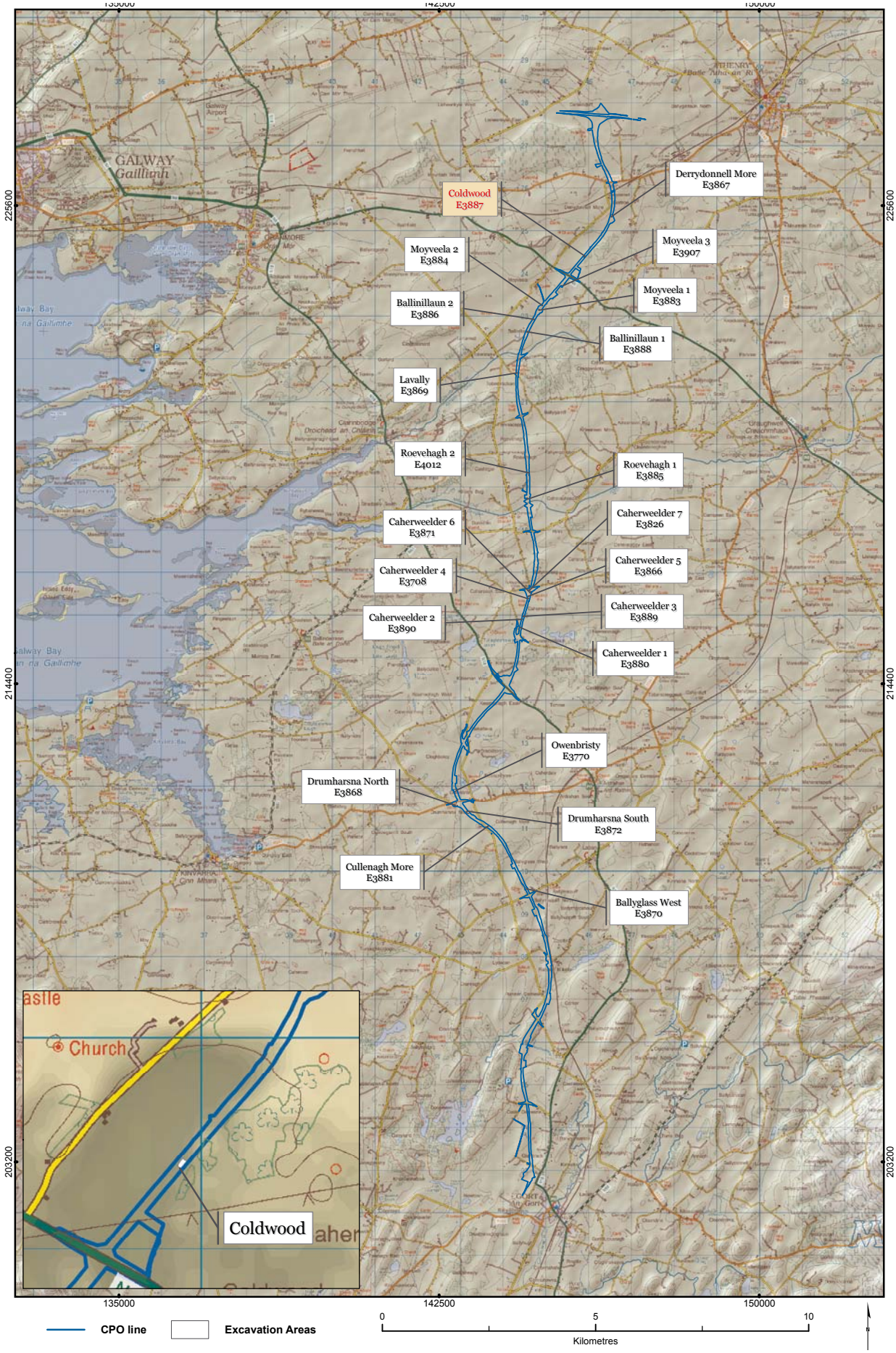


Figure 1: Discovery series Ordnance Survey map showing the route of the new N18 Oranmore to Gort road and the location of all the excavation sites. The excavation site at Coldwood is highlighted.

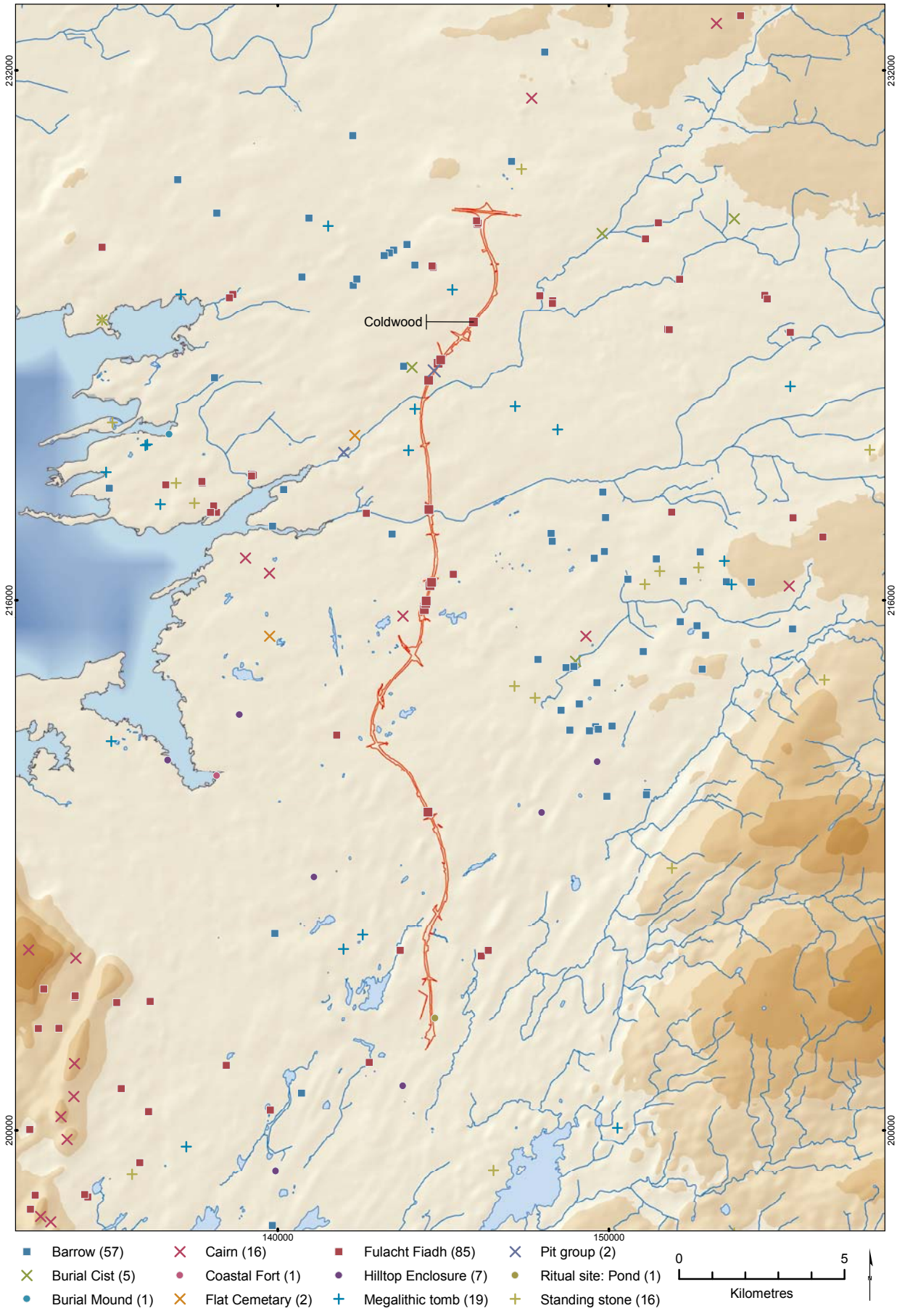


Figure 2: A distribution map showing the location of prehistoric sites surrounding the site at Coldwood. It is based on the RMP/SMR (Sheet GA096) data-set which has been overlaid on the Ordnance Survey discovery series mapping.

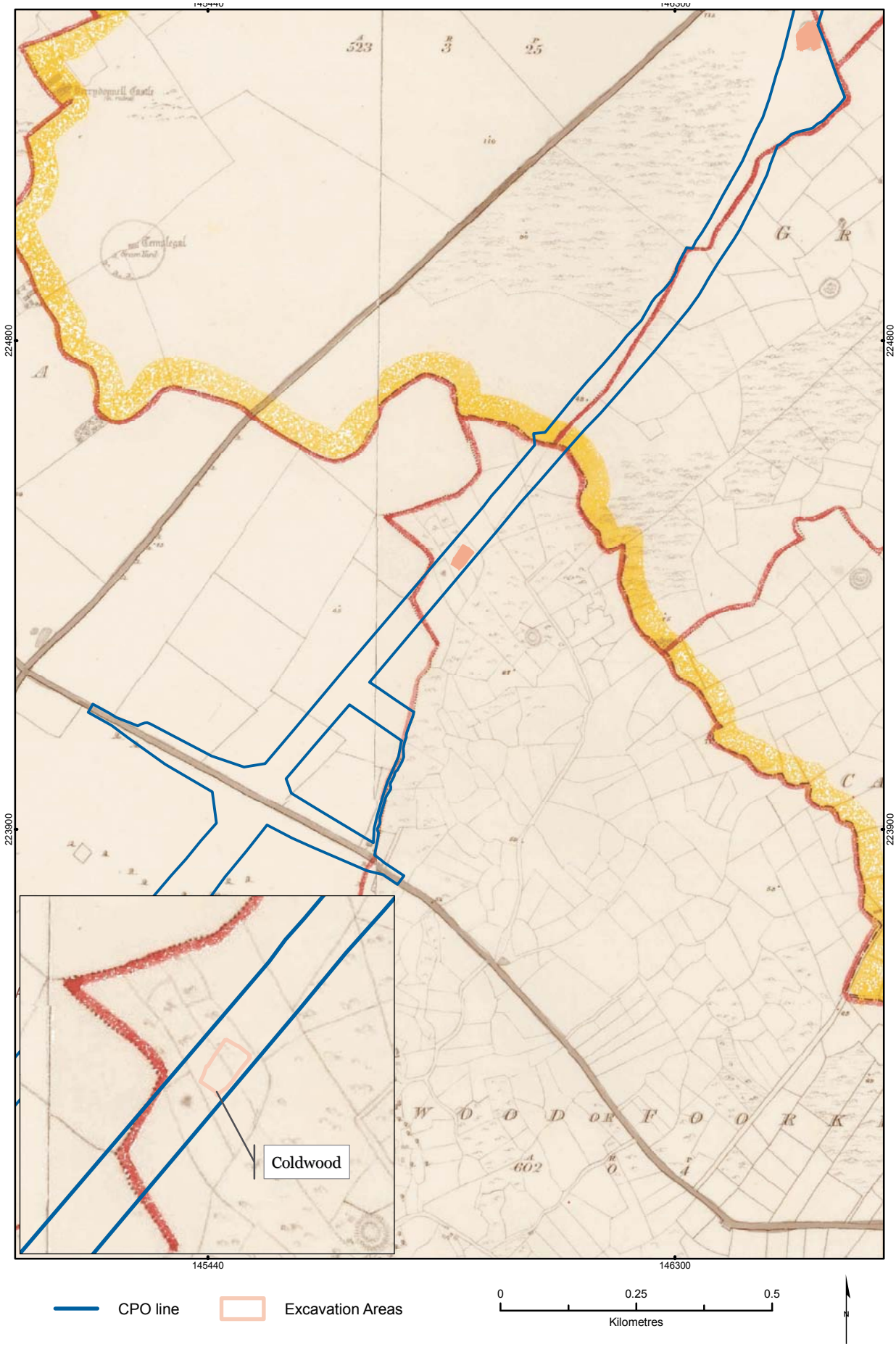


Figure 3: The route of the new N18 Oranmore to Gort road overlaid on the first edition Ordnance Survey map (Sheet GA096). The excavation site at Coldwood is also highlighted.

Pollawarla. The turlough and lakes were fed by the Lavally river from the north-east. A river exits towards the sea at Clarinbridge from the south-west side of the turlough and is marked as the Clarin river. The river was later dredged and a canal was constructed and the turlough was divided into large regular fields. The availability of water at Coldwood was assured by the turlough which, as shown on the 1st edition map, was 1.2 km away from the site. The River Lavally 1.4 km away, complete the water resources in the vicinity of the site.

4 Archaeological and historical background

The townland name Coldwood derives from the Irish *Fuar Choil*. The designation Foorkill is obviously a direct phonetic rendition of the Irish name. According to Joyce (1913) if the back of a hill had a northern aspect it was often called Coolfore. The element fore or its derivative Fuair often precedes the noun it is qualifying. So *Fuar Choil* literally means the 'cold wood'.

There seems to have been an expansion of settlement from hill-slopes and uplands into lower lying areas during the Bronze Age. There also seems to have been a trend way from communal funerary monuments to individual burial monuments with associated grave goods. This would explain the relatively high concentration of barrows in lowland east Galway.

Barrows are burial monuments of the Bronze Age and Iron Age. They usually consist of a circular central area, which may be flat or slightly dished (a ring ditch), or domed (a ring barrow), and which is enclosed by a ditch and occasionally by an external bank. Bronze Age burials that have been excavated, either in recent times or during the last century, include some found in cists - pits lined with stone flags, and some in simple pits, some of which were accompanied by pottery or other grave goods. These can be placed in mounds, cairns or barrows, but can also be set within 'natural' monuments, such as sand ridges, or can appear in so-called flat cemeteries, with no above ground marker at all.

These trends are also reflected in south Galway where stray finds of Bronze Age objects have been found in Toberbrackan and Lavally and a Bronze Age cist and 'food vessel urn' was found in Moyveela (O'Sullivan 2006) in the vicinity of this road scheme.

There are no known house sites or settlements of the period in the area, but there are numerous examples of burnt mounds or *fulacht fiadh*. These mounds of burnt and shattered stone were the by-products of a technique of immersing heated stones in pits filled with water, to boil it. Recorded examples occur on or near the proposed road scheme in Rathmorrissey, Toberroe and Caherweelder and the present programme of excavation in advance of construction on the N18 Oranmore to Gort road scheme has added up to 12 examples to the numbers of burnt mound sites in the area.

The distribution map of prehistoric recorded monuments shows a concentration of ring barrows centred around Derrydonnell North which is located to the north west of the disturbed burnt mound at Coldwood (Fig 5). A Bronze Age cist burial and a barrow are also recorded to the south west in the townland of Moyveela. The distribution map

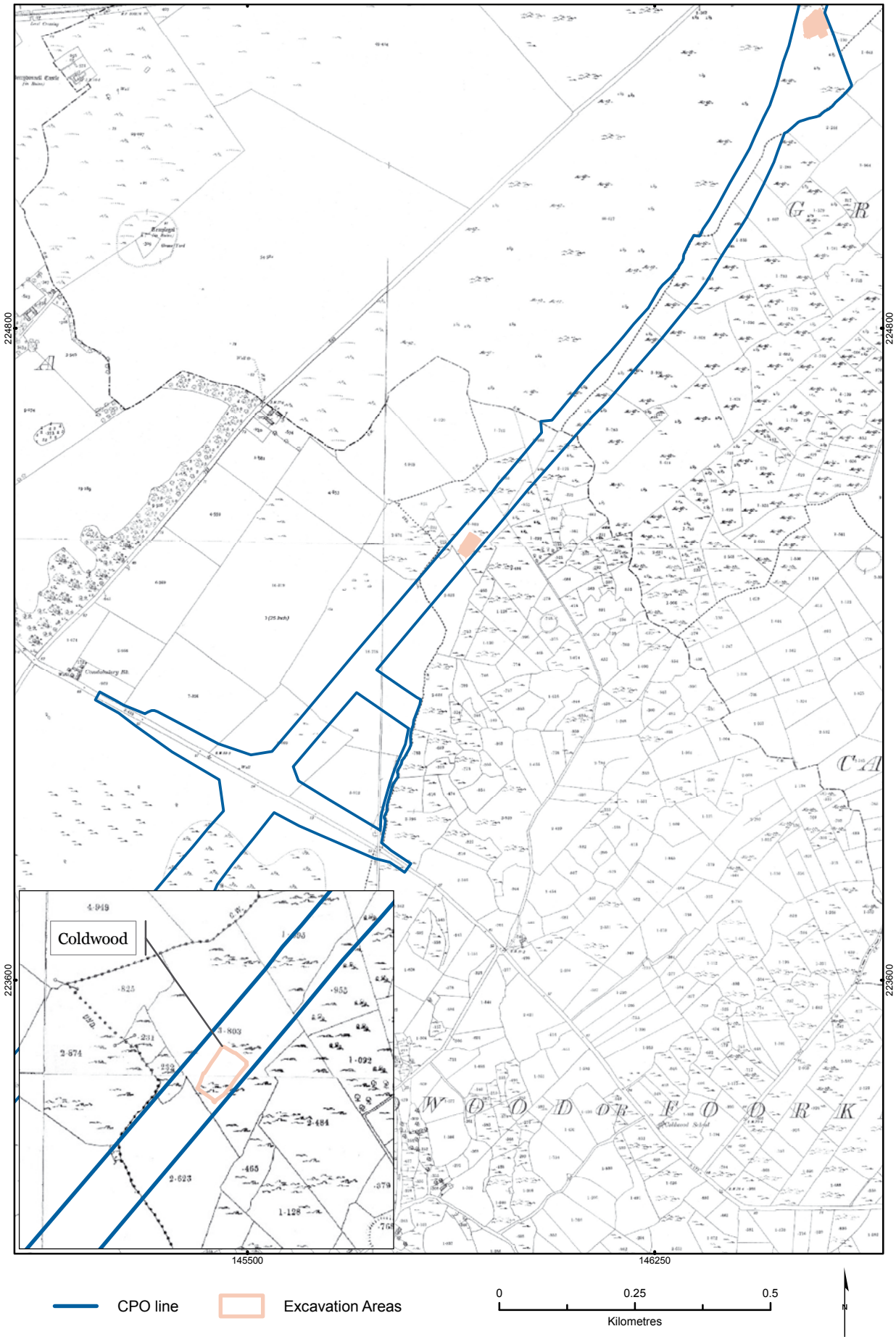


Figure 4: The route of the new N18 Oranmore to Gort road overlaid on the 25 inch Ordnance Survey map (Sheet GA096). The excavation site at Coldwood is also highlighted.

also shows that the burnt mound at Coldwood fits into a concentration of this monument type to the south and south-west of Athenry. Two other burnt mounds (Moyveela 1 and Moyveela 2) excavated within the CPO for this road scheme in the townland of Moyveela just to the south of Coldwood, also fit into this concentration.

The first edition Ordnance Survey map of the area portrays a marked difference in field layout on either side of the townland boundary between the townlands of Coldwood and Greethill to the east and Derrydonnell More and Moyveela to the west (Fig 2). The western townlands are marked as having larger open fields. The first edition map shows the excavation area for the disturbed burnt mound straddling a field boundary which is not shown on later editions of the map. All versions of the Ordnance Survey map show the location of the excavation area as being composed of rough grazing with indications of rock outcropping (Figs 2, 3 and 4).

5 Site description

The excavated site was located to the north of the present N6 in the north-western corner of Coldwood townland (NGR 145911/222399) (Fig 1). In fact, the site is located just to the south of the point where the four townlands of Coldwood, Derrydonnell More, Greethill and Moyveela converge (Fig 2). The elevation of the surrounding area is 15-17m O.D. The site is located on relatively low-lying, flat, level, ground. The ground does rise to the north and east and views are limited to the east by higher ground and trees and scrub. There are relatively unobstructed views to the south and east.

The site was situated in a large, flat, rectangular field of improved pasture. The field boundaries to the east and north are formed by large limestone boulders while those to the east and south are formed by typical single-leaf, dry-stone field boundaries lined with occasional trees and bushes. The large boulder boundaries are the result of reclamation work that was undertaken by bulldozer in the 1980s. All the hollows and lags were back-filled and levelled at the same time. Prior to this reclamation the field would have been subject to flooding during the winter months.

6 Methodology

An area measuring roughly 50 m north/south and 25 m east/west (1250 sq m) was stripped of topsoil by a 20 tonne excavator, using a toothless bucket to reveal the extents of the burnt mound and any associated features (Fig 6). The site was then subjected to intensive hand cleaning. The burnt mound was fully excavated by hand and recorded using the single-context recording system with plans and sections being produced at a scale of 1:20 or 1:10 as appropriate. A complete photographic record was maintained throughout the excavation.

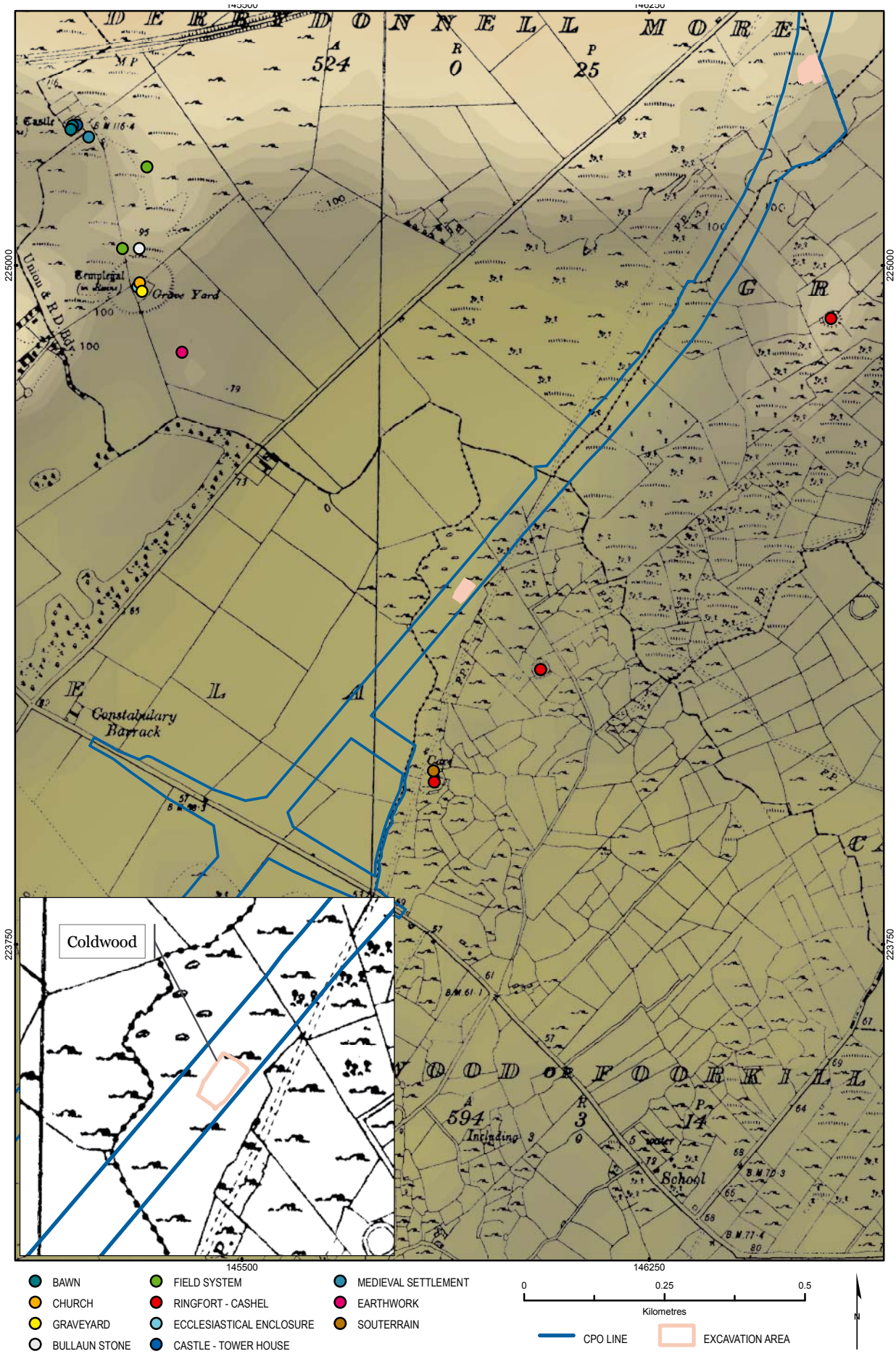


Figure 5: The route of the new N18 Oranmore to Gort road overlaid on the RMP/SMR map which is based on second edition Ordnance Survey map (Sheet GA096).

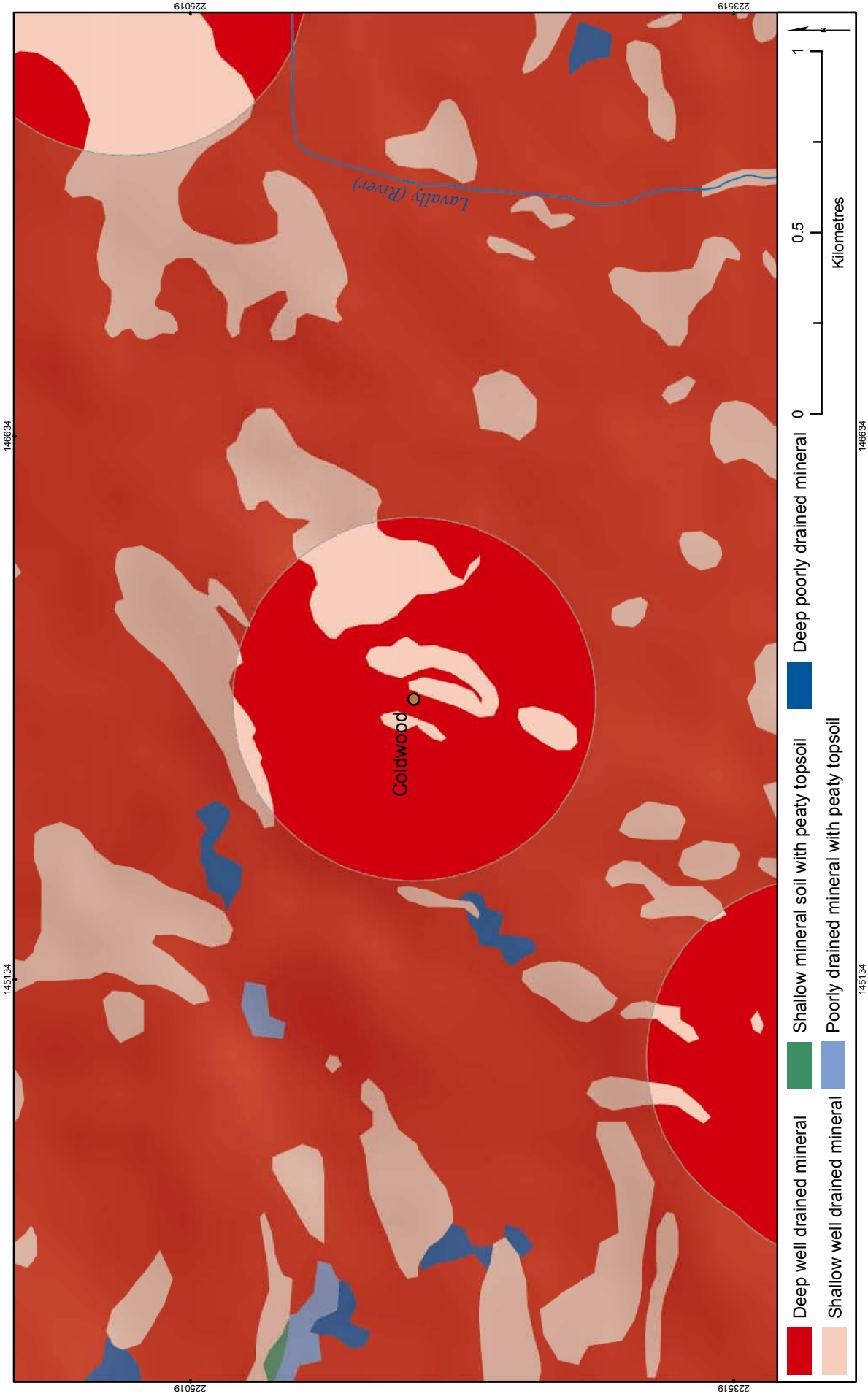


Figure 6: The soil type at Coldwood (data provided from Teagasc and Forest Service, Dept of Marine and Natural Resources, EPA).

Plate 1: General pre-excavation photograph looking north across the burnt mound.

Due to the badly disturbed nature of the deposits soil samples were not subjected to charcoal or plant remains analysis and no samples were sent for radio carbon dating. The animal bone and lithic assemblages were sent for detailed examination.

7 Results of excavation

The area stripped and cleaned by hand measured 50 m north/south and 25 m east/west. The burnt mound presented as two separate deposits, which were badly disturbed (Figs 8 and 9) (Plates 1 and 3). A deposit of possible buried topsoil was revealed below the burnt mound deposits.

7.1 The possible buried topsoil

In the southern half of the site a buried topsoil horizon (C.5) was identified. This deposit was firmly compacted, dark reddish brown silty clay with a low density of stone and charcoal inclusions. A small amount of animal bone, a chert flake E3887:5:1 and a flint arrowhead E3887:5:3 were recovered from this layer.

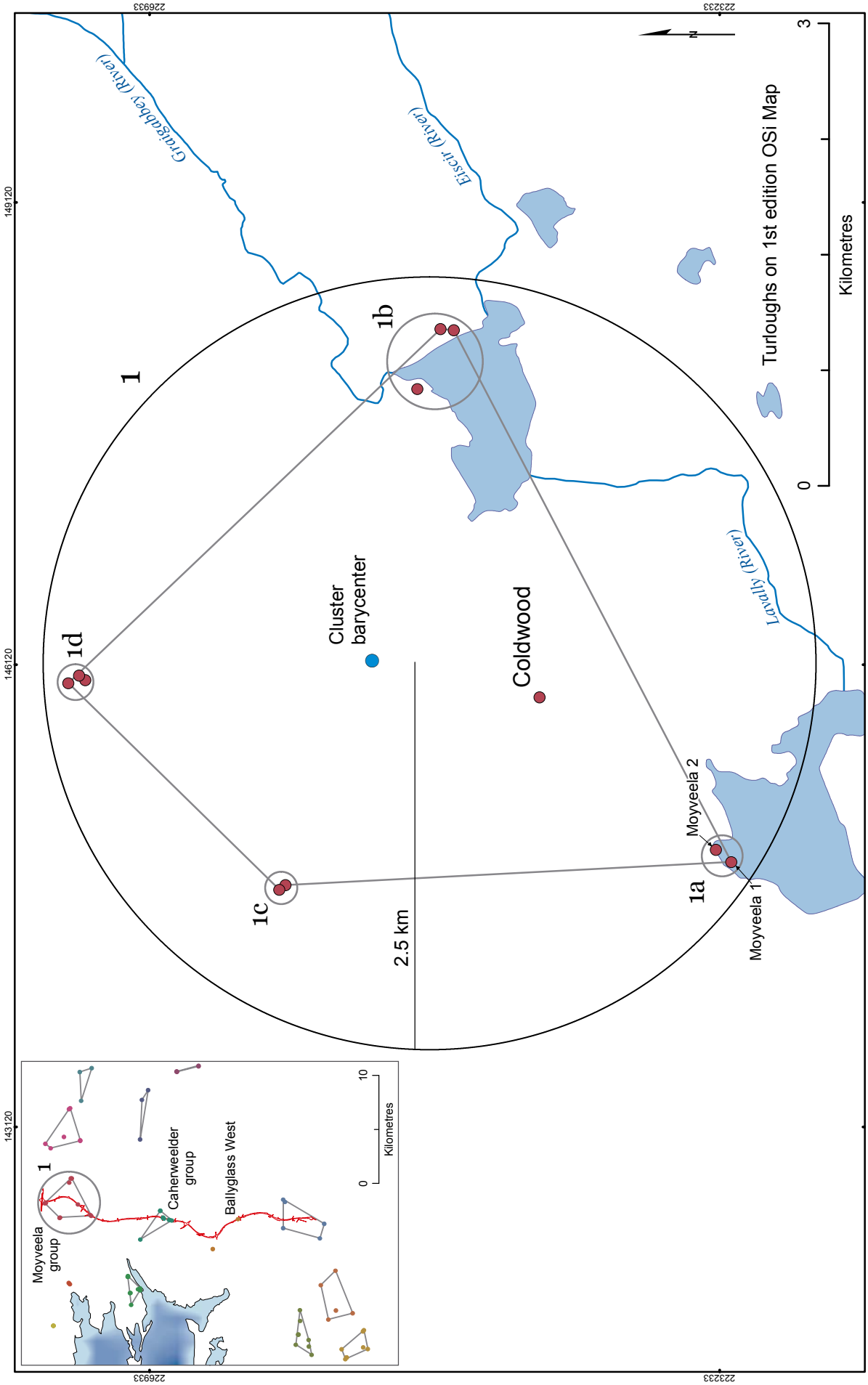


Figure 7: Clusters of burnt mound sites showing the location of Coldwood within the cluster. The insert shows the level of clustering of burnt mounds in the study area.

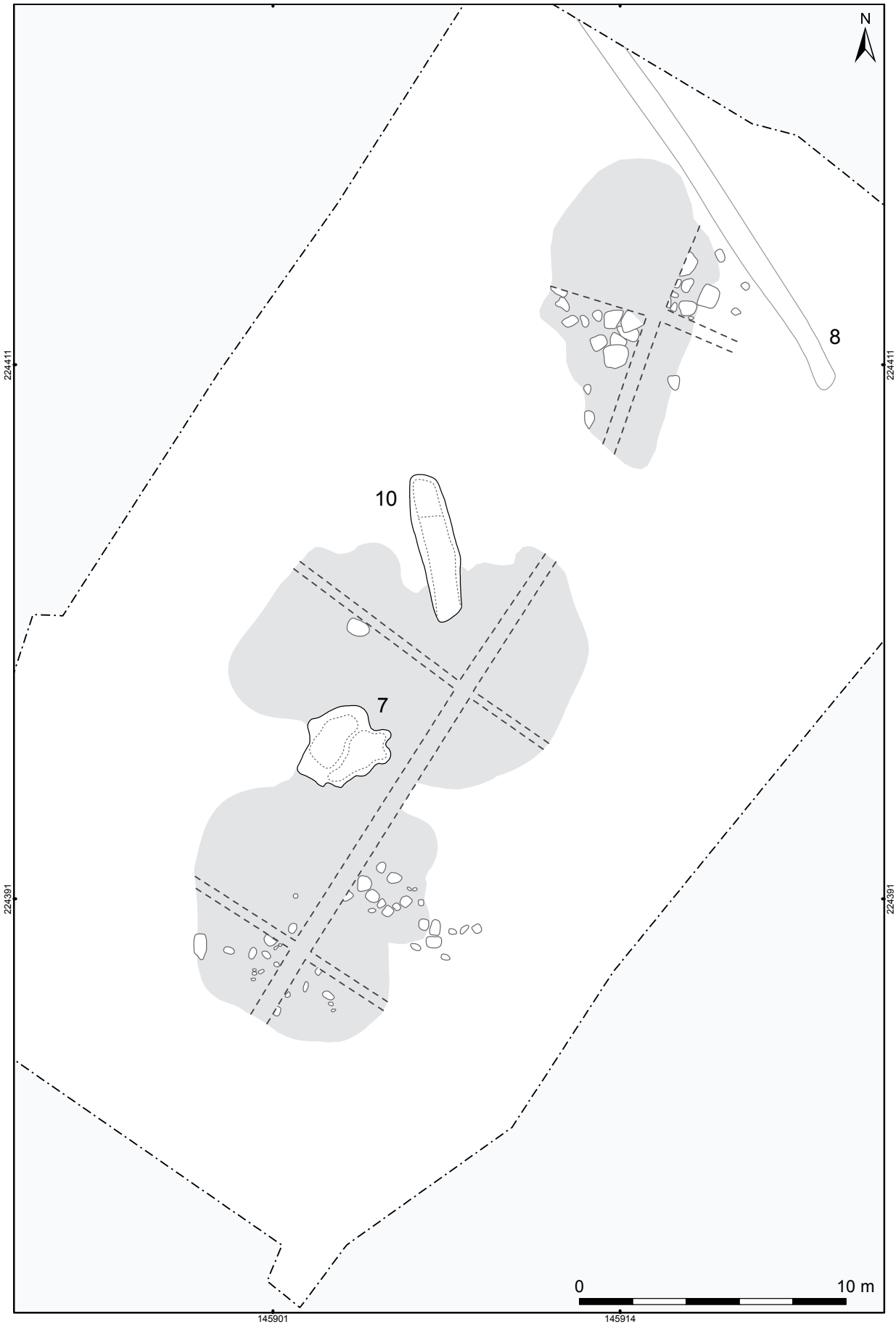


Figure 8: Post-excavation plan of the site.

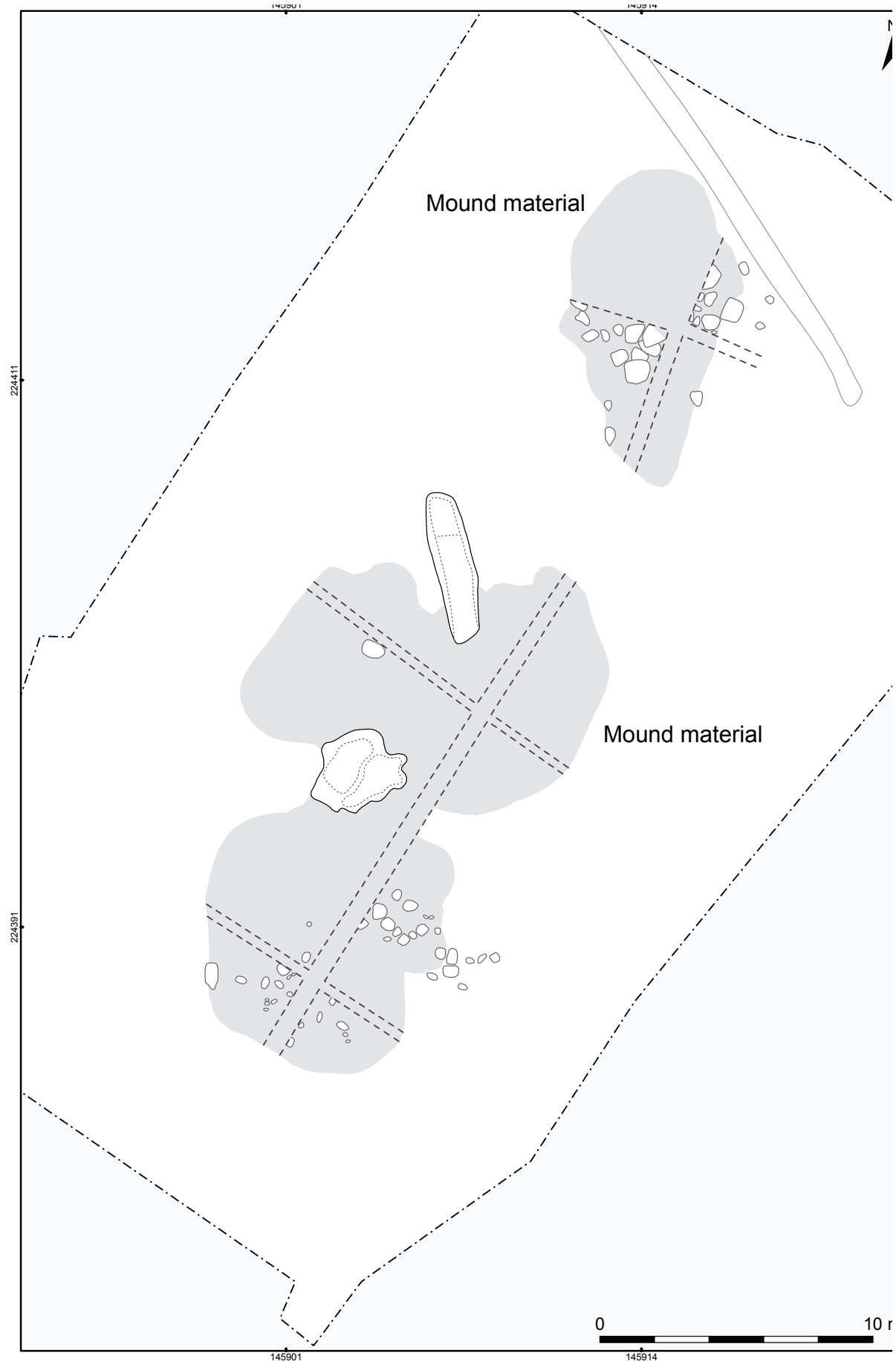


Figure 9: Interpretive post-excavation plan of the site.

Plate 2: Bulldozer track identified below the burnt mound deposit.

7.2 The burnt mound deposit

This was a deposit (C.4) of dark black silty clay with a high density of small heat-affected stones, all of which were angular in shape and mixed with small flecks of charcoal. It had a maximum depth of 0.26 m and was evident across the excavated area. It ranged in size from 13 – 8 m in length and 6 – 8 m in width. The deposit was highly disturbed with re-deposited material (C.3) mixed throughout the excavated layers. Evidence of earth-moving machinery in the form of track imprints were recorded under the mound material (Plate 2). The area around the northern deposit was also used as a dumping ground for modern domestic and agricultural waste evident from the discovery of field gates, fragmented toilet bowls and glass bottles.

A small amount of animal bone and a chert flake E3887:4:1 were recovered from the burnt mound deposit.

7.3 Modern disturbance

As noted above, modern disturbance was apparent under layers of burnt mound material produced evidence of earth-moving machinery in the form of track imprints (Plate 2). The area around the northernmost mound was also used as a dumping ground for modern domestic and agricultural waste evident from the discovery of field gates, fragmented toilet bowls, glass bottles and so on. To the east was a modern drain feature (C.8) filled

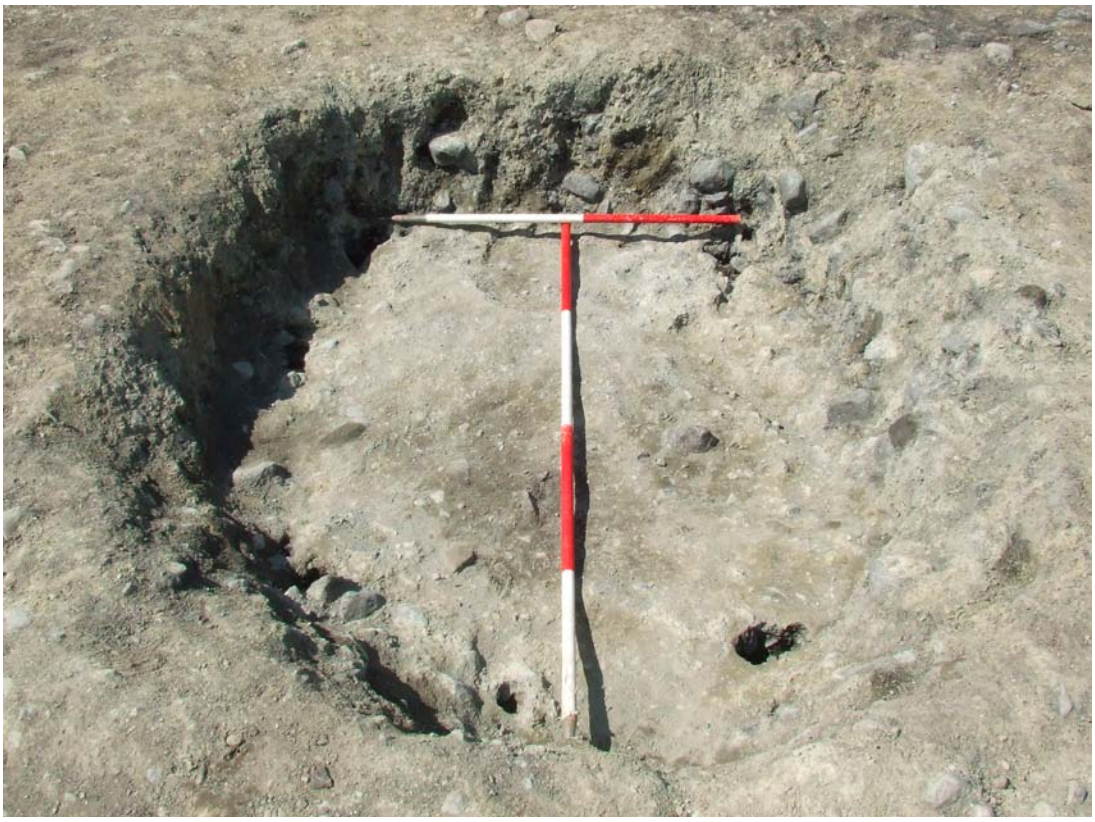


Plate 3: General post-excavation photograph looking north across the burnt mound.

with small stones (C.6) and mixed through with modern plastics and other modern debris. A similar drain (C.10) was located 15 m to the south-west.

8 Lithic assemblage

The lithics assemblage was examined by Farina Sternke (Appendix 5). Two chert flakes and a barbed-and-tanged flint arrowhead, dating to the late Neolithic period, were recovered from layers C.4 and C.5.

9 Animal bone

The animal bone was examined by Margaret McCarthy (Appendix 6). Cattle and sheep bone were recovered from layers C.4 and C.5.

10 Discussion

Burnt mounds are the most common Bronze Age sites found in Ireland. Estimates suggest that at least 4,500 examples are known (Power et al 1997) and this number is continuously growing as sites continue to be identified during archaeological field work. The characteristic site-type is found in low-lying and damp ground and consists of a mound of charcoal-rich black sediment that is packed with heat shattered stones and forms a horse-shoe shape around a pit or trough that filled with water. In many cases just like at Coldwood all that survives to the present day are black charcoal rich deposits with fragments of shattered stones visible in ploughed fields.

These sites are associated with the process of roasting stones to heat water. The remains of these 'pyrolithic technologies' (terminology follows Ó Néill 2004) produce the tell-tale deposits rich in charcoal and heat-affected stone. Debate continues about their use, as hot water is required for many processes including cooking, brewing, washing, dyeing and, most recently it has been argued that some burnt mounds were primarily used to boil and cure meat for long term storage (Roycroft 2006).

Traditionally these sites have been interpreted as ancient cooking places, where large stones were heated in fires and then added to the water filled trough the extreme heat of the stones eventually heating the water in the trough until it reached boiling point. Experimental cooking at reconstructed sites such as Ballyvourney (O'Kelly 1954) has demonstrated that meat wrapped in straw and placed into a boiling trough can be cooked quite effectively. The perceived lack of any animal bones from these excavated sites has been used against this theory. More recently however there is a growing corpus of sites which have produced animal bone (Tourunen 2008) and all of the sites excavated during the N18 Oranmore to Gort project have produced animal bone all be it in very small quantities, and sometimes in disturbed contexts.

The traditional perception of the burnt mound site is that they are isolated features on the landscape situated on marginal ground away from settlement. Recent studies however are requiring a re-evaluation of this perception. Excavations along the route of the N25 Kilmacthomas realignment in Co. Waterford produced evidence for a burnt mound site (Ahanaglogh) which was repeatedly used in the Early Bronze Age. Some Early Bronze Age dates from a nearby settlement sites suggest that there may have been an overlap in occupation. (Johnston et al 2008). A similar discovery was made at Cloghers II, Co. Kerry where Beaker settlement was found in close association with and proximity to an Early Bronze Age burnt mound (Kiely & Dunne 2005). The recent publication on the archaeology of Clare Island has also established the intimate relationship between burnt mounds and settlement areas (Gosling 2007). Surveys on Clare Island highlighted the spatial association of the identified burnt mounds with enclosures, houses and huts and boundary walls.

Site Name	E No.	Radiocarbon date (2 sigma) cal BC	Period
Ballinillaun 1	E3888	1260– 1228 1220–1108 1105–1055	MBA
Ballinillaun 2	E3886	1912–1876 1842–1821 1797–1781	EBA
Ballyglass west	E3870	1411–1290 1280–1270	MBA
		1687–1602 1591–1532	EBA
		1740–1703 1699–1618	EBA
		1125 – 978	MBA
Caherweelder 1	E3880	974–957 941–831	LBA
		1038–1034 1028–901	LBA
Caherweelder 2	E3890	1192–1174 1164–1143 1132–1005	MBA
		1294–1124	MBA
Caherweelder 3	E3889	1668–1501	EBA
		1448–1370 1351–1316	MBA
Caherweelder 5	E3866	1125–976 952–947	MBA
		1944–1865 1849–1773	EBA
Caherweelder 6	E3871	2195–2174 2145–2119 2096–2040	EBA
Coldwood	E3887		Unknown
Moyveela 1	E3883	731–691 660–652 544–406	LBA
Moyveela 2	E3884	1010–909	LBA
		894–873 846–798	LBA
Roevehagh 1	E3885	976–952 948–832	LBA

Table 2: Table of radiocarbon dates from the burnt mound sites on the N18 Gort to Oranmore

Up to recently comparatively few burnt mound sites had been excavated in County Galway. The excavations data-set listed only 18 excavations of burnt mounds/fulachta fiadh in the county prior to 2006 (Bennett 1970–2003). The published archaeological inventories for the county record only six examples from the west of the county and 17 in the north. Large-scale archaeological works such as those associated with the N6 Galway to Ballinasloe road scheme suggest that the numbers recorded are under representative: the N6 archaeological works identified thirteen burnt mound sites. However, work associated with the gas pipeline to the west revealed only one new burnt mound site in Co. Galway (Grogan et al 2007). The inventory for the south of the county is not yet published but a look at the distribution map based on the RMP data would suggest that the numbers are significantly higher in the southern portion of the county. Archaeological investigations on the N18 from Oranmore to Gort and from Gort to Crusheen bear out

this impression of under representation. A total of 12 burnt mounds including Coldwood were excavated on the Gort to Oranmore section while 27 burnt mound sites were excavated on the N18 Gort to Crusheen section by Irish Archaeological Consultancy Ltd.

The three lithic aretafcts from the archaeological excavation at Coldwood are late Neolithic in date. A small number of lithics were recovered from five of the other burnt mound sites.

Site Name	E No.	Material	Type	Period	Sub-Period	Comment
Caherweelder 7	E3826:3:1	Chert	Hone Stone?	Bronze Age		smoothened and worn all around
Ballyglass West	E3870:11:1	Chert	Blade	Mesolithic	Early	
Caherweelder 6	E3871:5:1	Chert	Retouched Artefact	Mesolithic	Late	blade point, not butt-trimmed
Coldwood	E3887:4:1	Chert	Flake	Neolithic	Beaker	
Coldwood	E3887:5:1	Chert	Flake	Neolithic	Beaker	
Coldwood	E3887:5:3	Flint	Retouched Artefact	Neolithic	Beaker	Barbed &tanged arrowhead
Ballinalliun 1	E3888:3:1	Chert	Flake	Neolithic		
Caherweelder 5	E3866:23:1	Chert	Retouched Artefact	Neolithic		convex end scraper

Table 3: Chipped and course stone finds from some of the burnt mound sites on the N18 Gort to Oranmore

Recent excavations in the south-east of Ireland revealed a similar pattern of very small assemblages found in associated fulacht fiadh, e.g. the N25 Waterford By-Pass (Woodman 2006), a pattern that is replicated elsewhere in Ireland. The coincidence of Mesolithic and Neolithic artefacts on Bronze Age sites may be explained by these locations being continually visited and occupied through the prehistoric period. Bronze Age burnt mounds were situated here due to the dual availability of water and fuel, while the ecological diversity of these locations would have attracted hunters and gatherers from the Mesolithic and the Neolithic periods.

A statistical cluster analysis has been applied to the entire set of burnt mounds recovered on a study area around the N18 OG project and the results show a multiscalar, high level of clustering for this type of site. In consideration of the burnt mound distribution in the landscape, Coldwood is located inside one of the larger clusters identified in the area. The cluster is composed of 11 sites, eight RMP and three newly recorded (Fig 7). The site does not belong to any of the additional clusters identified at a larger scale.

Cluster	Site quantity	Area enclosed	Density per sq. km.	Sites mean distance	Minimum distance	Maximum distance
1	11	8.5 sq. km.	1.3	2.6 km.	50 m.	4.4 km.
1a	2			130 m.		
1b	3	0.02 sq. km.		317 m.	86 m.	448 m.
1c	2			50 m.		
1d	3	0.002 sq. km.		82 m.	50 m.	112 m.

Table 5: Summary of cluster analysis

The badly disturbed burnt mound site at Coldwood is a very poorly preserved example of its type. It did not reveal any associated elements such as troughs or stakeholes and the only evidence for activity, including animal bone and lithics, comes from the black deposit rich in charcoal and heat-affected stone. The site does however fit into the distribution pattern of Bronze Age activity as reflected by the recorded archaeological sites in the area to the south west of Athenry and it provides another element in the growing corpus of excavated burnt mound sites in Co. Galway.

11 References

Alcock, O, de hOra, K and Gosling, P 1999 *Archaeological Inventory of County Galway*, Vol 2 North Galway. Dublin, The Stationery Office.

Bennett, I (ed.) *Excavations 1970-2003* [= annual gazetteer of licensed archaeological excavations in Ireland]. Wordwell Press for the Department of Environment, Heritage & Local Government.

Gosling, P 1993 *Archaeological Inventory of County Galway*, Vol 1 West Galway. Dublin, The Stationery Office

Gosling P 2007 'A Distributional and Morphological Analysis of Fulachtai Fia on Clare Island,' In P. Gosling (ed), *New Survey of Clare Island*, Vol 5 Archaeology, 69-90, Dublin

Grogan, E, O'Donnell, L, and Johnston, P 2007 *The Bronze Age Landscapes of the Pipeline to the West.* Bray. Wordwell

Johnston, P, Kiely, J. and Tierney, J 2008 *Near the Bend in the River: the archaeology of the N25 Kilmacthomas realignment*. NRA Scheme Monograph 3. Dublin

Joyce, P W 1867-1913 *Names of Irish Places*, 3 vols. London & Dublin.

Kiely, J and Dunne, L 2005 'Recent archaeological investigations in the Tralee area.' In M. Connolly (ed.), *Past Kingdoms: recent archaeological research, survey and excavation in County Kerry*. Tralee. Heritage Council/Kerry County Council

O'Kelly, M 1954 'Excavations and experiments in Irish cooking places.' *Journal of the Royal Society of Antiquaries of Ireland,* Vol 84, 105-55.

Ó Néill, J 2003/2004 *Lapidibus in igne calefactis coquebatur*: The historical burnt mound "tradition", *Journal of Irish Archaeology* Vol. XII & XIII, 77-84

O'Sullivan, J 2006 'Archaeological Heritage,' In Galway County Council *Environmental Impact Statement for N18 Oranmore to Gort National Road Scheme.*

Power, D, Byrne, E, Egan, U, Lane, S. and Sleeman. M 1997 *Archaeological Inventory of County Cork Volume 3:Mid Cork*. The Stationery Office, Dublin.

Roycroft, N 2006 Boiled bull and burnt mounds. *Seanda* 1, 38-43

Tourunen, A 2008 'Fauna and fulachta fiadh: animal bones from burnt mounds on the N9/N10 Carlow Bypass.' In J. O'Sullivan and M. Stanley (eds.), *Roads,*

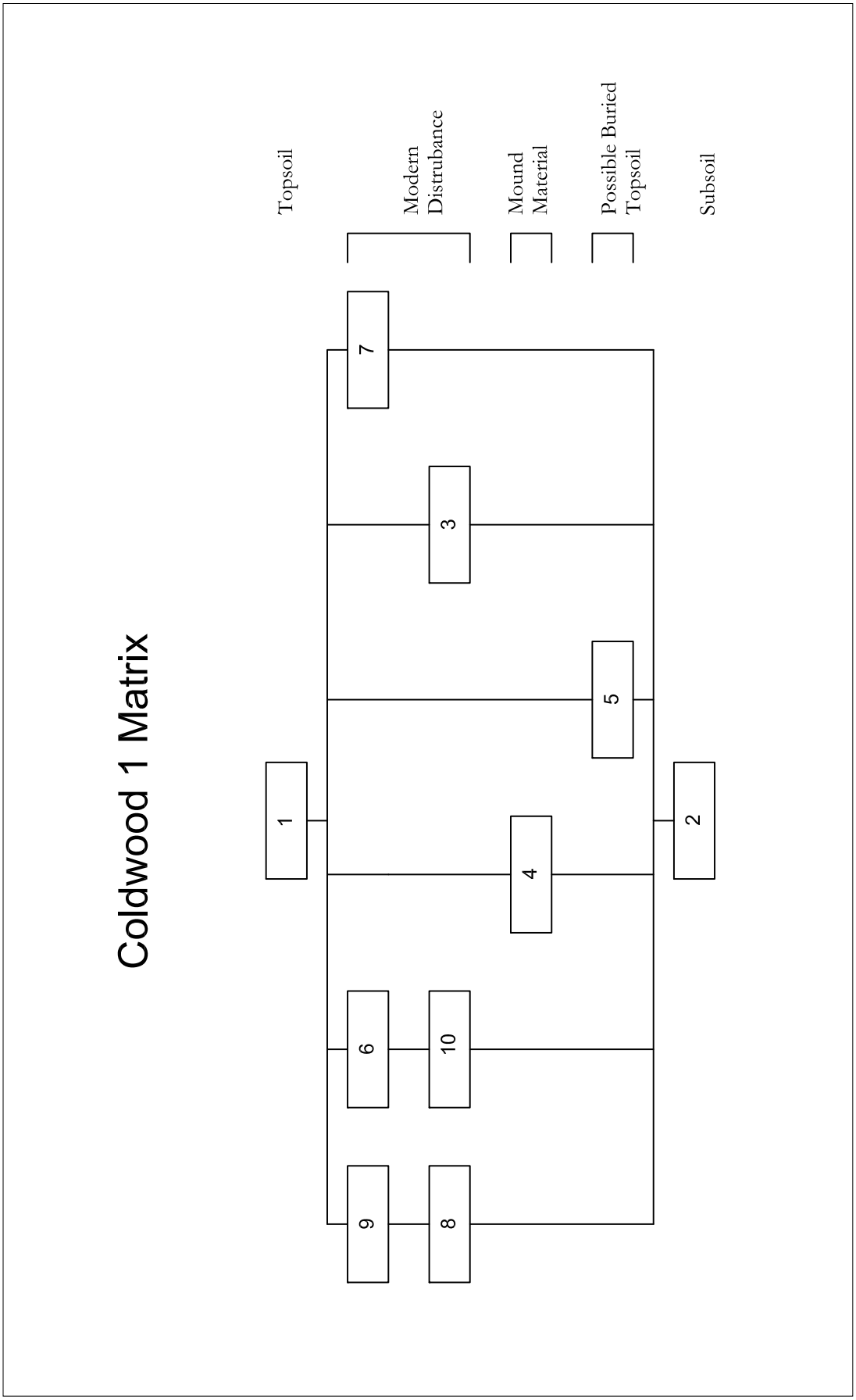
Rediscovery and Research. Archaeology and the National Roads Authority Monograh Series No. 5. Wordwell

Woodman, P C 2006. *The significance of the lithic assemblages from the archaeological excavations on the Waterford By-Pass*. Unpublished Report for Headland Archaeology - Ireland Ltd.

Appendix 1 Context register

Please see attached CD for Context Register.

Appendix 2 Stratigraphic matrix



Appendix 3 Groups and subgroups

Natural Deposits – Group 1

Topsoil - subgroup 1001

Context Number – C.1

Description
This was a mid brown silty clay with a low density of stone inclusions and with a maximum depth of 0.15 m.

Interpretation
This represented the topsoil which had formed across the site since the disturbance associated with reclamation and levelling.

Subsoil – subgroup 1002

Context Number C.2

Description
This was a strongly cemented silty sand with a high density of large stones and gravel inclusions, most of which showed signs of decay. It was light bluish grey in colour.

Interpretation
This was the underlying subsoil which extends across the excavation area.

Mound material – Group 2

Context Number – C.4

Description
This was a layer of dark black silty clay with a high density of small heat-affected stones, all of which were angular in shape and mixed with small flecks of charcoal. It had a maximum depth of 0.26 m and was evident in three spreads (A, B and C) across the excavated area. The spreads ranged in size from 13 – 8 m in length and 6 – 8 m in width. The deposit was highly disturbed with re-deposited material (C.3) mixed throughout the excavated spreads. Animal bone was recovered during the excavation of the deposit along with an iron horse shoe and chert debitage.

Interpretation
This deposit was the badly disturbed remains of a burnt mound The material was the discarded by product of a technology which used hot stones to heat water. The disturbance was due to land reclamation and levelling activities.

Buried Topsoil – Group 3

Context Number – C.5

Description
This was a firmly compacted, dark reddish brown silty clay with a low density of stone and charcoal inclusions. It was from this layer that a barbed-and-tanged arrowhead was found along with some flint and chert debitage. Some animal bone was also recovered from this deposit during the excavation. The deposit was located directly below the mound material in the southern half of the site.

Interpretation
This deposit was possibly a buried topsoil which was sealed by the overlying mound material.

Modern disturbance – Group 4

Disturbed/redeposited material – Subgroup 4001

Context Number – C.3

Description
This deposit was a firmly compacted, mid yellowish-brown silty clay which few if any inclusions. It was identified mixed through the burnt mound material.

Interpretation
The deposit has been heavily disturbed and may have originally been an alluvium deposit introduced during wet periods and possibly as a result of a nearby turlough. The deposit has been disturbed by the land reclamation and levelling activities.

Linear features – Subgroup 4002

Context Numbers – C.8, C.6, C.10, C.9, C.7

Description
Towards the centre of the site a linear features (C.10) 4 m long, 0.85 m wide and 0.15 m deep was filled with a mid brownish black peaty clay (C.9). At the northern end of the site

another linear feature (C.8) was recorded this measured 3.5m x 1.1m and was 0.48m deep it was filled with loose sub-rounded and rounded coarse pebbles and small stones (C.6). Modern plastic and other modern debris were identified within the loose stone. A deposit of light greyish brown silty clay with occasional occurrence of sub-angular medium and coarse pebbles and flecks of charcoal (C.7) filled a natural hollow in the subsoil.

Interpretation

Both of the cut features and their fills and the silty clay deposit filling a natural hollow are modern and are the result of land reclamation and levelling work

Appendix 4 Find register

Context #	NMI #	Category	Fabric	Artefact Type	Grid E	Grid N	Short description	Period	Initials	Date	Post-ex Comments
4	1	Stone	Chert	Flake	108.5	118.6		Prehistoric	MiM	15/05/2008	
4	2	Metal	Iron	Horse shoe	102	118		Modern	TW	18/05/2008	Incomplete. 120mmxW90.5mmxTh10.4mm
5	1	Stone	Chert	Flake	94.3	136.8		Prehistoric	MiM	14/05/2008	
5	2	Stone	Flint	Natural chunk	109.4	123.5		Prehistoric	MD	23/05/2008	
5	3	Stone	Flint	Arrowhead	110.4	120.6	Barbed-and-tanged arrowhead.	Prehistoric	MD	18/05/2008	

Appendix 5 Stone artefacts

Farina Sternke

Introduction

Four lithic finds from the archaeological excavation of prehistoric site at Coldwood (Foorkill), Co. Galway were presented for analysis (Table 1). The finds are associated with the remains of three burnt mounds.

Find Number	Con text	Material	Type	Condition	Cortex	Length (mm)	Width (mm)	Thickness (mm)	Complete	Retouch
E3887:4:1	4	Chert	Flake	Slightly Rolled	Yes	22	33	11	No	No
E3887:5:1	5	Chert	Flake	Reasonably Fresh	No	20	13	3	No	No
E3887:5:2	5	Flint	Natural Chunk							
E3887:5:3	5	Flint	Retouched Artefact	Patinated	No	25	22	5	Yes	bifacial

Table 1 Composition of the Lithic Assemblage from Coldwood (Foorkill) (E3887)

Methodology

All lithic artefacts are examined visually and catalogued using Microsoft Excel. The following details are recorded for each artefact which measures at least 2 cm in length or width: context information, raw material type, artefact type, the presence of cortex, artefact condition, length, with and thickness measurements, fragmentation and the type of retouch (where applicable). The technological criteria recorded are based on the terminology and technology presented in Inizan *et al.* 1999. The general typological and morphological classifications are based on Woodman *et al.* 2006. Struck lithics smaller than 2 cm are classed as debitage and not analysed further, unless they are retouched or of specific significance, e.g. cores etc. The same is done with natural chunks.

Quantification

The lithic artefacts are two flaked pieces of chert (E3887:4:1 and E3887:5:1), one flaked piece of flint (E3887:5:3) and one natural chunk of flint (E3887:5:2).

Provenance

The finds were recovered from a burnt mount layer (C4) and a buried topsoil horizon (C5).

Condition

The lithics survive in variable condition (Table 1) and only one artefact is complete (E3887:5:3).

Technology/Morphology

The artefacts are two flakes (E3887:4:1 and E3887:5:1) and a retouched artefact (E3887:5:3).

The two flakes are platform examples. Flake E3887:5:1 is missing its distal end. The flakes measure 22 mm and 20 mm long, 33 mm and 13 mm wide and 11 mm and 3 mm thick, respectively.

The retouched artefact is a well-made barbed-and-tanged flint arrowhead. It is slightly bent and hence was probably abandoned prior to its use. It measures 25 mm long and 22 mm wide and 5 mm thick.

Dating

The assemblage is technologically and typologically diagnostic and dates to the Late Neolithic, more specifically to the Beaker period (Woodman *et al.* 2006).

Conservation

The lithic artefacts do not require specific conservation, but should be stored in a dry, stable environment. Preferably, each lithic should be bagged separately and contact with other lithics should be avoided, so as to prevent damage and breakage, in particular edge damage which could later be misinterpreted as retouch. Larger and heavier items are best kept in individual boxes to avoid crushing of smaller assemblage pieces.

Discussion

The size and composition of the flaked assemblage is typical for Irish burnt mounds. Recent excavations in the south-east of Ireland revealed a similar pattern of very small assemblages found in associated *fulachta fiadh*, e.g. the N25 Waterford By-Pass (Woodman 2006), a pattern that is replicated elsewhere in Ireland.

Conclusion

The four lithic finds from the archaeological excavation at Coldwood (Foorkill), Co. Galway are two chert flakes, a barbed-and-tanged flint arrowhead and a natural chunk of flint. The assemblage is technologically and typologically diagnostic and dates to the Beaker period.

This site makes a minor contribution to the evidence for prehistoric settlement and land use in Co. Galway.

Recommendations for Illustration

Barbed-and-Tanged Arrowhead (E3887:5:3)

Bibliography

Inizan, M.-L., M. Reduron-Ballinger, H. Roche and J. Tixier, 1999. Technology and Terminology of Knapped Stone 5. CREP, Nanterre.

Woodman, P.C. 2006. The significance of the lithic assemblages from the archaeological excavations on the Waterford By-Pass. Unpublished Report for Headland Archaeology - Ireland Ltd.

Woodman, P. C., Finlay, N. and E. Anderson, 2006. The Archaeology of a Collection: The Keiller-Knowles Collection of the National Museum of Ireland. National Museum of Ireland Monograph Series 2. Wordwell, Bray.

Appendix 6 Animal bone report

Margaret McCarthy

The excavations at Coldwood yielded a total sample of 14 animal bones. The main burnt mound deposit (C4) contained a fragmented cow molar and the distal portion of an adult sheep tibia. Seven fragments of indeterminate bone were also recovered from this deposit. In the southern half of the site, a buried topsoil horizon (C5) beneath the burnt mound layer contained the distal portion of a calcaneum of an adult cow as well as fragments of large and medium sized mammals that were too small to identify to species. Two of these bones were totally calcined from being in contact with intense heat for a considerable period of time.

	Cow	S/G*	LM*	MM*	Indet*	Total
C4	1	1			7	9
C5	1		1	3		5
TOTAL	2	1	1	3	7	14

Table 1: Distribution of fauna by individual context

S/G* Sheep/Goat LM* Large mammal MM* Medium mammal INDET* Indeterminate

The whole site was disturbed by 1980s land improvement works and the context of recovery is not entirely reliable for any of the bones.