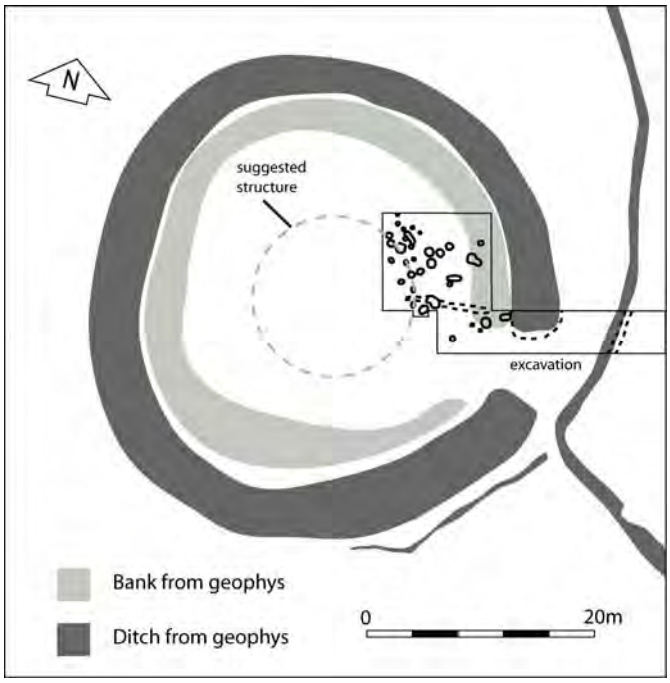
EVALUATION EXCAVATION AT A PREHISTORIC HILL-TOP ENCLOSURE AT CARROG, LLANBADRIG, ANGLESEY

Preliminary Report

THE ANCIENT LANDSCAPE OF MÔN ARCHAEOLOGICAL SURVEY PROJECT

GAT Project No. G2076

Report No. 946



Prepared for Cadw
April 2011

By
George Smith

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

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EVALUATION EXCAVATION AT A PREHISTORIC HILL-TOP ENCLOSURE AT CARROG, LLANBADRIG, ANGLESEY: PRELIMINARY REPORT

THE ANCIENT LANDSCAPE OF MÔN ARCHAEOLOGICAL SURVEY PROJECT

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SUMMARY

A small hill-top enclosure at Carrog, Llanbadrig, Anglesey, that had been identified from a crop mark on an aerial photograph was investigated by geophysical survey and subsequently evaluated by a small excavation. The enclosure was interpreted on typological grounds as a possible Late Bronze Age or Early Iron Age defended site. The area excavated comprised an entrance terminal of the enclosure ditch and an area inside the enclosure.

The enclosure ditch was substantial but there was no trace remaining of any accompanying bank. Within the enclosure were numerous post-holes and pits. Some of the latter proved to be hearths of Early Neolithic date and these have produced radiocarbon dates in the 4th millennium Cal BC. There was little artefactual evidence for the occupation of the enclosure itself but radiocarbon dates from post-holes and from the ditch showed that it was probably constructed about 800 Cal BC and occupied until about 400 Cal BC confirming the original interpretation. Late in its existence the ditch had been partially backfilled and a small building constructed within it, associated with a rotary hand quern and loom weight, and radiocarbon dated to the 8-9th C Cal AD.

1 INTRODUCTION

Archaeological features were first discovered at Carrog at SH 3780 9180
during aerial photographic survey by Chris Musson for the RCAHMW in July 1996. This recorded a possible small settlement enclosure 'about 30m diameter with an entrance on the east side' (PRN 7362, NPRN 309,535). The shape, size and hill-top position of the enclosure suggested comparison with enclosures of Later Bronze Age or Early Iron Age date in southern England. If so this was potentially an important discovery for Anglesey, where the presence of burial mounds and standing stones demonstrates major activity in the Early Bronze Age, but where evidence of settlement before about the Middle Iron Age is lacking, probably due to the effects of intensive clearance and cultivation over several millennia. New aerial photographs of the enclosure were taken by John Rowlands and Dafydd Roberts of *Pixaerial.com* during the summer of 2006 when a prolonged dry period was very favourable to the production of crop marks. These photographs showed the enclosure (Fig. 2b) as well as several other circular and sub-circular features in an adjoining field to the south (Fig. 2a). These new features appeared to be three ring ditches, each about 20m diameter, lying approximately in a line along the ridge. Ground survey showed that there were some earthworks remaining and these are almost certainly the remains of three large earthen burial mounds of Early Bronze Age date. A geophysical survey was carried on the enclosure and the burial mounds as part of a wider project for Cadw studying a number of new archaeological crop mark features (Smith and Hopewell 2010). The results of the geophysical survey of the Carrog enclosure are repeated here, for their relevance to the interpretation of the 2010 excavation.

Acknowledgements
Thanks are due to the landowner, Prof. Robin Grove-White and to the farmer, Jack Jones, for permission to carry out the survey and excavation. The excavation was made possible with the help off volunteers, Helen Grove-White, Chris 'Beaver' Hughes, Jeff Marples, Emily May and several local people. Outreach work in connection with the excavation and the project generally was made possible by a grant from the Anglesey Area of Outstanding Natural Beauty Sustainability Project, administered by Efan Milner for the Anglesey County Council.

2 TOPOGRAPHIC AND ARCHAEOLOGICAL BACKGROUND

The enclosure lies at a height of 30m OD in low, gently undulating countryside, on the east side of the summit of a low hill (Carrog 2 Survey Area, Fig 1). The land is part of Carrog Farm, which is part of the Brynddu Estate, Brynddu House being just to the south-west of Carrog Farm.

The fields at Carrog lie over ancient metamorphic green mica schist (HMSO 1972) but with an overlying cover of glacial drift boulder clay (HMSO 1974). The soil is a brown earth (Soil Survey1958) and the land classified as of agricultural Grade 3 (MAFF 1977) Grade 3 land is not the best land, suitable mainly for pasture but with occasional arable.

The field held a recently planted cereal crop at the time of the geophysical survey but was grass pasture when the excavation was carried out.

The straight sides of most of the fields in this area suggest that the present field pattern was a result of 18th-19th century improvement and it is largely unchanged from that shown on the Ordnance Survey map of 1889 and a Brynddu Estate map of 1805. However, the southern edge of the field to the south is irregular and wandering and this is also a Community boundary and is likely to be the continuation of a much earlier boundary.

3 AIMS AND METHODS

The main aims were to identify the function, date and potential of the sub-surface remains. If it were, as suggested, a Late Bronze Age settlement enclosure then it would be an important discovery at least regionally, as very little is known about what settlement consisted of in that period in Anglesey.

The excavation was based on the results of the geophysical survey by fluxgate magnetometer. The main part aimed to investigate part of the interior of the enclosure, where several geophysical anomalies suggested features such as pits or hearths. An extension from this main trench was designed to investigate the entrance to the enclosure on the south-east side, including one ditch terminal.

The grid used for the previous geophysical survey was re-established and the trenches laid out as designed, based on the results of the geophysical survey (Fig. 3). The turf and topsoil were stripped using a wheeled mechanical excavator. The stripped areas were then cleaned by hand and the exposed features investigated, planned and photographed. Excavation during the first two weeks was in very dry conditions, when the subsoil was hard and dusty and revealed very few features. After a spell of rain the soil colours became more visible and numerous other features were identified. It became clear that nearly all slight geophysical anomalies were the result of subsurface features, leading to an extension of the work.

4 MAGNETOMETER SURVEY RESULTS

Carrog Enclosure (Carrog Area 2, Figs 3-4)

An area of 60m x 60m on the top of the hill was surveyed at high resolution (0.5m x 0.25m) with an additional area on the slope to the north at (1.0m x 0.25m). Levels of background noise were again very low and archaeological anomalies were again relatively faint. Data was cropped to +-5nT.

A very well-defined circular anomaly (1) best interpreted as a circular ditched enclosure was detected. This has an external diameter of 40m and has a 6m wide entrance at the eastern side. The ditch appears to be about 4m wide. A slight anomaly around the inside of the ditch (2) could indicate the remains of a bank but this interpretation would have to be tested by excavation. The survey shows a scatter of typical iron responses (not transcribed on the interpretation plan) from debris in the topsoil but several weaker anomalies within the enclosure could be post-holes or pits (3). A narrow curvilinear anomaly (4) runs up the hill to the edge of the enclosure. It then appears to continue as a faint anomaly running parallel to the ditch for a short distance. It either divides or is crossed by a second anomaly (4) corresponding to the south edge of the enclosure entrance. There is no obvious interpretation for this anomaly, it appears to be a narrow, cut feature (or combination of features) and respects the edge of the enclosure, either implying that is contemporary or perhaps simply avoiding the earthwork. It is visible as a double feature on the slope. This could indicate that is a track that has caused increased erosion on the slope. Clearly excavation would be needed to allow anything but speculative interpretation of this feature and its relationship to the enclosure. Very faint anomalies elsewhere in the survey could indicate former field boundaries (6, 7 and 8).

Discussion

The survey detected a very clearly defined ditched settlement enclosure that was first recognised as a crop-mark. There are hints of internal activity although no structures could be recognised. A narrow feature, apparently aligned with the edge of the settlement requires further investigation.

5 SOIL PITTING STUDY

Carrog Enclosure *(Carrog Area 2)*

Three pits, a, b and c were dug (Fig. 4).

Pit a Topsoil 0 to -26cm. Mid-brown silty loam with *c*. 5% angular fragments of schist and occasional rounded pebbles and pieces of black chert up to 100mm long.
-26cm+ Subsoil. Yellow-buff clayey silt with *c*. 10% small angular stones and some iron-panning.

Pit b Topsoil 0 to -30cm. As Pit a.
-30cm+ Subsoil? Light grey clayey silt, not bottomed.

Pit c Topsoil 0 to -31cm. As Pit a.
-31cm+ Subsoil. As pit a.

Comments

Pit a lies outside the enclosure on the west side, slightly down slope from the hill summit and does not coincide with any geophysical feature. The topsoil was very shallow and lay over subsoil of *in situ* fluvio-glacial till.

Pit b was also outside the enclosure and slightly down slope from the hill summit, but to the east and beyond any geophysical features. The topsoil here was deeper and layer over darker silt that was not obviously natural subsoil.

Pit c was positioned in the centre of the enclosure on the hill summit. It was not above any identified geophysical feature and the topsoil was shallow and lay directly over undisturbed natural subsoil of fluvio-glacial till.

6 EXCAVATION RESULTS

The main excavation area included part of the interior of the enclosure and an area that would have been part of the enclosure bank. Removal of the ploughsoil showed that cultivation had entirely removed any trace of the bank. However, within the line of the enclosure bank the topsoil was deeper than elsewhere and the top of the subsoil was lower. This can be ascribed to the presence of a ‘ghost’ feature where the bank had been, that is a slightly raised area of subsoil where there had been less plough erosion because of the protection formerly provided by the remains of the bank. This means that the subsoil surface and any features cut into it, within the area of the former enclosure bank have been reduced by least 0.20m.

The ditch terminal was located, as expected from the geophysical survey. Beyond was a much smaller ditch, part of an extensive linear feature, probably an old field boundary ditch, also identified by the geophysical survey (Figs 3-5).

Numerous small features were present within the trench. These were concentrated in the western half of the trench, i.e. beyond the area of the former enclosure bank. However, there were also a few features within the expected area of the bank. These seemed likely to pre-date the construction of the bank and therefore of the whole enclosure.

The Enclosure Ditch

The ditch terminal was targeted for the possibility of a concentration of deposited objects next to the entrance, but it proved to have relatively few artefacts. The lowermost layers were quite sterile gravel and silt. A substantial soil layer had formed when the ditch had silted to about half its depth and this soil may provide some environmental evidence.

The ditch was v-shaped in cross-section, 4m wide and over 2m deep, indicating that it must have been accompanied by a bank of a considerable size.

After the enclosure ditch had been largely silted up a humic soil developed within it. The remaining hollow of the ditch had then been partially backfilled and a small rectangular stone-walled building [124] had then been built in the remains of the ditch. The probable structure [124], was only partly was exposed in the excavated area and this was fragmentary. It consisted of a probable floor of horizontally laid flat slabs (Figs 6-7). At one end were three stones set upright, probably marking the edge of one wall. At the other end was a line of stones set on edge, suggesting another wall [123]. Two stake-holes [32] and [95] were found at the west edge of the structure, driven into the layer (27) on which the slabs were laid. These were neatly circular vertical holes filled with dark humic material. There were also a few similar but smaller holes cut into the ditch edge further west, which might be associated with the structure. These stake holes did not form any pattern and one was under one of the floor slab but seem likely to have formed part of the structure [124].

Finds from the soil overlying the structure included part of a flat rotary quern (Fig. 12), a pierced stone probable loom-weight (Fig. 13.5) and two rubbing stones.

A small part of the top fill at the edge of the ditch was exposed in the north-east corner of the trench and this produced a small spherical yellow-glass bead, which could also belong with the use of structure [124].

Structure [124] lay on top of a deep layer of orange-brown clay-silt (27) interpreted as a result of backfilling of the ditch with material from the bank to the west (Figs 6b and 7b). This lay on top of a thin old turf line (40) over a natural silt (52) suggesting a stable phase. This lay over another clayey layer (53). This probably represented another backfill phase, but was biased towards eastern, outside edge of the ditch, suggesting that it did not derive from the bank, so its origin and interpretation are uncertain.

Layer (53) overlay another probable turf line (120) representing a stable land surface phase in the ditch silting which corresponded to the final abandonment of the enclosure. A soil column was taken through this old land surface for possible environmental analysis.

Beneath the OLS (120) was a deep secondary silt (54) which included three lenses of coarser material. This layer may have formed during the period of occupation of the enclosure and charcoal was obtained for possible radiocarbon dating. The layer produced several finds, including five discs chipped from thin plaques of slate, two of which were centrally perforated, and a stone pestle (Fig. 13).

The lower layers (64), (113), (114) and (115) represented the rapid primary ditch silts and were of stony clay. These did not produce any artefacts although charcoal was obtained from (64), for possible radiocarbon dating.

Interior of the enclosure

Within the enclosure was a considerable scatter of smaller features, pits and probable post-holes. These were concentrated at the west side of the excavated area, towards the centre of the enclosure. A few were within the area where the enclosure bank would have been, suggesting that they might pre-date the enclosure.

The features present within the enclosure were of five types (Fig. 5):

1. Circular shallow, concave based pits containing charcoal, probable hearths:
12, 24, 28, 49, 67 and 103.

2. Elongated shallow pits packed with burnt stones: 89 and 116.

3. Larger post-holes, identifiable by the presence of obvious arrangements of post-packing stones: 18, 62, 65, 71 and 73.

4. Smaller, probable post-holes, some with possible post-packing: 20, 22, 47, 55, 58, 69, 75, 79, 81, 83, 85, 87, 93, 110 and 118.

5. Other pits of uncertain function: 5, 14, 16, 30, 45, 60, 77, 91, 106 and 108.

There was also one small linear feature [97], a probable drainage gulley.

1. Shallow-scoop-shaped pits (Fig. 8)

The first of these excavated, Pit 28, was in the expected area of the enclosure bank and proved to pre-date the enclosure. Pit 28 was *c*. 1.2m diameter and 0.20m deep with fine silty fill above a 'lining' of fine charcoal-rich soil. The pit produced some waste flakes of flint and black chert but no retouched pieces and a few sherds of thin plain-rimmed pottery, of probable Early Neolithic type and probably all from a single pot. In all there were six pits of similar type and size - Pits 12, 24, 28, 49, 67 and 103. No others contained pottery but three produced flint or chert. Pits 24 and 28 lay under the expected former area of the enclosure bank; the others formed a group a little to the west.

2. Burnt stone pits. These two pits, 89 and 116, were very similar in shape size and depth, being elongated ovals, *c*. 1.6m long, 0.5m wide and 0.25m deep, both packed quite tightly with heat-fractured stones. Neither produced any artefacts although both produced charcoal and one was radiocarbon dated.

3. Post-holes (Fig. 9)
The majority of other features identified were smaller in diameter. Five were certainly post-holes, containing obvious packing stones. None of these produced any artefacts although a few produced some charcoal and two were radiocarbon dated.

4. Probable post-holes (Fig. 9)
Thirteen were slightly smaller and mainly shallower, some with probable packing stones and these were all probably minor post-holes. None of these produced any artefacts although a few produced some charcoal.

These post-holes and probable post-holes did not form any obvious pattern to suggest a structure but generally lay at approximately even spacing in an arc concentric to the enclosure ditch and bank. Four of them straddled, but respected a burnt stone pit, 89, and so may have formed a structure associated with the pit.

5. Other features (Fig. 10)

These were a miscellaneous group of varying shapes and depths, mainly shallow pits, two of which, 16 and 69, may have been the remnants of ploughed down post-holes.

A small linear feature [97], a probable drainage gully, was oriented east to west, and would have drained to the east. It had a fairly distinct end at the east but tapered away gradually to the west, which helps to define the additional amount of erosion inside the enclosure, where not protected by the bank. The gully continued into the area where the enclosure bank was believed to have been, indicating that the gully pre-dated the enclosure (Fig. 5).

Gully [97] cut through Pit 5, which was similar in size and shape to the shallow scoop hearths but did not contain the same amount of charcoal or any datable material such as flint, chert or pottery. However, it did contain a scatter of fragments of burnt bone, possibly a cremation deposit, and some of these had been eroded down the gully [97]. If it is correct that gully [97] predates the enclosure then so too must Pit 5.

Protruding from the trench edge just west of Pit 5 was another similar feature Pit [106]. This produced a piece of a large thick-walled, well-fired pot with heavily impressed decoration of possible Middle Neolithic style (Fig. 11). The trench was extended to allow the whole of the pit to be excavated. This produced more of the same pot, two beach-pebbles and some charcoal, which was radiocarbon dated, but no other evidence of function. The top of the pit was cut by a small post-hole [125], with packing stones still *in situ* (Fig. 10). This probably belongs with the other post-holes and was part of the enclosure activity and had cut the pit by chance.

The trench across the enclosure ditch terminal included part of the entrance causeway and it was expected that some features would be found there, such as post-holes for a gateway or revetting for the enclosure bank, as found at other similar enclosures in southern England. However nothing like that was found. The enclosure bank clearly must never have had any revetting. One small probable post-hole [55] was found close to the entrance but was unlikely to be part of any gate structure. Two features in the causeway, 30 and 45 were just shallow scoops, possibly backfilled stone-holes. The absence of any clear entrance structure or revetting for the bank terminals is problematic.

Beyond the enclosure ditch terminal was a narrow linear feature [7], a possible early field boundary. Excavation showed that it was quite shallow; its upper fill contained a scatter of stones of *c*. 0.1 - 0.2m length suggesting stones thrown out during hand cultivation. There were no datable finds, the only one a small stone disc chipped to shape, too small to be a spindle whorl, possibly a gaming counter. The ditch respects the enclosure, so some of the ditch and bank must have remained when it was dug. It seems likely to belong with the activity represented by the structure [10] in the top of the main enclosure ditch.

7 ARTEFACTUAL EVIDENCE

The main finds have been noted in the description of the excavation. Their occurrence by context and type is summarised in Table 1, below.

Table 1 Carrog, Summary of finds

Context	*Context Type*	*Flint*	*Chert*	*Pottery*	*Stone*	*Other*
6	Pit 5					Burnt bone, ?cremation
51	Pit 5	1				
13	Pit 12	1				
37	Pit 24	1				Burnt clay
3	Pit 28		1			
29	Pit 28	2	23	20	4 burnt stone	
50	Pit 49	2				
68	Pit 67				1 burnt stone	
104	Pit 103		1			
107	Pit 106				1 pebble	
1	Topsoil	1	2			
4	Lower topsoil ditch 9	4	2		1 quern	
10	Top fill ditch 9				1 ?loom weight 1 rubber 1 polisher	Fired clay ?loom weight frag
44	Top ditch 9					1 Glass bead
33	Post-hole top ditch 9			1 (?)		
26	Ditch 9				1 burnt stone	
27	Upper backfill Ditch 9		4		1 slate disc frag	
39	Ditch 9		1		1 ?slingstone	
53	Lower backfill Ditch 9				1 pebble	
54	Middle silts Ditch 9		1 (knife)		1 pestle 1 rubber 2 perforated slate discs 2 unperforated slate discs	
8	Linear 7				1 disc (?counter)	
102	Linear 97					Burnt bone, ?cremation

8 DISCUSSION AND DATING

Pre-enclosure activity

The discovery of a feature (Pit 28) in the area where the enclosure bank had been suggested the presence of an earlier phase of activity and this was confirmed by the presence in the pit of worked flint and chert as well as pottery of Early Neolithic type. Several very similar features were found elsewhere in the trench. These were pits 12, 24, 49, 67 and 103. All were shallow pits with concave profiles, containing few stones but several with layers of finely comminuted charcoal on their bases. These pits resemble the shallow pits found on some Mesolithic camp sites. No high temperatures were involved in their use, with no evidence of burning of the clay *in situ* but could have involved lower temperature cooking or baking, such as roasting hazel nuts. The one pit from which the charcoal has been identified contained hazel wood charcoal but no nut shell. Pits 12, 28, 49 and 103 also produced some worked flint or chert but none that was typologically diagnostic. Pit 28 had the largest quantity of lithic material as well as several pieces of pottery. This was a smooth dark fabric from a thin-walled pot or pots, with three pieces of rim, all probably from the same pot, identified as of part of an Early Neolithic plain bowl (F. Lynch, pers. com.).

The occurrence of a number of similar pits occurring in a group suggest the focus of a small camp site, possibly used on more than one occasion, although none of the pits intersected, so could have been in use together as part of a larger scale activity.

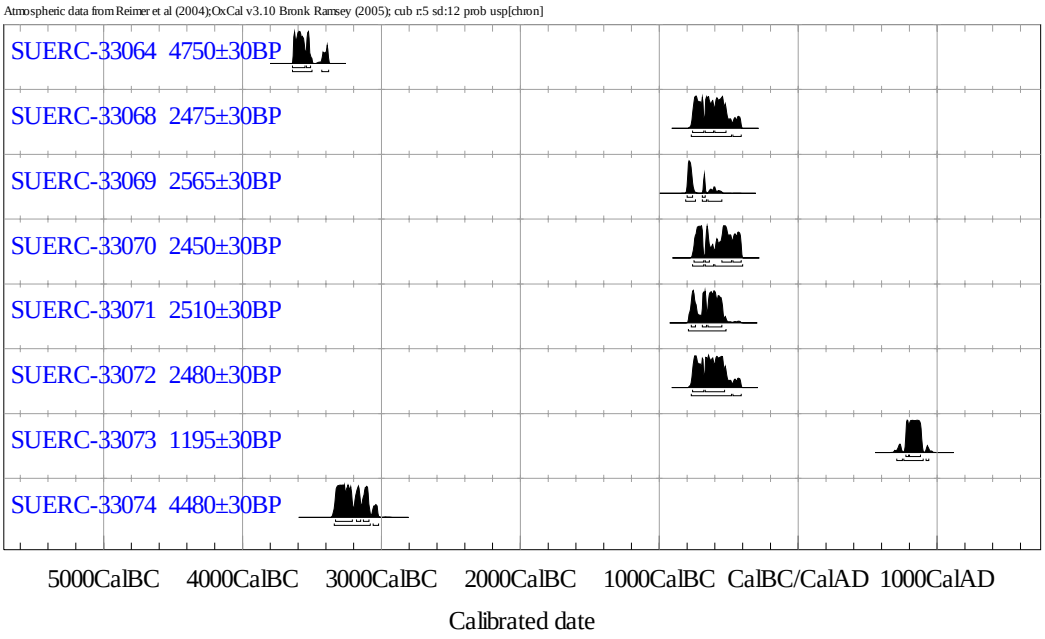
Other features recorded could belong to this phase but there was no worked flint or chert and no pottery to support that interpretation. A few other features that might belong with this phase were in the area where the later enclosure bank had been. These were the possible post-holes 47 and 58 and hollows 60 and 108 (Fig. 5). Another feature that partly lay within the area of the enclosure bank was gully 97. This did not produce any datable objects but cut through another shallow concave pit [5] which was similar to the Early Neolithic pits although it had no basal layer of charcoal. It did however contain some fragments of burnt bone and a few pieces of burnt occurred also in the fill of the gully 97, where they must have been re-deposited after the gully had cut the pit fill.

Close to pit [5] was another similar shallow pit [106]. This did not contain a charcoal ‘lining’ or any flint but did contain several fragments of a large pot with heavily impressed decoration, of a quite different fabric and firing to the pot in pit [28] and identified as probably of Middle Neolithic date, confirmed by radiocarbon dating (Fig. 11) (F. Lynch, pers. com.).

There were a few stray pieces of worked flint and chert from the ploughsoil and other features to suggest some limited activity on the hill top. The majority came from the silting layers in the enclosure ditch [9] including an edge-retouched chert knife from one of the middle fill layers (54) (Fig. 13.4).

The suggested dating of the features based on the pottery was confirmed by the radiocarbon dating (Fig. 14). Hazel charcoal from pit 28 produced an AMS radiocarbon date of 3640-3500 Cal BC at 95% probability (SUERC-33064) and hazel charcoal from pit 106 produced an AMS radiocarbon date of 3340-3080 Cal BC at 95% probability (SUERC-33074).

Fig. 14 AMS Radiocarbon dating: Summary plot



Enclosure activity

The majority of the remaining features are identifiable as probable post-holes and most are likely to be of a single general phase, although not necessarily directly contemporaneous, and belonging with the construction and occupation of the enclosure. There is a similarity in the size and spacing of these probable post-holes that suggests that some at least may have belonged to a single structure. Several of them fall within a vague arc on the circumference of a circle of about 15m diameter. This could belong to the outer wall of a large round-house, which if so would be situated centrally within the enclosure (Fig. 3).

AMS radiocarbon dates were obtained from two of the post-holes, 62 and 73. Alder wood charcoal from 62 produced a date of 600-400 Cal BC at 95% probability (SUERC-33070) and oak wood charcoal from 73 produced a date of 790-520 Cal BC at 95% probability (SUERC-33071).

There is a group of smaller post-holes at the north-west corner of the trench that could be part of a separate structure. Situated within these and possibly respecting them, or vice versa is an unusual elongated pit [89]. This was packed with burnt stones and is presumed to be some kind of cooking pit, although other functions are possible. There was no sign of burning of the pit sides so the stones may have been burnt elsewhere. Its elongated shape must have been relevant to its function. Another almost identical pit [116] was found to the south-east, with only one possibly associated post-hole. Willow wood charcoal from pit 116 produced an AMS date of 770-480 Cal BC at 95% probability (SUERC-33072). This date coincides with those from the post-holes 62 and 73 and helps to provide a reliable date range for occupation of the enclosure.

The lack of any artefacts from the post-holes makes it impossible to say anything about the activities carried on there although environmental analysis may produce evidence of cereals or seeds from carbonised remains. However, there was little evident charcoal and no sign that there had been any destruction phase in the post-holes or in the ditch silts. The ditch silts did produce a small number of artefacts that probably derive from the use of the enclosure. These included a number of stone discs, some perforated, of uncertain function as well as a stone pestle and a couple of rubbing stones (Fig. 13, 1-3 and 6). In all the finds are unusually sparse for such a major earthwork, although apart from a small amount of pottery there was little more than this at Castell Odo, for instance (Alcock 1960).

The actual limits of the enclosure bank are impossible to define but pit [116] must have been close to the inner edge of the bank unless the pit belonged to a construction phase before the bank was built. Enclosures of a similar period in England often have banks that were revetted with posts but there were

none here. The lack of any bias to the ditch silting suggests there was a reasonable gap or berm between the ditch edge and the bank.

Two AMS radiocarbon dates were obtained from the enclosure ditch, one from the middle fill and one from the top of the primary fill. The upper was from layer (53); a re-deposited horizon after the ditch silts had reached a stable point, when a humic soil had become established. This date was 770-480 Cal BC at 95% probability (SUERC-33068). The lower date was from layer (64) a rapid erosion layer on to of the primary silts, and so probably quite soon after the ditch completion. This was 810-740 Cal BC (SUERC-33069).

The dating evidence indicates that the enclosure was constructed about 800 Cal BC and that occupation probably continued for about at least another two centuries. This is a period for which there is presently no other settlement evidence from Anglesey. The nearest settlement of that period is the enclosure of Castell Odo on the Llŷn peninsula, where the earliest dates overlap with those from Carrog (Alcock 1960; GAT Archive). It was also a hill-top settlement although the earliest phase was interpreted as unenclosed. The later settlement enclosure was about 40m diameter internally, with several roundhouses.

The distribution of Early Bronze Age round barrows on Anglesey shows that the island was fairly completely settled by that time and this accords with the distribution of land with good potential for arable farming. Settlement remains should therefore be widespread but it is likely that most settlement was unenclosed and scattered, so rarely survives as recognisable features. It was only about this time that defensive enclosures began to be built, producing more lasting landscape features. Other enclosures, similar to Carrog may yet be found. The construction of defensive enclosures has been linked to changes in climate and the deterioration of the uplands and their margins after clearance of woodlands, widespread grazing and the degradation of soils. This led to increased focus on the lowlands including the new exploitation of areas of soils that were not of the best quality, e.g. clay soils and this expansion may have produced greater territoriality (Barrett 1980, 91-5). It was also a time when exploitation of copper from nearby Parys Mountain was declining, replaced by cheaper imported metal and when the trade in gold objects from Ireland was increasing.

The increase in territoriality has also been interpreted as leading to the development of enclosed settlements to provide secure communal storage areas for agricultural produce belonging to a local farming community and inhabited by a person who, by organising the collection and protection of such goods acquired status. Such enclosures therefore are characterised by the presence of a number of probable grain storage structures, as at the re-used Llandygai henge. There must have been other similar enclosures on Anglesey and the re-use of earlier earthworks may be one of the early phases of the development of defended enclosures. One such may be the re-used Neolithic circular earthwork of Castell Bryn Gwyn, Brynsiencyn (Wainwright 1962). Another very similar use was made of another Neolithic enclosure at Llandygai, Bangor, in which a large timber-walled roundhouse, *c*. 15m diameter was built as well as several other structures interpreted as granaries (Lynch and Musson 2004). These re-use phases have not been dated at either site. Similar enclosures known further afield but with better dating evidence include those at Springfield Lyons and Mucking (Essex), Mill Hill and Highfield (Kent), all of which have wide, south-east facing entrances, as at Carrog (Champion 1980).

The Carrog enclosure seems to have gone out of use by about 400 Cal BC at the latest. Its function would have been replaced by the development of the larger hill forts, such as the nearby large coastal promontory fort of Dinas Gynfor, Cemaes or the inland multivallate fort of Y Werthyr, Llantrisant, further to the west. These forts provided economies of scale in terms of defensive capability and would act as foci for larger territories and populations.

Post Excavation work

The excavation archive is listed below.

Context sheets	125
Photo records	90
Level record sheets	11
Drawings	49

Recorded finds, including charcoal	90
Charcoal samples for identification	62
Soil samples	37

A preliminary selection of charcoal was made from key contexts and identified by Astrid Caseldine (Appendix 1). This allowed selection of pieces suitable for radiocarbon dating (Appendix 2). This was successful in defining the phases of activity and demonstrating the value of the results. Further analysis and publication is therefore justified. Further analysis is needed as follows.

1. Worked flint and chert, analysis, illustration and report.
2. Stone, analysis, illustration and report.
3. Pottery, analysis, illustration and report.
4. Pottery fabric analysis and report.
5. Cremation, analysis and report.
6. Carbonised palaeo-macrobotanical analysis, processing of soil samples, analysis and report.
7. Buried soil column, possible pollen analysis and report.
8. Wood charcoal identification.

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APPENDIX 1

CHARCOAL SAMPLES: PRELIMINARY ASSESSMENT

Carrog, charcoal listed in layer context order (* First choice Radiocarbon samples)

Sample No.	Context No.	Feature No.	Type	Period	Charcoal samples no. of bags	
					single pieces	***multi pieces***
101	6	5	Cremation? pit	Neo?	5	6
102	8	7	Outlying ditch	RB?	1	
103	10	9	Encl ditch	IA	1	
104	13	12	Pit/Hearth	Early Neo	6	
105	17	16	Pit/Hearth	Early Neo?		3
106	19 *	18	Pit/Posthole	?		1
107	23	22	Pit	?	5	
108	27	9	Encl ditch	IA	2	
109	29 *	28	Pit/Hearth	Early Neo	15	
110	33	32	Stake hole	RB?	1	1
111	37	36	Pit/stake hole	Neo?	8	2
112	50	49	Pit	Early Neo	1	3
113	53 *	9	Encl ditch	IA	1	
114	54 *	9	Encl ditch	IA	1	
115	63 *	62	Pit/Posthole	IA?	1	2
116	64	9	Encl ditch	IA	2	1
117	66	65	Pit	IA?	1	
118	68	67	Pit/Hearth	Early Neo	4	
119	70 *	69	Pit/Posthole	IA?		1
120	74 *	73	Pit/Posthole	IA?		1
121	78	77	Pit	?		1
122	90 *	89	Pit/Hearth	Early Neo?	3	1
123	94	93	Pit/Posthole	IA?	1	
124	96	95	Pit/Posthole	RB?		1
125	101	97	Linear	Neo?		1
126	102	97	Linear	Neo?		1
127	104	103	Linear	Neo?		1
128	107 *	106	Pit	Middle Neo		2
129	115 *	9	Encl ditch	IA	2	
130	122	121	Pit	Neo?		1

CARROG CHARCOAL PRELIMINARY RESULTS, Astrid Caseldine

Some of the samples identified as first choice possible 14C samples produced no charcoal and were largely sediment.

The results so far are as follows:

Context 19 Feature 18 - unidentifiable (too small) only around 17mg (minimum required usually 10mg) and this includes sediment so doubtful if it is any use.
Context 29 Feature 28 - Corylus
Context 53 Feature 9 - Quercus
Context 54 Feature 9 – No charcoal
Context 63 Feature 62 - Alnus
Context 70 Feature 69 - Quercus
Context 74 Feature 73 - Quercus
Context 90 Feature 89 – Salix
Context 107 Feature 106 - Corylus

Context 115 Feature 9 – No charcoal

APPENDIX 2

AMS RADIOCARBON DATING

LABORATORY DATA

Scottish Universities Environmental Research Centre
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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code	SUERC-33064 (GU-23258)
Submitter	George Smith Gwynedd Archaeological Trust Graig Beuno, Ffordd y Garth Bangor Gwynedd LL57 2RT
Site Reference	Carrog Enclosure
Sample Reference	G2076 Carrog 8 Sample 109 ?Early Neolithic hearth
Material	Charcoal : Corylus
$\delta^{13}C$ relative to VPDB	-24.7 ‰
Radiocarbon Age BP	4750 ± 30

N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

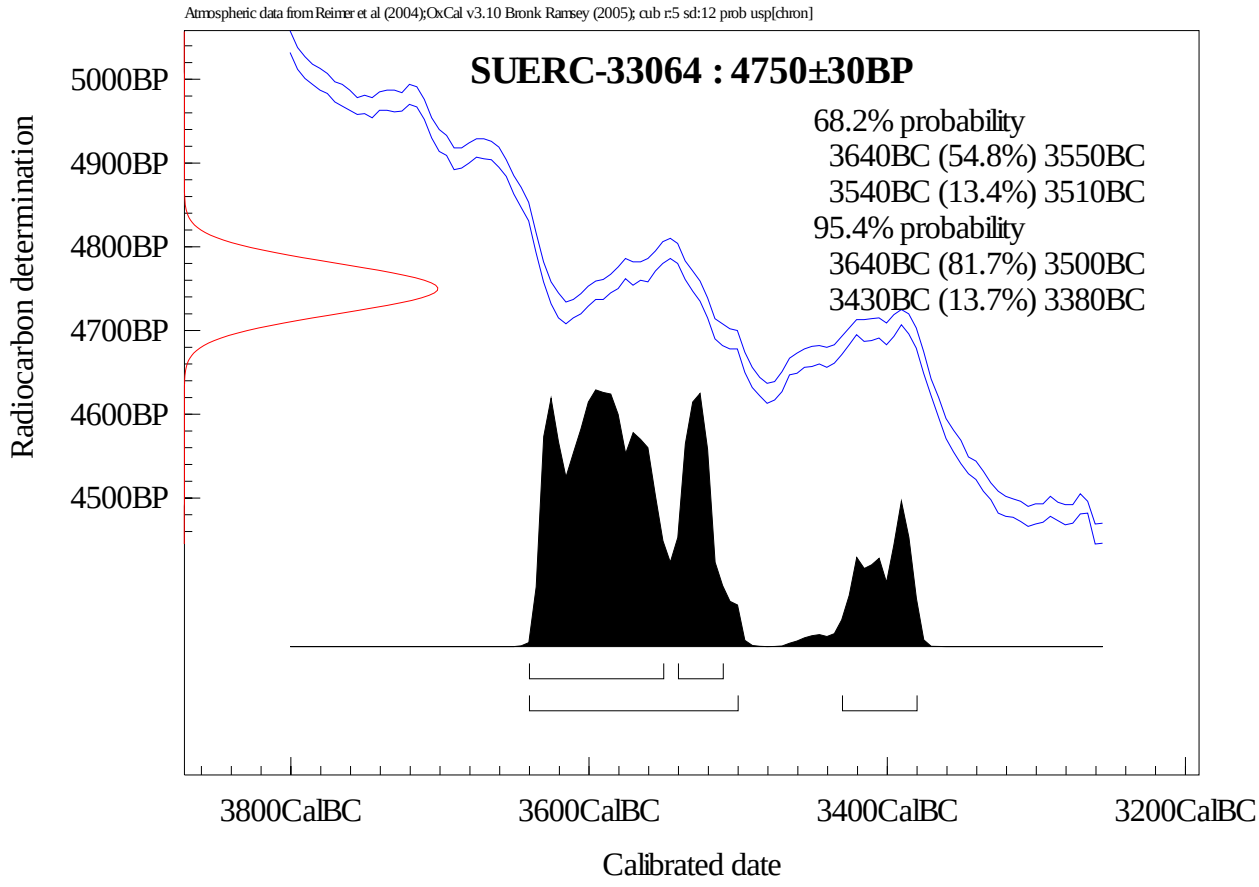
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code	SUERC-33068 (GU-23259)
Submitter	George Smith Gwynedd Archaeological Trust Graig Beuno, Ffordd y Garth Bangor Gwynedd LL57 2RT
Site Reference	Carrog Enclosure
Sample Reference	G2076 Carrog 8 Sample 113 ?Iron Age enclosure ditch mid-fill
Material	Charcoal : Quercus
$\delta^{13}C$ relative to VPDB	-24.2 ‰
Radiocarbon Age BP	2475 ± 30

N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

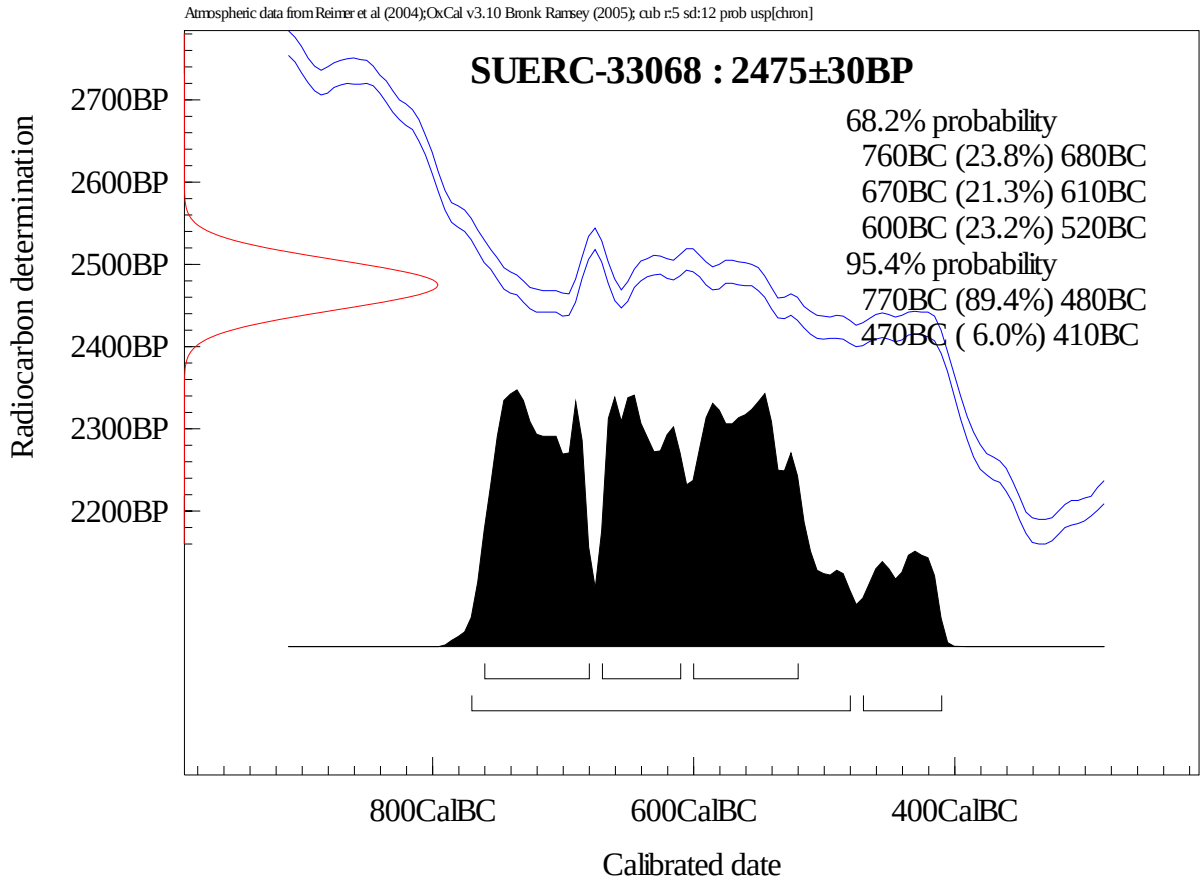
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code	SUERC-33069 (GU-23260)
Submitter	George Smith Gwynedd Archaeological Trust Graig Beuno, Ffordd y Garth Bangor Gwynedd LL57 2RT
Site Reference	Carrog Enclosure
Sample Reference	G2076 Carrog 8 Sample 116 ?Iron Age enclosure ditch, top of primary silts
Material	Charcoal : Quercus
$\delta^{13}C$ relative to VPDB	-25.7 ‰
Radiocarbon Age BP	2565 ± 30

N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

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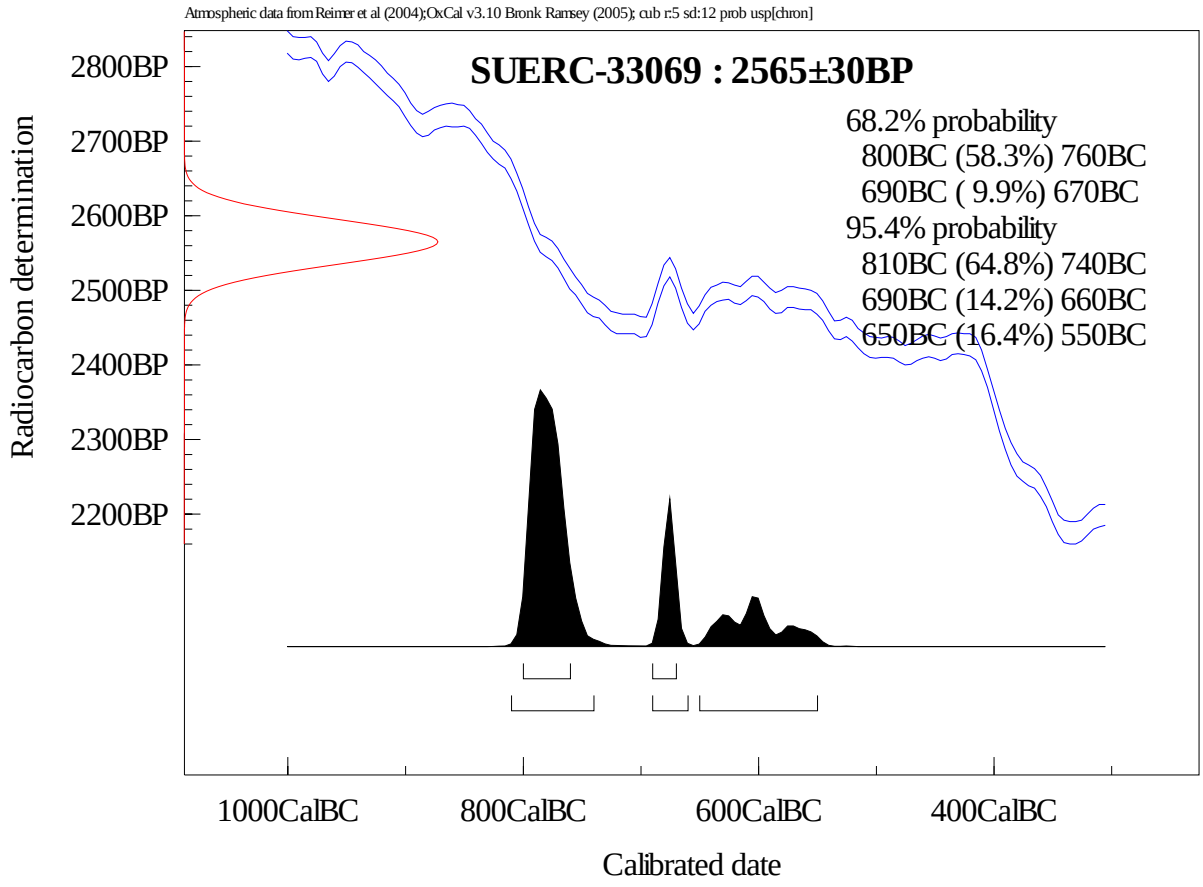
Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code SUERC-33070 (GU-23261)

Submitter
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Gwynedd Archaeological Trust
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Bangor
Gwynedd LL57 2RT

Site Reference Carrog Enclosure
Sample Reference G2076 Carrog 8 Sample 117 ?Iron Age pit

Material Charcoal : Quercus

$\delta^{13}C$ relative to VPDB -25.4 ‰

Radiocarbon Age BP 2450 ± 30

N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

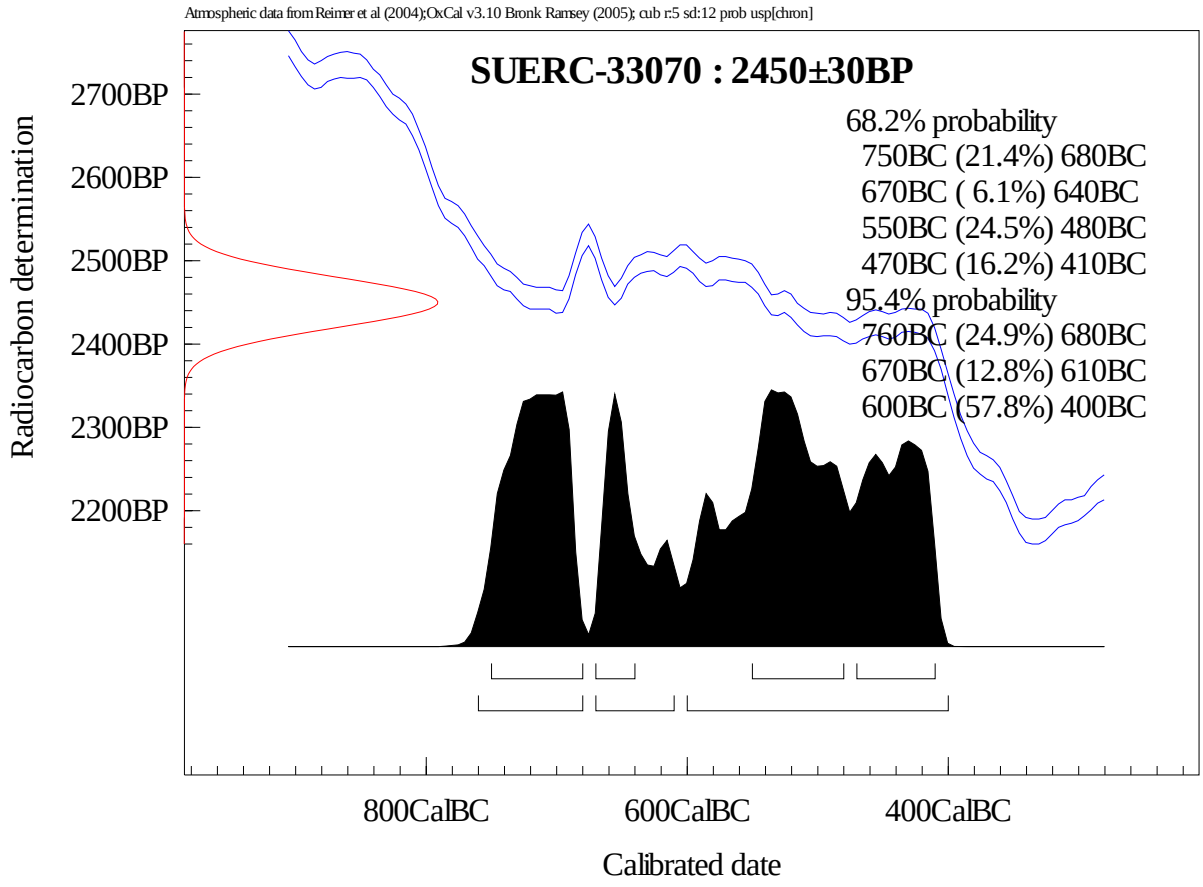
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code SUERC-33071 (GU-23262)

Submitter
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Bangor
Gwynedd LL57 2RT

Site Reference Carrog Enclosure
Sample Reference G2076 Carrog 8 Sample 120 ?Iron Age pit/post-hole

Material Charcoal : Quercus

$\delta^{13}C$ relative to VPDB -25.0 ‰

Radiocarbon Age BP 2510 ± 30

N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

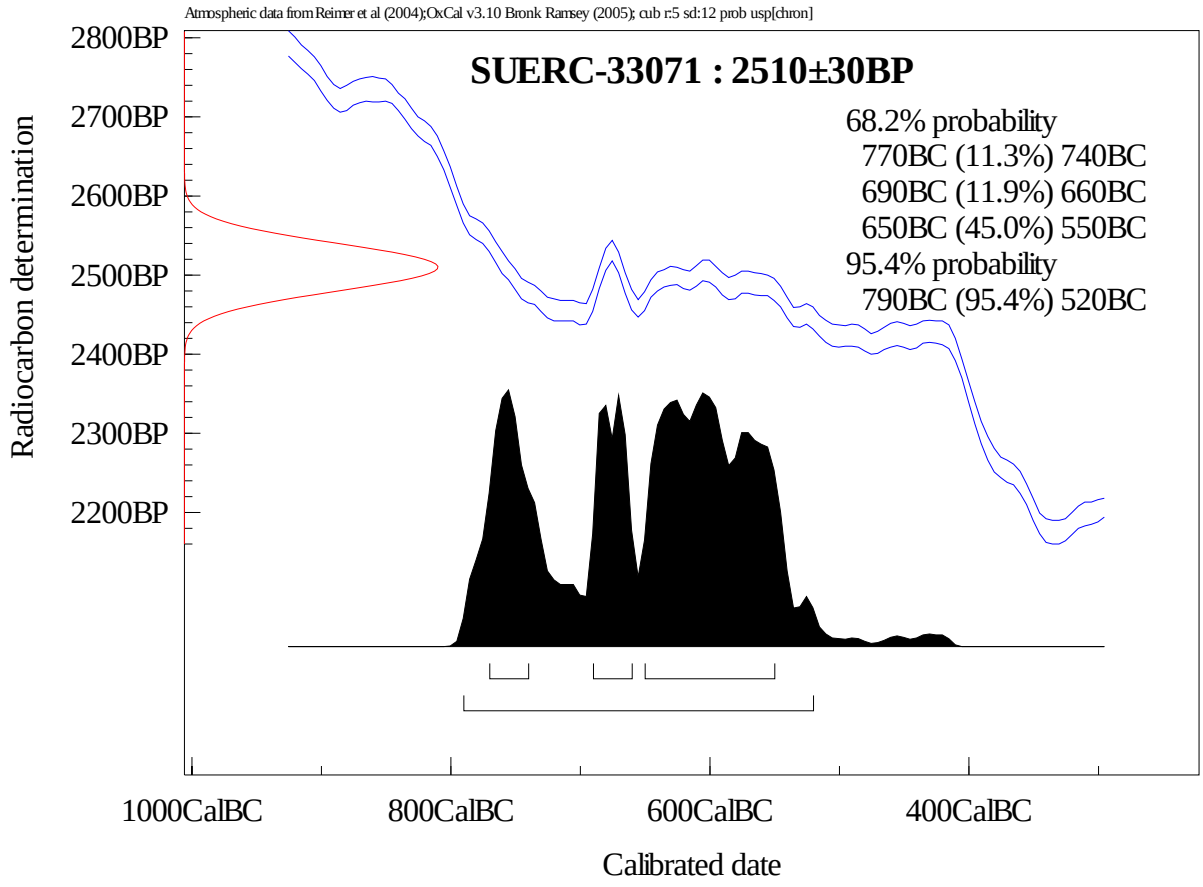
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code	SUERC-33072 (GU-23263)
Submitter	George Smith Gwynedd Archaeological Trust Graig Beuno, Ffordd y Garth Bangor Gwynedd LL57 2RT
Site Reference	Carrog Enclosure
Sample Reference	G2076 Carrog 8 Sample 122 ?Early Neolithic fire-pit
Material	Charcoal : Salix
$\delta^{13}C$ relative to VPDB	-25.6 ‰
Radiocarbon Age BP	2480 ± 30

N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

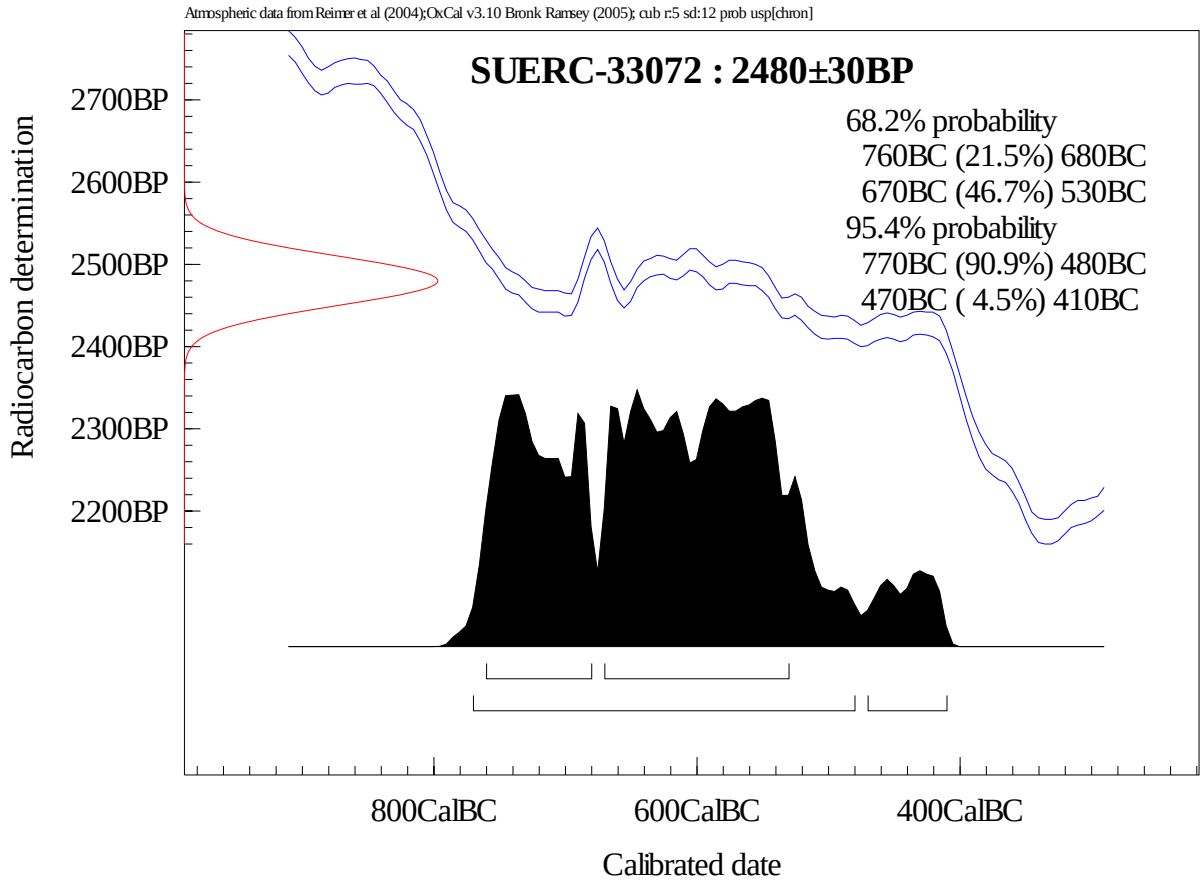
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code	SUERC-33073 (GU-23264)
Submitter	George Smith Gwynedd Archaeological Trust Graig Beuno, Ffordd y Garth Bangor Gwynedd LL57 2RT
Site Reference	Carrog Enclosure
Sample Reference	G2076 Carrog 8 Sample 124 ?Romano-British post-hole
Material	Charcoal : Salix
$\delta^{13}C$ relative to VPDB	-26.5 ‰
Radiocarbon Age BP	1195 ± 30

N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

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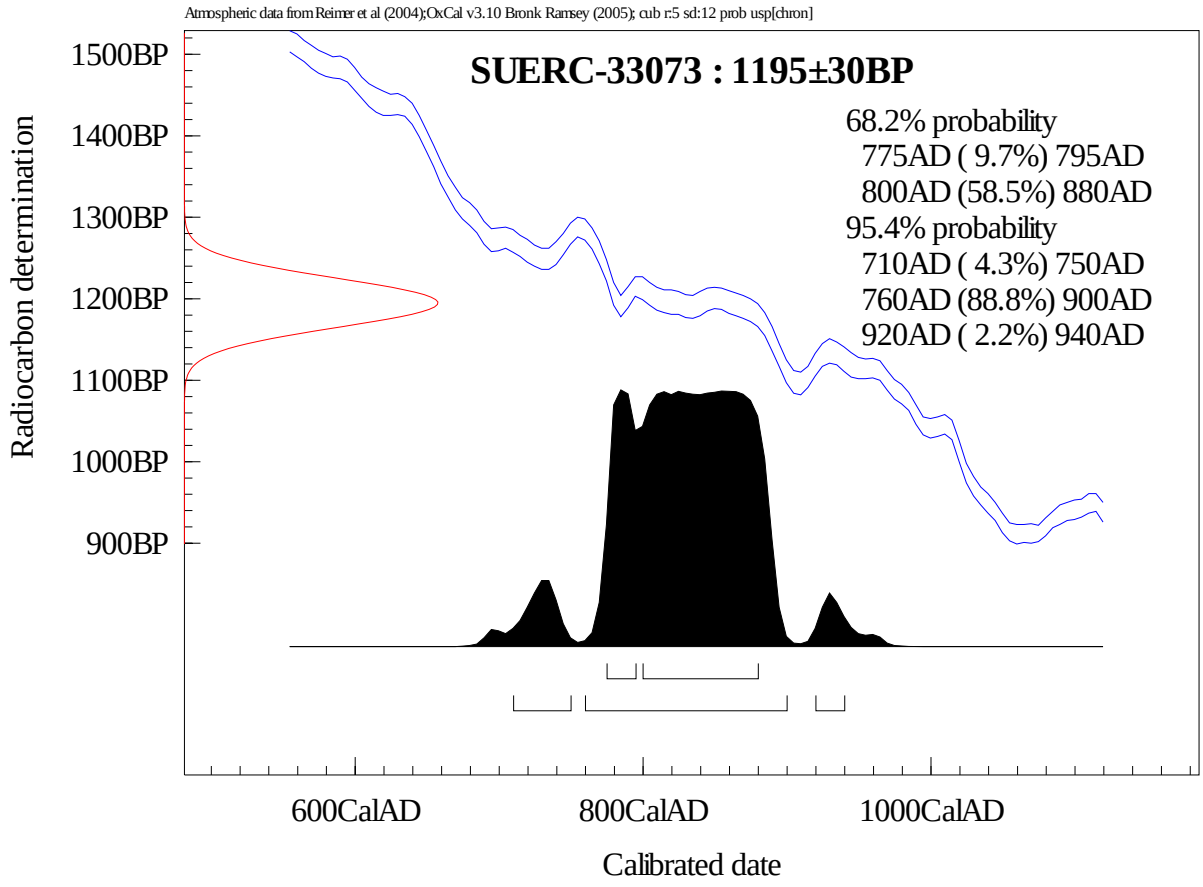
Calibration Plot



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RADIOCARBON DATING CERTIFICATE

9 February 2011

Laboratory Code	SUERC-33074 (GU-23265)
Submitter	George Smith Gwynedd Archaeological Trust Graig Beuno, Ffordd y Garth Bangor Gwynedd LL57 2RT
Site Reference	Carrog Enclosure
Sample Reference	G2076 Carrog 8 Sample 128 ?Middle Neolithic pit
Material	Charcoal : Corylus
$\delta^{13}C$ relative to VPDB	-26.4 ‰
Radiocarbon Age BP	4480 ± 30

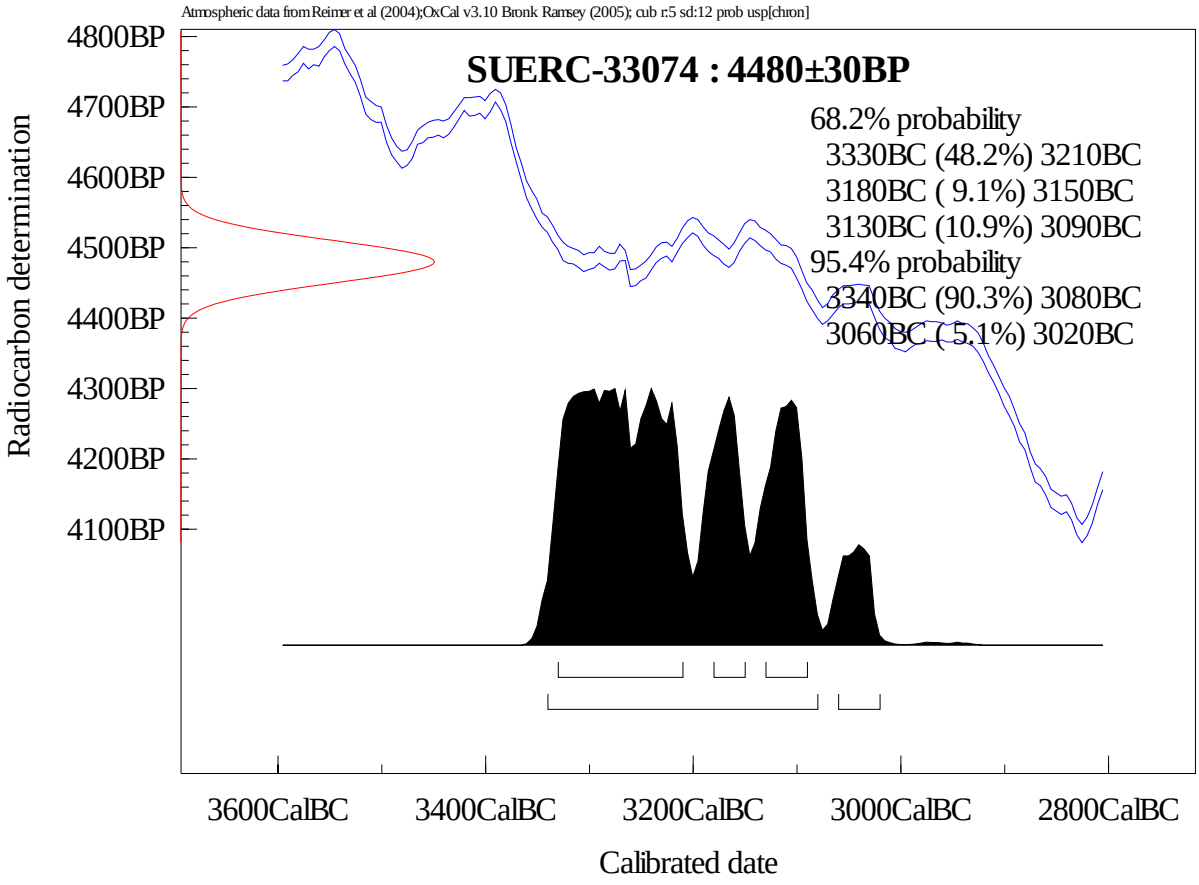
N.B.

1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

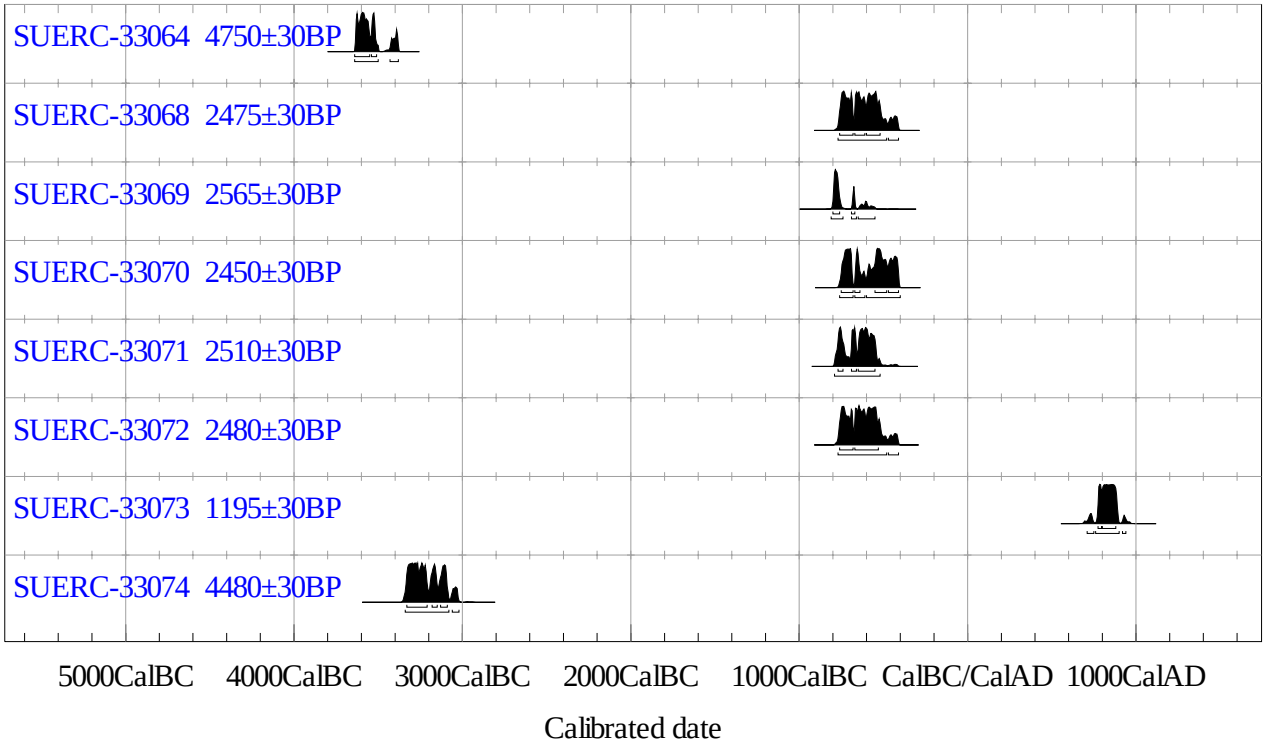
Conventional age and calibration age ranges calculated by :- Date :-

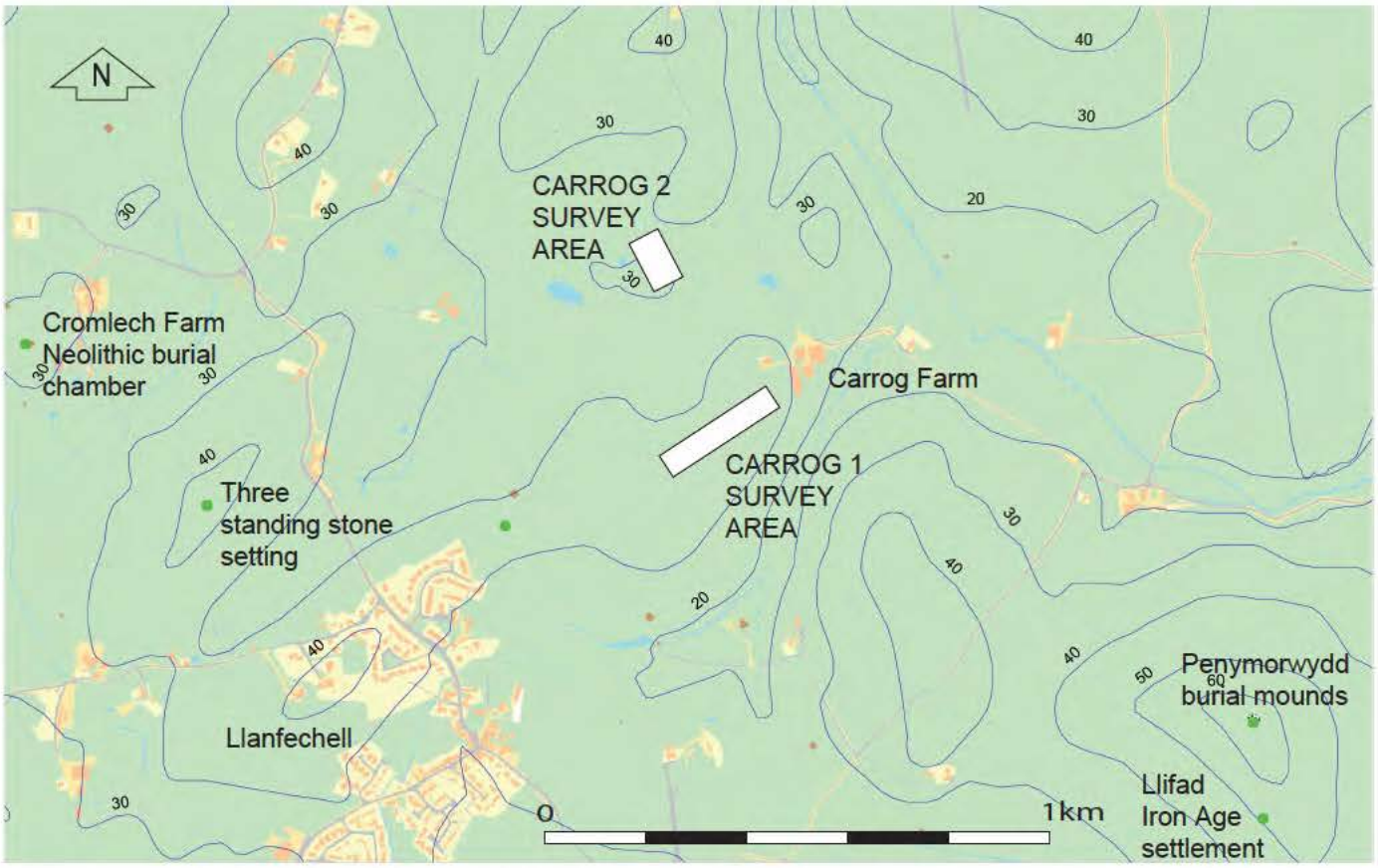
Checked and signed off by :- Date :-

Calibration Plot



Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]





Carrog, Llanbadrig, Fig. 1 Topographic location

Carrog, Llanbadrig, Fig. 2a Aerial photograph, from the south-west.
Copyright Pixaerial

Carrog, Llanbadrig, Fig. 2b Carrog 2: Aerial photograph, from the south.
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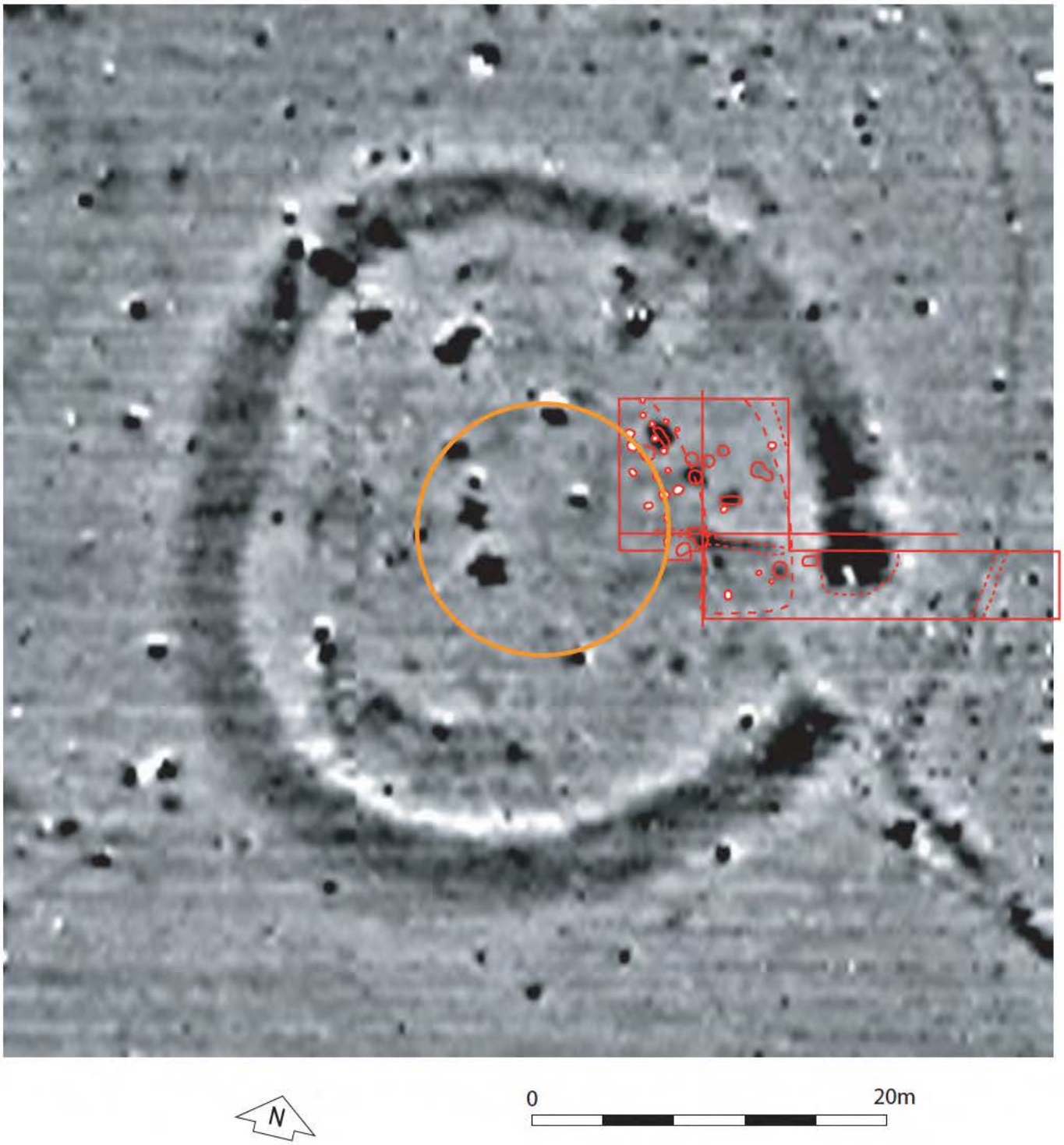


Carrog Fig. 3 Fluxgate gradiometer survey, grey-scale plot in relation to the excavated area and suggested central building

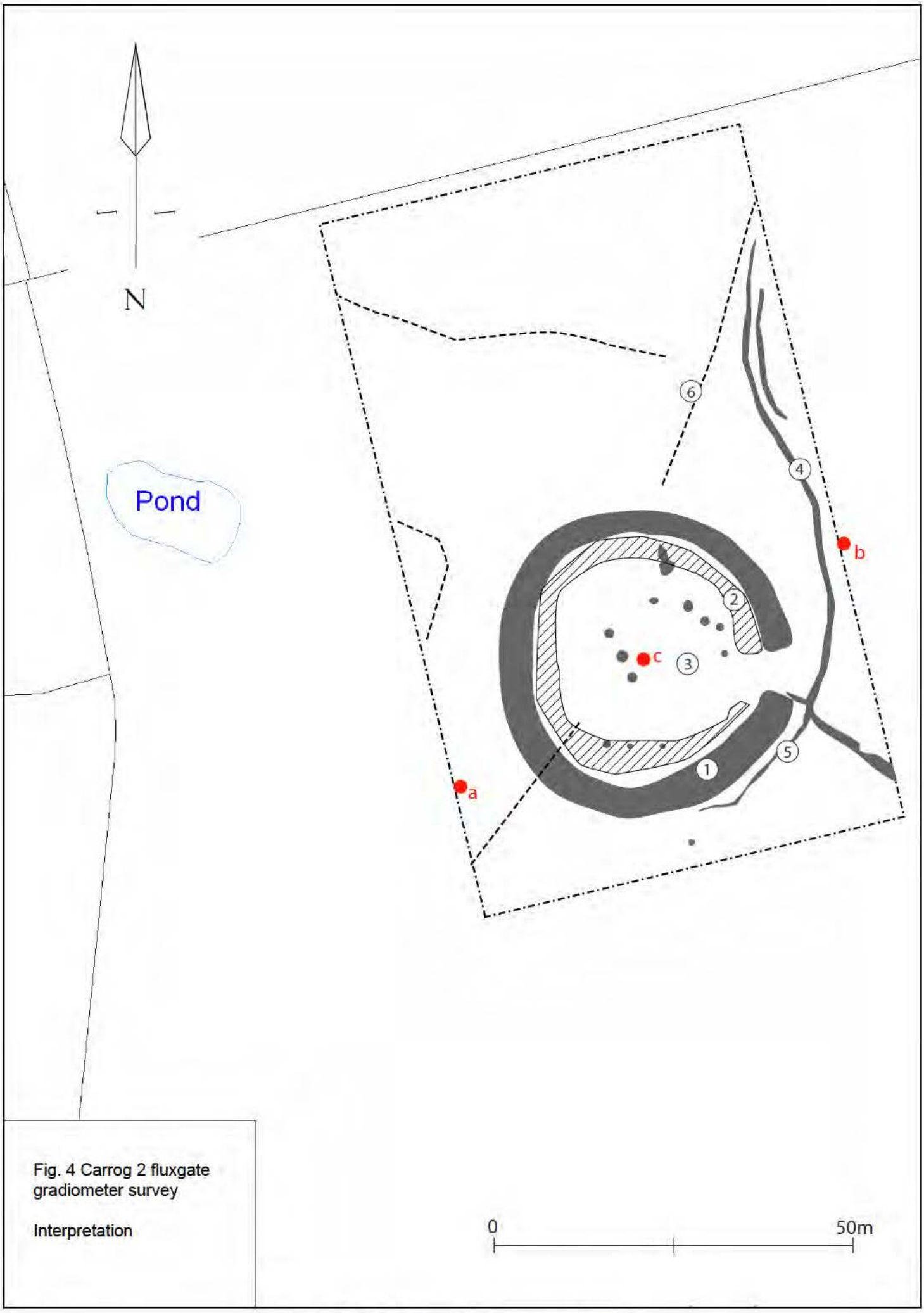
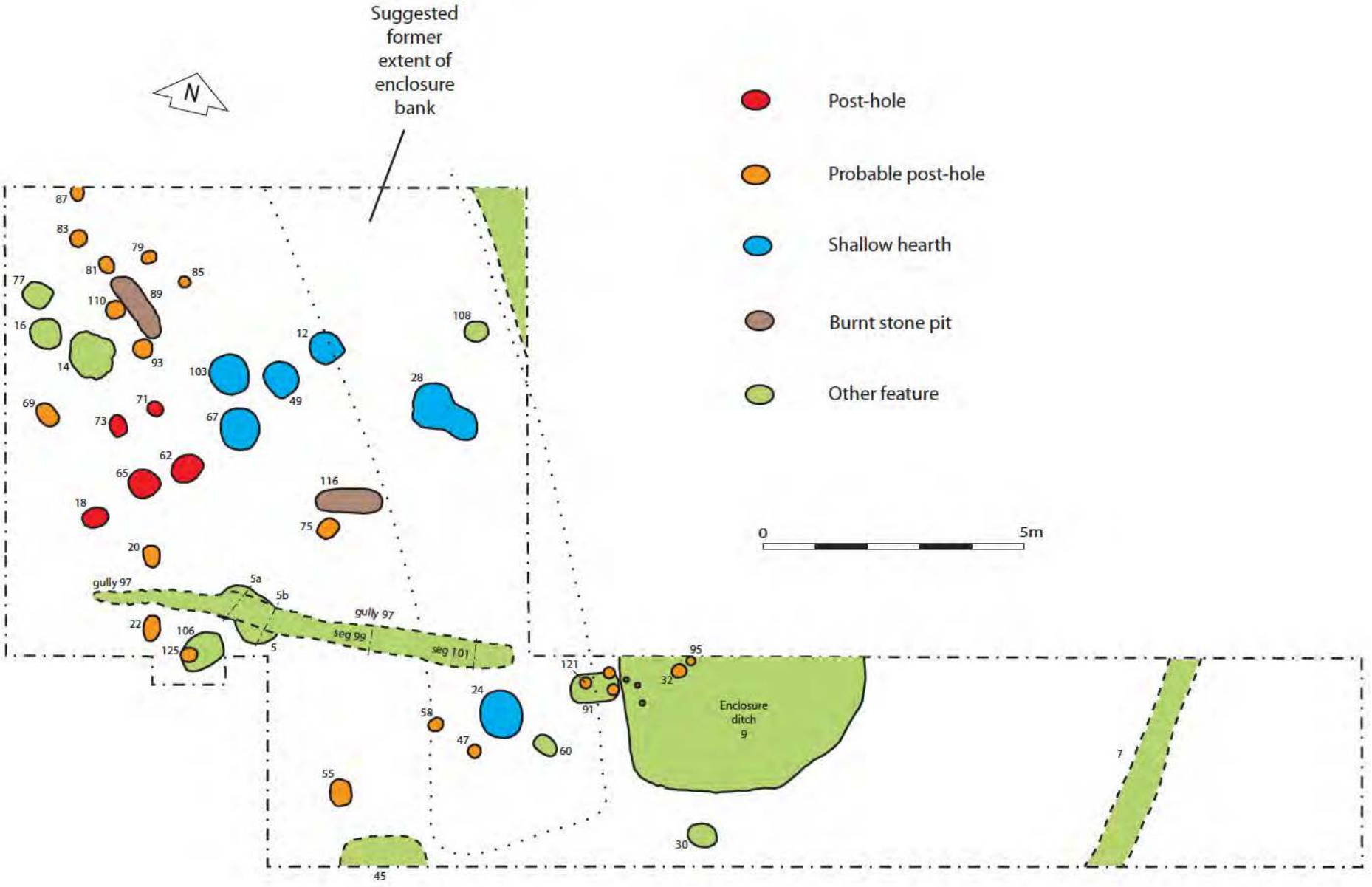


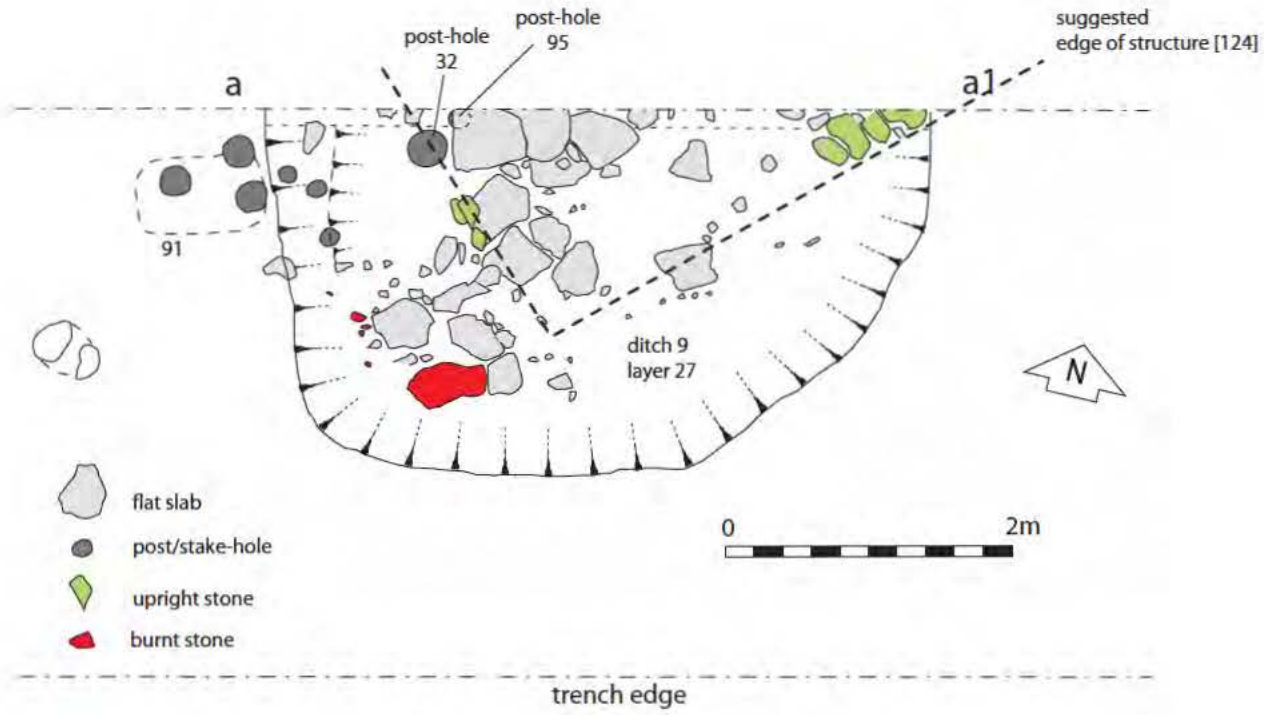
Fig. 4 Carrog 2 fluxgate gradiometer survey

Interpretation

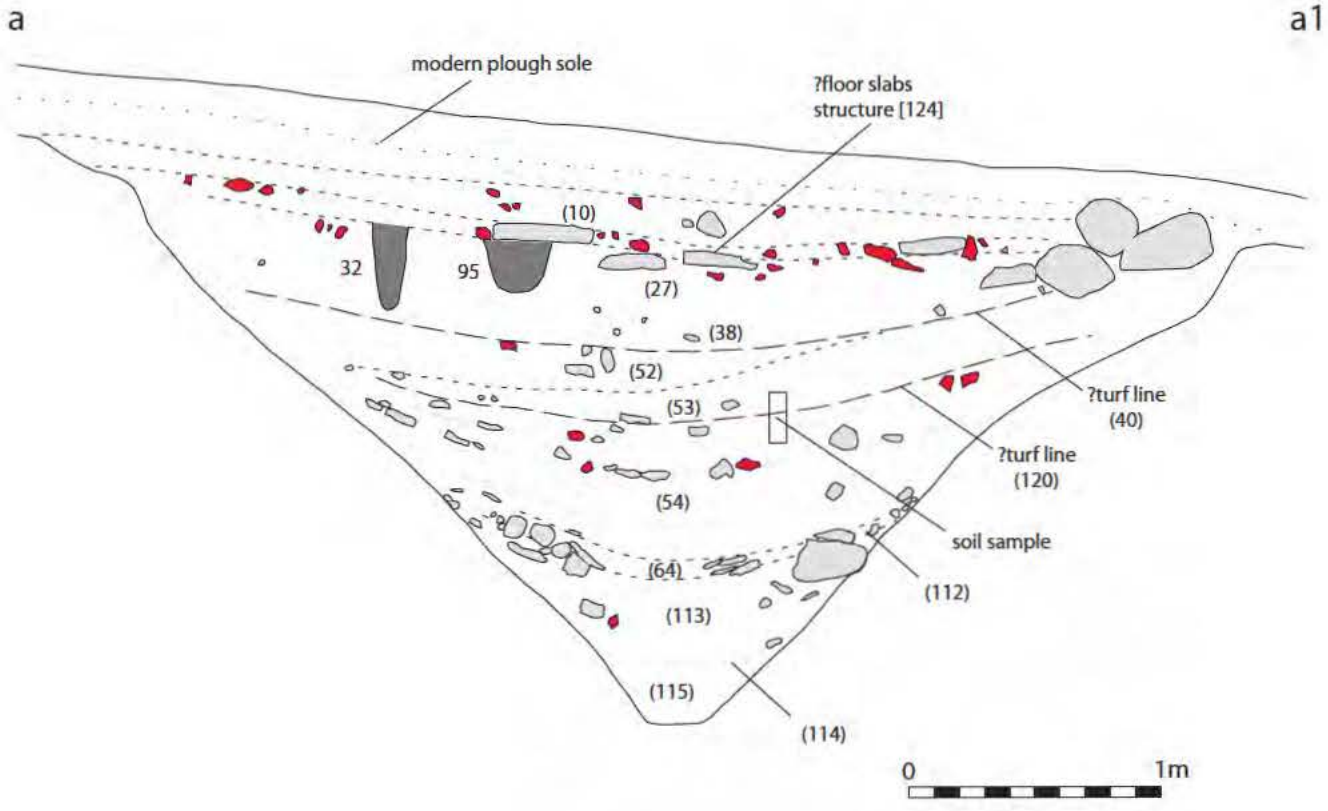
Carrog Fig. 4 Fluxgate gradiometer survey.
Interpretation and location of soil test pits Grey scale plot



Carrog Fig. 5 Plan of excavated area and features



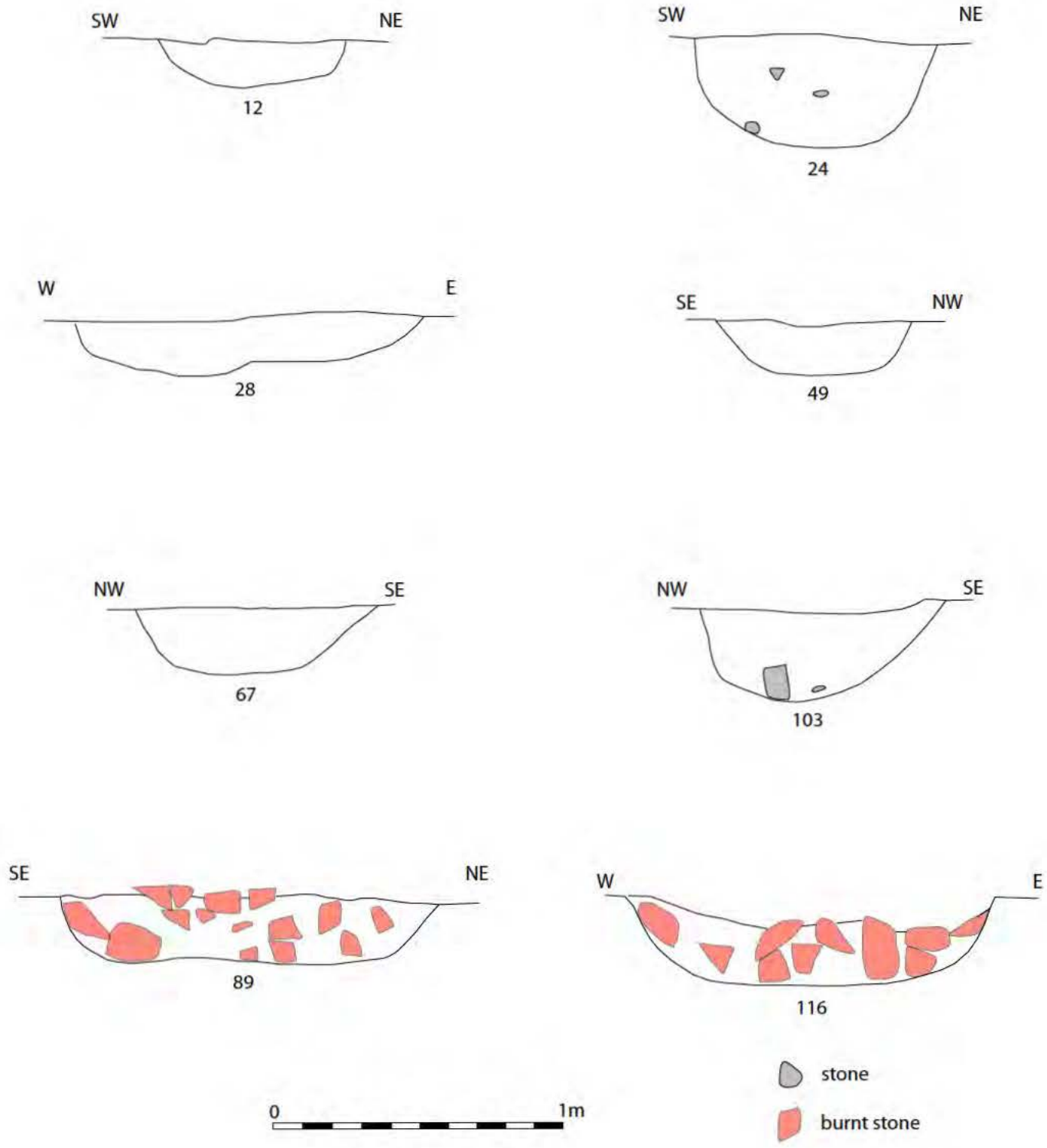
Carrog Fig. 6a Structure in upper fill of ditch 9



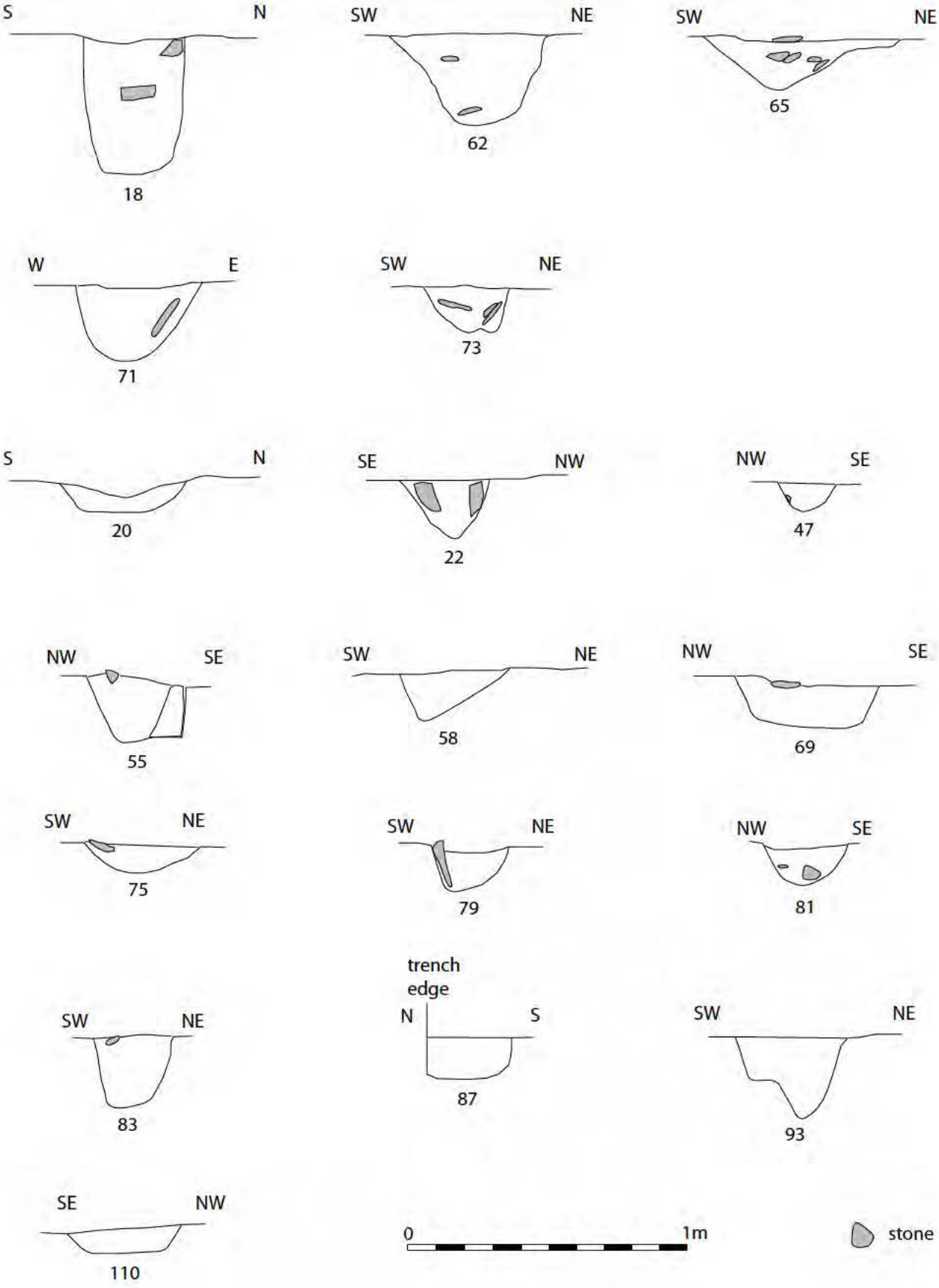
Carrog Fig. 6b Cross-section ditch 9

Carrog Fig. 7a Structure [124] in the top of Ditch [9].
From the south, 2m scale

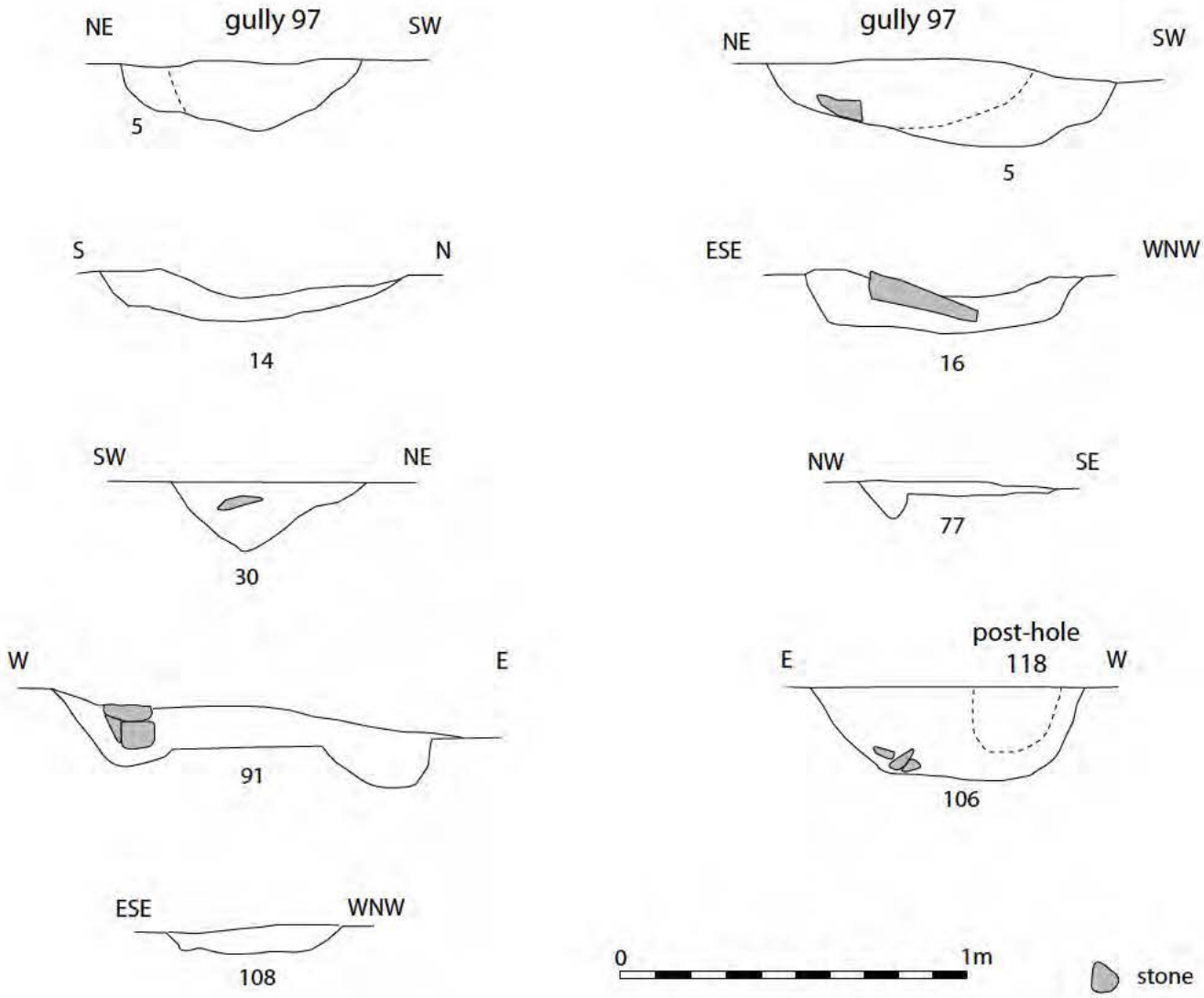
Carrog Fig. 7b Ditch terminal [9] after excavation, from the south.
2m scale



G2076 Carrog Fig. 8 Hearth and fire pit cross-sections (orientations given to site grid)



Carrog Fig. 9 Post-holes and probable post-holes cross-sections
(orientations given to site grid)



Carrog Fig. 10 Other feature cross-sections (orientations given to site grid)

Carrog Fig. 11 Neolithic decorated pottery from Pit 106. 15cm scale

Carrog Fig. 12 Rotary quern from top of Ditch [9]. 15cm scale

Carrog Fig. 13 Stone and chert obejcts from Ditch [9]. 15cm scale.
1-3 Slate discs. 4 Chert knife. 5 Shale ?loom weight. 6 Stone pestle

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