Assynt Fire and Water;
Stronechrubie Burnt Mound:
Excavation Report

29th March 2013

AOC Archaeology Group

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Assynt Fire and Water; Stronechrubie Burnt Mound:

Excavation Report

For:	**Historic Assynt**
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AOC Project No:	**60058**
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Abstract

As part of the Assynt Fire and Water Festival, an excavation was undertaken in order to investigate the burnt mound at Stronchubie (NMRS: NC21NW3) near Inchnadamph. The excavation was accompanied by a series of experiments in order to test the effectiveness of boiling water using local stone.

The mound was found to occupy a small natural mound situated next to a relict streambed. The mound of burnt stone was a metre deep at its deepest point, penannular in plan surrounding a central pit. The pit was sub-triangular with sides two metres long and a small channel running in the direction of the stream bed. This channel was found to be roughly level with the streambed, suggesting that the pit could have been filled from that source. The central pit may have been lined with flat slabs of quartzite, only four of which were in situ.

All deposits within the mound contained charcoal; this was sampled in order to provide a series of radiocarbon dates. The determinations from these samples indicate activity spanning the middle centuries of the second millennium BC, with a second period of activity in the tenth century AD indicated from charcoal in layers above a clay sealing deposit above the central pit.

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INTRODUCTION

Background

As the fieldwork component of the *Assynt Fire and Water* Project, AOC Archaeology Group supervised a two-week long excavation of a burnt mound at Stronechrubie, 1500m south of Inchnadamph (NGR: NC 2490 1870; NMRS Number: NC21NW 3). The site was first recorded by the Ordnance Survey in 1970, and is located at the southern end of the parish, approximately 600m S of the estate lodge at Stronechrubie. In 2010, the site was recorded by the *Assynt Hidden Lives* project (Cavers and Hudson 2010), noted as one of a group of burnt mounds found in the 'limestone corridor' of Assynt, the others being located primarily close to streams on the E side of the glen. The Stronechrubie burnt mound forms part of a prehistoric landscape that is rapidly becoming better understood through community archaeology projects such as Life *and Death in Assynt's Past* and the *Assynt Hidden Lives Project;* this project, however, represents the first investigation of a site of anticipated Bronze Age date in Assynt, and as such contributes a substantial contribution to our knowledge of that period in Sutherland. The mound is typical of examples in Scotland, being roughly crescent shaped in plan, 12m on its longest axis and 10m wide. At Stronechrubie the burnt material comprises three low mounds, each of which rose to around one metre above the natural subsoil. The mound was also located close to a relict streambed, another feature shared in common with examples on the mainland.

Location

The site is located at NGR NC 2490 1870 (Figure 1) occupying the edge of a parcel of "improved" land, between the A837 and the River Loanan. Fluvioglacial sands and gravels constitute the parent subsoil, with significant deposits of glacial till present in the valley floor. Glacial features dominate the local landscape, with morainic deposits of boulder clay, glacial errata, sands and gravels cut through and terraced by the river.

Land use

The Stronechrubie area, including the immediate vicinity of the burnt mound constitutes improved and semi-improved ground, with traces of historic agriculture detectable in the form of denuded lazy-beds. The improved fields are now partially reverting to rough moorland, and significant deposits of peat are found in the lower areas of the valley. Field drains have been cut in some areas, allowing the W-facing slopes to be maintained as grazing and horse paddocks. Soils in the area are generally very acidic, despite the limestone geology, with peat growth having the dominant influence on soil character.

Aims

There were three principal aims of the excavation, into which a series of research questions were grouped:

i) **Structure:** The excavations aimed to clarify the presence, and nature, of the central pit and hearth associated with the deposit of burnt stone and, additionally, the presence of any contemporary or earlier structures associated with activity on the site.

ii) **Function:** The excavations aimed to establish the function of the mound. Is there any evidence for specific functions such as food processing or production, textile manufacture or industrial processes?

iii) **Chronology:** The excavations aimed to recover evidence that might assist in the absolute dating of the structure, as well as evidence for the evolution of the form of the structure.

Method

Prior to excavation the mound and the surrounding area was mapped as a digital terrain model using a Trimble S6 robotic total station (Figure 2), breaks of slope, palaeochannels and other features were also surveyed. The excavation area was laid out (Figure 3) over the mound, incorporating the central depression and cross-sectioning the three highest points in the pile of burnt material. The area was then stripped of turf and topsoil, divided into quads and excavated stratigraphically, recoding each context in situ before removing it to reveal lower layers. Deposits within the mound were recorded in section and plan, and care was taken to preserve baulks within the excavation until they were fully recorded. All deposits within the mound were sampled in order to provide a range of material suitable for radiocarbon dating; samples were also taken for micro-morphological and geological analysis; every deposit was bulk sampled for the purposes of environmental analysis. The surrounding peat was cored using a thin gauge corer, and samples surrounding the mound were taken with a bucket auger. Turf and excavated soil/stone were bunded and stored separately to preserve the integrity of the turves. All excavation was executed by hand with volunteers under the guidance and supervision of archaeologists from AOC Archaeology Group. The site was backfilled by a three ton, 360° tracked excavator using a toothed digging bucket, and the turf replaced by hand.

RESULTS

Introduction

The various data gathered from the excavation are presented as a series of appendices:

Appendix 1: context register;
Appendix 2: Drawing register;
Appendix 3: Photographic register;
Appendix 4: Finds register;
Appendix 5: Sample register
Appendix 6: Auger/Gouge sample register

Appendix 7: Kubiena tin register
Appendix 8: Reproduces the '*Discovery & Excavation in Scotland*' entry.

The Excavated Deposits

The burnt mound material was encountered in three conspicuous mounds- referred to as M1, M2 and M3 clockwise from the west (see Plates 1 and 2; Figure 4). These mounds were sectioned and excavated in per-context blocks.

The upper deposit, (002), comprised a layer of shattered stone, with angular fragments averaging 5cm in diameter in a black silty matrix which covered the entire trench. This layer was taken to represent the final episode of use of the site, with the development of a thin peaty topsoil over the mound following its abandonment. In the lower areas of the mound and surrounding it was a thin, mid-brown loamy topsoil, averaging 0.15m in depth (001).

Removal of (002) in the NE and SW quadrants, over M1 and M2 revealed a spread of orange-brown clay (007) (Plates 2, 3 and 5), 0.17m in max depth and containing lenses of burning and occasional fragments of charcoal; one such lens (006) was a circular deposit 0.7m in diameter and 0.03m deep, found in the upper surface of (007) in the SW quadrant. The interfaces of this deposit with the burnt material to the N, W and SW was abrupt, suggesting that the deposit constituted a deliberately laid surface. (007) overlay further burnt material, and was overlain by burnt layer (002), indicating that the deposit represented an intermediate phase of activity on the site prior to its final use. There were no other obvious indications as to the origin or function of (007), and its interpretation remains problematic. One interpretation that may be offered is that the clay layer represents a re-surfacing of the activity area on the mound in preparation for a new hearth. Three kubiena samples (K1, K2 and K3) were obtained from (007), spanning the interfaces with the contexts above and below.

Beneath (007) in the SW quadrant, further deposits of burnt mound material, comprising heat-shattered stone in a charcoal-rich matrix (005) (Plate 4). Beneath (007) in the NE quadrant, a layer of grey, charcoal rich silt (011) separated the clay from the burnt stone layers beneath. Beneath (007) in the SW quadrant, a layer of similar grey clay was encountered, containing frequent charcoal fragments and regular inclusions of cracked stone. This deposit formed the primary lining of the central pit feature, apparently the focal centre of the burnt mound (see below).

The three mounds, M1, M2 and M3 were found to be generally similar in character (given context numbers (005), (008) and (009) respectively, though each appeared to comprise multiple superimposed dumps of burnt stone and hearth waste (Figure 4). In M3, distinct lenses were visible, such as (013), a lens of heat-shattered stone with a lighter brown-orange silt matrix, contained by (008). Between mounds (008) and (009) a lighter brown deposit (012) may represent intermixing of the weathered mounds after abandonment of the site. In general, however, the burnt mound deposits were fairly homogenous, and contained nothing of archaeological character other than charcoal and cracked stone.

The subsoil encountered beneath the three mounds of burnt material was boulder clay, presenting as a mottled orange to green-yellow clay, and forming a natural mound upon which the site had formed. To the N and E, this clay was very clean with an abrupt boundary with the burnt deposits (008) and (009) above, and there was no evidence of any cut features. To the SW, a compact orange-brown clay interface layer containing regular charcoal flecks and small fragments of shattered stone was recorded (014), possibly representing an old ground surface upon which the primary burnt mound material was cast. A kubiena sample, K4, was obtained from this deposit. A lens of charcoal rich silt, 0.4m across and 0.03m deep was encountered within (014); this deposit seems likely to represent one of the earliest dumps of charcoal at the site.

As (005) and (014) were removed it became apparent that the mound had been sited on a natural shelf or mound which sloped off sharply to the S, to where a probable palaeochannel of the River Loanan was identified. To the S of the mound, an extension of the main excavation area encountered a compact deposit of light yellow brown sandy silt (003) with frequent inclusions of river rolled gravel and large river rolled stones (004). The deposit was archaeologically sterile, and was interpreted as the bed of a relict channel of the River Loanan.

The central pit

The central pit was located at in the centre of a depression in the mound, cut into an outcrop of compact orangey white boulder clay and was roughly square in plan, measuring 3.25 x 2.56 metres at its greatest extent (Plate 6; Figures 5 and 6). The sides of the cut (018) were steeply sloping and the base was almost flat. At the S end of the pit, the base rose up to form a small channel, leading under the S extent of the mound, in the direction of the palaeochannel described above. When levels were checked with the total station, the base of the palaeochannel was found to be only 0.03m lower than the base of the channel inside the mound, suggesting that the pit could easily have been filled from the river via this channel.

The upper fill of the pit comprised a deposit of large rounded boulders (017), averaging 0.3m across and forming a well-defined deposit roughly rectangular in plan (Plates 7 and 8). The boulders were concentrated to the S end of the pit, close to where the channel joined the main cut of the pit, and were distinct from the majority of un-cracked stones found throughout the site, which tended to average c.10cm in diameter. Several of the boulders displayed a natural iron accretion.

The principal fill of the pit was heat-shattered stone in a charcoal rich silt matrix (019), virtually indistinguishable from the burnt mound material contained in M1, M2 and M3 above (Plate 9), though to the E side of the pit the stones were less dense and the deposit contained a greater proportion of charcoal rich silt (023).

On the N side of the pit, three fragments of tabular quartzite were discovered in positions which suggested that they might have formed the lining of a stone tank [021] (Plate 10; Figure 6). Two of the slabs were in

positions which had changed as the site was abandoned, having slipped and rotated on their vertical and horizontal axes. The third was positioned vertically on the side of the pit, behind which was a friable black-brown sandy silt (022) which was sampled in bulk. It is possible that the grey clay (010), which was found in a very thin layer across the pit at the interface with the boulder clay, represented a clay lining. The deposit, however, was less than 0.01m thick on average. The lowest layer contained in the pit fill was a very wet, loosely compacted black-brown greasy deposit, 0.05m in thickness and situated close to the water table at the time of excavation. It is probable that this deposit derives from the weathering of the pit while it was still open.

No artefacts were recovered from the deposits within the pit.

Associated features

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A metre square test pit was excavated through a crescent shaped mound, ten metres SE of the excavated mound. This mound was found to be natural, encountering glacial till, and is not considered further.

The Radiocarbon Dates

The radiocarbon dates from the Stronechrubie burnt mound, in the absence of any material culture, provide the only means of estimating the chronological origins of the site. Six dates were obtained from deposits throughout the burnt mound profile, chosen to test whether the mound represents the accumulation of a long period of use and reuse, or whether the entire mound can be placed within a single chronological horizon. The results of the six determinations and the tests for which they were selected are summarised in table 1.

						CALENDAR YEARS	
Sample ID	**Context**	**Test**	**Code**	**Age BP**	**Error**	**FROM (2 sig)**	**TO (2 sig)**
1	006	Answers whether 007 separates events	SUERC-43972	1091	29	AD 892	AD 1014
2	007	Answers whether 007 separates events	SUERC-43973	1062	29	AD 896	AD 1023
3	009	Gives date for later use of mound M2	SUERC-43974	3000	30	BC 1310	BC 1129
4	010	Gives date for end of use of pit	SUERC-43975	3189	30	BC 1513	BC 1413
5	014	Gives date for early use	SUERC-43976	3275	28	BC 1624	BC 1466
6	020	Gives date for primary fill of pit	SUERC-43977	3038	30	BC 1404	BC 1212

Table 1: Radiocarbon dates from the Stronechrubie burnt mound.

Samples 3-6 represent Bronze Age activity at the site, and are broadly in line with a date that might have been anticipated prior to excavation, falling in the range c. 1600 to 1100 BC, broadly equating to the middle

Bronze Age in Scottish terms. As such, the Stronechrubie burnt mound can be seen within the wider Scottish context for such sites.

It is apparent that the activity at the burnt mound took place over some time, with the earlier dates separated from the later by over 150 years. Date 5 (SUERC-43976) was obtained from charcoal incorporated into context 014, a patch of charcoal lying directly on the old ground surface at the base of mound M1, and as such must represent activity very close to the first burning events on the site. Date 3 (SUERC-43974) was obtained from charcoal in context 009, the upper levels of mound M2. The separation of these dates is likely to be at least 150 years, supporting the view that the different dumping episodes visible within the mound fabric represent different episodes of use, and tends to lead towards the view of intermittent use of the site. Dates 4 (SUERC-43975) and 6 (SUERC-43977), chosen to bracket the last and first deposits within the central pit respectively, demonstrate that the infilling deposits of the pit accumulated either by slumping of surrounding burnt mound material or through deliberate backfilling, since the charcoal from the lower deposits is statistically likely to be much earlier than that from the upper levels. In the loose, free draining matrix of the mound such an inversion is not unexpected, but the mechanics of deposition are as likely an explanation for this as any post-depositional sorting. If the central pit was infilled by slumping deposits of hearth material from mounds M1, M2 and M3 after the final Bronze Age abandonment of the site, there would be no structure to the sequence of deposition with early phase hearth debris intermixing with later material.

A similar pattern would be observed if the pit was deliberately backfilled with surrounding burnt mound material, a scenario that is seen as a possibility given the much later dates returned from the upper deposits of the mound. Dates 1 and 2, obtained from the clay layer 007 and the burnt debris above this layer, provide the only real surprise from the excavation. The results indicate activity- most probably in the 10th century- long after the abandonment of the Bronze Age burnt mound.

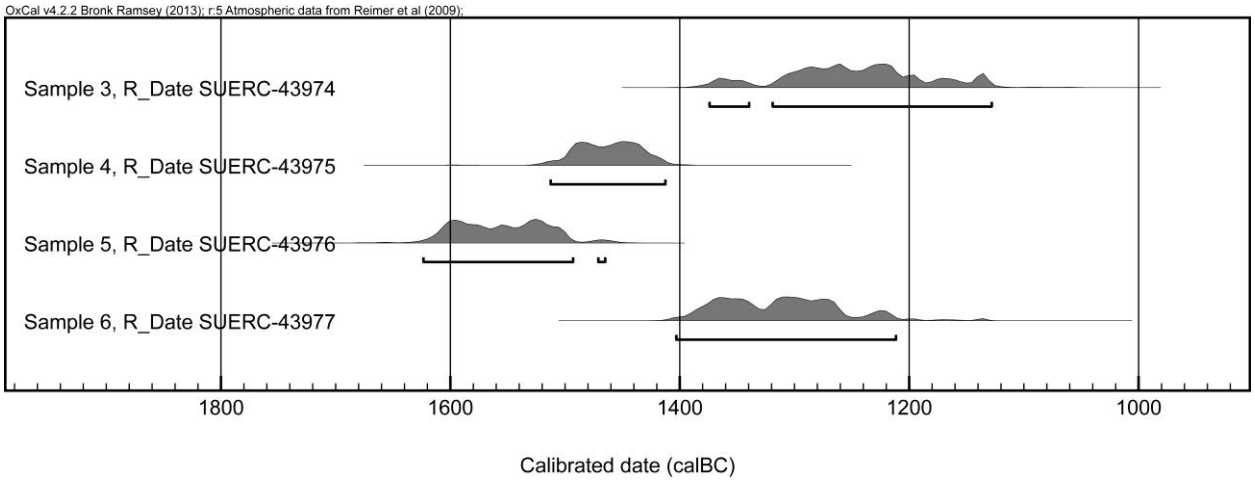

Figure 8: Calibration ranges for Bronze Age dates from the burnt mound.

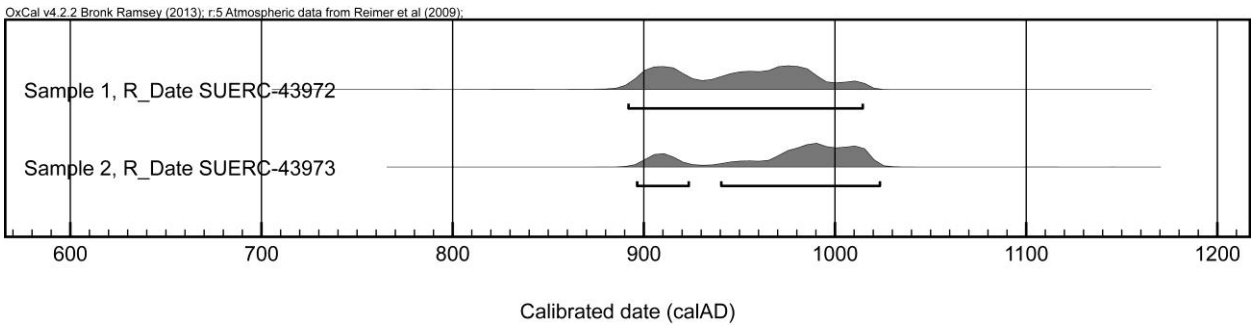

Figure 9: Calibration ranges for early medieval dates from the burnt mound.

Geology

Fiona McGibbon

Samples of the stone that made up the mound were collected for analysis, and each sample showed a dominance of quartzite. The rocks are bleached and heat afffected, their angular shapes suggestive of breakage due to thermal shock and this makes it difficult to determine their original shapes. Most looked like the Cambrian quartzite that is typical of the area. This is widely distributed both in situ and as an erosion resistant clast in drift deposits and would be expected to dominate glacial deposits; this stone would be abundantly available locally. The angular shapes might suggest a source of scree has been used rather than river or ice worn drift.

Sample from Context 005

Three angular fragments of quartzite possibly with some feldspathic grains. The fourth sample was rounded with an igneous texture with euhedral elongate black crystals of amphibole or pyroxene suggesting a diorite composition water or ice transported cobble.

Samples from Contexts 008 and C009

Four samples of quartzite with sugary texture. Vivid white, but discoloured by oxidation by heat exposure and covered in soot. Oddly light weight and friable with spidery cracks, all typical of heat exposure. Grain size 0.375 - 0.500mm. Density suggests quartzite rather than sandstone.

Sample from Context 008

Two samples of quartzite as described above. One sample of paler than usual, heat affected coarse Torridonian sandstone with well rounded granules (>2mm) of quartzite or vein quartz in a finer matrix.

Sample from Context 009

Two samples are quartzite as described above. One has coarse grainsize with grains greater than 1mm. Two are igneous; one a felsite with drusy vugs and euhedral darker phenocrysts, the other a diorite with elongate black phenocrysts. The diorite is similar to that noted in context 005.

A sample of iron-encrusted rock from context 017 was also examined. This is common in acidic peaty soils, where bog iron nucleates on the rock surface and grows there. This is entirely natural.

Charcoal Assemblage

Jackaline Robertson

Summary

Charcoal fragments from 17 bulk samples were submitted for species identification from the excavation undertaken at Stronchrubie Burnt Mound. The species identified were alder (*Alnus glutinosa*), birch (*Betula* sp.), hazel (*Corylus avellana*), apple/pear/hawthorn/quince/rowan (*Maloideae* cf *Sorbus* sp.), rowan (Sorbus sp.) and willow (*Salix* sp.)

The charcoal assemblage has been analysed to ascertain what wood species were used as fuel sources, to assist where possible with understanding the development and economy of the site and the composition of the woodland growing in the nearby landscapes.

The assemblage

Carbonised wood larger than 4mm was retrieved from 17 contexts during sample processing; some 221 fragments were identified to species. Charcoal smaller than 4mm was present in context [2] but these were not analysed and this sample is not discussed further. The wood species identified were alder (*Alnus glutinosa*), birch (*Betula* sp.), hazel (*Corylus avellana* L.), apple/pear/hawthorn/quince/rowan (*Maloideae* cf *Sorbus* sp.), rowan (Sorbus sp.) and willow (*Salix* sp.). The charcoal assemblage contained 44 small fragments of roundwood and one twig but there were no worked wood offcuts. The charcoal derived from a range of features such as pits, hearth waste, a lens, packing for stone lining and a ground surface.

No other archaeological environmental material such as charred macroplants, bone and burnt peat was recovered during the bulk sample processing. The only artefactual finds recovered from the retents were heat affected stone. Modern contamination comprised small quantities of peat, roots, insect eggs, insect remains, earth worm capsules and seeds. There is no evidence that the presence of the modern contamination has adversely affected the archaeological security of any of the charcoal fragments within the burnt mound.

Charcoal from Scottish sites tends to be a rare commodity and there is usually only a limited range of species present, so this ultimately affects how far the evidence can be interpreted. However, given the archaeological nature of this site, it is probably safe to assume that the charcoal assemblage represents accumulated fuel debris. This report will therefore focus on which wood species were used as fuel sources and the composition of the woodland growing in the nearby landscapes.

Charcoal larger than 4mm was selected for species identification and these were confirmed using reference keys and texts (Schweingruber 1982). The species apple/pear/hawthorn/quince/rowan are similar in terms of

anatomic characteristics and only be examining the presence and concentration of spiral thickenings was it possible to distinguish between apple/pear/hawthorn/quince and rowan. On the west coast of Scotland the trees most likely to be growing are rowan, hawthorn and possibly crab apple which is much rarer in Northern Scotland.

Results

Results are recorded in Table 1. and are presented by structure.

The overall species composition was as follows; alder 54%, birch 34.4%, hazel 8.1%, apple/pear/hawthorn/quince/rowan 1.8%, rowan 1.3% and willow 0.4%. The assemblage included large fragments along with smaller pieces of roundwood and a single twig. There was no evidence of worked wood within the assemblage, nor was there any evidence for the shaping or working of structural wood on any part of this site. The charcoal assemblage from 16 samples is made up of mixed species of two or more species which is typically representative of fuel debris. Context [16] was the only feature which contained a single species.

Burnt mound matrix (005 upper), (005 Lower)

The bulk sample collected from the south west of the burnt mound was divided into an upper and lower layer to establish if any differences in feature usage and charcoal deposition could be established. The charcoal recovered from both layers accounted for 11% of the total assemblage and the only species present were alder and birch, with the exception of a single fragment of apple/pear/hawthorn/quince/rowan in the upper level. The charcoal fragments from the lower layer were partly vitrified and had suffered a greater degree of surface degradation than those from the upper layer. This suggests that the charcoal fragments within the lower layer may have been exposed to a higher temperature or burnt for longer. The differences in preservation within this context suggest that the charcoal does not represent the debris from a single burning event.

Deposit (006)

The charcoal from this deposit formed 19% of the overall assemblage, the largest concentration of charcoal found on the site. The species present where a mix of alder, birch and hazel, and included 11 fragments of roundwood. This appears to represent a discrete dump of fuel debris which appears to have been deliberately deposited over the sealing layer of boulder clay [7NE], [7SW]. The charcoal dated from this feature was medieval in origin and therefore does not represent fuel used in the function of the burnt mound. Instead this fuel debris appears to have been deposited long after the abandonment of the burnt mound.

Sealing layer of boulder clay (007, NE), (007, SW)

This layer contained alder and birch which formed only 1% of the charcoal assemblage. This was the only other sample to produce a medieval date. Interpretation of this feature was problematic and it was assumed during excavation that this could represent a deliberately laid surface perhaps in preparation for a new Hearth before the burnt mound was disused. The medieval date obtained from this sample appears to suggest that this feature is contemporary with the fuel debris from deposit (006). However given the small

size of the charcoal assemblage recovered from the boulder clay, it is just as likely that the this sealing layer relates to activities on the earlier Bronze Age burnt mound and that the charcoal has been re deposited from the much later medieval fuel debris.

Burnt mound matrix (009)

The species recovered from the west side of the burnt mound was a mix of birch, alder and hazel which accounted for 2% of the overall charcoal assemblage. This charcoal sample from this feature provided an early Bronze Age date.

Clay lining (010), (010, SW)

Two bulk samples were collected from the lining to determine if there was any variation in how this feature was used and if this could be detected. Birch, alder and apple/pear/hawthorn/quince were recovered from context (010) which formed 14% of the overall assemblage. The species present in the SW section contributed only 1% to the assemblage and birch, alder and hazel were identified. The charcoal located in context (010) is partly vitrified and was noticeably less well preserved than the fragments located in (010 SW). As with context (005) this suggests that the charcoal does not represent the debris from a single burning event. The charcoal dated from this pit demonstrated it was no longer in use in the early Bronze age.

Hearth waste (011)

This sample contained 7% of the overall assemblage and was made up of alder, hazel, birch and a single fragment of willow. This sample also contained nine small fragments of roundwood.

Heat shattered stone layer (013)

The alder and birch charcoal from context (013) accounted for only 1% and appears to be residual fuel debris. The small number of charcoal fragments recovered demonstrates that at no stage was this area used for the deposition of fuel waste.

Primary ground surface of burnt mound (014)

The alder and birch charcoal from context (014) accounted for 4%. There were two fragments of alder roundwood. The charcoal dated from the primary ground surface returned the earliest Bronze Age date from all six dates submitted.

Context (015 upper), (015 lower)

The charcoal from this feature accounted for 2% of the overall assemblage. Alder was recovered from the upper layer and a mixed assemblage of alder, birch and hazel came from the lower layer along with two fragments of roundwood.

Charcoal rich silt (016)

Although this sample was described as charcoal rich during excavation it only formed 3% of the overall assemblage. Alder was the only charcoal present in this feature. Species uniformity is generally interpreted as a good indicator of *in situ* burning of structural remains such as a wattle screen, post or stake. However

given the small quantity of charcoal concentrated within this feature and the absence of any surviving structural remains it is more likely to represent residual fuel debris.

Pit fill (019)

The charcoal assemblage from context (019) was a mixed deposit comprised of alder, apple/pear/hawthorn/quince and birch which formed 5% of the total assemblage. Preservation of the charcoal from this feature was poorly preserved and there was evidence of discolouration due to oxidisation which may be a reaction to soil conditions.

Pit fill (020)

This deposit contained mixed species of birch, hazel and rowan which formed 12% of the overall assemblage. This is fuel debris which probably accumulated in the bottom of the pit during its use.

Deposit behind stone lining (022)

This deposit contained the second largest concentration of charcoal recovered from site, forming 18% of the total assemblage. Birch, alder and hazel were present. This deposit may represent fuel debris that has slumped into the pit from the surrounding spread.

Charcoal Assemblage: Conclusion

The charcoal assemblage recovered from the bulk samples excavated at Stronchrubie burnt mound is representative of mixed fuel debris.

The absence of any other environmental finds such as charred macroplant and bone indicates that this site was never used to prepare or consume food within a domestic setting. The recovery of charred macroplant and burnt bone from burnt mound sites in Scotland is rare and, where it does survive, tends to be limited to small assemblages of little interpretive value. This is true at Beechwood Farm, Inshes, Inverness and Cleann nan Clachan, North Uist where only small numbers of cereal caryopses and burnt bone were present (Cressey 2003; Armit et al 2002). If the charcoal assemblage from the Stronechrubie site derived from cooking activities directly associated with the use of the burnt mound, then the food must have been prepared and consumed away from the actual vicinity of the burnt mound.

The composition of species found at Stronchrubie, alder, birch, hazel, apple/pear/hawthorn/quince/rowan and willow, probably reflects the composition of woodland in the surrounding landscape. Alder and birch were the most common species present, probably reflecting their dominance in the landscape. The burnt mound was situated in close proximity to a relict streambed and the damp ground conditions would have readily supported alder woodland, hence its dominance within the charcoal assemblage. The other species would have been components of this scrubby woodland. The radiocarbon dates suggest that the character of tree cover has undergone little change and the wood species available from the Bronze Age were still commonplace and exploited during the medieval period.

The charcoal assemblage at Stronchrubie burnt mound is representative of mixed fuel remains where alder and birch have clearly been favored. The absence of any other environmental finds indicates that this site was not domestic and that if it was used to cook food then the initial preparation of such items and the eating of the final product occurred out with the boundaries of this site. The charcoal assemblage from this burnt mound is typical of other finds recovered from similar sites in Scotland.

Discussion

The excavation has provided important information on one of the 182 burnt mounds in Sutherland (Cressey & Strachan, 2003) and one of several in the local area.

The Stronechrubie burnt mound falls into the category of such sites that pose significant problems for interpretation. The lack of structural features, artefactual material or any evidence for human occupation other than charcoal mean that determining the precise function of the site is very difficult. Unlike examples of burnt mounds excavated in the Northern and Western Isles, no evidence for associated structures nor any other sign of permanent occupation was recovered, and it seems unlikely that the Stronechrubie burnt mound represents the site of a settlement. Although soil conditions would generally preclude survival, the lack of any bone, burnt or otherwise, coupled with the absence of ceramics or stone tools that might be associated with food preparation, it seems similarly unlikely that the mound is related to cooking.

The Stronechrubie mound is average-sized within a Scottish context, at around 12m in diameter. The central pit, however, is exceptionally large, far larger than the small stone or timber lined tanks typically found within Bronze Age burnt mounds. Excavations at Craggie Basin, Kildonan, on a mound of similar dimensions yielded a radiocarbon date of 920 ± 50 BC (Lowe, 1990), suggesting that the use of the site may have extended into the late Bronze / Early Iron Age. The mound at Craggie Basin was also located next to a relict streambed, with a substantial platform where a hearth may have been located, and a possible trough. The trough dimensions are not recorded (Lowe, 1990). Mounds found at Beechwood near Inverness and at Machrie on Arran were associated with pits, which were both around 0.25 – 0.60 m³ in volume (Cressey & Strachan, 2003; Barber, 1990, 1997). The pit at Stronchrubie is a step up from these examples: with a volume of 2.46 m³: more than ten times the volume of the trough associated with the Beechwood mound. Whereas small pits have usually been associated by excavators with cooking larger pits, and structures, such as Ceann nan Clachan on Uist, have been interpreted as possible bathhouses or sweat lodges (Armit & Braby, 2002). This seems likely in the case of Stronchrubie as the energy needed to heat 2400 kilogrammes of water from ten degrees (estimated water temperature on site) to boiling point amounts to ninety thousand kilojoules:

$$H = Cp \times m \times \Delta T$$
$$H = 4.18J \times 240{,}000g \times 90°C$$
$$H = 90{,}288{,}000J$$

Or roughly 25 kWh, again ten times the amount of energy needed to heat the water in the Beechwood mound to boiling point (2.5 kWh). The energy cost for heating the water to bathing temperature (40-50°C) would be substantially less, and could be maintained with much less effort.

Moore and Wilson's discussion of the likely duration of use of burnt mounds pointed to a crudely-estimated 1000 boilings per 20 m^2 of fire-cracked stone, based on the igneous geology of the sites considered in their Shetland study (Moore and Wilson 1999:227). Experiments carried out alongside the excavations at Stronechrubie demonstrated that the local quartzite river cobbles were decidedly less durable than this, with a single boiling episode sufficient to shatter cobbles into fragments. The identification of at least seven discrete dumps of burnt mound material throughout the three mounds, M1, M2 and M3 at Stronechrubie might indicate a similar number of episodes of use, conceivably spanning the c.150 years attested by the Bronze Age radiocarbon dates, and the impression given by the Stronechrubie site is that use was probably to be measured in decades rather than centuries.

The presence of three possible lining stones [021] suggests either that there were more, lining the entire edge of the pit or that they represent a smaller structure within the pit itself. Many burnt mound troughs have been discovered with a timber or stone lining, and this is often interpreted as a form of revetment, rather than as a watertight container. The same could be possible at Stronchrubie, ensuring that the clay sides of the pit were not eroded away with use. It is also possible that, if the pit was used for bathing, a stone container could have acted to protect bathers from the hot stones being loaded into the pit from the fire.

The suggestion that many burnt mounds may represent the by-product of bathing was first presented by Barfield and Hodder (1988), based on the observation that the majority of burnt mounds produce very little in the way of artefactual material, and the theory has gained considerable support in the interpretation of burnt mounds ever since. What is certain, however, is that pyrolithic technology was not limited to a single function, and was employed as a means of heating water for a variety of purposes on both domestic and non-domestic sites (e.g. discussion by Barber 1990), and this is certainly the case on Bronze Age sites in Northern and Western Scotland (e.g. Armit and Braby 2002; Toolis 2008). On the basis of the excavated evidence, however, the interpretation of the Stronechrubie burnt mound as a bathing site is not the least plausible.

The radiocarbon dates raise interesting questions over the nature of the later activity at the site. From the character of the fill of the central pit and the inversion of the radiocarbon dates, it seems likely that the central pit was backfilled, with the large stones (017) apparently placed on top. When this occurred is difficult to judge, but the distinction between the early medieval dates from (007) and above, and the Bronze Age dates from below this layer suggest that the central pit was backfilled in prehistory.

There is no indication, unfortunately, of the nature of the medieval use of site. The clay layer 007 suggests a purposeful sealing of the layers below, and this must have occurred during the historic phase of activity in order for charcoal sample 2 to become incorporated in the deposit. The presence of burnt mound material, including shattered stones and hearth debris in context (002), albeit much more dispersed than in the lower levels of the mound hints that the mound may have been used for a related purpose, perhaps even involving

the use of pyrolithic techniques for heating water. The deposition of clay onto the mound might have been required to provide a dry base for a hearth if surrounding ground was flooded by the River Loanan, but otherwise seems difficult to explain.

Perhaps the most likely explanation is that the early medieval use of the mound represents a purely fortuitous secondary phase, with the later activity merely making use of the site as a prominent mound in the local landscape. If the course of the Loanan surrounded the mound, as in the Bronze Age, the site would have made a convenient location for a camp, or a base for fishing or hunting from, and as such would be as likely to have been used for this purpose in the early medieval centuries as in prehistory. After nearly 2700 years of disuse the mound can have been little more than a grassy knoll by the late first millennium AD, and it can be argued that it is highly improbable that the significance of the site as a place of human activity was known by this time. Having said this, burnt mounds were certainly a feature of early medieval Europe; the term *fulachta fiadh* comes from the early medieval Irish literature, which makes repeated reference to burnt mounds as hunting and feasting places (O'Drisceoil 1990). It is possible that the topographic location of the Stronechrubie mound, in a floodplain of the Loanan, made it a suitable point for the activities that may give rise to the formation of burnt mounds.

Investigation of a series of burnt mounds in SW Scotland by Russell-Whyte in the 1980s produced dating patterns that bear some resemblance to that from Stronechrubie. Of the six sites sampled by the CEU during their investigation of the burnt mounds of the East Rhinns, four returned dates in the middle Bronze Age (spanning c.1700 BC to 1000 BC) while two, those at Auld Taggart 2 and Auld Taggart 4, produced dates calibrating in the 9th to 12th centuries AD (Russell-Whyte 1990:74-5). More recently, excavation of an example at Derskelpin in Wigtownshire produced waterlogged posts of 9th-10th century date in association with the remains of a probable Bronze Age burnt mound (Moore 2010). It is difficult to be confident in the real reasons for this pattern, although the survival of burnt mound tradition in western areas of Scotland might not be unexpected given the medieval records of such activities from sites in Ireland.

Burnt Mounds and the Bronze Age of Assynt

The archaeology of the Bronze Age in Sutherland is less immediately visible in the landscape, and as such less impressive, than the Neolithic and Iron Age remains that came before and after. The remains that date to the Bronze Age include evidence of settlement in the form of hut circles and field systems, and burnt mounds, but Assynt has proven somewhat sparse in the national distribution of such remains. The landscape of Sutherland in the Bronze Age would have differed greatly to the landscape of today: much of the existing blanket peat would not yet have formed, meaning that more of the land would have been suitable for agriculture; and large areas would be lightly wooded, with much birch and Scots pine, and with the development of thick blanket peat across much of Assynt from the later second millennium BC, traces of such settlement remains, where these survive are likely to be buried and invisible to surface survey.

The effective constriction of viable agriculture from the beginning of the first millennium BC into pockets of the more fertile agricultural land in Assynt has resulted in the repeated 'overwriting' and destruction of

prehistoric settlement remains from earlier periods, so that the later centuries are only ever likely to be represented in the immediately visible field remains (discussion by Halliday 1999). This process of destruction caused by the continual erosive effect of continued agriculture and settlement is almost certainly what accounts for the 'invisible' Iron Age and medieval periods in inland areas of Assynt. These restricted zones of viable agriculture are found along the river valleys in the inlands of the parish, particularly through the 'limestone corridor' of Ledbeg to Inchnadamph.

Of course, the distribution of Bronze Age activity in Assynt is equally a function of the efforts of concerted field survey, and the limited evidence for second-millennium activity in the NMRS (figure 10) is already becoming outdated as Historic Assynt add to the number of known hut-circles and related prehistoric settlement remains, and several known candidates await detailed survey. Examples at Kirkton, Inchnadamph and Glenleraig (see figure 11) demonstrate that close survey of areas settled and cultivated in much later centuries is likely to produce further examples and fill out the distribution map for the parish.

The results of the excavations at Stronechrubie extend our knowledge of the nature of Bronze Age activity in Assynt, albeit by confirming that the pattern of burnt mound activity falls broadly into that of northern mainland Scotland more generally, and closely parallels results of burnt mound investigation in neighbouring areas (Suddaby 2009; McCullagh and Tipping 1998). Unlike the burnt mounds of the Hebrides and Iorthern Isles the Stronechrubie example appears to belong in Barber's *fulacht* class 1 (Barber 1990b:98), though unlike examples from medieval Ireland the site lacked any evidence for use as a hunting or feasting site, and was more akin to Bronze Age burnt mounds elsewhere in the British mainland, that may have been used for bathing.

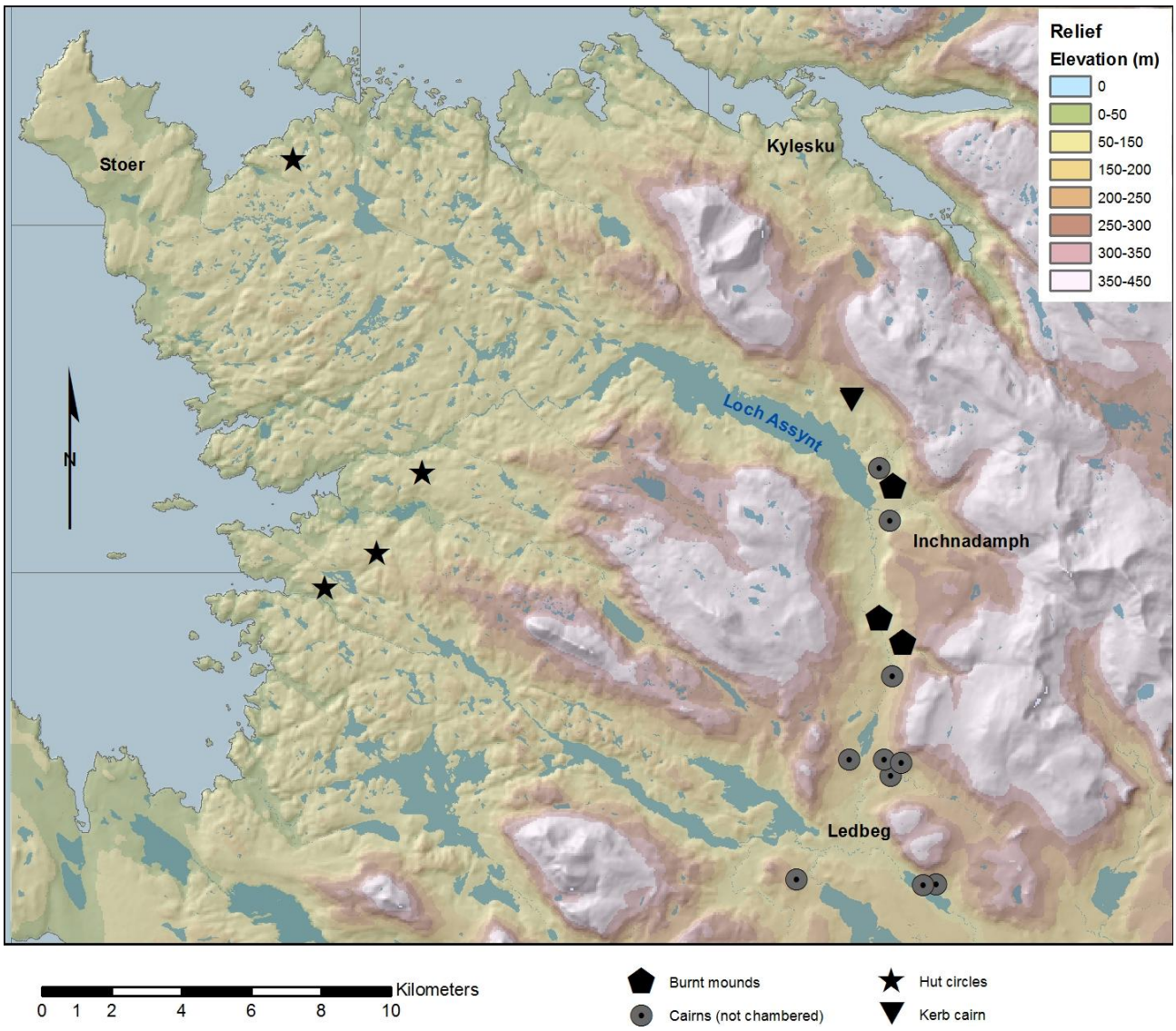

Figure 10: Distribution of Bronze Age sites listed in the NMRS for Assynt.

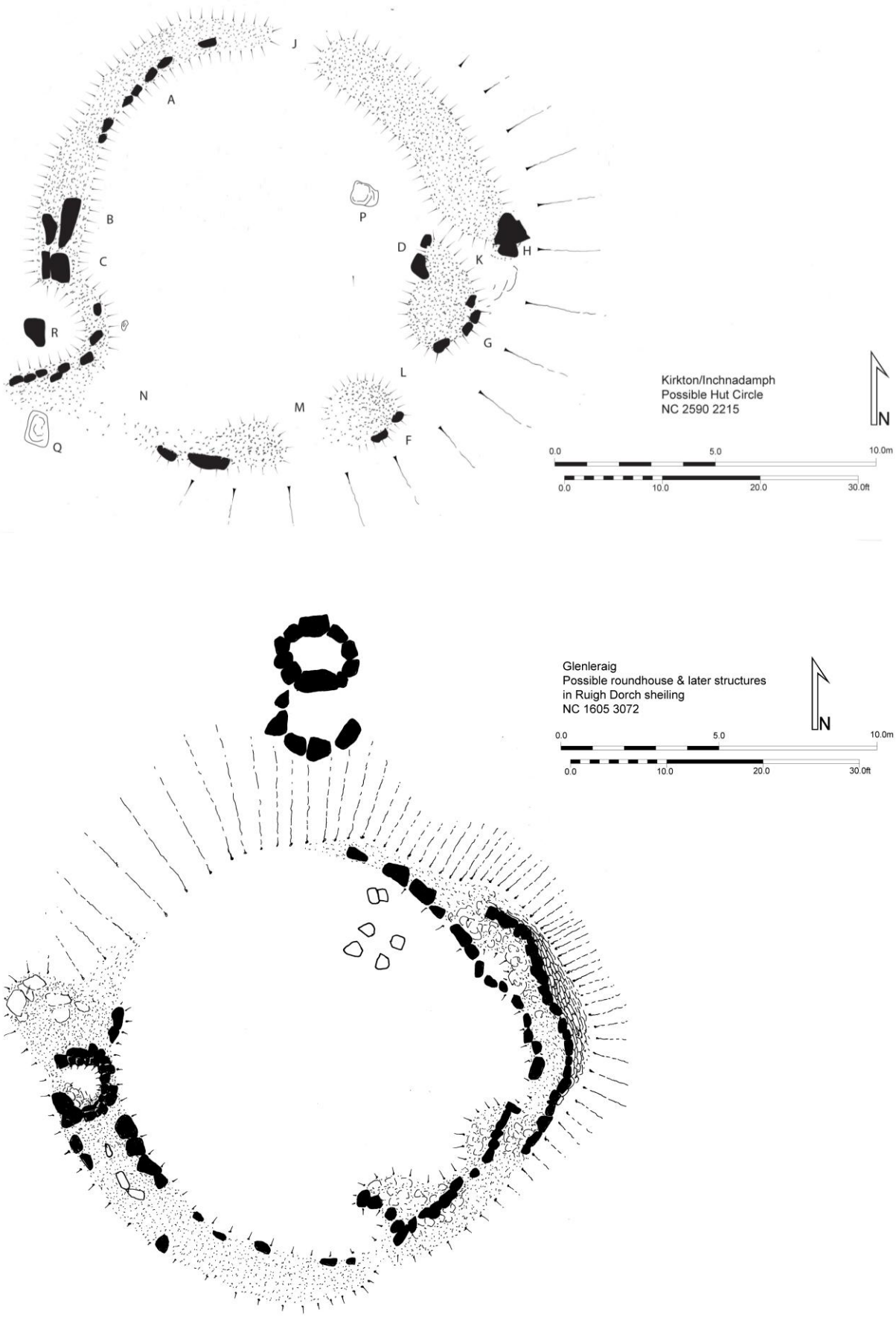

Figure 11: Hut-circles at Kirkton (above) and Glenleraig (below), surveyed by Historic Assynt.

REFERENCES

Armit I, & Braby A (2002) The Excavation of a burnt mound and associated structures at Cleann nan Clachan, North Uist in *Proceeding of the Society of Antiquaries of Scotland,* 132, 229-258

Barber, J. 1990a 'Burnt mound material on settlement sites in Scotland' in Buckley (ed.) pp.92-7

Barber, J. 1990b 'Scottish burnt mounds: variations on a theme' in Buckley (ed.), pp.98-105

Barber, J. 1997 *The Archaeological Investigation Of A Prehistoric Landscape: Excavations In Arran 1978-81*, STAR Monographs vol 2

Barfield, T. And Hodder, M. 1987 'Burnt mounds as saunas and the prehistory of bathing', *Antiquity,* vol.61, pp.370-9

Buckley, V. (ed.) (1990) *Burnt Offerings, International Contributions to Burnt Mound Archaeology,* Dublin: Wordwell

Cavers G, and Hudson G, (2010) *Assynt's Hidden Lives, An archaeological survey of the parish;* Unpublished report for Historic Assynt

Cressey M, and Strachan, R (2003) The excavation of two burnt mounds and a wooden trough near Beechwood Farm, Inshes, Inverness, 1999 in *Proceedings of the Society of Antiquaries of Scotland,* 133, 191-203

Halliday, S. P. 1999 'Hut-circle settlements in the Scottish landscape.' In Frodsham, P, Topping, P and Cowley, D *'We were always chasing time.' Papers presented to Keith Blood, Northern Archaeol (Spec Edition), vol.* 17/18, pp. 49-65

Lowe, C. 'Craggie Basin, Kildonan, Sutherland' in Buckley (ed.), p.83

McCullagh, R. And Tipping, R. 1998 *The Lairg Project 1988 - 1996*: *the evolution of an archaeological landscape in Northern Scotland* STAR Monograph 3, AOC/Historic Scotland

Moore, P 2010 'A75 Cairntop to Barlae Dual Carriageway, Dumfries and Galloway (Old Luce parish), evaluation, excavation, peat basin investigation, topographic and standing building survey', *Discovery Excav Scot, New, vol.11* Cathedral Communications

O'Drisceoil, D.A. 1990 'Fulachta fiadh: the value of early Irish literature' in Buckley (ed.), pp.157-64

Russell-Whyte, C.J. 1990 'The East Rhinns of Galloway' in Buckley (ed.), pp.70-6

Toolis, R. 2008 'Excavation of a burnt mound at Meur, Sanday, Orkney' *Scottish Archaeological Journal,* vol.29(1), pp.31-49

Schweingruber F H (1982) Microscopic Wood Anatomy 2nd edition

Suddaby, I. 2009 *The Excavation of an Early Bronze Age Burnt Mound at Arisaig, Lochaber, Highland*, SAIR Report 39, Society of Antiquaries of Scotland

Table 2: Charcoal species

Context	Feature	Latin species	Species	No of Frags	RW	Twig	Total weight (g)
5 Upper	SW B/M	*Alnus glutinosa*	Alder	18	7		30.2
5 Upper	SW B/M	*Betula* sp	Birch	1			
5 Upper	SW B/M	*Maloideae* cf *Sorbus* sp	Apple/pear hawthorn/quince/rowan	1			
5 Lower	SW B/M	*Alnus glutinosa*	Alder	5	1		
5 Lower	SW B/M	*Betula* sp	Birch	2			38.7
6	Burnt lens	*Alnus glutinosa*	Alder	6	3		121.8
6	Burnt lens	*Betula* sp	Birch	9	6		
6	Burnt lens	*Corylus avellana*	Hazel	2	2		
7 NE	Sealing layer	*Alnus glutinosa*	Alder	4	1		0.7
7 NE	Sealing layer	*Betula* sp	Birch	2			
7 SW	Sealing layer	*Alnus glutinosa*	Alder	6			7.3
9	W B/M	*Alnus glutinosa*	Alder	4			11.5
9	W B/M	*Betula* sp	Birch	6			
9	W B/M	*Corylus avellana*	Hazel	1			
10		*Alnus glutinosa*	Alder	6	1		89.5
10		*Betula* sp	Birch	10	1		
10		*Maloideae* cf *Sorbus* sp	Apple/pear/hawthorn/quince/rowan	2	1		
10 SW		*Alnus glutinosa*	Alder	3			10.2
10 SW		*Betula* sp	Birch	8			
10 SW		*Corylus avellana*	Hazel	1			
11	Hearth waste	*Alnus glutinosa*	Alder	12	4		42
11	Hearth waste	*Betula* sp	Birch	5	2		
11	Hearth waste	*Corylus avellana*	Hazel	11	3		
11	Hearth waste	*Salix* sp	Willow	1			
13	Heat stones	*Alnus glutinosa*	Alder	10			3.6
13	Heat stones	*Betula* sp	Birch	1			
14	Surface	*Alnus glutinosa*	Alder	11	2		21.7
14	Surface	*Betula* sp	Birch	3			
15 Upper		*Alnus glutinosa*	Alder	8	1		9.2
15 Lower		*Alnus glutinosa*	Alder	4			4.5
15 Lower		*Betula* sp	Birch	3			

15 Lower		*Corylus avellana*	Hazel	1	1		
16	Charcoal rich layer	*Alnus glutinosa*	Alder	14	1		17.6
19	BM	*Alnus glutinosa*	Alder	6			30.4
19	BM	*Betula* sp	Birch	1			
19	BM	*Maloideae* sp	Apple/pear/hawthorn/quince	1			
20	Water pit	*Betula* sp	Birch	13	6		72.9
20	Water pit	*Corylus avellana*	Hazel	1	1		
20	Water pit	*Sorbus* sp	Rowan	3			
22	Stone lining	*Alnus glutinosa*	Alder	2			113
22	Stone lining	*Betula* sp	Birch	12		1	
22	Stone lining	*Corylus avellana*	Hazel	1			

Assynt Fire and Water;
Stronchrubie Burnt Mound:
Excavation Data Structure Report

Section 2: Appendices

AOC Archaeology Group

APPENDIX 1: Context Register

Context	Interpretation	Description	Stratagraphic relationships		Dimensions as exposed (m)		
			Below	Above	Length	Width	Depth
(001)	Topsoil	Mid brown sandy silt, max depth = 0.15m spreads to central depression of the mound		(002)			0.15
(002)	Layer of heat shattered stones beneath newly initiating peat.	Dark brown peaty sandy silt. Frequent inclusions of burnt stone. Stones range from 10mm-150mm diameter All angular Appears in three peaks of the mound	(001)	(004) (005) (008) (009)			0.07
(003)	Fluvial deposits from relict stream bed	Light yellow-brown sandy silt with high mineral content. Lies along the foot of the mound (S. side). Highly compacted with frequent inclusions of river rolled pea gravel.	(001)	Natural			0.11
(004)	Cluster of river rolled stone. Possibly collected for burning on the mound. Possibly = (017)	Large river rolled stones to the SW of the mound. In topsoil matrix. Stones measure 0.1m to 0.6m in diameter. Orangey brown quartzite.	(001)	(003)			
(005)	Body of the SW focus of the burnt mound	Dark brown sandy silt with frequent inclusions of heat shattered stone. Loosely compacted. Max Depth = 0.58m SW mound	(002)	(014) (016)			0.58
(006)	Lens of burning on top of surface (007)	Small patch of charcoal and burnt soil, roughly circular in plan and 0.03m deep. Deposit is 0.07m in	(002)	(007)			0.03

Context	Interpretation	Description	Stratagraphic relationships		Dimensions as exposed (m)		
			Below	Above	Length	Width	Depth
		diameter.					
(007)	Sealing layer of boulder clay	Compact red orange clay, mottled to grey with patches of black burning. Edge with 005 to SW, 008 to W and 009 to the N is very sharp. Few stone inclusions in SW quad but deposit contains small quantities of shattered stone in NE quad. Max Depth = 0.17m	(002)	(010)			0.17
(008)	Body of E focus of burnt mound	Black brown silt with frequent inclusions of heat shattered stone. Forms E mound. Loosely compacted 1.02m deep	(002) (001) (007) (012)	(019)			1.02
(009)	Body of W focus of burnt mound	Black brown silt with frequent inclusions of heat shattered stone. Forms N mound. Max depth = 1.08m loosely compacted	(002) (001) (007) (012)	(019)			1.08
(010)		Mid grey brown sandy silt occupying central depression under 007. friable, Max depth = 0.07m	(007)	(017)			0.07
(011)	Charcoal spread - probably hearth waste	Layer of charcoal rich silt compact and 0.03m deep. Layer found at interface between 007 and 010. Seen only in NE quad.	(007)	(010)			0.03
(012)	Dump of cracked stone, infilling between two foci of the burnt mound.	Mid greyish brown sandy silt. Frequent inclusions of heat shattered stone. Max depth = 0.21m	(002)	(008) (009)			0.21

Context	Interpretation	Description	Stratagraphic relationships		Dimensions as exposed (m)		
			Below	Above	Length	Width	Depth
(013)	A tip layer of heat shattered stone within 008.	A substantial lens of loose heat shattered stone within 008. lacks the matrix of hearth material - dark brown black sandy silty material which makes up 50% of 008. Max depth = 0.41m	(008)				0.41
(014)	Possible original ground surface - primary layer of burnt mound.	Compact orange brown silt, containing small fragments of shattered stone and frequent lumps of charcoal. Underlies shattered stone dumps 005 max depth 0.04	(005)	(015)			0.04
(015)		Grey green compact silt, containing lumps of charcoal in uppermost surface. Possibly derived from 005 above	(014)	Natural			0.05
(016)		Small patch of charcoal rich silt measuring c0.40m across and 0.03m deep appearing a lens within brown deposit 014	(005)	(014)			0.03
(017)	Upper fill of central pit	Large stones in upper fill of [018] dimensions from 0.30x0.30x0.40m River rolled boulders forming a deposit roughly rectangular in plan max depth =0.45m	(010)	(019)			0.45
[018]	Cut of water holding pit.	Cut of large pit in centre of site. Sub triangular in plan with steep sides and a flat base. W sides are more gently sloping. To S a shallow channel with steep sides and a concave	[021]	Natural			

Context	Interpretation	Description	Stratagraphic relationships		Dimensions as exposed (m)		
			Below	Above	Length	Width	Depth
		base leads towards the relict stream channel. 2.0 x 2.2 x 0.7m deep					
(019)	Slighted burnt mound material infilling the central pit	Burnt mound material extending to make up secondary fill of pit. Max depth = 0.65m	(017)	(020) [022], (010)			0.65
(020)	primary silting of water holding pit 018	Loosely compacted black brown deposit of sandy silt. 0.05m deep. Makes up primary fill of pit.	(019)	[018]			0.05
[021]	Potential stone lining to the N side of the pit. Behind the N most stone there was a deposit 022, which was potentially a packing	Large flat quartzite stones lining a small area of the N corner of pit 018. stones measure 0.6 x 0.3 x 0.1m (largest) Two stones were displaced with mound material 009 infilling the gaps around the stones. The N most stone was potential in situ, standing vertically on one on its long axis.	(019)				
(022)	Possible packing for stone lining 021	Dark black brown sandy silt up to 0.5m deep and 0.2m thick. Moderately compacted, containing some stone pebbles, but not heat shattered stone as in the main fill of pit.	(019)	[021]			0.50
(023)	Burnt mound material infilling pit (018)	Heat shattered stone fragments in charcoal-rich grey-black silt, distinguished from (019) by slightly lower percentage of stone content.	(017)	(020), (010)			0.65

APPENDIX 2: Drawing Register

Drawing Number	Scale	Description
1	1:20	Plan of stones in SW extent of trench
2	1:20	Mid ex plan of SW quad
3	1:20	Mid ex plan of (014)
4	1:10	N facing section through mound
5	1:10	S facing section through mound
6	1:10	E and W facing section through mound
7	1:20	Plan of NW quad mid-ex
8	1:20	Plan of SE quad mid-ex
9	1:20	Plan of [018]
10	1:10	Section through [018]
11	1:20	Overlay to #9 post ex plan of [018]
12	1:10	E facing section through edge of mound

APPENDIX 3: Photographic Register

Digital images

Frame	Description	From
649-659	(007) With black deposit, SW quad	E
660-663	(007) After removal of black deposit, SW quad	E
664-665	Stones at S edge of mound	E
666-667	Stones at S edge of mound	W
668-669	Working shot NE quad	E
670-674	NE quad (007) (008) (009)	E
675-682	NE quad (007) (008) (009)	S
683-684	NE quad (007) (008) (009)	SW
685-686	General Shot	S
687-688	NE quad (007) (008) (009)	N
689-694	SW Quad (007) post ex section	S
695-700	NE quad (007) post ex	S
701-702	Stones at S end of T1	S
703-704	Stones at S end of T1	W
705-707	Stones at S end of T1 western side	S
708-709	Stones at S end of T1 eastern side	S
710-712	SW quad, S facing section	S
713-715	S extension, stones (004) post-ex	W
716-717	S extension, stones (004) section	E
718-729	SW quad, (014)-(015) pre ex	S
730-733	SW quad, E facing section	E
734-735	SW quad, S facing section	S
736-740	Pit [018] pre-ex showing stones (017)	S
741-745	Pit [018] pre-ex showing stones (017)	E
746-750	Pit [018] pre-ex showing stones (017)	N
751-753	Pit [018] pre-ex showing stones (017)	W
754-756	SW quad, S facing baulk	S
757-758	NW Slot E facing section	E
759-761	Pit [018] pre ex	N
762-764	Pit [018] pre ex	W
765-768	Pit [018] pre ex	E
769-770	Stones (017) pre ex	E
771-774	Section through pit [018]	S
775-779	Pit [018] post ex	S
780-785	Pit [018] post ex	E

APPENDIX 4: Finds Register

Finds Number	Context	Material
1	(009)	Stone

APPENDIX 6: Bulk Sample Register

Context	Quantity (litres)
(002)	20
(005)	30
(006)	10
(007)	20
(009)	20
(010)	20
(011)	10
(013)	10
(014)	10
(015)	20
(016)	10
(019)	10
(020)	30
(022)	10

APPENDIX 7: Auger/Gouge Sample Register

ID	Quantity (litres)
AS1	10
AS2 upper	10
AS2 lower	10
AS3	10
AS4	10
AS5	10
GS1	10
GS2	10
GS3	10

APPENDIX 8: Kubiena Box Register

ID	Context
Tin 1	(010) (007)
Tin 2	(007)
Tin 3	(007)
Tin 4	(005) (014)

APPENDIX 6: 'Discovery and Excavation in Scotland' Report

LOCAL AUTHORITY:	Highland
PROJECT TITLE/SITE NAME:	Assynt Fire and Water, Stronchrubie Burnt Mound
PROJECT CODE:	60058
PARISH:	Assynt
NAME OF CONTRIBUTOR:	Graeme Cavers, Gordon Sleight, Jake Streatfeild-James, Charlotte Douglas
NAME OF ORGANISATION:	AOC Archaeology Group
TYPE(S) OF PROJECT:	Excavation
NMRS NO(S):	NC21NW3
SITE/MONUMENT TYPE(S):	Burnt Mound
SIGNIFICANT FINDS:	None
NGR:	NC 24902 18699
START DATE (this season)	1st October 2012
END DATE (this season)	11th October 2012
PREVIOUS WORK (incl. DES)	Survey in 2009/10, DES 2010, p.86
MAIN DESCRIPTION: (May include information from other fields)	As part of the Assynt Fire and Water project, an excavation was undertaken in order to investigate the burnt mound at Stronchubie (NMRS: NC21NW3) near Inchnadamph. The excavation was accompanied by a series of experiments in order to test the effectiveness of boiling water using local stone. The mound was found to occupy a small mound of fluvioglacial clay situated next to a relict streambed. The mound of burnt stone was a metre deep at the deepest point, pennannular in plan surrounding a central pit. The pit was sub-triangular with sides two metres long and a small channel running in the direction of the stream bed. This channel was found to be roughly level with the streambed, suggesting that the pit could have been filled from that source. The central pit was partially lined with flat slabs of quartzite. A single small find was recovered from the burnt mound material – a possible fragment of worked quartz. All deposits within the mound contained charcoal; this was sampled in order to provide a series of radiocarbon dates, which will ultimately provide start and end dates for the occupation of the mound.
PROPOSED FUTURE WORK:	
CAPTION(S) FOR ILLUSTRS:	
SPONSOR OR FUNDING BODY:	Heritage Lottery Fund
ADDRESS OF MAIN CONTRIBUTOR:	AOC Archaeology Group
EMAIL ADDRESS:	

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Plate 1: The burnt mound after removal of turf, facing N.

Plate 2: Mounds M2 (top) and M3 (right), with (013) between, and upper surface of (007) in bottom left, facing N.

Plate 3: Section through M1, SW quadrant, showing mound (005) to the left, red clay deposit (007) overlying grey clay (010). The boulder layer (017) can be seen in the emerging central pit to the right of the image. Facing N.

Plate 4: Section through M1, deposit (005) in NW quadrant, facing W.

Plate 5: Clay layer (007) overlying buolders (017) in the upper fill of pit (018), NE quadrant, facing W.

Plate 6: Pit (018), pre-excavation, showing boulder deposit (017) in upper fill; the channel can be seen running in the direction of the palaeochannel towards the top of the image. Facing S.

Plate 7: Pit (018) pre-excacvation, facing W.

Plate 8: Boulder layer (017) in the upper fill of pit (018), pre-excavation, facing W.

Plate 9: Section through pit (018), facing NW.

Plate 10: Pit (018) post-excavation, showing quartzite lining slabs (021), facing N.

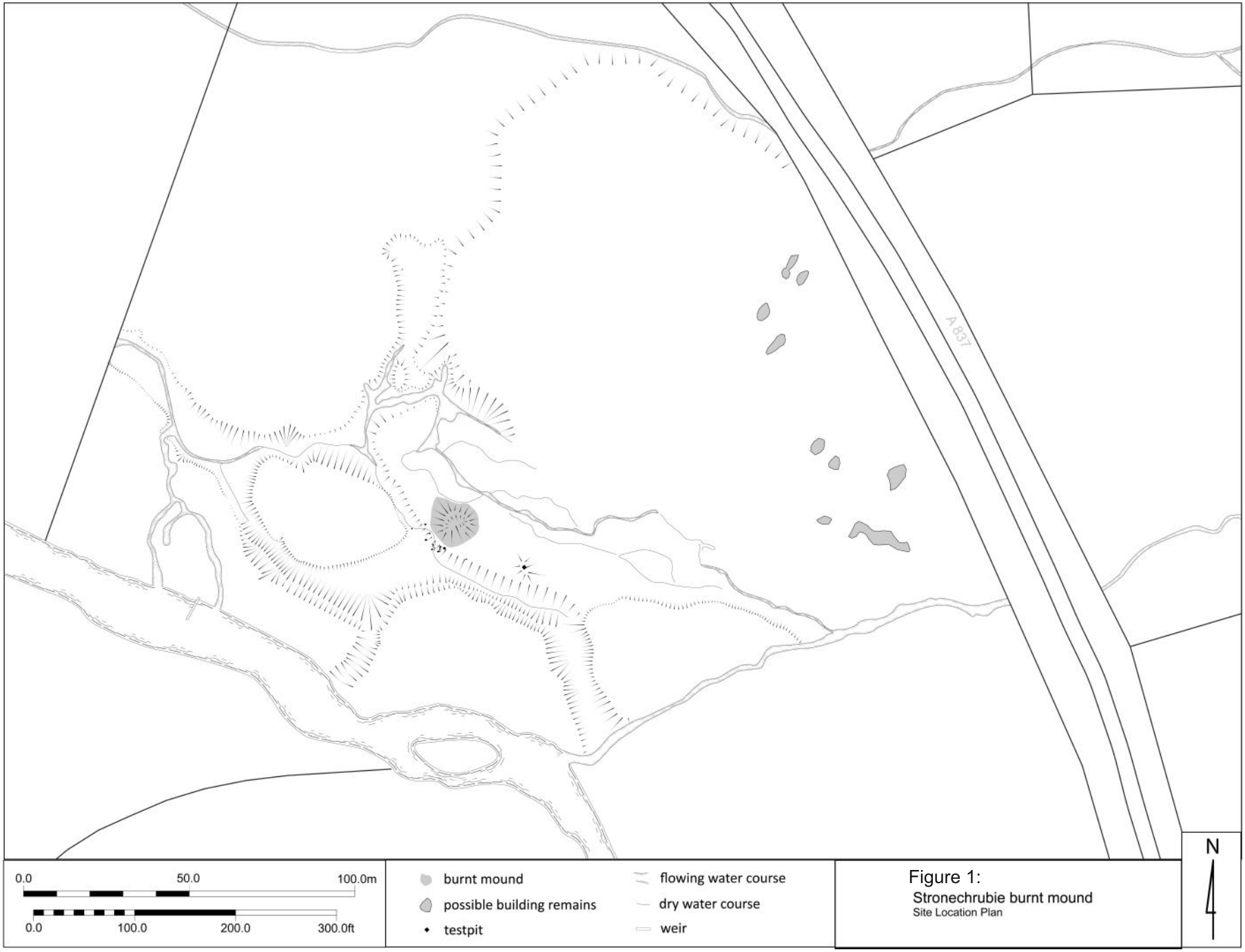

Figure 1:
Stronechrubie burnt mound
Site Location Plan

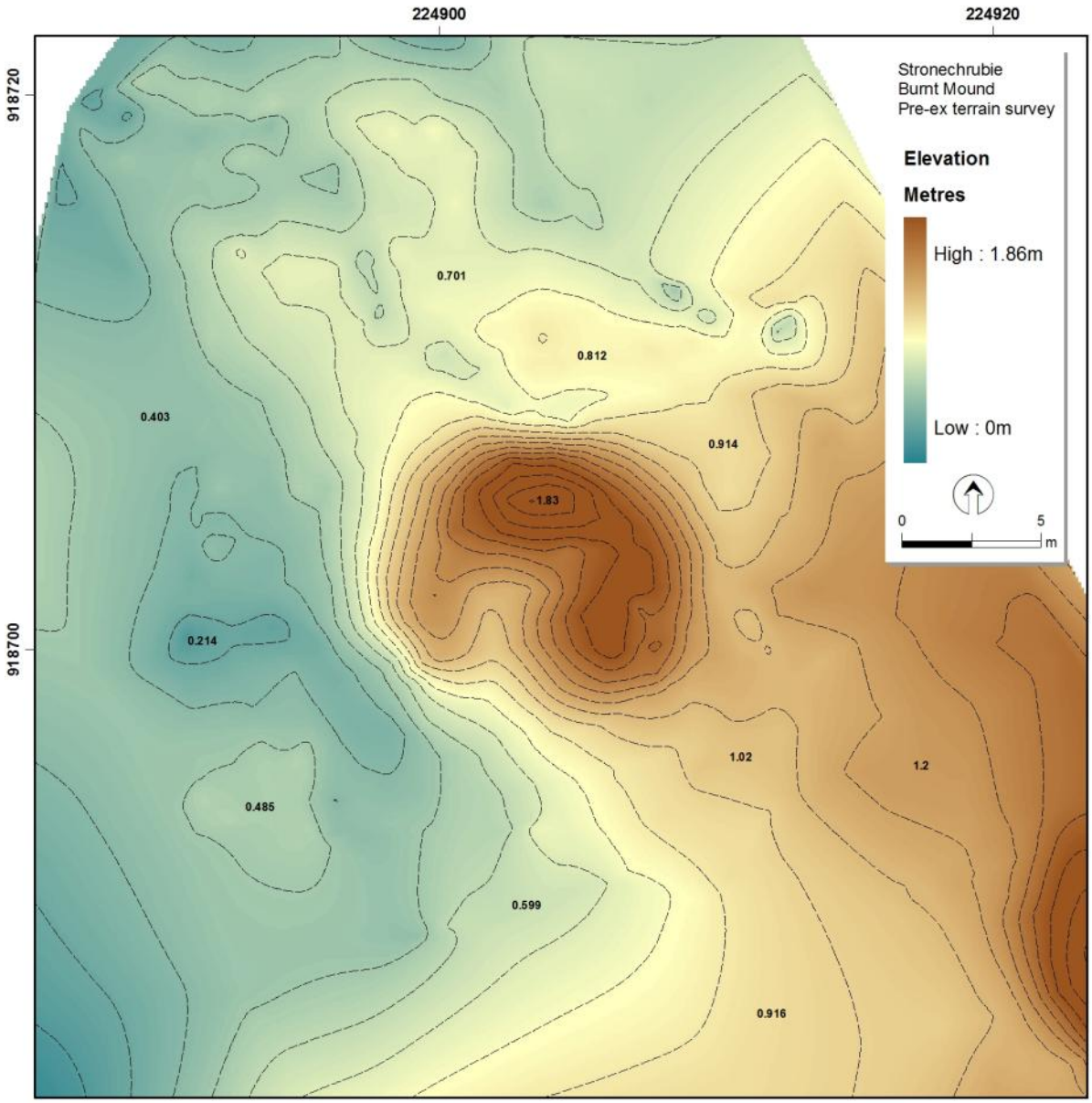

Figure 2: Pre-excavation terrain survey of the Stronechrubie burnt mound.

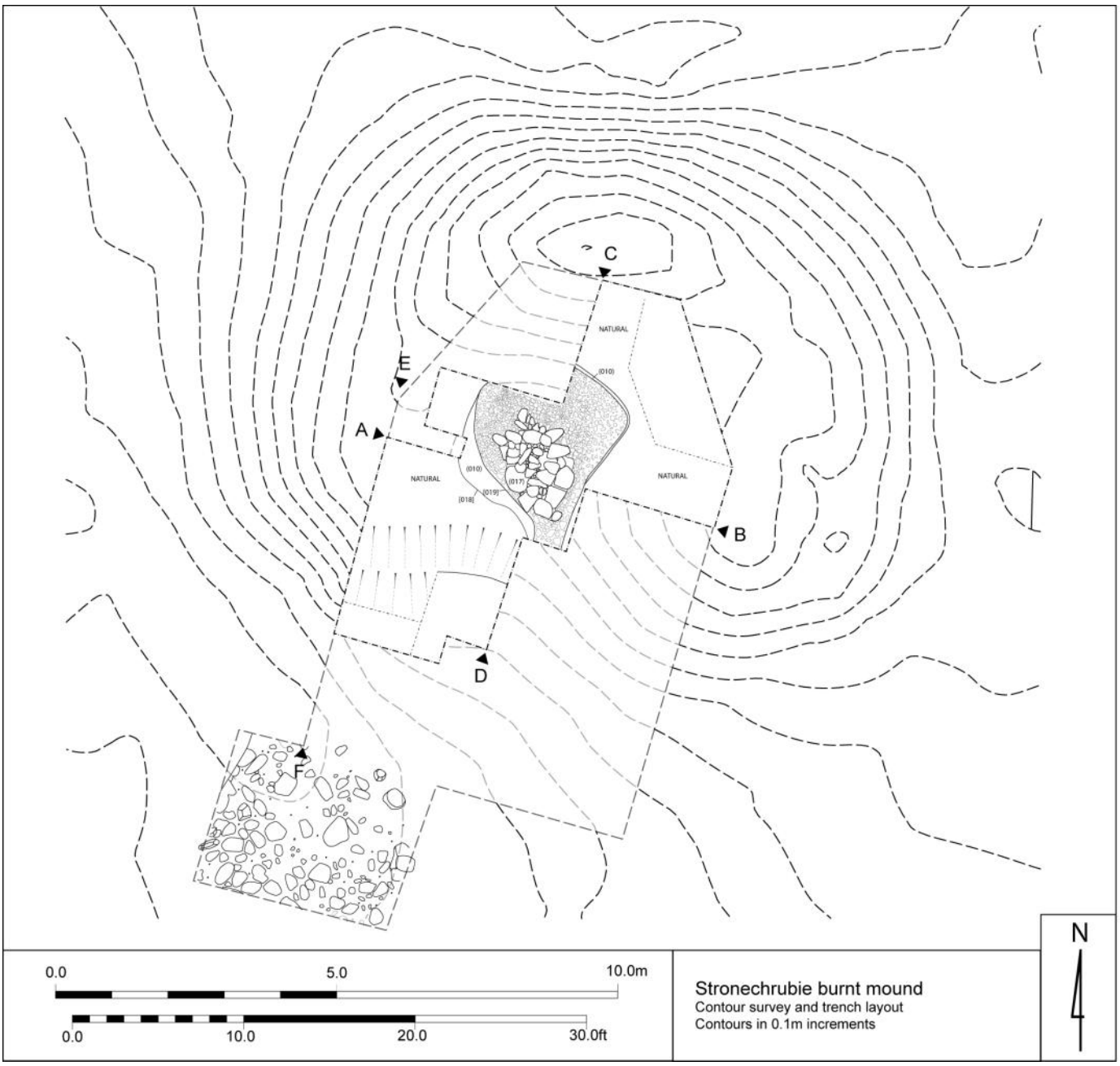

Figure 3: Contour survey of the mound, showing trench layout and location of pit [018].

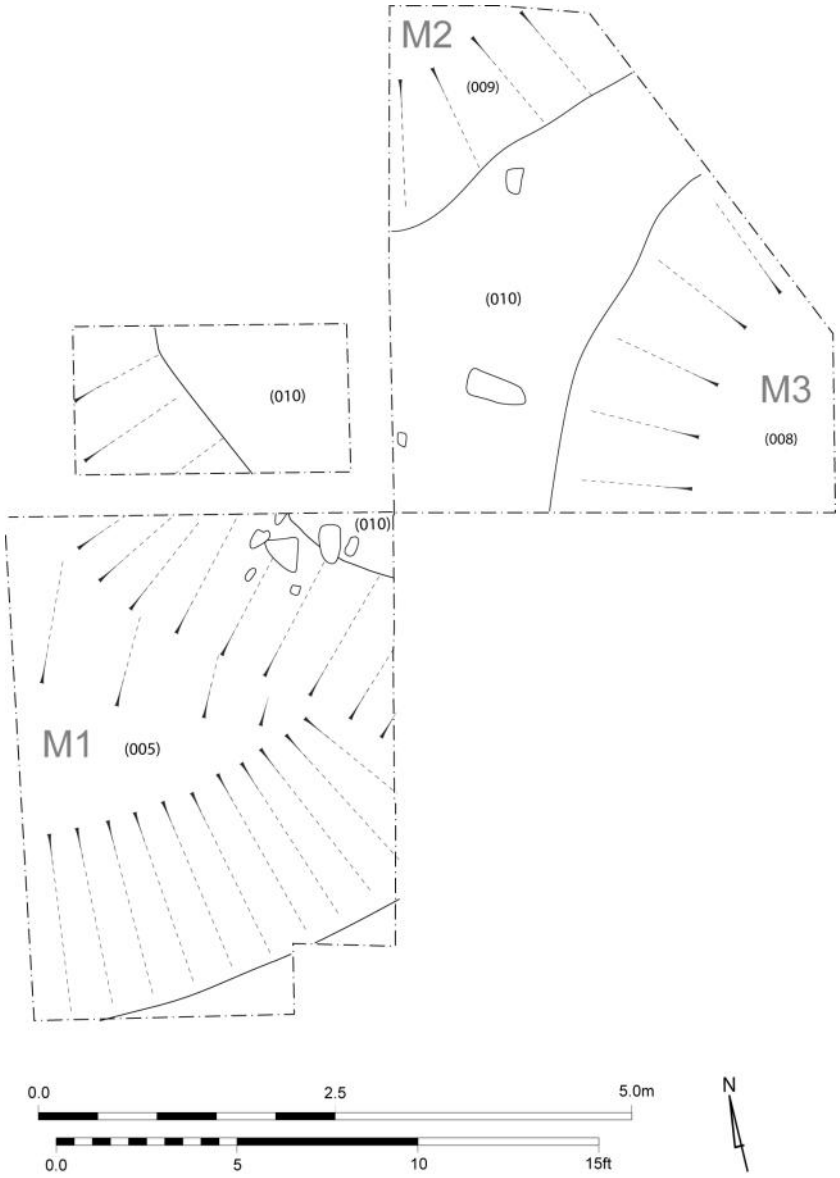

Figure 4: Plan of mounds M1, M2 and M3 on exposure.

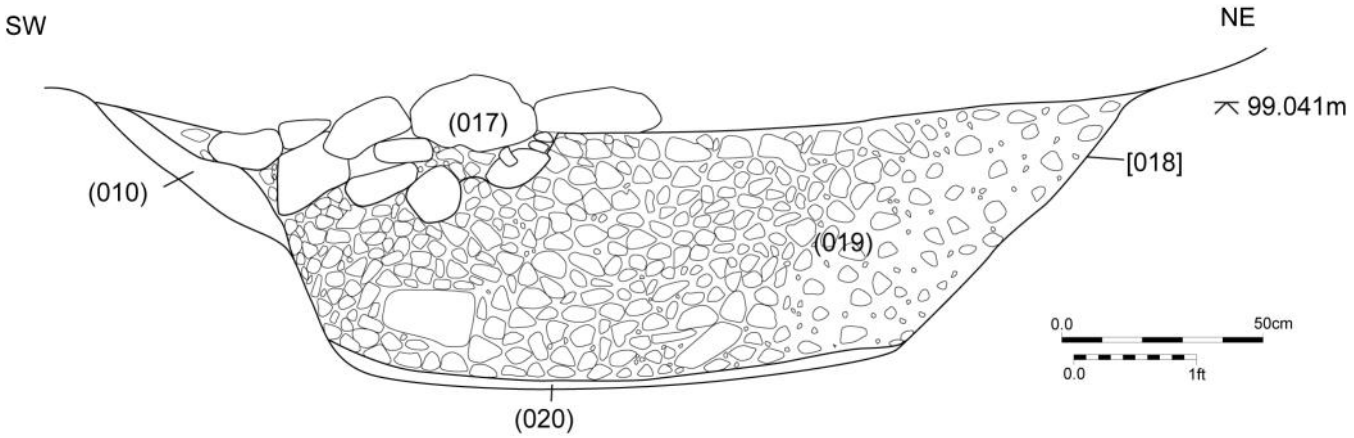

Figure 5: Section through pit [018].

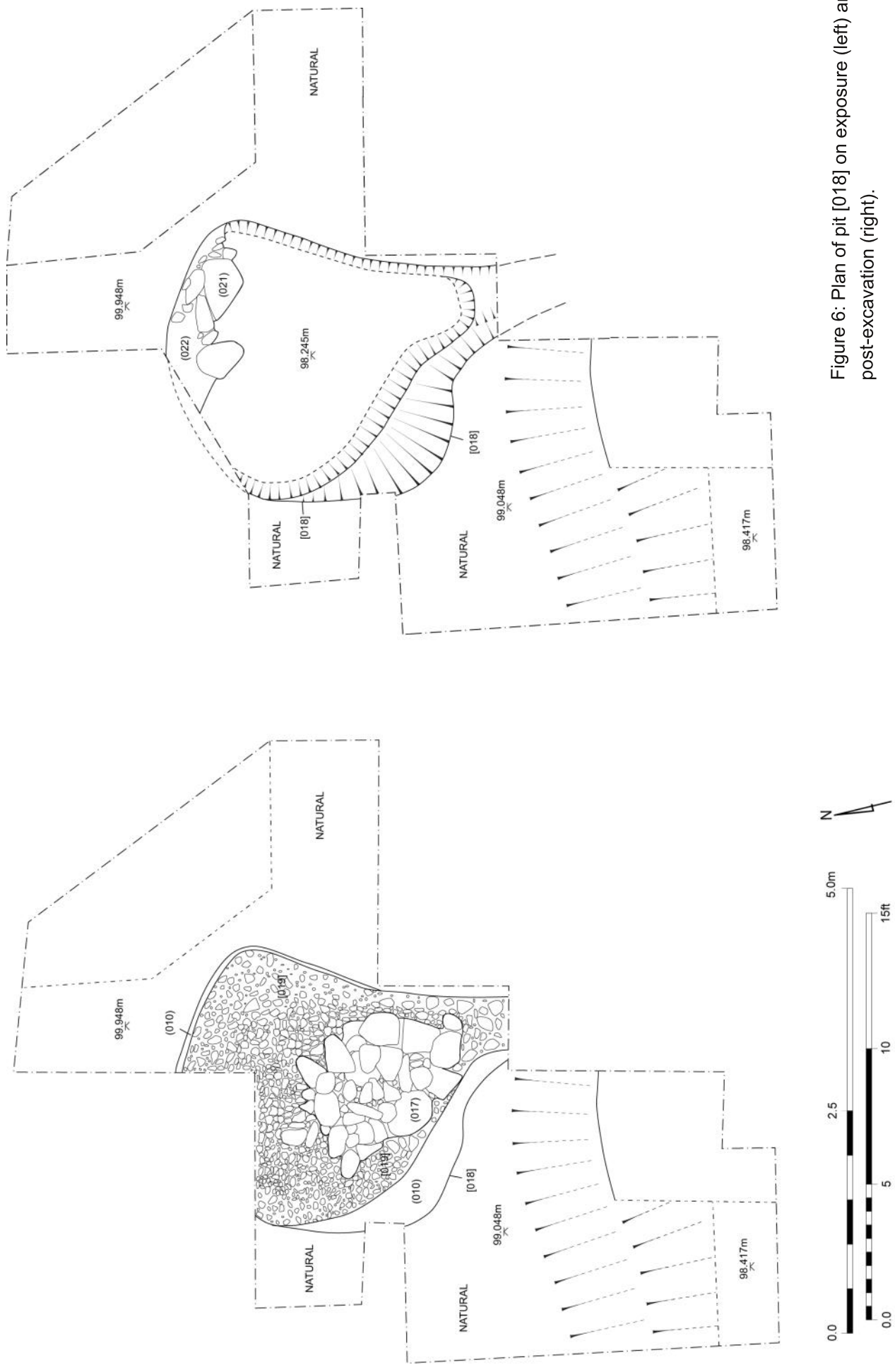

Figure 6: Plan of pit [018] on exposure (left) and post-excavation (right).

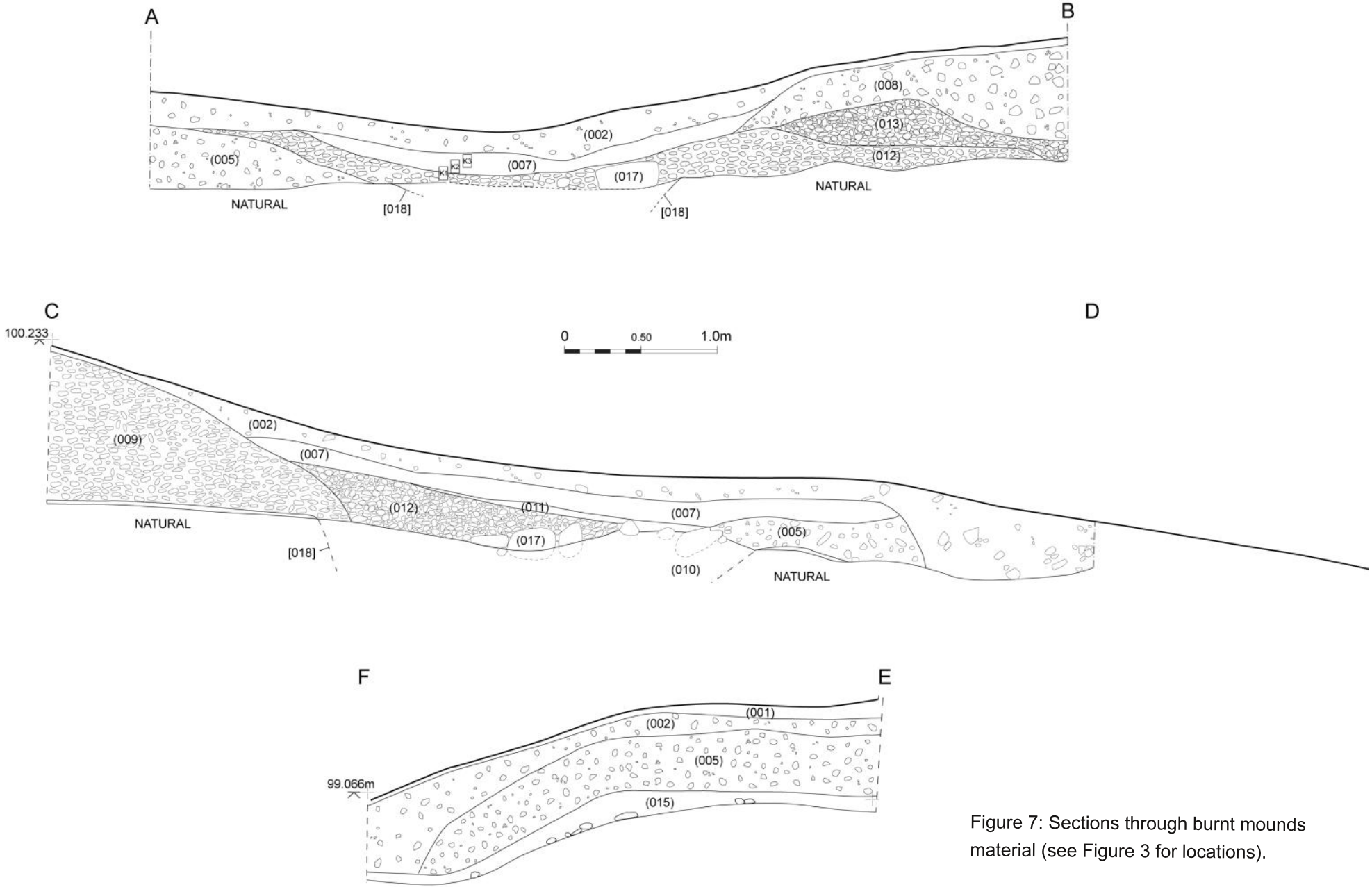

Figure 7: Sections through burnt mounds material (see Figure 3 for locations).