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Whitehorse Hill Cist, Dartmoor, Devon

Archaeological Excavation, 2011

Historic Environment Projects

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Excavation of the contents of the cist were carried out by Helen Williams at the Wiltshire Conservation Service laboratory in Chippenham

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The views and recommendations expressed in this report are those of Historic Environment Projects and are presented in good faith on the basis of professional judgement and on information currently available.

Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

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Cover illustration

The Whitehorse cist exposed in the section across the peat mound

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Abbreviations

DNPA	Dartmoor National Park Authority
EH	English Heritage
HE	Historic Environment, Cornwall Council
NGR	National Grid Reference
OS	Ordnance Survey

1 Summary

In August 2011 HE Projects Cornwall Council were commissioned by Jane Marchand on behalf of the Dartmoor National Park Authority to undertake the archaeological excavation of a cist. The site was a Scheduled Ancient Monument (Monument 1376648) and lay within an area surrounded by peat cuttings; it was located on the western edge of a peat mound which was drying out and shrinking.

It was initially thought that the cist was aligned east-west and that the western end stone had fallen off. However, excavation revealed that the cist was in fact aligned north-south. It was also found that despite the collapse of one of the side stones, there was an intact burial deposit including cremated bone which was associated with organic artefacts. The cremation had been placed within an animal hide or fur and there were two layers of matted plant material, a woven bag or basket, a textile band, and a leather and textile object. The cist also contained shale and amber beads from a necklace. The contents of the cist were excavated at the Wiltshire Conservation Service laboratory in Chippenham.

The excavation was highly significant as the environmental information recorded from the peat mound will provide the first secure dating information from a Dartmoor cist. However, it is the unparalleled assemblage of organic objects which are of most importance, as this will yield insights into materials which have not survived elsewhere from the earlier Bronze Age in southern Britain.

The excavations were also important because they demonstrate the potential for nationally significant archaeological sites to survive in remote areas of the moor where sites were not thought to exist.

2 Introduction

2.1 Project background

In July 2011 Historic Environment Projects, Cornwall Council (HE Projects) were commissioned by Jane Marchand, Senior Archaeologist Dartmoor National Park Authority, to undertake the excavation and recording of a cist on Whitehorse Hill (Lydford), Dartmoor. The site is located within the National Park and is situated within the boundaries of the Okehampton firing range (Fig 1).

The site, which became a Scheduled Monument (Monument 34445) in 2003, lay within an area surrounded by peat cuttings; it was located on the western edge of a peat mound which was drying out and shrinking. Efforts had been made over a period of eight years to stabilise the monument, including grant aid from English Heritage South West region, and a stone revetment wall had been built in front of the cist. However, ongoing extreme weather and the exposed nature of the site meant the repairs had failed and the peat had continued to dry out. It was therefore feared that the cist was in danger of collapsing over the winter of 2011/12 without any record being made of the site.

A MorphE compliant project design was submitted to English Heritage in the summer of 2011, who agreed to part fund the excavation of the cist together with the DNPA and a number of local funders. Archaeological investigations of the cist and the mound into which it was set took place during the first week of August 2011 during a closure of the army firing range. Little in the way of artefactual material was expected from the site. However, the results from the excavations exceeded expectations and have led to the discovery of a nationally important collection of organic objects and other items associated with an Early Bronze Age burial. Environmental samples taken from the mound will also help to answer import questions about the environmental conditions at the time the cist was constructed, as well as providing further dating evidence for the construction of the cist.

This report outlines the results from the excavations and provides a record of the project archive. It is the first stage of the post excavation process which will see further stages of assessment, analyses and final publication.

2.2 Aims

The aims of the archaeological project were both general and specific to the project.

The general aims were:

- To record archaeological features, layers and finds associated with the cist.
- To establish the extent, condition, significance and character of the archaeological remains.
- To establish the presence/absence of other archaeological remains.
- To identify and recover any artefacts relating to the use of the cist.
- To ensure that the results from the project were disseminated and published to an appropriate level.
- To ensure the long-term conservation of the project archive in appropriate conditions.

In particular the key objectives of the project were to:

- To record and excavate the cist so that a record was made of it before it collapsed.
- To recover and date environmental material recovered from the cist, so that its chronology and landscape context could be better understood.

- To assess and analyse environmental material from within and around the cist to help establish the environment when the cist was constructed.
- To establish whether the peat mound was a natural or partly constructed landscape feature.

2.3 Methods

The fieldwork was undertaken in two stages; field survey and excavation.

2.3.1 Fieldwork

Pre excavation survey

Prior to the excavation of the cist a survey of the site was undertaken by Phil Newman (Fig 2). The survey took the form of a dual frequency GPS RTK survey. A base station was established on Hangingstone Hill for which final grid coordinates were computed using RINEX data from four OS active stations. This enabled the survey to be geo-referenced without the need for fixed identifiable features on OS maps. It also meant that the information could be downloaded into GIS mapping without any correction. In addition, a 12m grid was established over the site. The four corner pegs were subsequently used as reference points during the excavations.

Excavation

The stone wall in front of the cist was removed by hand and the west-facing section of the peat mound was hand-cleaned. A 10m north-south section was established and cut back which included the axis of the cist. This ensured that the relationship between the cist and the mound could be established and recorded in profile, as well as the sequence of the site's construction. The remaining portion of the mound was not excavated. The standing section was hand-drawn at a scale of 1:10. The top of the mound above the cist was then cut back to expose the top of the cist and its *in situ* capstone. A plan was made of the unexcavated cist at a scale of 1:20. After completing the plan, the capstone was lifted and a second 1:20 plan was made. Excavation of the cist's contents then commenced in spits, which were 100% sampled for plant macrofossils. However, very early in the excavation of the cist a shale bead was identified and human bone could be seen beneath a layer of matted 'fur-like' material. At this point the decision was made to block lift the contents and the base stone of the cist and transport it for detailed excavation under laboratory conditions. The stone was wrapped up in cling-film and transported some 1.5km by wheelbarrow down to the site Land Rover. A final post-excavation plan was made of the site showing the position of two hazel/birch/alder stakes (small finds 1 and 2) which were identified when the remainder of the cist was dismantled.

A black and white archive photographic record was made of the excavations and additional colour digital images were taken. A Total Station was used to survey the stones which comprised the cist. Environmental samples (plant macrofossil, pollen and testae amoebae) were taken from within the cist, as well as from the surrounding peat mound.

Only two finds (hazel/alder/ birch stakes) were recorded as 'small finds' during the onsite excavations. However, several unique discoveries were made during the excavation of the contents of the cist at Wiltshire Conservation Service laboratory in Chippenham (Appendix C).

On completion of the archaeological recording the stones from the cist were all labelled with identifying letters (see Appendix B), so that the cist could be reconstructed within the peat mound at a future date.

The site is referred to by its context number, Cist 10.

3 Location and background to the project

Cist 10 was situated within a peat mound near to the summit of Whitehorse Hill (SX 6172 8547), located at the southern end of a north-south ridge at a height of approximately 604m OD (Fig 1). The cist is one of the highest to be recorded on Dartmoor. The northern end of the ridge, approximately 700m to the north, is occupied by a prominent turf and stone barrow known as the Hangingstone cairn. Both sites have comparable landscape settings.

The site was first documented by Joe Turner in 2000, as a short note in the *Proceedings of the Devon Archaeological Society* (Turner 2000). He recorded that a stone was missing from the western side of the cist and that this was likely to be the end stone.

Prior to excavations, the exposed section of the cist measured up to 0.7m wide by 0.25m deep and 0.35m high. Visual inspection (by torch light) of the interior ahead of excavation appeared to indicate that it was a largely empty void except for a peaty fill in the bottom of the cist. Previous recording of the condition of the cist in 2000 had noted that hair moss was growing out of the exposed section (Turner 2000), so it was anticipated that the fill might be recent or disturbed. The peat mound into which the cist was set measures approximately 12m in diameter and has height of approximately 1.5m. The current extent of the mound is largely an artificial construction, its edges being defined by the limit of adjacent peat cuttings.

Environmental sampling of the peat mound into which the cist is set was carried out by English Heritage in 2005 (Straker 2006). Analyses of the samples and two radiocarbon determinations showed that the peat at the level of the base of the cist was of Early to Middle Neolithic date (3650–3100 cal BC), whereas that from the peat level with the top of the cist was of Early Bronze Age date (2200-1890 cal BC). The meaning of these dates was open to question, as the position of the cist within the mound allowed for the possibility that it could be of either of earlier to Middle Neolithic or Early Bronze Age date. One possibility was a trench to hold the cist had been cut into the peat, down to the Neolithic level of the peat accumulation and the stones were inserted into it. The alternative was that the cist was constructed upon the Neolithic ground surface and that the peat had grown up around it during the Bronze Age. The second scenario implied that the cist stood proud of the contemporary land surface.

There are approximately 187 recorded cists on Dartmoor (Butler 1997, 173), although others almost certainly exist beneath unexcavated barrows and cairns. Most appear to be set within mound/cairn material although one or two, such as Ugborough 16 (Worth 1967, 170; Grinsell 1978; Butler 1997, 168-77) may have originally been free-standing. Nearly all are of simple stone chest appearance, being constructed of long side stones and shorter end stones (Worth 1967, 173).

Analogy with dated sites across the south west region indicate that cists post-date the Neolithic period, although available evidence suggests that they were a long-lived site type. Early examples, such as Lydford 24 at Fernworthy were associated with Beaker pottery which is likely to predate 2000 cal BC, whereas others such as Moretonhampstead 6 were associated with Early Bronze Age artefacts, including a copper alloy dagger (Grinsell 1978, 158). However, most investigated cists on Dartmoor were excavated a century or more ago, and have produced little in the way of artefactual material (Butler 1997, 279). Furthermore, there are no radiocarbon determinations from any of the Dartmoor cists, and scientific dates in the southwest are generally few and far between' although a recently obtained date from the Try cist in Cornwall fell in the period 1880-1600 cal BC (Jones and Quinnell 2006). As a result, it was possible that the Whitehorse cist could prove to be of later third or second millennium cal BC date.

Given the uncertainties relating to the possible date of the cist, the probable absence of datable artefacts and the uncertain method of construction, the peat mound around the cist was also investigated. This was done out to establish whether it was an entirely

natural mound and to recover dating and environmental material, which it was thought were unlikely to survive within the interior of the cist itself.

4 Archaeological results (Figs 3 and 4)

A full description of the layers within the mound and the deposit within Cist 10 are given in Appendix A, descriptions of the stones are presented in Appendix B. The site stratigraphy is described below from the bottom to the top of the section.

At the base of the section the natural granitic soil or 'growan' (5) and the granite bedrock (13) were exposed. Overlying these deposits was the peat mound, which reached a height in the section of up to 1.3m. It comprised five layers; (1), (2), (3), (4), (5), (6) and (7), which ranged from a black to mid greyish brown colour. There was no evidence that the mound was in any way artificial, although two hazel/birch/alder stakes (small finds 1 and 2) were found in layer (2) close to Cist 10. Small find 1 was located on the eastern side of the cist and was lying prone at the level of the base of the cist. Small find 2 was situated against the northern side of the cist and was in a vertical position. It is suggested below that these stakes may have been associated with the marking of the mound for the cist. The changes in colour of the peat were given conventional context numbers. However, in reality these changes reflected little more than the wetness of the peat. This was demonstrated by the fact that when layer (7) on the south side of Cist 10 was cut back (and became damper), it became identical to the wetter layers (2) and (3), which were located on the north side of the cist. In other words, the 'stratigraphy' of the mound relates more to condition of the mound at the time of recording than to conventional layer formation or episodes of activity which are normally associated with a context numbering.

Cist 10 was set within layer (2) (Fig 5). Externally, the cist measured 0.78m long by 0.68m wide and 0.3m high. The cist comprised a flat granite base slab (H), measuring 0.7m long by 0.48m wide, around which several wedge-shaped granite stones (A, C, E, F, G, I, J, K, L and M) were set upright within the peat. These stones ranged from 0.24m long to up 0.6m long. Most were arranged so that the tapering end of the stone pointed downwards into the peat. One, stone (J) was much smaller and square, measuring 0.1m by 0.1m and had been used in the south east corner of the cist to square it off. A large capstone B was placed on top of the cist. This stone was larger than the others and measured 0.79m long by 0.66m wide. This stone gave the cist the appearance of being a large 'stone mushroom' (Fig 6).

Initially it appeared that the cist was aligned east-west and that it had lost the stone at the northern end. However, excavation revealed that this appearance had been created by end stones E, F and C, sinking into the peat layers (2), (3) and (4) and leaning inward, so that they gave the impression of forming the narrow end of the cist. Likewise, stone D, which was originally thought to be the base of the cist, was instead found to be a collapsed side stone. A stone opposite it (G) was also found to have become displaced on the eastern side of the cist. The slightly longer axis of the cist was found to be north-west south-east, which is in keeping with most other cists on Dartmoor (Butler 1997, 281).

The original shape of the cist is uncertain. Unlike most Dartmoor cists, it does not appear to have been a neat rectangular shape, but may originally have been more square or box-like in plan. Alternatively, it could have been far more irregular and actually built around the shape of the base stone. This might explain the apparent instability of the side stones.

A cut for the cist was not found. However, as discussed above, it is perhaps unlikely that one would have been identifiable in the peat. It is, however, considered unlikely that the cist was freestanding and the reasons for this are elaborated upon in the discussion below.

The cist was partially filled by layer (8). Layer (8) was a peat deposit measuring between 0.05m and 0.15m thick. In the exposed section the deposit was quite rooty and it was initially thought likely that it had formed naturally, rather than being a placed deposit. However, during the excavation of the layer in spits, it was found that it contained a burial deposit as well as a number of unique organic artefacts which do not normally survive on dry-land sites (Figs 7, 8, 9 and 10). It now seems likely that layer (8) may have been deposited into the cist after the burial deposits had been placed within it. The contents of the cist were excavated offsite and the reporting on the contents of the burial is at an early stage. However, it appears that cremated human bone had been placed within an animal hide or fur on top of a very thin leather/hide and textile object, itself placed above a mat of plant material. At one end of the fur / hide was a delicate woven bag or basket with fine stitching still visible. The contents inside include over 80 shale disc beads, amber spherical beads and a textile band. A further layer of matted plant material covered these objects. The beads appear to be of Early Bronze Age type and point to an early second millennium date for the burial (see below).

Cist 10 was covered by layer (6), a friable peat deposit up to 0.37m thick. When the section was cut back two further layers were identified between layer (6) and the top of the capstone. Layer (11) was a thin 0.02m thick, gritty peat which was directly above capstone B. It was covered by a second thin peat layer (12), which was darker and grit free. It is not absolutely certain whether layers (6), (11) and (12) represented material which had been backfilled onto the top of the cist, or had formed naturally over time. However, it seems likely that the latter scenario is more probable and the layers represent the natural growth of the peat. Layer (11) may have been a soil horizon which had started to establish above the capstone, or represent the contact zone between the peat and the decaying surface of the granite capstone.

To north and south of the cist, the upper part of the mound section comprised layer (1), a thick dark peat deposit. It is quite likely that layer (1) was just wetter version of layer (6) and that in fact they represent the same sequence of peat growth.

The initial interpretation of the results from the archaeological recording of the cist is given below.

5 Conclusions/discussion

Further analytical work is needed before a definitive interpretation can be attempted on the results from the excavations. However, a few initial comments can be made about Cist 10 in the interim. These will of course be subject to revision as the results from the analyses of the samples and the artefacts become available.

Nonetheless, the initial results have fulfilled several of the objectives of the project. In particular, it is now possible to be more certain about the broad date of the cist, the form of the site, and the manner in which it was constructed.

Provisional dating

There are no available radiocarbon determinations from any of the previously investigated Dartmoor cists. Nevertheless, the weight of artefactual evidence from excavated cists on Dartmoor (Grinsell 1978), and the wider south west region suggested that the site was unlikely to date to before 2500 cal BC. Prior to the excavation of Cist 10, two radiocarbon determinations had suggested that the cist could date to either the Neolithic or to the Early Bronze Age period. However, it was possible that it could date to any time from the middle of the third millennium cal BC down to around 1500 cal BC. Initial dating provided by the shale and beads would perhaps indicate an Early Bronze Age date, in the first centuries of the second millennium cal BC (for example, Hunter and Davis 1994; Woodward *et al* 2005). Necklaces containing shale beads have been found in two other locations in Devon, at North Molton (Fox and Stone 1951) and at Upton Pyne (Hutchinson 1880, Fox 1969). The latter find was

associated with Early Bronze Age artefacts, including an Accessory Vessel and a copper alloy dagger.

The results from the excavation are suggestive of a broad Early Bronze Age date for the use of Cist 10. However, further scientific dating will be able to greatly refine this suggested date for the site and there will be the opportunity to undertaken the first Bayesian modelling of a moorland cist in south west England (see recommendations below).

Form of the monument

Cist 10 is, to date, the only example of a cist to have been recorded within a peat mound. Nonetheless, it falls within the broad spectrum of excavated cists that have been recorded across south west England. The discovery that the long axis of the cist was broadly northwest-southeast, conforms to 94% of all other recorded cists on Dartmoor (Butler 1997, 176). Likewise, the overall dimensions of the site are within the range of documented cists (Worth 1967, 173.4). However, the irregular shape of Cist 10 and use of small stones to form the sides of the structure is rather different from most other recorded Dartmoor cists. Typically, they are neatly built rectangular boxes or chests comprising a capstone supported by two long side stones and two shorter end stones. At a very small number of sites, there is a floor stone or paving (for example, Peter Tavy 39). A few sites have been found to be constructed from smaller stones, as for example at White Hill 4 and a handful of non-rectangular cists are also known (Butler 1997, 172). As will be discussed below, the final shape of the cist might in part have arisen through its situation within a peat mound.

Construction and context of Cist 10

The cist was set into a mound of peat. It may be noteworthy that Cist 10 occupies a similar topographical position to the Hangingstone barrow which is located at the northern end of the ridge. However, it is currently uncertain how high the mound stood above the surrounding moorland before the site was constructed; although it is now a prominent mound at the end of the ridge and may have stood out as a knoll in the Bronze Age.

It seems possible that prior to the construction of the cist the two hazel/birch/alder stakes were pushed into the peat to mark the site. A similar process of marking the site for burial has been suggested for other sites, as for example the grave of the Amesbury Archer, which had a stakehole in the bottom of it (Fitzpatrick 2011, 71).

As discussed above, a cut for the cist was not identified in the section, although it is perhaps unlikely that one would have been identifiable in the peat. It is, however, currently considered improbable that the cist was ever a free-standing structure. The side and end stones are unlikely to have provided any kind of long-term support for the capstone and the stones are likely to have collapsed long before a peat layer developed around it. The growth of the mound over time may also have destabilised a free-standing structure. It is therefore considered more likely that the stones were set around a cutting which had been made into the top of the peat accumulation. The difficulty in cutting a neat shape into the peat might also explain why the cist was less regular than those found in the mounds of barrows and cairns. By lining the side stones around the edge of the cut, with their tapering ends pointing down, the peat would have provided the stability needed to hold the cist together as a structure. However, the weight of the stones (including the large capstone B) and the periodic expansion of the mound would have led to some distortion over time, with some stones sinking deeper into the mound and others moving inwards. This is reflected in the final slightly contorted appearance of the cist and by the cracks in the peat beneath the large end stones C and E.

After the cist was constructed, the burial deposit and the accompanying items were placed inside it. As noted above, the assemblage of so many organic objects is exceptional and without parallel in a southern British context. Although pieces of hide,

wood and other organic remains have been recorded in northern Britain (for example, Noble and Brophy 2011) Early Bronze Age organic objects from burial sites in southern and south west Britain remain exceptional and are mostly inferred from the position of non organic item such as copper alloy pins (Burgess 1980, 1180-92) or documented from antiquarian excavations. In Devon, for example 'hair' was reported within the cist at Soussons Plantation south (Manaton 9) (Burnard 1903, 142; Butler 1997, 277) and 'oak and birch leaves' were recorded from beneath a cremation at the Huntshaw barrow (Doe 1875). However, fabrics and woven objects normally only survive as mineralised fragments where they have come into contact with copper alloy corrosion products (for example, Jones *et al* 2011) or as impressions in clay (for example, Dudley 1964). Indeed, the nearest comparable finds may turn out to be from bogs outside mainland Britain, such as the basketry recovered from Irish bogs (Raftery 1970), or the clothing from Danish bogs and log-coffin burials (Hald 1980). Indeed, it is possibly the Danish log-coffin burials, such as that from Borum Eshøj, which provide the nearest comparanda in terms of the range of organic materials, including hide, wood, leather and bark containers (Glob 1983, 40-2).

In addition to the exceptional preservation of the organic artefacts, the cist also contained the jet and amber bead necklace referred to above. The completeness of the necklace will need to be established; however, the number of beads in the necklace is unusual in southern Britain where incomplete composite necklaces (for example, Woodward 2000, 116-9; 2002) and single beads are more usually found (for example Jones 2005; Jones and Quinnell 2008). Neither of the necklaces from North Molton or Upton Pyne (Fox and Stone 1951; Fox 1969) has anywhere near the number of beads as the example from Cist 10. Many beads within southern British necklaces have been found to be very worn or re-bored (Woodward 2002; Woodward *et al* 2005) and it will be important to establish biography of the individual beads within the necklace, as well as their source. The presence of amber and shale suggests contacts with communities, at least as far away as Wessex, although it may be possible to refine this further through the analyses of the beads.

The preservation of the artefacts within Cist 10 is likely to have resulted from the cist being situated within the peat mound and through the placing or formation of a deposit of peat within it after the cremation and the artefacts had been placed inside it. At this point in time, it seems likely that the interior of the cist had been infilled with peat. This pattern of infilling is found at some other Dartmoor sites, as for example, at Chagford 4 (Worth 1897), where the interior of the cist had been filled with redeposited subsoil.

It is uncertain whether the peat above the capstone was placed upon the cist, or if it was left as an exposed feature and the peat had developed naturally over the site. Radiocarbon dating and micromorphological analyses of the soil above the cist might clarify this.

In summary, the excavation of Cist 10 has led to the recovery of unique archaeological deposits which are of national importance. It also highlights the potential for exceptional sites to survive in area of the high moor, where archaeological sites were not expected to exist.

The outline given above is of an interim nature and will be modified by subsequent stages of assessment and analyses. The following section will outline some of the areas for further assessment and analysis which are evident at the end of the archive stage.

6 Recommendations for analyses

The Whitehorse cist project involved the excavation of the first cist on Dartmoor in 100 years. As a result of the excavations, the project has provided the opportunity to answer environmental and archaeological questions which would not have been possible, even a generation ago.

It was anticipated that the investigations would result in the collection of an important assemblage of environmental samples which would provide material for radiocarbon

dating as well as information about past environments on the high moor. However, the investigations also generated a unique finds assemblage.

This section will therefore make some initial recommendations for further stages of assessment and analysis.

Artefactual analyses

If preliminary dating of the beads is correct then the cist is of Early Bronze Age date. Artefacts are rare from cists in the south west and the organic composition of the artefactual assemblage from the site is unique in southern England.

The study of the artefactual material will therefore form an important aspect of post-excavation analyses. It will enhance our understanding of the range of materials included with associated contexts which do not normally survive. It will greatly increase our knowledge of methods of manufacture of organic items (leather working, basketry, etc) and provide evidence for the biography of objects (for example, were the objects new or worn?). Analyses will also shed light on patterns of contact within and beyond the southwest region (for example, through the sourcing of the shale beads). The radiocarbon dating of samples from the organic artefacts will greatly assist with the development of a site narrative and an accurate chronology (see below).

Cremation analyses

The human remains from the cist represent the first to be recovered under controlled conditions from a Dartmoor cist. Through analyses of the human remains it should be possible to determine the composition of the burial. For example, there is the potential to find out whether the deposit represents a single individual, or is made up of several people. Dating of the remains would also shed light on the chronological relationships between the interred individual(s) and the other dated artefacts in the cist (see below).

Environmental analyses

Analysis of the environmental samples (plant macrofossil remains, testate amoebae, soil micromorphology and pollen) will contribute to an understanding of the changing local environment throughout the Neolithic and Bronze Age periods. In particular, work on the environmental samples has the potential to answer questions regarding the conditions around the site at the time the cist was constructed, and identify the factors which led to the preservation of the material within the cist. It will also provide useful comparanda with other sampled areas on the moor – including the work on Cut Hill. Radiocarbon dating of the environmental samples from below, within and above the cist will place tit within a longer chronological framework and help answer key questions relating to the development and formation of the peat mound around and above the cist (see below).

Radiocarbon dating

The organic material and the environmental samples have the potential to provide the first scientific dating from a Dartmoor cist. Radiocarbon dating will also provide close dates for rare organic artefact types and the necklace, which are lacking closely associated determinations. A wide range of material suitable for radiocarbon dating (for example, cremated human bone, the stakes, plant macros and pollen and organic artefacts) is available. From this information it should be possible to confirm and define distinctive chronological phases of activity and undertake the first Bayesian analyses of a site of this type in the southwest. From the material available it should be possible to date key horizons to answer the following questions:

- Development of the peat mound up to the construction of the cist (plant macros and pollen). How long did the mound take to develop prior to the construction of the cist – and was it a prominent feature? What were the environmental conditions at the time the cist was constructed?

- Marking out of the cist site (the two hazel/alder/birch stakes). At what point in time was the site marked by the stakes and how does this relate to the finds and burial horizon within the cist?

- The burial horizon (radiocarbon determinations on the cremated human bone). What is the date of the burials and is there evidence for the curation of bone, for example, if more than one individual is identified or the burial proves to be of a different date to the artefactual assemblage?

- The artefactual horizon (radiocarbon determinations on organic objects). How do the dates of the artefacts relate to the burial deposit and were the artefacts contemporary with the one another and the burial – were any of the objects heirlooms or were they made for the grave?

- The date of the peat immediately above the cist (plant macros and pollen). Did this deposit form naturally over time, or is there evidence that it was backfilled over the top of the capstone?

- The development of the mound around the cist (plant macros and pollen). How long did the mound continue to form around the cist after it had been constructed and how did the environmental conditions change over time?

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8 Project archive

The HE project number is **2011068**

The project's documentary, photographic and drawn archive is currently housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Field plans and copies of historic maps stored in an A2-size plastic envelope (GRE 752).
3. Electronic drawings stored in the directory R:\Historic Environment (CAD)\CAD Archive\Devon\Whitehorse Cist_2011068
4. Black and white photographs archived under the following index number: GBP 2217, 1-19
5. Digital photographs stored in the directory R:\Historic Environment (Images)\Sites Devon\Whitehorse Cist Excavation 2011068
6. English Heritage/ADS OASIS online reference: cornwall2-107036 (2)
7. This report text is held in digital form as: G:\CAU\HE Projects \Sites\Devon\Whitehorse cist excavation\Archive Report\Whitehorse Cist Archive Report.doc

Appendix A: Recorded contexts

Context Number	Type (**C**ut/ **D**eposit/ **B**uild)	Description
(1)	D	Upper section of the peat profile. A dark brownish black plastic peat up to 1m thick, shallower over the area beside cist 10. Very rooty in the upper part of the profile, less so at depth. Possibly the same as (6). Probably post dates the construction of cist 10.
(2)	D	Middle section of the peat profile to the north of cist 10. A dark blackish grey sticky peat 0.22m thick consisting of 30% roots. These roots are predominately of cotton-grass which would indicate wetter conditions at the time of peat growth (Ralph Fyffe pers comm). Same as (7). Probably contemporary with cist 10 construction.
(3)	D	Lower section of the peat profile. A mid brownish grey plastic peat 0.2m thick. Less rooty than (2) but consists of 10% roots, smaller than those in (2). Orthostats of cist 10 have been pressed into this layer.
(4)	D	Lowest section of the peat profile. A dark greyish brown plastic peat 0.25m thick. Some orthostats of cist 10 had penetrated this layer and had sunk into it.
(5)	D	Buried soil or 'growan' (decomposed granite) beneath the peat profile. A dark greyish black firm sandy loam up to 0.1m thick. Overlies and infills natural granite clitter (13).
(6)	D	Peat overlying cist 10. A dark brownish black friable peat 0.37m thick. It was unclear whether this was the same deposit as (1) but more friable and drier due to the better drainage afforded by cist 10 under it, or was looser as a result of disturbance caused by the construction of the cist. The former seems more likely.
(7)	D	Middle section of the peat profile to the south of cist 10. A dark blackish grey friable peat 0.42m thick consisting of 20% roots. Probably same as (2).
(8)	D	Fill within cist 10. A dark greyish black plastic peat 0.05m to 0.15m thick. Rooty at exposed section. Fill was removed in block on basal slab of cist 10 and taken to the Wiltshire Conservation Service laboratory at Chippenham. Finds include: shale and amber beads, burnt bone, hide/fur and other objects (see Appendix C below).
[9]	C	Cut for cist 10. Not visible in peat but should cut deposits (2) and (3).
10	B	Cist structure consisting of granite slabs oriented NW-SE. Orthostats surrounding basal stone supported a capstone. Extra stones had been used to level the capstone and to fill gaps in the perimeter. Several of the orthostats had sunk into layer (4) and cracks below the stones exposed in the section were observed. Increased drainage beneath these stones was accelerating sinkage. See Appendix B for a full catalogue of the stones.
(11)	D	Thin layer above the capstone of cist 10. A dark greyish brown plastic sandy peat 0.02m thick. Possibly a soil horizon formed after capstone was first laid or may represent the degradation of the granite surface below.
(12)	D	Thin deposit over layer (11). A dark greyish black plastic peat 0.01m thick.
(13)	D	Natural granite outcropping beneath the peat. Deposit (5) lies over and between these stones.

Appendix B: The stones

Stone	Type	Dimensions (length x width x depth in m)	Description	Photo
A	Misc	0.5 x 0.25 x 0.15	Fallen side stone on northern side	
B	Capstone	0.79 x 0.66 x 0.12	Roughly square	
C/F	Ortho	0.6 x 0.4 x 0.11	Orthostat at southern end, collapsing inwards. Originally identified as 2 stones. Probably sunk into layer (4) and peat below has cracked.	
D	Side	0.34 x 0.3 x 0.09	Side stone to west, lying prone, having fallen outwards. Originally thought to be the 'floor stone' Nearly square.	

Stone	Type	Dimensions (length x width x depth in m)	Description	Photo
E	Ortho	0.55 x 0.48 (tapering to 0.15) x 0.09	Orthostat at northern end tapers (like a tooth). Collapsed inwards. Probably sunk into layer (4) and peat below was cracked.	
G	Misc	0.56 x 0.25 (tapering to 0.1) x 0.14	Long tapering stone set on peat to the east of the cist. Probably sat on stones I and L as leveller and became loose when capstone slid following collapse of stone D. This is likely to have occurred prior to peat growth.	
H	Base	0.7 x 0.48 x 0.05	Basal stone. Removed with fill before measurements were made.	
I	Ortho	0.56 x 0.42 (tapering to 0.2) x 0.11	Orthostat on eastern side, sunk into peat.	

Stone	Type	Dimensions (length x width x depth in m)	Description	Photo
J	Misc	0.1 x 0.1 x 0.08	Small cube used to level and square SE corner of cist	
K	Misc	0.24 x 0.2 (tapering to 0.14) x 0.09	Small stone, probably used like stone J to level cist wall and capstone.	
L	Misc	0.38 x 0.3 x 0.13	Probably used to level cist and capstone in NE corner.	
M	Ortho	0.4 x 0.24 (tapering to 0.2) x 0.11	Rectangular stone in S end of cist, broadest end sat in peat.	

Stone	Type	Dimensions (length x width x depth in m)	Description	Photo
N	Ortho	0.56 x 0.27 (tapering to 0.2) x 0.07	Orthostat at S end of cist.	

Appendix C: Finds

Most of the artefacts from the site were not recorded from the onsite excavation but were instead uncovered during excavation of the contents of the cist at the Wiltshire Conservation Service laboratory in Chippenham. However, two objects (two hazel/alder/birch stakes) were recovered after the remainder of the cist had been dismantled.

Context (2)

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Organic				
1		1	Small find 1	
1		1	Small find 2	

SF1 hazel/alder/birch stake located to immediate east of cist. The stake was found lying prone within peat deposit (2). The stake measures approximately 0.53m long by 0.03m in diameter.

SF2 hazel/alder/birch stake located to immediate north of cist. The stake was found in an upright position within peat deposit (2). The stake measures approximately 0.4m long by 0.03m in diameter.

Finds catalogued at the Wiltshire Conservation Service laboratory in Chippenham

Finds recovered during the excavation of the cist in Chippenham include:

Cremated bone

At least 94 Shale and amber beads (88 shale beads and 6 of amber)

Woven wristband with applied decoration

Woven bag / container

Leather / textile item (bag?)

Animal hide / fur

Matted feature

Unidentified object (nut or seed? to be confirmed by environmental analysis)

Burnt textile fragment / textile impression (to be confirmed by textile specialist)

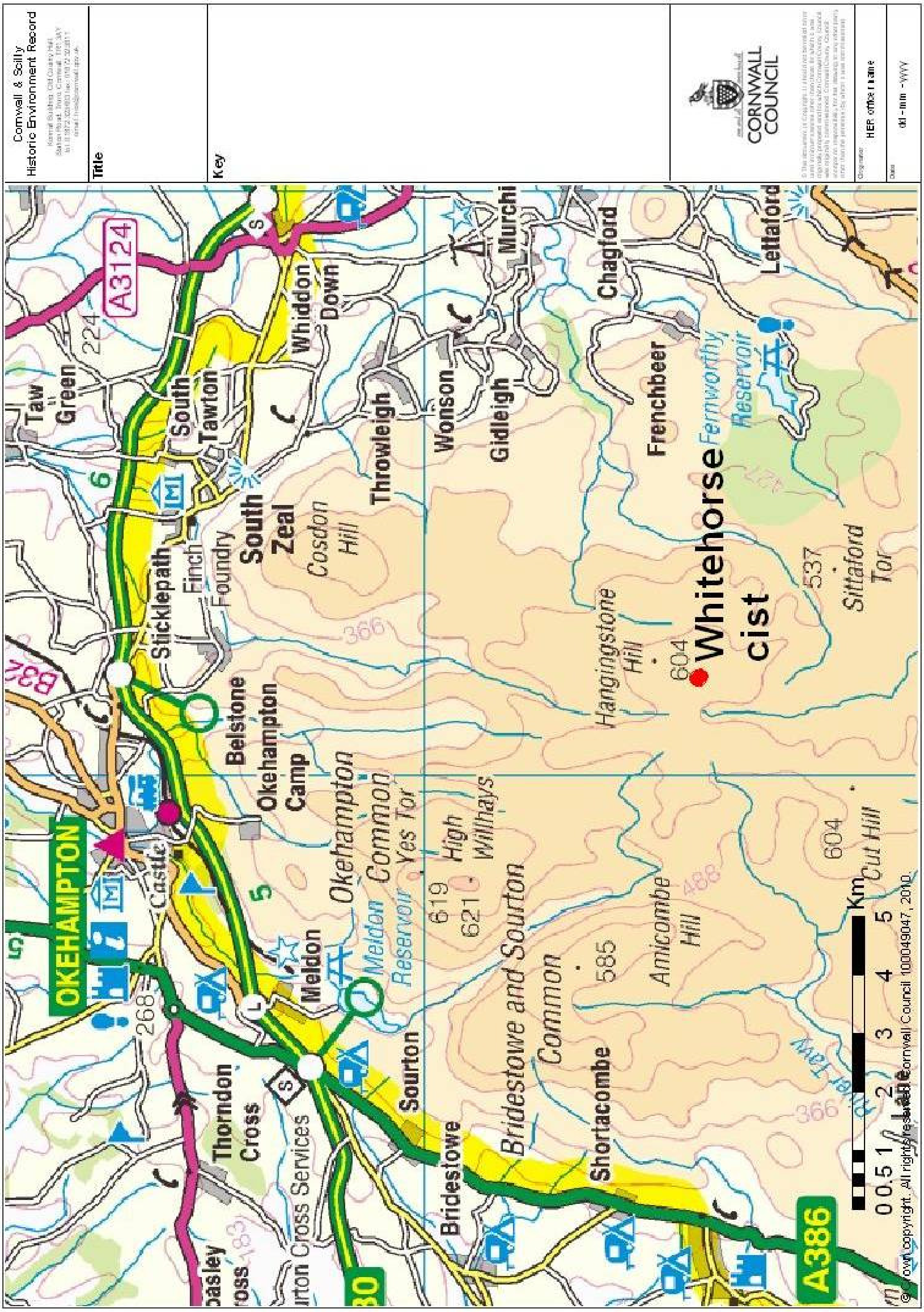
Cornwall & Scilly
Historic Environment Record
Title
Key
CORNWALL COUNCIL
HER office name
Whitehorse cist
OKEHAMPTON
A3124
A386
Taw Green
South Tawton
Whiddon Down
Sticklepath
South Zeal
Finch Foundry
Cosdon Hill
Throwleigh
Wonson
Gidleigh
Chagford
Murchington
Frenchbeer
Fernworthy Reservoir
Teignford
Belstone
Okehampton Camp
Okehampton Common
Yes Tor
High Willhays
Meldon
Meldon Reservoir
Sourton
Bridestowe
Bridestowe and Sourton Common
Shortacombe
Thorndon Cross
Sourton Cross Services
Hangingstone Hill
Sittaford Tor
Amicombe Hill
Cut Hill
River Taw
Castle
Km
0 0.5 1 2 3 4 5
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Fig 1 Map showing the location of the Whitehorse cist

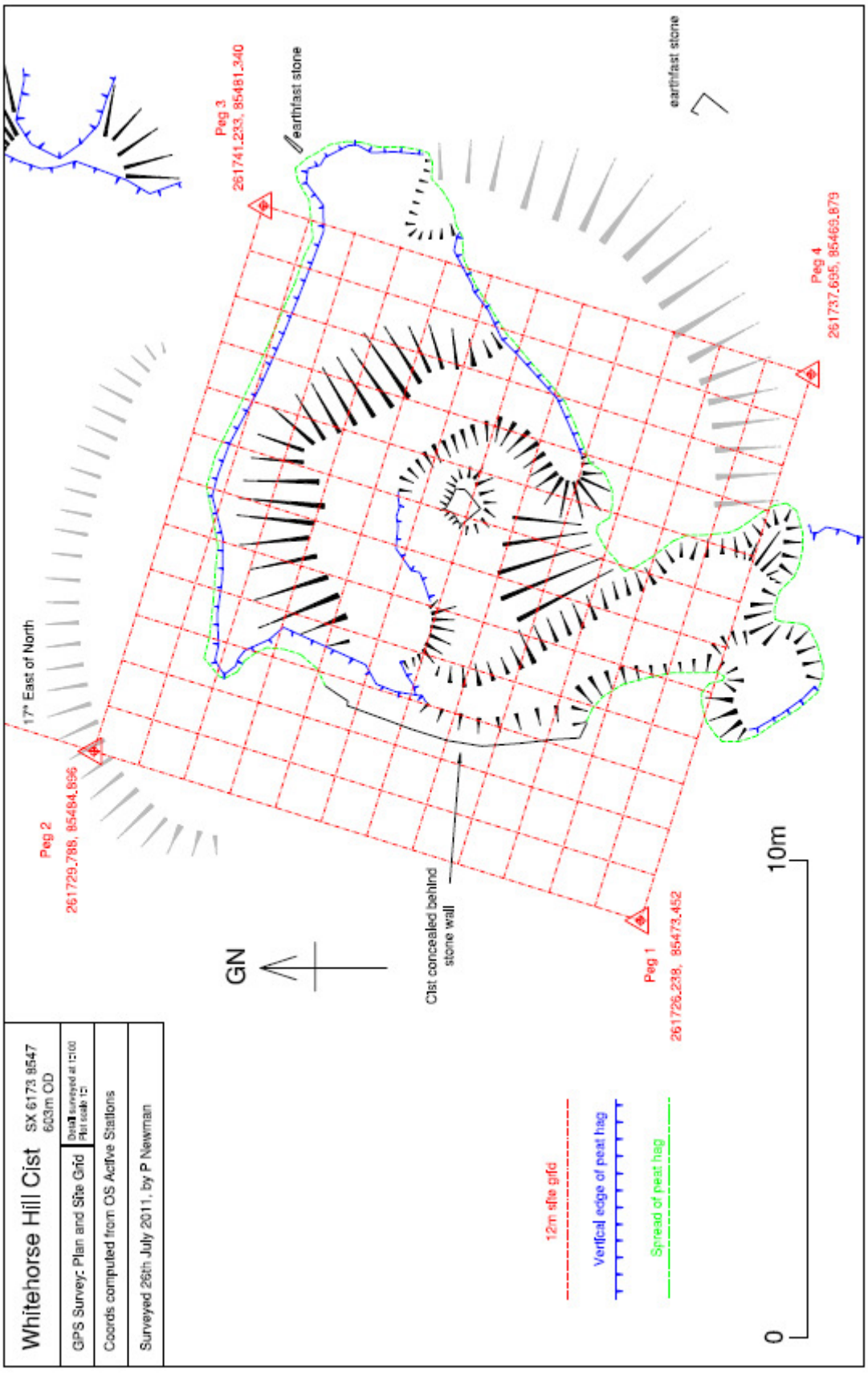

Fig 2 Pre-excavation plan of the Whitehorse cist showing the survey grid

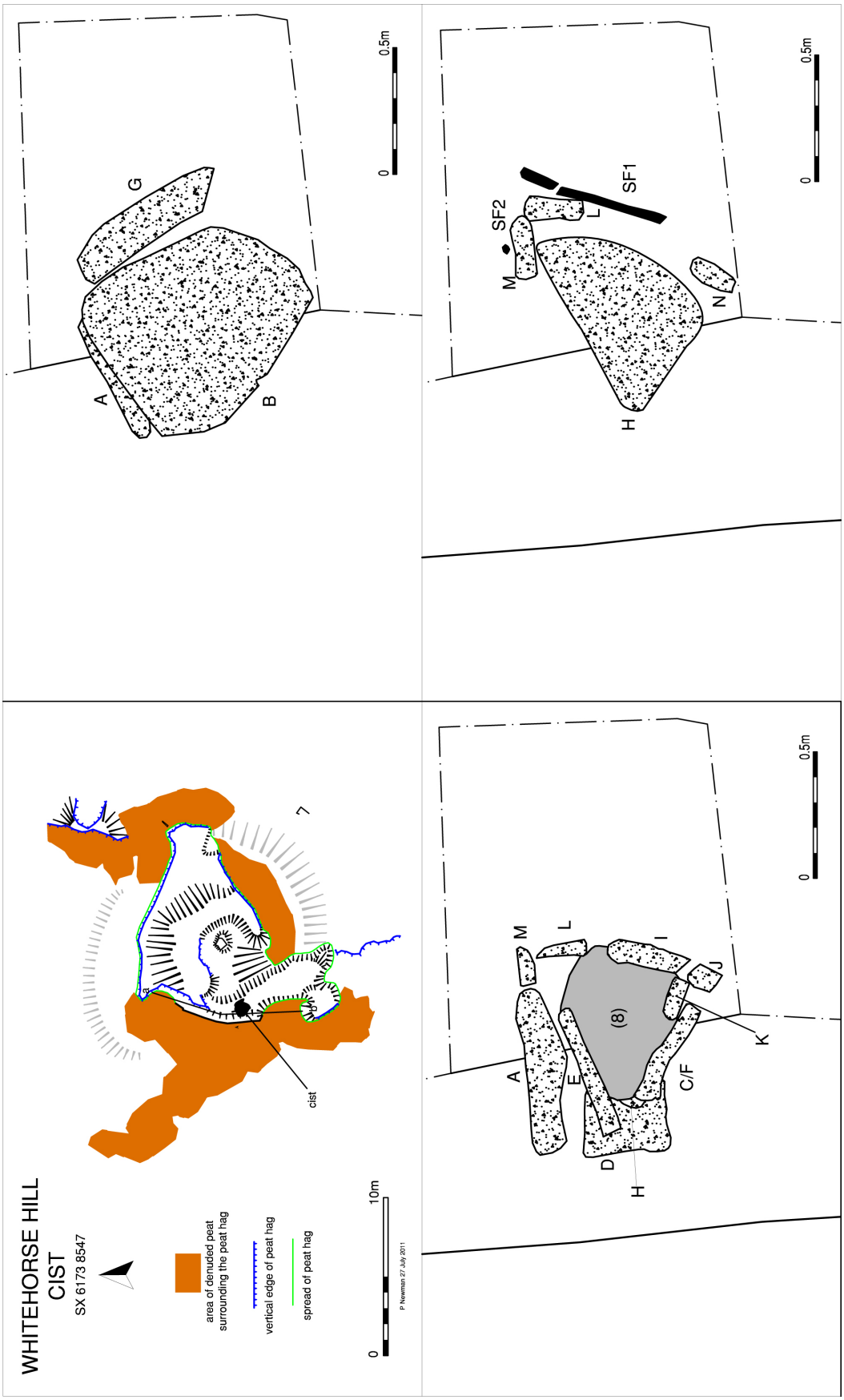

Fig 3 Plans of the Whitehorse cist during the excavation (bottom left- location of cist in mound, top left- top of cist with capstone in place, bottom right- cist with contents in situ, top right-cist after removal of contents, with small finds 1 and 2 showing).

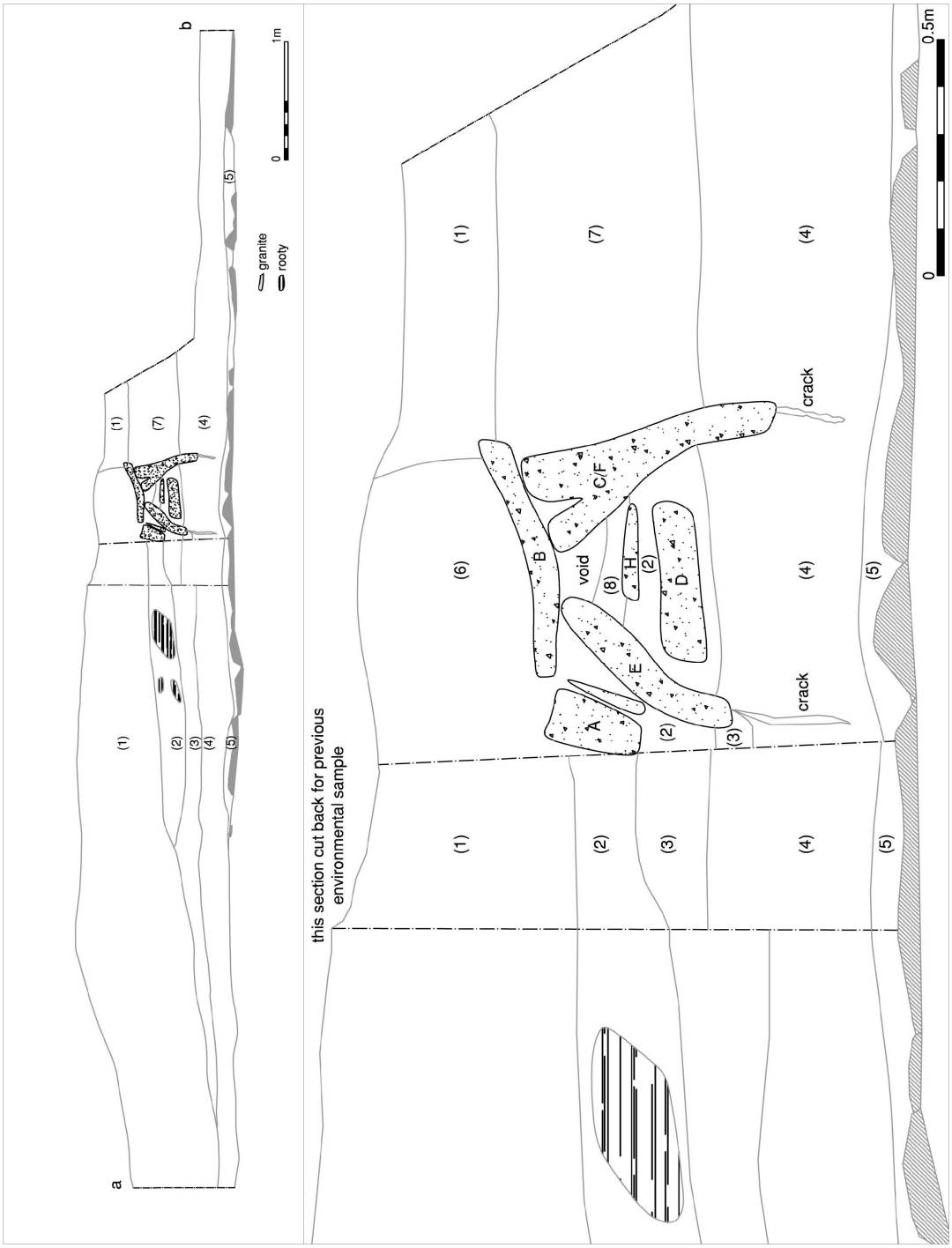

Fig 4 section through Whitehorse cist (left - long section through mound, right - detailed view of cist in section).

Fig 5 Photograph showing the east facing section through the peat mound and the cist

Fig 6 Photograph showing the cist in detail with the capstone exposed (note stone D, a collapsed side stone projecting out of the section – this was not as originally thought, the floor slab)

Fig 7 Photograph showing Cremated bone on fur / hide layer

Fig 8 Photograph showing woven object

Fig 9 Photograph showing woven band and beads

Fig 10 Photograph showing leather and textile object