Cotswold Archaeology

Community Excavation at Whiteways Plantation
Arundel
West Sussex

Archaeological Excavation

for
South Downs National Park Authority

CA Project: 770329
CA Report: 16336

July, 2016

Andover Cirencester Exeter Milton Keynes

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Document Control Grid						
Revision	Date	Author	Checked by	Status	Reasons for revision	Approved by
A	16 June 2016	Peter Busby		Internal review		
	04 July 2016		Richard Massey	Internal Review		KEW
	22 Aug 2016		Richard Massey	Internal Review	Final Draft	

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SUMMARY

Project Name:	Community Excavation at Whiteways Plantation
Location:	Arundel, West Sussex
NGR:	TQ 00076 10234
Type:	Excavation
Date:	18 April to 29 April 2016
Location of Archive:	To be deposited with Novium Museum, Chichester
Site Code:	SDNP 16
Accession No.	CHCDM 2016.12

An archaeological excavation was undertaken by Cotswold Archaeology in April 2016 at Whiteways Plantation, Arundel, West Sussex. The excavation area was located on the bank of an earthwork enclosure, on the southern side of the late prehistoric linear boundary known as the War Dyke entrenchment, and within Whiteways Plantation, Arundel, West Sussex (Figs. 1 ï 3).

The earliest feature identified was a 1.9m-wide, north/south-aligned, surfaced trackway, which was provisionally dated to the early Iron Age or Later Bronze Age period. This was overlain by a chalky-silt layer which appeared to have been deposited after the trackway went out of use. This was overlain in turn by an early ploughsoil, which was truncated on the west side by a later negative lynchet. The ploughsoil was undated, but clearly pre-dated the construction of the enclosure bank, and has been tentatively dated to the Early-Middle Iron Age. Directly above this was constructed a chalk enclosure bank of a univallate hilltop enclosure of suggested Middle to Late Iron Age date, which was located immediately to the south of the War Dyke. The bank was constructed of three distinct layers of chalky make-up, of which the bulk comprised a dump of flint-free chalk rubble excavated from the enclosure ditch to the west. A construction cut just the west of the surviving extent of the bank had been made through a natural subsoil, and contained two, irregularly-laid courses of nodular flints, which may represent the remains of an outer facing, or revetment, of the bank.

A ditch ran *c*. 2.75 west of the flint foundation, and parallel to the bank. This contained a sequence of weathering fills which were cut by a U-profiled re-cut, which contained a single, jumbled fill. This fill included a number of large flints which may have fallen from the

decayed bank revetment, and may indicate that the ditch was deliberately backfilled not long after the re-cut was made.

The remains of the bank, ditch and suggested revetment wall were overlain by a sequence of later cultivated soils, and the western face of the bank had been partly cut away by a negative field lynchet. This indicates a number of phases of cultivation across the site at some time after the final abandonment of the enclosure, possibly during the medieval and or post-medieval periods. The trench was sealed by a layer of decayed leaf litter to a depth of 0.11m, which represents a relatively recent phase of woodland establishment.

The enclosure bears some resemblance to a number of later prehistoric ditched hilltop enclosures on the South Downs, although the relatively modest dimensions of the earthworks suggest a function possibly related to livestock husbandry, rather than domestic occupation. The evidence suggests that, prior to its eventual abandonment, the enclosure may have been integrated into a re-ordered landscape, following the construction of the War Dyke, and the establishment of the neighbouring Oppidum in the late Iron Age period.

1. INTRODUCTION

1.1 In April, 2016, Cotswold Archaeology (CA) supported community archaeologists at the request of the South Downs National Park Authority (SDNPA), in the investigation of an earthwork bank which appeared to relate to a large enclosure located on the southern side of the War Dyke earthwork (centred at NGR: TQ 00076 10234: Figs. 1 and 2), within the broadleaf woodland of Whiteways Plantation. The bank and enclosure had been identified through the 2014 Lidar survey undertaken as part of the ñSecrets of the High Woodsòproject (Thorne and Bennett 2015).

1.2 The excavation was undertaken as part of the SDNP-hosted and Heritage Lottery-funded ôSecrets of the High Woodsô community project. This project is currently investigating over 305 km² of downland within the National Park in West Sussex and East Hampshire, using a combination of airborne laser scanning, field survey and archival research.

1.3 The excavation was undertaken in accordance with a detailed *Written Scheme of Investigation* (WSI) produced by CA (2016), and approved by the Chichester District archaeologist as archaeological advisor to the South Downs National Park Authority. The fieldwork stage of this project has followed the *Standard and Guidance: Archaeological Excavation* (CIfA 2014), the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* and accompanying *PPN3: Archaeological Excavation* (Historic England 2015). It was monitored by James Kenny, Chichester District Archaeologist, including a site visit made on April 28th, 2016.

The site

1.4 The excavation site is situated within an area of Whiteways Plantation, which is characterised by regenerated broadleaf woodland, and bordered by a wide forest ride and areas of clearance. The site lies at an elevation of approximately 140m AOD on the southern side of the War Dyke, just below the crest of the South Downs, and on a gentle, south-facing slope, with distant views of the sea (Figs. 1 and 3).

1.5 The Underlying Geology is recorded by the British Geological Survey as comprising Upper Chalk of the Seaford Formation, of the Cretaceous Period. No superficial

deposits are recorded (BGS 2016). The natural substrate encountered during the evaluation comprised flint-free, tabular chalk, consistent with the mapped deposits.

2. ARCHAEOLOGICAL BACKGROUND

2.1 Whiteways Plantation is situated within a complex and nationally-important archaeological landscape. The significance of this area was first recognised in 1918, when investigations by E. and C. Curwen (Curwen, 1920) first recorded an extensive network of well-preserved earthworks of principally later Iron Age and early Roman date within the woodlands of the Arundel estate.

2.2 The Curwens recorded an extensive series of earthworks within Rewell Wood and Rewell Hill, comprising linear boundaries, banks, ditches and pits. Three distinct earthwork groups were identified on south-facing slopes, with the earthworks at Dalesdown (the ónorth-eastern groupô), situated closest to the excavation site (Fig. 2). These earthworks comprise a series of boundary banks and trackways, which are suggested to define a late Iron Age Oppidum, or proto-urban settlement. In the absence of any large-scale excavation, the contemporaneity of the earthwork forms could not be confirmed, although it was suggested that the earthwork complex as a whole could have a relatively long developmental chronology. Linear boundaries on the top of the ridge, to the north, particularly the massive ówar Dykeô, were previously considered to represent ócovered waysô, but appear to be broadly contemporary with the oppidum complex to the south.

2.3 Excavations on Rewell Hill conducted by Hadrian Allcroft, in the following year (Allcroft 1920), were largely inconclusive. However, pottery recovered from the floor of a ditch was thought to be of Iron Age date and, in conclusion, the earthworks were thought to represent a considerable settlement of ónot later than the Roman Occupationô

2.4 More recent interest in the Rewell Hill/Whiteways Plantation area has included excavations to the south-west of the present site, at Goblestubbs Copse West, by Con Ainsworth, in 1972 (Ainsworth unpubl. doc.). The Ordnance Survey has also mapped a number of these earthworks, and has raised an alternative possibility that some features could represent hunting lodges, or aspects of stock/deer management within the medieval Forest of Arundel.

2.5 Recent work by David McOmish and the Worthing Archaeological Society has re-established a probable Late Iron Age and Early Roman date for the earthworks in this area (McOmish and Hayden 2013). Excavations at the easternmost of the enclosures at Goblestubbs Copse have located evidence of early-mid first century AD activity (McOmish and Hayden, forthcoming). Taken as a whole, the groups of enclosures are suggested to resemble ósub-oppidaô, representing Late Iron Age/ Early Roman concentrations of settlement, industrial and ritual activity. This agglomeration of settlement and associated activity appears to be contained within a massive enclave on the western banks of the River Arun, of which the War Dyke, and a southern extension, possibly represent defining boundaries.

2.6 A number of these enclosures are designated as Scheduled Monuments, reflecting their national importance. The proposed excavation site is located close to two scheduled areas. Scheduled Monument ref 1005893 refers to the enclosures and tracks first investigated by the Curwens, in Dalesdown Wood (Curwen 1920). Scheduled Monument ref 1002983 refers to the War Dyke entrenchment in Whiteways Plantation and South Wood. This massive earthwork extends from the River Arun along the top of the north-facing ridge to the west. While situated closely adjacent to the proposed excavation area, neither Scheduled Monument extends within it (Fig. 2).

2.7 The excavation was targeted on an earthwork enclosure, which appears to intersect with the course of the War Dyke earthwork. Elements of the enclosure bank were originally thought to represent a ódeterraced wayô, or cross-ridge dyke (as referenced in HER record MWS2788). However, this feature was subsequently reinterpreted by David McOmish, in 2006, as a previously unrecognised hilltop enclosure, and possibly associated with the adjacent War Dyke earthwork to the north (HER MWS8044) or, conversely, part of an earlier monument. The Lidar survey data depict a hilltop enclosure, with curvilinear boundaries to the south and east (intersected by the A284), and with a straight alignment defining the western boundary (Fig. 2, Chart 1).

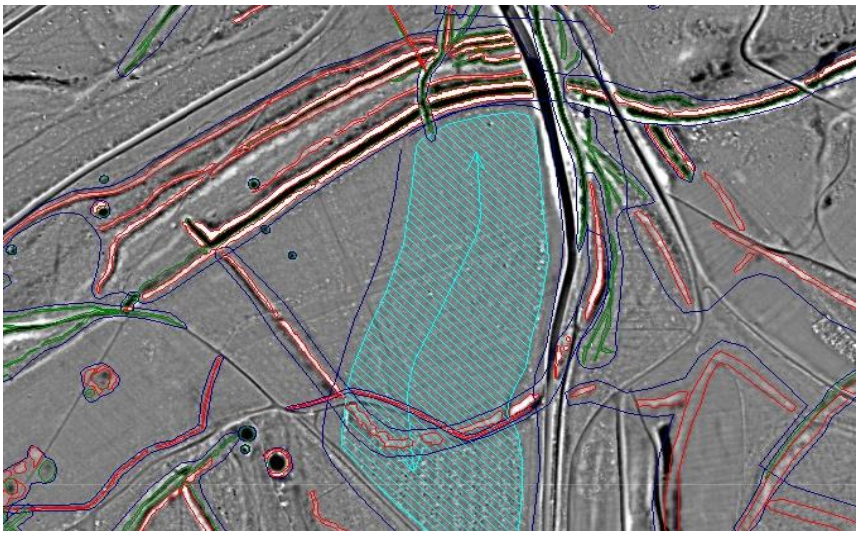

Chart 1. Mapped earthwork features in and around Whiteways Plantation and Rewell Hill, showing the location of the War Dyke and the suggested earthwork enclosure immediately to the south (SDNPA)

2.8 The National Mapping Record (NMP) (CMS 201952) for this monument contains the following information:

The earthworks remains of a possible later prehistoric enclosure can be seen on LiDAR imagery. This enclosure is situated within Whiteways Plantation, and consists of fragmentary earthworks that together may form the western, southern and eastern sides of an enclosure; the northern side is formed by the Iron Age War Dyke, and together these earthworks define an area of c.380m by 360m. Earthwork survival varies, and the southern side is low and fragmentary, while much of the western side is well preserved. The A284 and hollow ways run along the eastern side, but a north-south bank may be part of the same enclosure. It is even less clear if the faint and fragmented earthworks between the road and one of these hollow ways are the remains of this enclosure bank.

3. AIMS AND OBJECTIVES

3.1 The objectives of the archaeological mitigation were to:

- assess the overall presence, survival and potential of earthwork and buried archaeological features, and artefactual and ecofactual remains;
- to achieve the above as part of a community excavation, and to provide training to project volunteers in excavation methodologies, archaeological recording and finds analysis;
- to provide information which can be used to develop best-practice guidelines for the future management of this form of archaeological resource;
- to engage the public, and promote the work of the SHW project and the South Downs National Park in accordance with the following purposes of the SDNP Authority:
    - *Purpose 1: To conserve and enhance the natural beauty, wildlife and cultural heritage of the area.*
    - *Purpose 2: To promote opportunities for the understanding and enjoyment of the special qualities of the National Park by the public.*

3.2 The specific aims of this excavation were to:

- record any evidence of past settlement or other land use;
- recover artefactual and biological evidence to date, and characterise any evidence of past settlement or other activity that may be identified;
- sample and analyse environmental remains to create a better understanding of past land use and economy; and
- to confirm the existence of the hilltop enclosure identified by Lidar survey, and to assess this monument within the context of the adjacent War Dyke earthwork, and remains at Dalesdown and Rewell Hill.

4. METHODOLOGY

4.1 The fieldwork followed the methodology set out within the WSI (CA 2016). The location of the excavation area was agreed with James Kenny (Chichester DC) and Alice Thorne (South Downs National Park Authority). An excavation area measuring 30m by 2m was set out on OS National Grid (NGR) co-ordinates, using Leica GPS and surveyed in accordance with CA Technical Manual 4: *Survey Manual*. The excavation area was scanned for live services by trained CA staff using CAT and Genny equipment in accordance with the CA *Safe System of Work for avoiding*

underground services. The location of the trench in relation to modern mapping data is shown in Figure 2.

4.2 Fieldwork commenced with the removal, by hand, of topsoil and leaf litter within the excavation area, to reveal the underlying subsoil.

4.3 The archaeological features thus exposed were hand-excavated to the bottom of archaeological stratigraphy. This included a full section of the earthwork bank and accumulated soils on the east side, together with the ditch to the west. All features were planned and recorded in accordance with CA Technical Manual 1: *Fieldwork Recording Manual*.

4.4 Deposits were assessed for their environmental potential, and five deposits considered to have potential for characterising the earlier phases of activity were sampled in accordance with CA Technical Manual 2: *The Taking and Processing of Environmental and Other Samples from Archaeological Sites*.

4.5 All artefacts recovered from the excavation were retained in accordance with CA Technical Manual 3: *Treatment of finds immediately after excavation*.

5. RESULTS (FIGS 4–13)

5.1 This section provides an overview of the excavation results; detailed summaries of the contexts, finds and environmental samples (biological evidence) are to be found in Appendices A ï E of this report.

5.2 The dating evidence suggests that the majority of archaeological activity on site dates to the Middle Iron Age period. The very limited quantity and range of recovered artefacts, together with their relatively undiagnostic and frequently residual nature, has greatly limited the scope for spot dating. However, stratigraphic analysis of recorded features and deposits has enabled five broad phases of activity to be identified:

- Phase 0: Geology
- Phase 1: Late Prehistoric: (?)Late Bronze Age/Early Iron Age

- Phase 2: Early/Middle Iron Age (?)
- Phase 3: Middle/Late Iron Age: Cultivation
- Phase 4: Post- abandonment cultivation
- Phase 5: Post-medieval/Modern plantation and woodland

Phase 1; Late Bronze Age/Early Iron Age (?)

The Trackway

5.4 The earliest feature identified was a 1.4m length of north/south-aligned surfaced trackway, 139, which was exposed under the enclosure bank (Figs. 4 and 8). It comprised a flat-bottomed feature, with moderately sloping sides, which had been cut through the natural subsoil, 131, and into the surface of the chalk, 122. It was *c*.1.9m wide, by 0.2m deep, and contained a 0.04m-thick metalled surface, 138, which covered the base of the cut. The surface was constructed of small chalk fragments and angular flint pebbles which had been compacted into the underlying chalk to form a very hard, level surface. Overlying this surface was a dark-brown, chalky-silt clay fill, 137, of 0.13m depth (Fig. 4). This appears to have been deposited after the track went out of use. This was sealed in turn by the cultivated soil 136 (see below).

Phase 2; Early /Middle Iron Age

Cultivation

5.5 Underlying the enclosure bank was a 0.28m-deep layer of cultivated soil, 136 (Figs. 4 and 8). It comprised a mixed, dark-brown silt clay, with a 25% inclusion of fine, rounded chalk fragments. This layer merged with the later cultivated soil, 113, to the east of the bank, and had been truncated by the negative plough lynchet 142, to the west. The mixed nature of the deposit, together with the rounded nature of its inclusions and the flat, well-defined nature of the lower deposit boundary, all indicated that this was a ploughsoil deposit.

Phase 3; Middle/Late Iron Age

The Enclosure

5.6 The earthwork enclosure bank targeted by the excavation was revealed by Lidar survey to have a curvilinear form on its south and east sides, with a straight alignment defining its western boundary (Chart 1, Fig.2). The fourth, northern side is represented by the ditch of the War Dyke, thus defining a total internal area measuring *c*.380m by 360m. The western enclosure boundary investigated by this excavation survives as a slight earthwork bank on its eastern side, but dramatically falls away to lower ground on its western side (Fig. 5), with a pronounced scarp of *c*. 2m in height.

5.7 Excavation demonstrated that the north-west/south-east-aligned bank, which had been constructed of largely flint-free chalk, had been constructed directly on the surface of the cultivated soil 136 (Figs. 4 and 8). Its eastern side was sealed below the later ploughsoils 113, 114 and 115, and its western face had been truncated by the negative lynchet 142. It was 4.45m wide at its base, and survived to a height of 0.92m, and had been constructed of three distinct layers of chalky material, which extended across the whole excavated section of the bank (Fig. 4). The earliest, 135, comprised a brown, redeposited subsoil, which directly overlay ploughsoil 136, towards the eastern limits of the bank. This was overlain by the bulk of the bank, comprising layer 134, which consisted of small angular, excavated chalk rubble and gravel.

5.8 Overlying this, on the western face of the bank, was a *c*. 0.15m-deep, firm layer of angular chalk cobbles, 133, which appeared to form the western face of the bank (Fig. 6). Just to the west, and parallel to the surviving extent of the bank, was construction cut 141. This comprised a flat, 1.1m-wide ledge, which was cut through the natural subsoil 131 into the natural chalk, 122. Only the moderately-sloping eastern side was present. Intentionally placed on the floor of this cut was a deposit of nodular flints, 140, consisting of closely-backed, angular nodules laid in two irregular courses, and measuring 0.65m long by 0.25m wide and 0.1m deep (Figs. 5, 6 and 7). This structure was interpreted as a possible wall or revetment foundation (Fig. 4, Plan). Between the flints and the sides of the cut, was a light-brown, silt clay fill, 108. Both the cut and the suggested wall had clearly been heavily truncated by lynchet 142.

Ditch 130

5.9 The north-west/south-east aligned ditch, 130, was located *c*.2.75m west of the surviving extent of wall foundation 140, and appeared to run directly parallel to the bank (Figs. 5, 7 and 10). Its profile suggested that it had suffered minimal truncation

from the subsequent cultivation of the area (Fig. 5). In section, it was 3.35m wide, by 1.15m deep. The ditch was highly asymmetrical in section, with the eastern side sloping moderately down to a flat base. On the western side of the excavation trench, a vertically-sided cut was visible.

5.10 Ditch 130 contained three, chalk-rich primary fills, 127, 128 and 129, which were probably derived from the weathering of the sides of the original cut (Fig. 5). These deposits were subsequently cut by a 'U'-shaped re-cut, 126. This re-cut had moderately sloping sides and a flat base, and was 1.56m wide by 0.56m deep. It contained a single fill, 125, which consisted of mixed, light-grey/brown silt clay, with a 33% inclusion of flint nodules. This was one of the very few deposits containing flints to be identified during the excavation. The jumbled nature of this fill suggested that it may represent a dumped deposit, and the lack of any primary deposit suggested that backfilling occurred shortly after the ditch was re-cut.

5.11 Sealing fill 125 was a 0.12m-deep, dark-brown silt clay fill, 124, with a 15% inclusion of chalk gravel and 1% of flints (Figs. 5 and 7). This layer had notably fewer inclusions, and was darker that the other deposits within Ditch 130. This suggested that it formed more gradually, in a stable environment, and may therefore represent a relict topsoil.

Phase 4; Post-abandonment cultivation

5.12 Sealing the bank on its eastern side, was a 0.33m-deep, dark grey/brown silt clay deposit, 114/115 (Figs. 4, 8 and 13). Overlying this layer, and extending beyond the eastern limits of the trench, was the 0.22m-deep, yellow-brown silt clay layer 113. Both layers contained a 50% inclusion of rounded chalk fragments which, along with their mixed natures, suggested that they were both cultivated soils. Sealing 113 was a 0.18m-deep, very similar, but darker, cultivated soil, 106.

5.13 To the west of the bank was a 0.4m-deep layer of cultivated soil 102/104. It was identical to 106, but filled the negative lynchet 142 (Fig. 5). This lynchet cut the western face of the bank, resulting in its steep profile on this side. A number of large flint nodules were recorded within the lynchet, against the base of the bank.

5.14 The limited artefactual evidence recovered, and its residual nature, offers no confirmed date-range for the later cultivation across the site. Nor is there any indication of whether such cultivation was episodic or continuous. The very small assemblage of Roman pottery, including from the upper fills of Ditch 126, suggests

that cultivation occurred during this period, possibly followed by a period of abandonment and woodland regression.

Phase 5; Post-medieval/Modern plantation and woodland

5.15 Sealing the whole trench, was a 0.11m-deep, dark-brown layer of decayed leaf litter, 101/103/105, which forms the modern woodland floor (Figs. 5 and 11). This indicated a well-established phase of woodland regression, most probably since the post-medieval period.

6. THE FINDS

6.1 Finds recovered are listed in Table 1, below. Details relating to the pottery assemblage are to be found in Table 5, Appendix B, of this report.

Table 1: Quantification of Finds

Type	Category	Count	Weight (g)
Pottery	Late prehistoric	21	165
	Roman	8	55
	Post-Med/Modern	4	33
	Total	*33*	*253*
Worked flint		38	772
Burnt flint		10	298
Metalwork	Fe other	1	n/w
Glass	Bottle	2	123
Ceramic Building Material		4	n/w

The Artefactual Assemblage

6.2 The artefactual assemblage is very limited, both in the quantity and range of material recovered. The lithic assemblage is small and largely residual in character, and includes a large component of waste flakes and re-used items of predominantly Bronze Age type. The small pottery assemblage comprises mostly flint-tempered material of locally typical late prehistoric type, much of which can be assigned to a Mid to Late Iron Age date. Much of the very small collection of diagnostically Roman fabrics can only be broadly dated within this period, and at least some of this material could possibly derive from manure scatter or wider taphonomic spread from nearby settlement. At least some items of recognisably 'transitional' type may reflect activity associated with the neighbouring Late Iron Age/Early Roman settlement associated with the suggested Oppidum.

Lithics by Jacky Sommerville

Introduction and methodology

6.3 A total of 38 worked flints (772g), and 10 pieces of burnt, unworked flint (298g), was hand-recovered from the excavation of 11 deposits. Lithics were recorded according to broad artefact/debitage type, and were catalogued directly onto a Microsoft Excel spreadsheet. The attributes recorded included colour, cortex description (the outer óskinô on a flint nodule or pebble), degree of edge-damage (micro-flaking), rolling (abrasion), breakage, burning and recortication. The latter is apparent as a white or blueish surface discoloration resulting from chemical change within the burial environment (Shepherd 1972, 109). For debitage (unretouched flakes and blades), butt and termination type were also recorded, unless breakage precluded this.

Raw material, provenance and condition

6.4 The raw material comprised flint in all cases. Cortex remained on 33 items, and was chalky on 31 (94%), indicating the exploitation of mainly primary sources, presumably the local chalk. On two items (6%), the outer surface consisted of previously worked and recorticated surfaces, thus indicating the órecyclingô of flint tools from earlier periods. This pattern of re-use is most typical of the Bronze Age period (Edmonds 1995, 175ï 6). Only two flints did not feature a white colouration due to recortication, and these were brown in colour.

6.5 Two-thirds of the assemblage (66%) was retrieved from secondary contexts, comprising topsoil 105 and the relict ploughsoils 102, 104, 106, 136, the trackway 139, and the flint revetment construction cut 141. The remainder was recovered from ditch fills and a dump layer. Two of the worked flints (5%) had also been burnt, and 10 (26%) were in broken condition. Overall, 58% of the lithics recovered displayed heavy to moderate edge-damage, and 37% heavy to moderate rolling. The lithics from the cut features were not in recognisably better condition than those recovered from topsoil or relict ploughsoils. A degree of recortication was noted on all but two (95%) of the flints.

Range and variety

Primary technology

6.6 Debitage totalled 34 items, including three pieces of shatter, and 31 flakes. The termination was present on 22 flakes, which were either feathered (73%) or hinged (27%). A high proportion of hinge fractures (as seen here) is a typical feature of

Bronze Age assemblages (Ford *et al.* 1984, 163), and results from the poorly-controlled knapping which is characteristic of this period (Whittaker 1994, 109). Butt types were mostly plain (64%), or cortical (29%). Clear indications of Mesolithic or Early Neolithic technology were absent, such as blades, linear or punctiform butt types and evidence of soft-hammer percussion, or preparation of the striking platform. However, the recovered lithic items are too few in number to preclude the possibility of earlier material being represented within the assemblage.

6.7 Two cores were retrieved, plus one core fragment. The complete example from fill 128, of ditch 130, is a fully exhausted flake core, with at least four platforms. That from topsoil 105 has only one clear platform, with two flake scars. There is a flaw running across this piece of flint, which is likely to have prevented further knapping.

Secondary technology

6.8 The only retouched tool is an end scraper from fill 137 of the trackway 139. It was made on a squarish secondary flake, with regular, neat, semi-abrupt retouch along the distal dorsal edge. It can only be broadly dated to the prehistoric period.

Discussion

6.9 The assemblage from Whiteways Plantation, Arundel is very small, and at least 66% of this material is known to have been redeposited. The lithic items appear unlikely to include diagnostic types of Later Neolithic or Bronze Age date, although some inclusion of earlier prehistoric material remains possible.

Pottery by E.R. McSloy

6.10 A small pottery assemblage was hand-recovered from 10 deposits, which in total amounted to just 34 sherds (257g). The majority of this material, some 20 sherds of Iron Age, Roman and post-medieval date, was derived from topsoil or ódelict ploughsoilô type deposits. The remaining portion, which consists of Iron Age and Roman sherds, relates to the fills of ditch 126, trackway 139, óconstruction trenchô 108, and dumped deposit 135. A quantification of the pottery assemblage is provided in Table 5, Appendix B, of this report.

6.11 The pottery has been fully recorded. Quantification has included sherd count and weight by fabric and rim EVEs. Vessel forms, where identifiable, sherd thickness

range and evidence for use (residues) were also recorded. Fabric codings used for recording are listed in Appendix B, which also includes fabric descriptions and summary quantification.

6.12 The pottery assemblage is well fragmented, and this reflected in a low sherd weight (7.6g). Surface loss was a feature of most sherds from topsoil-type deposits, and was particularly marked amongst the Roman material. The large majority of this group consists of unfeatured bodysherds, a factor which makes any refinement of chronology difficult. The dating, as set out below, has for the most part been undertaken by reference to pottery fabrics and firing characteristics, and is necessarily broad in its attribution.

Late Prehistoric (Iron Age)

6.13 A total of 21 sherds (165g) are attributable to this period, with the majority seemingly re-deposited within topsoil or relict ploughsoil deposits (Table 5, Appendix B). Two features, Ditch 126 (fill 125) and Trackway 139 (fill 137) produced material exclusively of this period.

6.14 The larger part of the assemblage comprises bodysherds in handmade flint-tempered (16 sherds) or quartz-tempered fabrics (5 sherds). The use of burnt and crushed flint fillers is representative of a persistent tradition in southern-central Britain, which has been recognised from the Neolithic through to the early Roman period. The generally well-sorted, reduced-fired flinted types which characterise this small group (Appendix B) suggest a broad, later prehistoric (probably Iron Age) or early Roman date-range, which is supported by the small number of featured sherds (below). Handmade quartz sand-tempered fabrics appear to be a more distinctly Iron Age phenomenon in the region, and there is some evidence for their increasing use in the Middle and later Iron Age.

6.15 Rim sherds, both in flint-tempered fabrics, were recorded from two deposits; relict ploughsoil 104 and ditch fill 125 (fill of ditch re-cut 126). That from deposit 104 comes from a neckless vessel with a simple (rounded) rim, probably a jar of barrel-shaped or ovoid form. That from ditch fill 125 is also probably a jar of neckless form, but with a pronounced, beaded rim. Both forms are characteristic of the (Middle and Late) Iron Age, with the beaded rim particularly common to the Late Iron Age/Early Roman transitional period.

Roman

6.16 A total of 8 sherds (55g) dates to this period, most of which were re-deposited in topsoil or within relict ploughsoil deposits. In addition, single Roman sherds were recorded from the uppermost fill of Ditch 126 (deposit 123), and from construction cut 141 (fill 108).

6.17 One sherd, from topsoil 105, which occurs in a fine, grog-tempered fabric (GR1), is included among the õRomanô group, although this type spans the Late Iron Age/Early Roman transition of the early and mid-1st century AD. The remainder comprises almost exclusively body sherds in reduced sandy fabrics, probably of local derivation (Table 5, Appendix B), and for which only broad dating is possible. One sherd from topsoil deposit 105, in a dark-firing fabric GW2, exhibits decoration in the form of a burnished lattice motif. The single recorded rim sherd, from ditch fill 123 (fill of feature 126), probably comes from a large jar in a probable Rowlands Castle fabric, GW4.

Post-medieval/modern

6.18 Four sherds (33g) were dateable to the post-medieval, or later, periods. A small sherd in a fine redware fabric, with clear lead glaze, from relict ploughsoil deposit 103, probably dates to the 18th or early 19th century. The remainder come from topsoil 101, and comprises joining sherds from a small porcelain bowl with a brown transfer-printed design. This vessel probably dates to the second half of the 19th century.

Fabric codes/descriptions

6.19 F1 Dark-grey throughout; soft, with irreg. fracture and harsh feel. Contains common, moderately-sorted flint (1-2mm). *Total*: 14 sherds (73g).

F2 Dark-grey throughout; soft, with irreg. fracture and harsh feel. Contains abundant, well-sorted flint (1-1.5mm). *Total*: 1 sherd (11g).

F3 Dark grey throughout; soft with irreg. fracture, and harsh feel. Contains abundant well-sorted, fine flint (<1mm). *Total*: 1 sherd (15g).

GR1 Grey throughout; soft with irreg fracture and soapy feel. Contains common, well-sorted dark grey grog (0.5-1mm). *Total*: 1 sherd (4g).

Q1 Dark-grey throughout. Hard with finely-irreg facture and sandy feel. Contains common mod-sorted, sub-rounded quartz sand (0.3-0.4mm). *Total*: 3 sherds (39g).

Q2 Brown surfaces and grey core. Hard, with irregular fracture and harsh feel.

Contains common quartz/glauconite sand (0.3-0.4mm). *Total*: 1 sherd (15g).

QF1 Dark-grey throughout. Hard, with finely-irreg facture and sandy feel. Contains common, mod-sorted, sub-rounded quartz 0.3-0.4mm), and sparse flint (1-2mm). *Total*: 1 sherd (12g).

GW1 Grey throughout. Soft, with sandy feel/finely irreg. fract. Abundant, fine quartz sand (<0.3mm). *Total*: 1 sherd (4g).

GW2 Dark-grey throughout. Soft, with finely irreg. fracture and sl sandy feel. Contains common fine quartz sand (<0.3mm). *Total*: 4 sherds (40g).

GW3 Grey throughout. Soft, with sandy feel/finely irreg. fract. Abundant fine quartz sand (<0.3mm) and common angular, dark grey inclusions. *Total*: 1 sherd (4g).

GW4 Grey throughout. Hard, with sandy feel and finely irreg. fracture. Abundant medium quartz sand (0.3-0.4mm) and common flint (1mm). Rowlands Castle? *Total*: 1 sherd (3g).

OX1 Orange throughout. Soft, with sandy feel and finely irreg. fracture. Abundant quartz sand (<0.3mm). *Total*: 1 sherd (4g).

PMGRE Orange throughout. Hard, dense fabric, with fine fracture and smooth feel. Abundant fine quartz sand. Clear (orange) lead glaze. *Total*: 1 sherd (2g).

PORC modern English porcelain. *Total*: 3 sherds (31g).

Ceramic building material by Katie Marsden

6.20 Five fragments of ceramic building material were recorded from four deposits. Flat tile of probable post-medieval date, in a hard, sandy fabric, was recorded from topsoil layers 101 and 105, and relict ploughsoil 106. A softer, paler fabric was recorded from relict ploughsoil 102, with visible quartz inclusions.

Glass by Katie Marsden

6.21 Two fragments of post-medieval glass (123g) were recorded from relict ploughsoil 106. The base-fragment of a green-coloured, mould-made cylindrical bottle is embossed B[RIS]TOL P&R. This is the manufacturerôs mark for the company Powell and Ricketts, between 1858 and 1923 (Jones 1986). The second fragment is likely to be from the same vessel.

Metalwork finds by Katie Marsden

6.22 One metal item, an iron ox-shoe, was recovered from topsoil deposit 105. Eight shoes were required per animal (two per hoof), each attached by iron nails. One

complete nail survives with the shoe. Ox-shoes have a long period of use from at least the late 14th century, being mentioned in bailiff accounts in the time of Richard II (Goodall, 2011). They remained in use on the South Downs at least into the late 19th century, and a last team of working oxen were recorded as working until 1964, at Cirencester Park, Gloucestershire (Collins 2010).

7. THE BIOLOGICAL EVIDENCE

7.1 Biological evidence recovered is listed in the table below. Details of faunal remains, molluscs and pollen evidence are to be found in Appendices C ï E of this report.

Table 2: Quantification of Biological Evidence

Type	Category	Count
Animal Bone	Fragments (ID to species)	**17**
Samples	Environmental	**8**

7.2 The shallow, open character of chalk downland soils indicates little potential for the survival of organic remains, and in no case did deposits contain identifiable plant macrofossil or charcoal evidence. Levels of pollen survival also proved to be too poor to permit any effective palynological interpretation (Appendix E). The eight samples taken from the excavation were, however, assessed for snail evidence, which provided significant evidence of long-term changes in land use (Appendix D).

Animal Bone *by Andrew Clarke*

7.3 A small assemblage of animal bone, comprising only 17 fragments (86g), was hand-recovered from nine deposits. The results of the animal bone assessment are summarised in Table 6, Appendix C, of this report. Seven of the recovered fragments came from construction trench fill 108, ditch fill 128 and trackway fill 137, with the remaining ten fragments from topsoil and relict ploughsoil-type deposits. The bone was very poorly preserved, displaying surface erosion due to exposure to the elements, as well as historic and modern damage. As a result, it was possible to identify only two fragments of cattle bone (*Bos taurus*), and three of sheep/goat (*Ovis aries/Capra hircus*). Any evidence of butchery, in the form of cut and/or chop-marks, has been lost. No further inference can therefore be drawn, beyond basic species identification.

7.4 The poor preservation and redeposited nature of this material precludes any suitability for radiocarbon dating.

Molluscan Analysis by *Sarah F. Wyles*

Introduction

7.5 A series of eight samples were analysed, to help define the character of the local landscape during late prehistory, and to identify any changes in land use over time. The samples were taken as spot samples from fill 137, from trackway 139, and the overlying relict ploughsoil deposit 136, from under the bank, and from the deposits recorded within the cut of the enclosure ditch, 130, and the recut 126. The results of the mollusc assessment are tabulated and summarised in Table 7, Appendix D, of this report, and are graphically illustrated in histogram form in Chart 2, below.

7.6 The analytical methods employed were standard, namely the identification of apical and diagnostic mollusc fragments >0.5mm, using a x10-x40 stereo-binocular microscope. Nomenclature follows Anderson (2005). This is shown in Chart 2, with *Cecilioides acicula* being plotted over and above the assemblage. Some species were grouped in the histogram. Details of the ecological preferences of the species follow Evans (1972), Kerney (1999) and Davies (2008).

Results

Trackway139

7.7 A high number of mollusc shells were recovered in the sample from context 137, the upper fill of trackway 139. The mixed assemblage was dominated by the shade-loving species *Carychium tridentatum* and *Discus rotundatus*, the intermediate species *Pomatias elegans, Trochulus hispidus* and *Deroceras/Limax,* and the open-country species *Vallonia excentrica* and *Vallonia costata*.

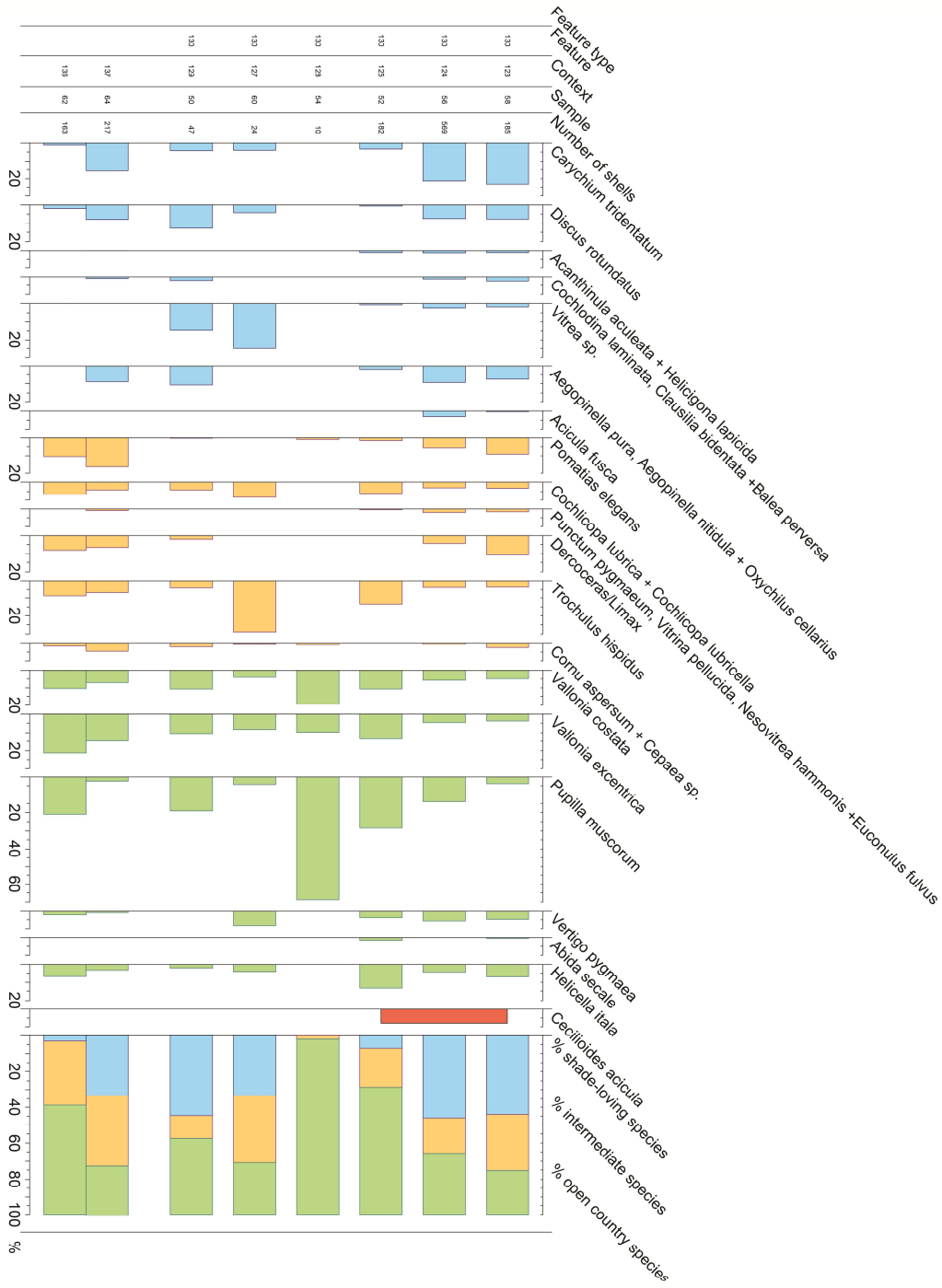

Chart 2: Histogram showing relative incidence of mollusc species for the eight contexts sampled

7.8 *Carychium tridentatum* and *Discus rotundatus* are shade-loving species, which can be found in the ground litter of deciduous woodland, or in long grassland. The small

numbers of *Clausilia bidentata* would favour woodland environments. The presence of *Pomatias elegans* in significant numbers within the assemblage is indicative of broken ground. The assemblage is likely to be reflective of a trackway surface of trampled grass and bare earth, with longer grass on the edge, and possibly areas of open woodland in the vicinity.

Relict Ploughsoil 136

7.9 The relict ploughsoil layer 136 sealed trackway 139, overlying 137, and was in turn overlain by the bank. Shell numbers were relatively high, and were predominantly those of the open country and of intermediate species. These species included *Pupilla muscorum*, *Vallonia excentrica, Vallonia costata, Pomatias elegans, Deroceras/Limax* and *Trochulus hispidus*. Shells of *Vallonia excentrica* outnumbered those of *Vallonia costata*. Although *Pupilla muscorum* favours earth bare of vegetation, like that caused by extensive sheep grazing, and does not therefore favour intensive agriculture, it is sometimes extraordinarily abundant in hill-wash deposits (Evans 1972, 146). In combination with *Pomatias elegans, Trochulus hispidus, Deroceras/Limax* and *Vallonia excentrica* in this assemblage, it reflects the presence of arable activity in the vicinity.

Enclosure Ditch 130/126

7.10 There are fluctuations within the molluscan assemblages recorded from this ditch. There were changes between the moderately small assemblages from the primary fills 129 and 127. The assemblage from fill 129 was dominated by shells of the shade-loving species *Discus rotundatus* and *Vitrea* sp., and the open-country species *Pupilla muscorum, Vallonia costata* and *Vallonia excentrica,* while Vitrea sp., and the intermediate species Trochulus hispidus were predominant within the assemblage from fill 127. This may reflect circumstances in which the enclosure ditch was dug within an open environment, with areas of woodland in the vicinity. There are likely to have been patches of longer grass alongside (or possibly within) the ditch, as it began to fill up.

7.11 Shells of Pupilla muscorum were predominant within the small assemblage from the secondary fill 128.

7.12 Sample 52 from 125, the first fill within recut 126, contained a high number of shells. The open-country species represented 71% of the assemblage, with *Pupilla muscorum* being predominant. A few shells of the rarity, *Abida secale,* were

recorded in this assemblage. The habitat of this snail is usually of open calcareous grassland, with short discontinuous turf, although it has also been found in dry-stone walls, old quarries and open spaces in dry woodland (Evans 1972, 152). It prefers locations where soil cover is broken, and bare rock shows through, and although most of its habitats are unshaded and rather exposed, it may sometimes be found under a light woodland canopy (Kerney 1999, 102). The presence of shells of *Acanthinula aculeata* is also noteworthy, as this is a species which can favour deciduous woodland. This assemblage is indicative of an open landscape, possibly comprising both grazed grassland and arable environments, with some areas of longer grass and woodland in the vicinity.

7.13 A very rich molluscan assemblage was recovered from context 124, a possible stabilisation layer within the ditch. The increase in shell numbers could also be indicative of a slower rate of natural infilling of the ditch. The shade-loving element represented over 45% of this assemblage, representing a marked rise from the assemblage from fill 125, with *Carychium tridentatum* and *Discus rotundatus* being dominant. Although the percentage of open-country species had fallen from 71 % to 34% of the assemblage, there were still significant numbers of *Pupilla muscorum*. There is still, however, an overall decline in this species in percentage terms. The presence of the rare species *Acicula fusca* within the assemblage is noteworthy. This species is found in moss and leaf litter, mainly in old, undisturbed deciduous woodland (Kerney 1999, 43). There were also shells of *Acanthinula aculeata, Clausilia bidentata, Cochlodina laminata* and *Balea perverse,* which all favour woodland environments. This assemblage appears to indicate that the local landscape became more overgrown, with increasing areas of longer grass and possibly scrub, together with some possible woodland regeneration in the vicinity.

7.14 The mollusc assemblage recorded from context 123, the upper fill of the ditch, continues the pattern of the decline of open-country species. They comprised 25% of the assemblage. This is mirrored by an increase within the intermediate species. The predominant species within the assemblage were *Carychium tridentatum, Discus rotundatus, Pomatias elegans Deroceras/Limax* and *Helicella itala*. There were also a few shells of the rarities *Abida secale* and *Acicula fusca*, together with those of *Acanthinula aculeata, Clausilia bidentata,* and *Cochlodina laminata*. This assemblage may reflect a continuation of the trend seen in the assemblage from context 124, of the surrounding landscape becoming increasingly overgrown.

Summary

7.15 The molluscan assemblages provide some indication of a changing local landscape. The trackway appears to have been located in an area of grassland with possible open woodland in the vicinity. The trackway itself is likely to have comprised a very localised environment of trampled grass and bare earth, with longer grass on the margins. At a later stage, there is evidence for arable activity in the vicinity before the creation of the enclosure bank in the Middle or later Iron Age. The enclosure ditch may have been dug within an open environment, with areas of woodland in the locality. There are likely to have been patches of longer grass alongside (or possibly within) the ditch, as it began to silt up. When the ditch was recut, it appears to have been situated within a more open landscape, possibly including both grazed grassland and arable environments, with some areas of longer grass and woodland in the vicinity. The upper fills of the ditch as it fell into disuse may have formed in an increasingly overgrown landscape, with more extensive areas of longer grasses and possibly scrub, together with woodland regeneration in the vicinity.

The Pollen Evidence *by Michael Grant*

Introduction

7.16 The pollen assessment was undertaken by Dr Michael Grant (COARS), who also compiled this report. Pollen extraction was undertaken using the facilities at PLUS, University of Southampton. Sediment samples were taken from three contexts to identify whether any preserved pollen could supplement the molluscan sequence that had been obtained from this bank by Sarah Wyles (above, Appendix D). The pollen evidence is summarised in tabular form in Appendix E, of this report.

Assessment aims

7.17 The pollen assessment has been undertaken with the following aims:

1. To ascertain whether pollen is preserved within the samples submitted for assessment;
2. To identify any changes in local vegetation between the different buried contexts; and
3. To provide palaeoenvironmental information to supplement that derived from the molluscan assessment of the same ditch sediments.

Methodology

7.18 Standard preparation procedures were used (Moore *et al*. 1991). A total of three samples were selected for preparation (see Table 3, below). 2cm^3 of sediment was processed from each sample. To each sample a *Lycopodium* spike added (two tablets from batch 3862) to allow the calculation of pollen concentrations (Stockmarr 1971). All samples received the following treatment: 20 mls of 10% KOH (80°C for 30 minutes); 20mls of 60% HF (80°C for 120 minutes); 15 mls of acetolysis mix (80°C for 3 minutes); stained in 0.2% aqueous solution of safranin, and mounted in silicone oil following dehydration with tert-butyl alcohol. Due to the highly minerogenic nature of these samples, additional sieving and decanting was undertaken between the KOH and HF stages, along with an extended period of 10% HCL dissolution of the calcareous sediments .

Table 3: List of pollen samples assessed

Sample Number	Sample Number	Context Number
Pol_1	<57>	(124)
Pol_2	<63>	(136)
Pol_3	<65>	(137)

7.19 Pollen counting was undertaken at a magnification of x400, using a Nikon SE transmitted-light microscope. Determinable pollen and spore types were identified to the lowest possible taxonomic level with the aid of a reference collection kept at COARS, University of Southampton. The pollen and spore types used are those defined by Bennett (1994; Bennett *et al*. 1994), with the exception of Poaceae which follow the classification given by Küster (1988), with plant nomenclature ordered according to Stace (2010). The pollen assemblage has been calculated as %TLP. The TLP sum excludes aquatics and pteridophyes, which are calculated as % + Group. A total land pollen (TLP) sum of 100 grains was sought for the pollen assessment, though this count was not achieved for any of the three samples assessed. The results from these three samples are summarised in Table 8, Appendix E.

Results

7.20 Pollen concentrations were insufficient to enable pollen counts to reach the desired 100 TLP sum. The pollen taxa identified, and respective counts, are shown in Table 3, Appendix E. Pollen concentrations were highest in sample <57> at 990 grains cm^{-}

^{3,} and lowest in sample <65> at 190 grains cm^{-3}. Too few pollen were counted to provide any indication of the local vegetation composition or structure, with taxa such as Lactuceae likely to reflect over-representation due to differential pollen preservation. The low pollen preservation is likely to reflect the aerobic nature of the sediments (calcareous geology), which would have led to increased pollen deterioration and subsequent low levels of pollen preservation.

Recommendations

7.21 Pollen assessment was undertaken on three samples derived from an excavated Iron Age enclosure, located within the broadleaf woodland of Whiteways Plantation, Sussex. Pollen preservation was found to be poor, with little pollen identified within the three samples processed. Consequently no meaningful palynological interpretation can be derived from these samples, and there are consequently no recommendations for further pollen work associated with these ditch sediments.

8. DISCUSSION

8.1 The lithic assemblage is small, and largely residual in character, and includes a large component of waste flakes and re-used items of predominantly Bronze Age type. This material precludes any interpretation beyond that of transient prehistoric activity on the site, and as such is broadly typical of the South Downs. The character of the assemblage, including the proportion of waste flakes, suggests an element of contingent flint-working typical of the Bronze Age, and which might plausibly extend into the Iron Age (Ford *et al* 1984).

8.2 All the features identified during the excavation appear to be late Prehistoric in date. The earliest of these is the north/south-orientated trackway 138 (Figs. 4, 8). Its well-defined and carefully-constructed character suggest a specific use and a direct relevance to this locality, rather than an ancillary aspect of the late prehistoric landscape. The condition of the exposed portion also suggests that it had been well-maintained up until the time of its abandonment, and the formation of fill 137. Its stratigraphic position, cut into underlying chalk, and beneath a succeeding ploughsoil, certainly suggests an early date. The molluscan associations with an open, farmed downland landscape might extend this to the mid to late Bronze Age, at a time when much of the higher South Downs was extensively exploited (Bedwin 1978).

It is not possible to speculate on the extent or purpose of the trackway. It is clearly aligned towards the crest of the downs, now occupied by the course of the War Dyke, although any spatial relationship to known features remains unclear. The excavation provided no artefactual evidence to suggest any close associations with an occupation site or funerary monument of Bronze date, and no immediate local parallels with the trackway feature have been established. The formation of silt clay deposit 137 over the trackway surface suggests that a considerable period of time elapsed before the onset of cultivation and the establishment of a later ploughsoil over the trackway. This would appear to indicate a radical change in land use, although it is difficult to suggest a time-frame.

8.3 The cultivated soil, 136 (underlying the bank and sealing the abandoned trackway), suggests a re-ordering of the landscape at a time prior to the construction of the enclosure, with arable cultivation obscuring the remains of earlier earthwork features in this high location of the South Downs (Fig. 4). Certainly, the molluscan evidence appears to support assumptions of a more widespread farming environment at this time, and while a secure date cannot be assigned to this phase, it could plausibly be of the earlier Iron Age.

8.4 The enclosure is a well-defined earthwork, although its chronological and stratigraphic relationship to the War Dyke remains obscure, and has not been addressed by this project. It is clear from the excavation that the western boundary of the enclosure comprises a bank which appears to have been faced on its western side by a flint revetment, with an outer quarry ditch located a short distance to the west. The section through the bank demonstrates that it was simply constructed by initially creating a ridge of subsoil (135), which was laid directly on an earlier cultivated soil, 136, towards the eastern limits of the bank. Chalk rubble from the excavated ditch was then dumped to provide the body of the bank, with a compacted layer of larger chalk rubble, 133, being used to consolidate the inner, eastern face, resulting in a slope of *c.* 30°. As the western face of the bank had been partly cut away by the later negative lynchet 141, its original morphology is less clear. However the parallel construction cut 142, together with the remains of a suggested flint revetment (140) within it, provide convincing evidence of an outer flint facing. This suggestion is supported by the natural paucity of flint nodules at this elevation on the downs, with the nearest exposure of flint seams being located at a distance downslope. As flint nodules do not occur naturally at this location, they would necessarily have had to be transported to this site. It may also be significant

that excavation demonstrated that large flint nodules were only to be found in deposits to the west of the bank, and in particular fill 125 of the re-cut ditch. This would be consistent with the existence of a flint wall on the outer face of the bank, and with its tumbled remains being used to backfill the ditch.

8.5 Ditch 130 was located *c*. 2.75m west of the surviving extent of wall foundation 140, and runs directly parallel to the bank. It is of sufficient capacity to have produced the chalk required for the construction of the bank, and its quarry function is still evident in its asymmetric profile. A trench on the western side of the base of the ditch was clearly cut to allow natural chalk to be easily prised up, with the shallower, eastern side of the ditch facilitating the removal of chalk from its base. The relatively modest dimensions of the ditch (3.35m wide by 1.15m deep), and the bank (4.45m wide at its base and surviving to a height of 0.92m), suggest that these were not defensive earthworks. However, comparative evidence might suggest that the bank may originally have been topped with a palisade or hedge, which may have subsequently left no archaeological trace. It is therefore possible that this univallate enclosure may have been primarily associated with the penning of livestock, although the evidence for an external flint revetment suggests a construction of some status.

8.6 It is clear from the relict ploughsoils which seal the internal, eastern side of the bank, and from the negative plough lynchet which has partly cut away the western side of the bank and wall, that both the interior of the enclosure and the area immediately to its west, have been subject to extensive ploughing following abandonment. It is also clear that the negative lynchet has been responsible for straightening the outer edge of the western boundary of the enclosure. No date can be assigned for this period of later cultivation across the site, although former field boundaries depicted on historic mapping indicate that much of this area nominally remained as farmland until the early Modern period, and it is therefore possible that this later cultivation occurred in the medieval and/or post-medieval periods.

8.7 The origins of the enclosure remain obscure. There is no evidence that the earthwork ramparts were preceded by, or defined, a palisaded enclosure, as in other Iron Age enclosures on the South Downs, including The Caburn, Hollingbury and Park Brow (Curwen 1931, 1932). In these cases, palisades had been replaced by ditched enclosures by the Middle Iron Age. The prominent hilltop setting, the area enclosed and the relatively modest earthwork ramparts are broadly comparable with those of a number of possibly contemporary enclosures on the South Down,

including The Trundle and Chanctonbury Ring (Hamilton and Manley 2001). The imposing ditches of the War Dyke clearly cut the course of the enclosure ditches at the points of intersection, and it is therefore clear that the enclosure pre-dates the War Dyke in its latest form (Chart 1, Fig. 2). In the absence of investigation any further speculation must remain speculative, although it is possible that the course of the War Dyke in this location represents a late Iron Age aggrandisement of an earlier linear earthwork with which the enclosure was directly associated, or that construction of the War Dyke effectively removed and replaced the north side of the enclosure. However, given the scale of the ditch on the south side of the War Dyke in this location, and the resulting large breaches in the enclosure bank, it is difficult to envisage how it could have continued to fulfil a suggested function as a livestock enclosure following such changes.

8.8 The proximity of the enclosure to both the War Dyke, and the complexes of Late Iron Age settlement at Dalesdown and Rewell Hill, is significant (Fig. 2). Late Iron Age pottery from the recut (126) of the ditch, may indicate an episode of re-use at this time, or at least an attempt to re-define the earthwork. Similarly, the molluscan evidence from the recut indicates a change to a more open landscape by the later Iron Age, with evidence of both arable and pastoral land-use (Chart 2). This would be consistent with the establishment of the neighbouring Oppidum site at this time, and the suggested large-scale clearance of land for settlement and farming purposes. The role of the adjacent War Dyke as an imposing boundary might indicate continuing interest in the hilltop enclosure, particularly if the War Dyke in its final phase was used to form, or re-emphasise, its northern side. It may be significant that the prodigious size of this earthwork diminishes considerably just to the west of the enclosure, perhaps indicating that its most highly-developed section was intended to reference the enclosure in some way (James Kenny pers.comm.). The possibility that the enclosure defines a hilltop location which was accorded particular significance in social memory (cf The Trundle), and which may yet await more detailed archaeological interpretation, cannot be dismissed. The surfaced trackway 138, beneath the enclosure bank, may be relevant in this context.

8.9 It is possible to speculate on post-abandonment patterns of land-use, particularly in the light of marked changes in the incidence of land snail species in the latest contexts (Chart 2). From this, it is possible to suggest a broadly cyclical pattern of clearance and woodland regression in later prehistory, with the earliest ploughsoil associated with a marked increase in percentage of open-country species over that

associated with the fill of the preceding trackway. This may tentatively be associated with a phase of clearance and cultivation of the higher downs in the late Bronze Age or Early Iron Age periods (Bedwin 1978), which appears to be followed by limited woodland regression during the period associated with the formation of the enclosure ramparts, which might be tentatively dated to the Middle Iron Age period. Following this, there is a notable increase in open-country snail species within the ditch re-cut, which appears, on the basis of associated pottery, to be of Late Iron Age date, and which may be associated with wider patterns of settlement and cultivation associated with the development of the adjacent settlement centres at Dalesdown and Rewell Hill (Fig. 2). The subsequent marked increase in shade-loving species associated with second and upper ditch fills may be associated with a further phase of woodland regression following the final abandonment of the enclosure (cf. Rackham 1986, 81). A small quantity of Roman pottery from topsoil or relict ploughsoil contexts may conceivably result from manure scatter, although it is probable that the sequence of ploughsoils which have accumulated to the east of the enclosure bank may represent later episodes of cultivation, of medieval and post-medieval date. Historic mapping of the early nineteenth century depicts field divisions within this part of Whiteways Plantation, and it is possible that at least parts of the enclosure remained in agricultural use until the establishment of the woodland plantation in the later nineteenth century.

9. CA PROJECT TEAM

9.1 Fieldwork was undertaken by Peter Busby, assisted by Tony Brown, and Stephanie Duensing from CA; Community Archaeological Team Leaders Juliet Smith and Henry Wakeford, and Community Archaeologists Mark Allen, Andrew Baker, Janet Bradley, T Brown, Sue Brown, Tim Burr, Dave Butcher, Steven Cleverly, John Crane, Trevor Creighton, Margaret Dean, James Dodd, Tony Douglas, John Forwood, John Grimster, Mike Joyner, Mike Kallaway, Peter King, Mary Iden, Liz Lane, James Sainsbury, Mark Taylor, Brian Tomkinson and Sue Webber. The report was written by Peter Busby and Richard Massey. The pottery report was written by Ed McSloy, the worked flint report by Jacky Sommerville, the metalwork, glass and ceramic building material reports by Katie Marsden, and the faunal remains report by Andrew Clarke. The mollusc report was written by Sarah Wyles, and the pollen analysis was undertaken by Dr Michael Grant (University of Southampton). The illustrations were prepared by Sam O'Leary. The archive has been compiled and

prepared for deposition by Hazel O'Neill. The fieldwork was managed for CA by Damian De Rosa, and the post-excavation was managed by Richard Massey.

10. STORAGE AND CURATION

10.1 The archive is currently held at CA offices in Kemble whilst post-excavation work proceeds. Upon completion of the project, and with the agreement of the legal landowners, the site archive and artefactual collection will be deposited Novium Museum, Chichester (Accession number CHCDM 2016.12). A summary of information from this project, set out within Appendix F, will be entered onto the OASIS online database of archaeological projects in Britain.

11. ACKNOWLEDGEMENTS

11.1 Special thanks must go to Sarah Rance-Riley and Alice Thorne, of the South Downs National Park Authority, for their advice and support throughout the project. Similarly, the advice of James Kenny of Chichester District Council has been invaluable. Dr Mark Roberts of University College, London has also shared his considerable knowledge of the archaeology of surrounding areas of West Sussex at earlier stage of the project. Thanks are also due to The Norfolk Estate, and to the Forestry Commission, who gave permission for the excavation to take place, and offered every assistance.

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APPENDIX A: CONTEXT DESCRIPTIONS

Table 4: Context Descriptions

Trench No.	Context No.	Type	Fill of	Context interpretation	Description	L (m)	W (m)	Depth/thickness (m)
1	101	Layer		Topsoil	Dark-brown clay silt	>14.3	>2	0.11
1	102	Layer		Relict ploughsoil	Light-brown clay silt, with 25% fine chalk gravel inclusion	>14.3	>2	0.26
1	103	Layer		Topsoil	As 101	5.3	>2	0.,08
1	104	Layer		Relict ploughsoil	As 102	4.1	>2	0.49
1	105	Layer		Topsoil	As 101	>11	>2	0.11
1	106	Layer		Relict ploughsoil	Dark-brown silt clay with 25% chalk gravel inclusion	>10.1	>2	0.21
1	107	Layer		Relict ploughsoil	Same as 104	4.1	>2	0.49
1	108	Fill	141	Construction trench fill	Light-brown silt clay with 25% chalk gravel inclusion	>2	0.79	0.08
1	109	Cut		Posthole/ treethrow	Sub-oval in plan, with moderately-sloped side, uneven base	0.44	0.33	0.12
1	110	Fill	109	Posthole/ treethrow fill	Dark-brown silt clay, with chalk and gravel inclusion	0.44	0.33	0.12
1	111	Cut		Posthole/ treethrow	Sub-oval in plan, with moderately-sloped side, and uneven base	0.5	0.34	0.14
1	112	Fill	111	Posthole/ treethrow fill	As 110	0.5	0.34	0.14
1	113	Layer		Relict ploughsoil	Yellow-brown silt clay, with 50% rounded chalk gravel inclusion	>8.3	>2	0.29
1	114	Layer		Relict ploughsoil	Brown silt with fine chalk gravel inclusion.	3.2	>2	0.28
1	115	Layer		Relict ploughsoil	Same as 114	3.2	>2	0.28
1	116	Cut		Posthole/ treethrow	Irregular oval in plan, with irregular sides and base.	0.43	0.37	0.07
1	117	Fill	116	Posthole/ treethrow fill	As 110	0.43	0.37	0.07
1	118	Cut		Posthole/ treethrow	Sub-square in plan, with irregular sides and base	0.3	0.27	0.08
1	119	Fill	118	Posthole/ treethrow fill	As 110	0.3	0.27	0.08
1	120	Cut		Posthole/ treethrow	Sub-square in plan, with Irregular sides and base	0.5	0.33	0.13
1	121	Fill	120	Posthole/ treethrow fill	As 110	0.5	0.33	0.13

1	122	Layer		Natural substrate	Off-white chalk	>30	>2	>1
1	123	Fill	126	Upper ditch fill	Brown silt clay with 50% fine chalk gravel and 5% flint nodules	>1	3.35	0.29
1	124	Fill	126	Second ditch fill	Dark-brown silt clay with 15% fine chalk gravel and 1% angular flint cobbles	>1	2.75	0.12
1	125	Fill	126	First ditch fill	Loose, light grey-brown silt clay, with 30% flint cobbles/nodules and 10% chalk gravel.	>1	1.54	0.56
1	126	Cut		Ditch re-cut	NW/SE-aligned linear cut, with moderately-sloping sides and flat base.	>1	1.54	0.56
1	127	Fill	130	Upper ditch fill	Light grey-brown silt clay, with 80% chalk gravel inclusion	>1	1.45	0.93
1	128	Fill	130	Upper ditch fill	Light grey-brown silt clay with 80% chalk gravel	>1	1.8	0.83
1	129	Fill	130	First ditch fill	Grey-white silt clay, with 50% chalk gravel inclusion.	>1	1.24	0.34
1	130	Cut		Ditch re-cut	NW/SE- aligned linear cut, with moderately-sloping sides and flat base.	>2	3.35	1.15
1	131	Layer		Natural subsoil	Yellow-brown silt clay, with 80% chalk stones/cobbles	>12	>2	0.21
1	132	Layer		Bank slump	Dark-brown silt clay, with 50% angular chalk stones/nodules	1.35	>95	0.1
1	133	Layer		N face of bank	Dark-brown silt clay, with 75% angular flint stones/cobbles.	>2	2.96	0.21
1	134	Layer		Body of bank	Excavated, loose white angular chalk gravel and small stones	>1	4.05	0.77
1	135	Layer		Dump	Brown silt clay, with 75% chalk gravel inclusion.	>1	3.45	0.26
1	136	Layer		Relict ploughsoil	Dark-brown silt clay with chalk gravel.	6.55	>1	0.28
1	137	Fill	139	Trackway fill	Dark-brown silt clay with 50% chalk gravel inclusion	>1.4	2.35	0.13
1	138	Fill	139	Trackway surface	Hard, flat surface of rammed chalk and flint gravel.	>1.4	1.9	0.06
1	139	Cut		Trackway cut	N/S-aligned linear cut, with steep sides and a flat base	>1.4	2.16	0.32
1	140	Structure	141	Wall	Two courses of undressed large flints bonded with light-brown silt clay. No face to structure survives	0.65	0.25	0.1
1	141	Cut		Construction trench	NW/SE-aligned linear cut, with one moderately-sloping northern side and flat base	>2	0.78	0.08
1	142	Cut		Lynchet cut	NW/SE-aligned linear cut, with one almost vertical side and a flat base that slopes to the south	>2	>1.5	0.36
1	101	Layer		Topsoil	Dark-brown clay silt	>14.3	>2	0.11
1	102	Layer		Relict ploughsoil	Light-brown clay silt with 25% fine chalk gravel inclusion	>14.3	>2	0.26
1	103	Layer		Topsoil	As 101	5.3	>2	0.,08
1	104	Layer		Relict ploughsoil	As 102	4.1	>2	0.49
1	105	Layer		Topsoil	As 101	>11	>2	0.11
1	106	Layer		Relict ploughsoil	Dark-brown silt clay, with 25% chalk gravel inclusion	>10.1	>2	0.21

APPENDIX B: POTTERY DISTRIBUTION BY CONTEXT

Table 5: Pottery distribution by context number (sherd count only)

Date	Fabric	101	102	104	105	106	108	123	125	135	137
Pre.	F1			2	4				2	1	5
	F2								1		
	F3			1							
	Q1					1			1		
	QF1					1					
	QZ1						1				
	QZ2						1				
Rom.	GR1				1						
	GW1				1						
	GW2				4						
	GW3						1				
	GW4							1			
	OX1						1				
Pmed.	PMGRE		1								
	PORC	3									

APPENDIX C: ANIMAL BONE

Table 6: Identified animal species by fragment count (NISP) and weight and context.

Cut	Fill	BOS	O/C	Ind	Total	Weight (g)
	102			1	1	1
	103		1		1	20
	104	1		2	3	5
	105			3	3	7
141	108			1	1	1
	114			1	1	1
130	128		1	1	2	11
	136			1	1	1
139	137	1	1	2	4	39
Total		**2**	**3**	**12**	**17**	
Weight		**33**	**34**	**19**	**86**	

BOS = cattle; O/C = sheep/goat; Ind = indeterminate

APPENDIX D: MOLLUSCAN EVIDENCE

Table 7.
Quantification of Molluscs from the trackway, overlying relict plough soil and from the enclosure ditch

Feature type	Trackway	Relic plough soil	Enclosure Ditch					
Feature	139		130			126		
Context	137	136	129	127	128	125	124	123
Sample	64	62	50	60	54	52	56	58
Depth (M)	spot	spot	spot	spot	spot	spot	spot	spot
Weight (G)	1500	1500	1500	1500	1500	1500	1500	1500
Molluscs								
Pomatias elegans (Müller)	36	17	+	-	+	3	32	17
Pomatias elegans (Müller) opercula	2	+	+	-	-	-	5	2
Acicula fusca (Montagu)	-	-	-	-	-	-	18	1
Carychium tridentatum (Risso)	25	-	1	1	-	5	82	33
Carychium spp.	9	2	1	-	-	1	40	10
Cochlicopa lubrica (Müller)	-	1	1	1	-	3	5	1
Cochlicopa lubricella (Porro)	-	1	-	-	-	2	2	-
Cochlicopa spp.	9	9	1	1	-	6	10	5
Vertigo pygmaea (Draparnaud)	1	-	-	1	-	6	24	6
Vertigo spp.	-	3	-	1	-	1	8	3
Abida secale (Draparnaud)	-	-	-	-	-	3	-	1
Pupilla muscorum (Linnaeus)	5	34	9	1	7	52	79	7
Vallonia costata (Müller)	14	16	5	1	2	18	32	8
Vallonia excentrica Sterki	28	33	5	2	1	23	25	6
Vallonia spp.	4	3	-	-	-	3	3	2
Acanthinula aculeata (Müller)	-	-	-	-	-	2	7	2
Punctum pygmaeum (Draparnaud)	1	-	-	-	-	-	7	2
Discus rotundatus (Müller)	17	3	6	1	-	1	42	14
Vitrina pellucida (Müller)	-	-	-	-	-	1	2	-
Vitrea sp.	-	-	7	6	-	1	13	3
Nesovitrea hammonis (Ström)	1	-	-	-	-	-	2	1
Aegopinella pura (Alder)	10	-	1	-	-	2	28	7
Aegopinella nitidula (Draparnaud)	8	-	2	-	-	1	18	6
Oxychilus cellarius (Müller)	1	-	2	-	-	-	7	1
Deroceras/Limax	14	13	1	-	-	-	25	20
Euconulus fulvus (Müller)	-	-	-	-	-	-	1	-
Cecilioides acicula (Müller)	-	-	-	-	-	8	8	7
Cochlodina laminata (Montagu)	-	-	-	-	-	-	2	2
Clausilia bidentata (Ström)	2	-	-	-	-	-	3	2
Balea perversa (Linnaeus)	-	-	1	-	-	-	1	-
Helicella itala (Linnaeus)	7	11	1	1	-	24	25	13
Trochulus hispidus (Linnaeus)	15	14	2	7	-	24	22	7

Helicigona lapicida (Linnaeus)	+	-	-	-	-	-	+	+
Cornu aspersum	-	-	-	-	-	-	+	-
Cepaea/Arianta sp.	10	3	1	+	+	-	4	5
Taxa	18	13	15	10	3	17	24	23
Total	217	163	47	24	10	182	569	185
% Open Country Species	27.79	61.35	42.46	29.05	98.04	71.43	34.43	24.85
% Intermediate Species	39.61	35.58	12.95	37.76	1.96	21.43	19.69	31.33
% Shade-loving Species	33.21	3.07	44.59	33.2	0	7.14	45.87	43.81

APPENDIX E: POLLEN EVIDENCE

Table 8: Pollen counts from samples <57>, <63> and <65>

Sample	**<57>**	**<63>**	**<65>**
Context	**(124)**	**(136)**	**(137)**
Corylus avellana-type			1
Vaccinium	1	2	
Lactuceae undiff.	2	3	
Poaceae undiff.	10		3
Pteropsida (monolete) indet.	11		
TLP Sum	13	5	4
Pollen Concentration (grains cm^{-3})	990	270	190

APPENDIX F: OASIS REPORT FORM

PROJECT DETAILS	
Project Name	Community Excavation at Whiteways Plantation, Arundel, West Sussex
Short description	The earliest feature identified on site was a 1.9m-wide, north/south-aligned, surfaced trackway, which was provisionally dated to the early Iron Age or Later Bronze Age. This was overlain by a chalky-silt layer which appears to have been deposited after the trackway went out of use. This was overlain in turn by an early ploughsoil, which was truncated on the west side by a later negative lynchet. The ploughsoil was undated, but clearly pre-dated the construction of the enclosure bank, and may therefore have been of Early-Middle Iron Age date. Directly above this was constructed the chalk enclosure bank of a possibly Middle or Late Iron Age univallate enclosure, which was located immediately to the south of the War Dyke. The bank was constructed of three distinct layers of chalky make-up, of which the bulk comprised flint-free chalk rubble

	excavated from the ditch to the west. A construction cut just the west of the surviving extent of the bank had been cut through a natural subsoil, and contained two, irregularly-laid courses of nodular flints, which may represent an outer facing or revetment. A ditch ran c. 2.75 west of the flint foundation and parallel to the bank. This contained weathering fills which were cut but a U-profile re-cut containing a single, jumbled fill. This contained a number of flints which may have fallen from the decayed bank revetment, and may result from a single episode of backfilling not long after the re-cut was made. The remains of the bank, ditch and wall were overlain by sequence of later cultivated soils, and the western face of the bank had been partly cut away by a negative field lynchet. These indicate a phase of cultivation across the site at some time after the final abandonment of the enclosure, possibly during the medieval and or post-medieval periods. The trench was sealed by a layer of decayed leaf little to a depth of 0.11m, which represents a relatively recent phase of woodland establishment.	
Project dates	18 April ï 29 April, 2016	
Project type	Excavation	
Previous work	None	
Future work	Unknown	
PROJECT LOCATION		
Site Location	Whiteways Plantation, Houghton, Arundel, West Sussex	
Study area (M^2/ha)		
Site co-ordinates	TQ 00076 10234	
PROJECT CREATORS		
Name of organisation	Cotswold Archaeology	
Project Brief originator	South Downs National Park Authority	
Project Design (WSI) originator	Cotswold Archaeology	
Project Manager	Damian de Rosa	
Project Supervisor	Peter Busby	
MONUMENT TYPE	Ditched hilltop enclosure	
SIGNIFICANT FINDS	Surfaced trackway	
PROJECT ARCHIVES	Intended final location of archive Novium Museum, Chichester Accession Number CHCDM 2016.12	Content: pottery, lithics, animal bone,
Physical		Lithics, ceramics, animal bone
Paper		Context sheets, drawn plans and sections, photographs, matrices etc
Digital		Database, digital photos
BIBLIOGRAPHY		

CA (Cotswold Archaeology) 2016 *Community Excavation at Whiteways Plantation, Arundel, West Sussex* . CA typescript report **16336**

N

0 1km

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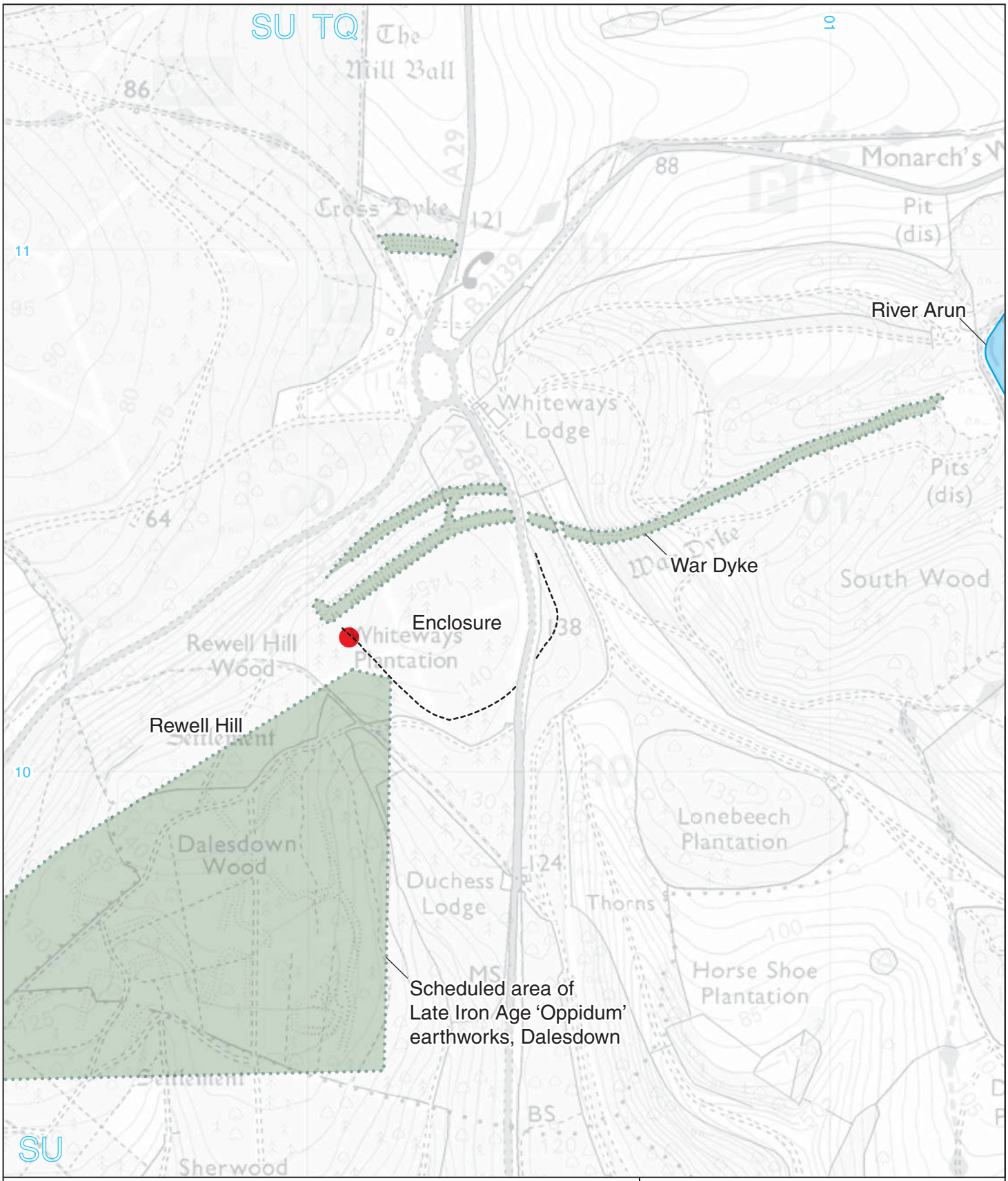
PROJECT TITLE

Community excavation at Whiteways Plantation, Arundel, West Sussex

FIGURE TITLE

Site location plan

DRAWN BY	SO	PROJECT NO.	770329	FIGURE NO.
CHECKED BY	LM	DATE	12/07/2016	1
APPROVED BY	RWM	SCALE@A4	1:25,000	



Site location

Scheduled Monument

Enclosure ditch-bank

0 500m

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PROJECT TITLE

Community excavation at Whiteways Plantation, Arundel, West Sussex

FIGURE TITLE

The Whiteways Plantation enclosure in relation to the War Dyke linear earthwork, and the Late Iron Age Oppidum earthworks at Rewell Hill and Dalesdown.

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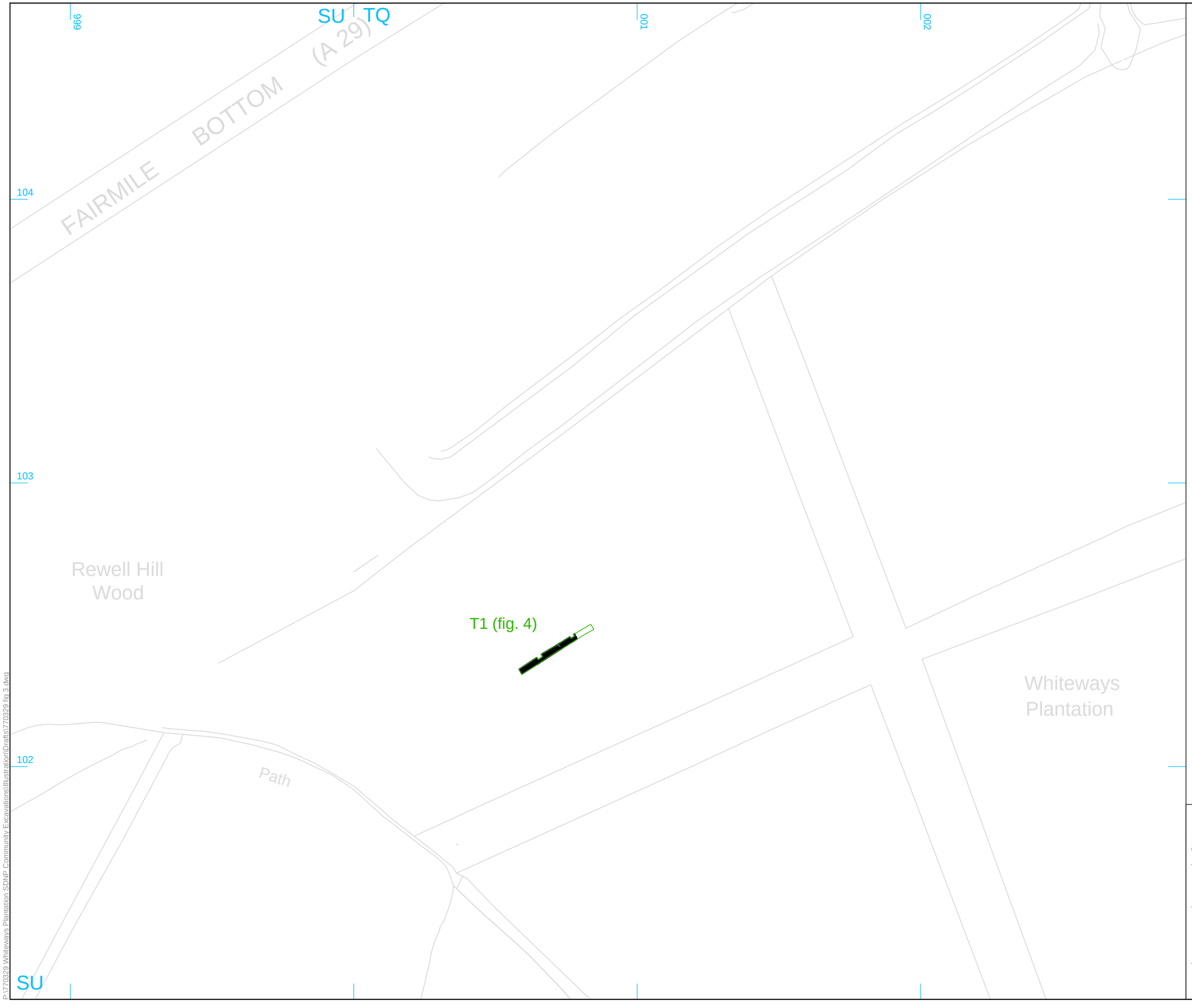
CHECKED BY	LM	DATE	22/07/2016	2
APPROVED BY	RWM	SCALE@A4	1:10,000	



N

site boundary

excavation area

archaeological feature

structural feature

0 50m

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PROJECT TITLE

Community excavation at Whiteways Plantation, Arundel, West Sussex

FIGURE TITLE

Trench location plan and LiDAR model

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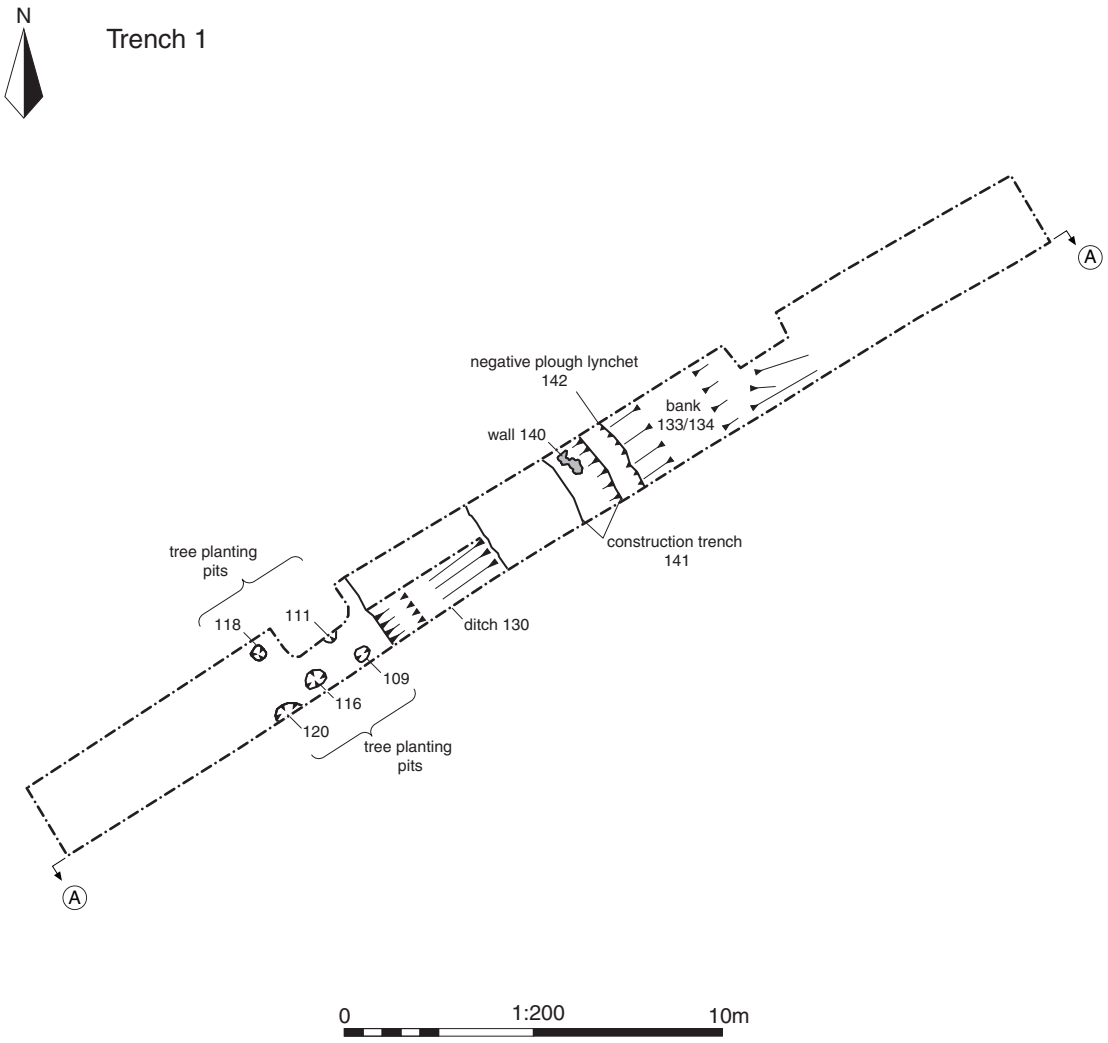

Archaeological feature

Structural feature

Limit of excavation

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PROJECT TITLE

Community excavation at Whiteways Plantation, Arundel, West Sussex

FIGURE TITLE

Trench 1, plan

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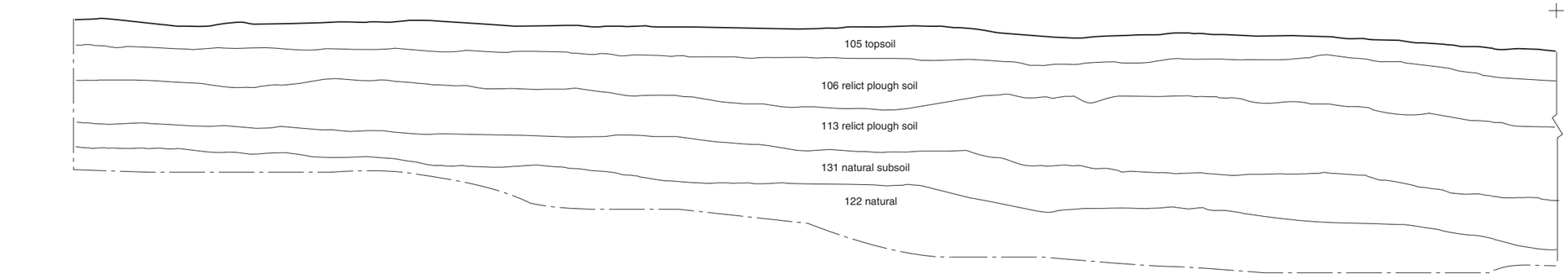
APPROVED BY	**RWM**	*SCALE@A4*	**1:200**	

Section location

Section AA



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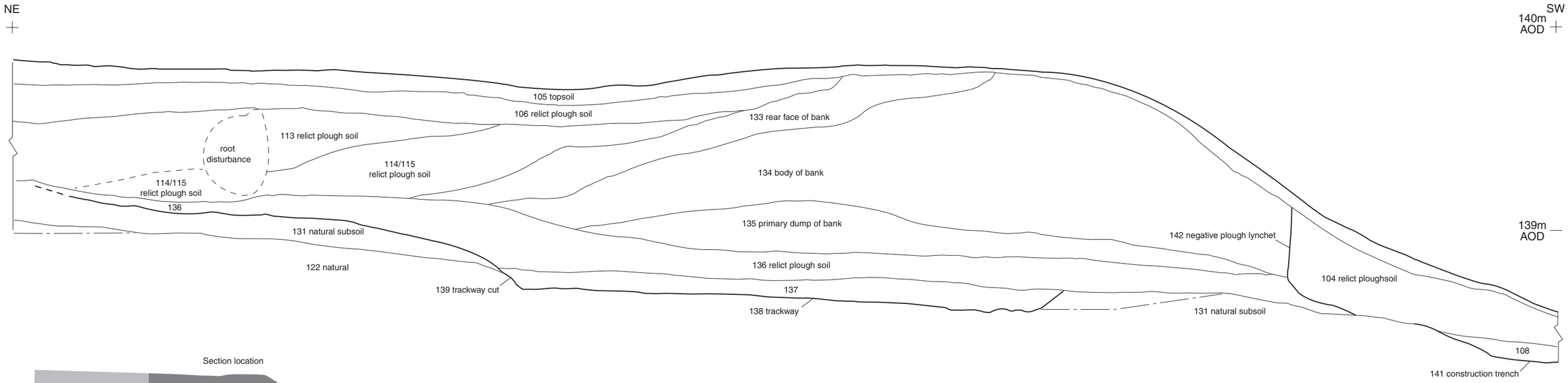

Section location

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FIGURE TITLE

Trench 1, north-west facing section

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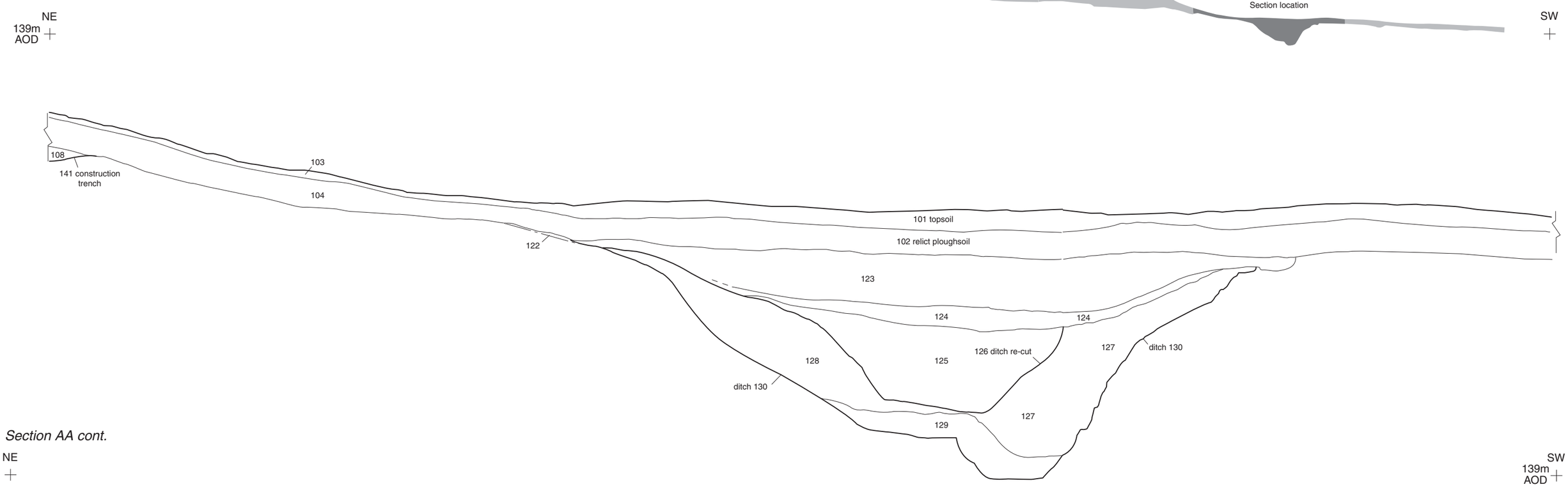
Section AA cont.



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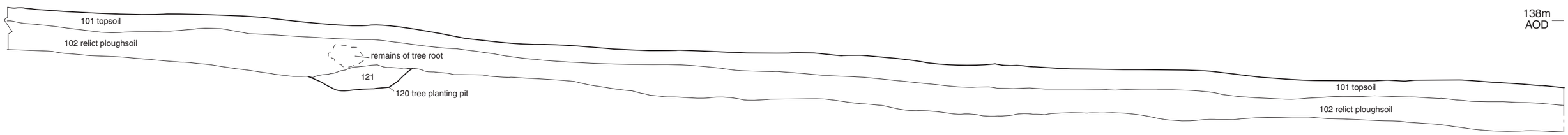

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Community excavation at Whiteways Plantation, Arundel, West Sussex

FIGURE TITLE

Trench 1, north-west facing section

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7

7 Ditch 130, bank 134, wall 140, facing east (scale 1m)

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FIGURE TITLE
Photographs

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FIGURE NO. 7

8

8 **Ditch 130, wall 140 and enclosure bank, facing south-east (scale 1m)**

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FIGURE TITLE

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9

10

9 **Enclosure bank and trackway 138 (scale 1m)**

10 **Clearing up for photograph**

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FIGURE NO. **9** **10**

11

11 Section drawing

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12

12 Photography training

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FIGURE TITLE
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FIGURE NO. 12

13

14

13 Training being given in recording

14 General shot of excavation

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FIGURE TITLE

Photographs

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