Todlaw Pike Excavation
Otterburn Training Camp, Northumberland

Archaeological Excavation

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Summary

Wessex Archaeology were commissioned by Landmarc Support Services Ltd to complete an archaeological excavation within two monuments identified through lidar assessment within Otterburn Training Area, Northumberland, centred on National Grid Reference 381569 600546. The targeted monuments are located to the east of the main camp, south of the Scheduled Monument area of Todlaw Pike, a suspected Bronze Age settlement with associated filed systems and burial cairns.

The excavation was conducted as a community excavation alongside wounded, Injured and sick military veterans and volunteers from the Revitalising Redesdale Landscape Partnership. The works were supported by Breaking Ground Heritage, supported by Breaking Ground Heritage.

The 2021 excavation follow a programme of evaluation trenching in 2020. The 2020 evaluation confirmed the LiDAR results and identified Site 1 as a circular, embanked feature, c.20 m in diameter, comprising a low, grass-covered, circular bank, up to c.0.60 m high x up to 4 m wide with some raised possible internal features centred on NGR NY 89699 95583. Site 2 comprised of a circular, embanked feature c.30 m in diameter, comprising a low moss and grass covered stone bank c.0.30 m high, enclosing a flat internal area centred on NGR NY 89714 95531.

Two excavation areas were stripped by machine and cleaned by hand with hand excavation of features. Excavation Area 1 was located in the central part of the Site 1 enclosure and cairn. It covered the southern part of the enclosure and cairn and was 158 m^2 in area. Excavation Area 2 was located in the central and southern part of the Site 2 enclosure and covered an area of 238.6 m^2.

No datable artefacts were recovered from either site and both are currently undated but phased through analogy with other dated sites. Excavations at Site 1 revealed a cairn covering a probable grave cut surrounded by a ring ditch and the bank of the enclosure. These are almost certainly prehistoric features and probably Early Bronze Age in date. The bank enclosing Site 2 was found to be segmented with an internal kerb. In a break in the western part of the circuit, two recumbent standing stones with their original sockets were found. No features were found within the Site 2 enclosure bank. It is unclear whether this is a multiphase structure consisting of a stone circle that is later embanked or a kerbed ring cairn that incorporates standing stones but is also likely to belong to the Early Bronze Age (although earlier and later elements cannot be ruled out).

Later drainage ditches cut across both sites 1 and 2 and these are best dated to between the Romano-British to modern period, but it is impossible to narrow down further.

Recommendations are made with regard to possible radiocarbon dating opportunities that may help to establish a date for the Site 1 ring ditch.

Acknowledgements

Wessex Archaeology would like to thank Landmarc Support Services Limited for commissioning the archaeological evaluation, in particular Jonathan Pounder. Wessex Archaeology is also grateful for the advice of the Northumberland National Park Authority Archaeologist, and the DIO Archaeologists who gave advice on the project, and to the volunteers and staff from Breaking Ground Heritage, Operation Nightingale, and Revitalising Redesdale for their cooperation and help on site.

The fieldwork was directed by Ben Saunders, with the assistance of Stephanie Morris and Micheil Halliday. The samples were processed by Samantha Rogerson. The flots were sorted and assessed by Megan Scantlebury and Ed Treasure. This report was written by Megan Scantlebury and Ed

Treasure, with contributions from Samantha Rogerson and was edited by Ines Lopez Doriga. Graphics are by Nancy Dixon.

This report was written by Andy Valdez-Tullett, Ben Saunders and Alice Amabilino and edited by Chris Swales. The project was managed by Chris Swales on behalf of Wessex Archaeology.

Otterburn Training Camp: Todlaw Pike Excavation Northumberland

Archaeological Excavation

1 INTRODUCTION

1.1 Project background

1.1.1 Wessex Archaeology was commissioned by Landmarc Support Services Limited (hereafter "the client") to complete an archaeological excavation within two monuments identified through lidar assessment within Otterburn Training Area, centred on National Grid Reference (NGR) 381569 600546, hereafter "the site".

1.1.2 The excavation was conducted as a community excavation alongside wounded, Injured and sick military veterans and volunteers from the Revitalising Redesdale Landscape Partnership. The works were supported by Breaking Ground Heritage. Fieldwork was undertaken between the 31st August and 10th September 2021 and was supervised by Wessex Archaeology and DIO archaeologists.

1.1.3 The 2021 excavation follow a programme of evaluation trenching in 2020. The 2020 evaluation confirmed the LiDAR results and identified Site 1 as a circular, embanked feature, c.20 m in diameter, comprising a low, grass-covered, circular bank, up to c.0.60 m high x up to 4 m wide with some raised possible internal features centred on NGR NY 89699 95583. Site 2 comprised of a circular, embanked feature c.30 m in diameter, comprising a low moss and grass covered stone bank c.0.30 m high, enclosing a flat internal area centred on NGR NY 89714 95531. The features are located close to a prehistoric cairnfield and settlement at Todlaw Pike and were initially thought to be a previously unrecognised Iron Age/Romano-British settlement.

1.1.4 All works were undertaken in accordance with a written scheme of investigation (WSI) which detailed the aims, methodologies and standards to be employed in order to undertake the evaluation (Wessex Archaeology 2021a). The Principal Archaeologist for the National Park Authority approved the WSI, prior to fieldwork commencing.

1.2 Scope of the report

1.2.1 The purpose of this report is to provide a detailed description of the results of the excavation, to interpret the results within a local, regional or wider archaeological context and assess whether the aims of the fieldwork have been met.

1.2.2 The presented results will provide further information on the archaeological resource present within the site and facilitate an informed decision regarding ongoing land management within the immediate area of the site.

1.3 Location, topography and geology

1.3.1 The site is located within the Otterburn Training Area (OTA) and is 2.5km to the northeast of Otterburn. OTA itself is a 23,000 ha upland estate and a major UK training area predominantly used for artillery firing and field firing infantry, with the majority of OTA within Northumberland National Park.

1.3.2 The monuments are located on rough land 600 m to the east of the Otterburn Camp compound and is around 20 m north of Nunmoss Sike (**Fig. 1**).

1.3.3 The underlying geology is mapped as Tyne Limestone Formation – Limestone, Sandstone, Siltstone and Mudstone. Superficial deposits are mapped as 'Peat – Peat (British Geological Survey online viewer).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Introduction

2.1.1 The name of Otterburn means otter stream, a stream frequented by otters (Old English "otor" + "brunna"). Otterburn lies in west Northumberland in the Northumberland National Park. It has a long history, much of it associated with defence from prehistoric times to the present day. The remote and inaccessible nature of much of the parish, together with the presence of the army's Otterburn Training Area, has led to exceptional preservation of some prehistoric and later settlements and field systems. A selection of records of the archaeology and historic environment of Otterburn is available online at Keys to the Past (http://www.keystothepast.info/). A summary of the archaeological and historical background, based on the records referred to, is provided below.

2.2 Previous investigations

2.2.1 The first comprehensive archaeological survey of the Training Area was carried out by the Conservation Group of Otterburn Estate and the Field Research Group of the Society of Antiquaries of Newcastle upon Tyne between 1975 and 1977. Directed by Beryl Charlton, this survey resulted in the production of a gazetteer and review of archaeological remains on the estate (Charlton & Day 1977; Charlton 1996). There is an abundance of archaeological sites of most periods in the Training Area, ranging from Neolithic burial monuments to Roman forts, medieval farmsteads and post-medieval industrial sites, all of which suggest that the area was considerably more densely populated than in recent times.

2.2.2 Following MoD proposals for the 'Options for Change' project, archaeological surveys and evaluations were undertaken at a number of locations in the Training Area in 1995 to 1997, in order to assess the potential archaeological significance of specific areas affected by the road-widening proposals. These investigations were undertaken jointly by Lancaster University Archaeological Unit and The Archaeological Practice, University of Newcastle upon Tyne. The evaluations identified a number of areas where the survival of significant archaeological remains would be threatened by the proposed developments (LUAU/NUAP 1996, 1997).

2.2.3 In 1996, an excavation was carried out on the Dour Long Cairn which gives us some insight into these prehistoric monuments in the area. In this case the long cairn was, in fact, a chambered cairn with subsequent modifications into the Early Bronze Age (Waddington 1998).

2.2.4 Subsequently, in 2002, Archaeological Services undertook excavation on a number of sites threatened by development for the AS90/MLRS Project, as well as further topographic survey and historic building recording (Archaeological Services 2004; 2005a).

2.2.5 Additional archaeological works, consisting of watching brief, evaluation and excavation, were carried out by Archaeological Services during the construction works for the AS90/MLRS Project at the Otterburn Training Area between 2003 and 2005 (Archaeological Services 2005b).

2.2.6 In 2017 Wessex Archaeology carried out an excavation relating to a presumed Roman marching camp (Scheduled Monument Ref: 1011392) which revealed a Roman rampart and ditch as well as a post-medieval rough cobbled surface and ditch (Wessex Archaeology 2017).

2.2.7 In 2019 Wessex Archaeology carried out an evaluation made up of three trenches across three features identified through walkover surveys and LiDAR assessments. These three features were Site 1: a circular embanked feature bearing similarities to a Bronze Age Ring Cairn. Site 2; an earth and stone mound thought to be either a prehistoric clearance cairn or a burial monument and Site 3; a linear earthwork, possibly forming part of an enclosure (Wessex Archaeology 2020). Excavation demonstrated that Site 1 was made up of a turf bank, the turf of which had been cut from the area immediately outside the bank. No subsoil was present within this area outside the ring bank, suggesting that the turf had been cut relatively recently. No internal features were found other than an area of vitrified soil inside the bank. Samples were taken from the bank deposit and the buried ground surface below it to attempt to recover organics which could be C14 dated, however no suitable material was recovered. Site 2 proved to be two stone and earth clearance cairns of indeterminate date, with the more northerly being more robustly built with clear kerbing and an inner rubble fill, both on to a previous land surface. Radiocarbon dating was completed on two non-oak wood charcoal fragments from the old land surface layer 2008 below the main cairn and returned two Late Iron Age to Romano-British dates. The cairn must therefore post-date this, and may relate to late Romano-British field clearance. Site 3 proved to be a northeast-southwest running bank of upcast material from a shallow ditch to the southeast running in a similar alignment. A fragment of charcoal was recovered from the lower fill of the ditch but was not suitable.

2.2.8 In 2020, Wessex Archaeology carried out an archaeological evaluation on the two monuments that will be investigated in 2021, located through lidar assessment within Otterburn Training Area, Northumberland, centred on National Grid Reference 381569 600546. The possible monuments (Site 1 and Site 2) were located to the east of the main camp, south of the Scheduled Monument area of Todlaw Pike, a suspected Bronze Age settlement with associated filed systems and burial cairns (Wessex Archaeology 2021b). Site 1 was comprised of a circular, embanked feature, c.20 m in diameter, comprising a low, grass-covered, circular bank, up to c.0.60 m high x up to 4 m wide with some raised possible internal features centred on NGR NY 89699 95583. The excavation works demonstrated that the feature contained a well-built stone and earth bank in the south and east of the monument, which became very ephemeral to the north and west. Within the centre of the monument a rough kerbstone wall around a rubble deposit may be the covering for a central burial but time limits meant this could not be fully investigated. Other internal features included a bank of redeposited natural material. Two flint artefacts, potentially dating to the Early Neolithic were recovered, although neither were from secure contexts. Evidence for military training during the 20th century was demonstrated through the presence of two .303 rifle cartridges within the topsoil in the centre of the monument. Site 2 was comprised of a circular, embanked feature c.30 m in diameter, comprising a low moss and grass covered stone bank c.0.30 m high, enclosing a flat internal area centred on NGR NY 89714 95531. The excavation works demonstrated that the monument was made up of a rough drystone bank of cobbles and rocks, with a probable internal kerb of larger flat stones, which may have originally been stood upright. An entrance was present in the north-east of the monument, with the stone bank ending in rounded terminals also faced with kerbstones. The bank and the kerb were placed directly on the old land surface, which was directly on top of the natural substrate, suggesting that the area had been scrapped back prior to the construction of the monument. No internal features were found, and no artefactual evidence was recovered from Site 2.

2.3 Archaeological and historical context

Prehistoric to Romano-British

2.3.1 There are a number of rich prehistoric sites in the vicinity and the earliest remains in the parish are Neolithic. The finds include a piece of pottery and some stone tools, such as worked flint, polished stone axe and axe head. The sites are particularly notable for the area such as a number of cup marked stones, HER N340 Bellshiel Law Cairns which comprises over 15 cairns in varying states of preservation and HER N331 Bellshiel Law long cairn.

2.3.2 The oldest structures are Bronze Age, and they are mainly ritual monuments and cairns in the area. Many of these remains lie in places where people reused the same places in the Iron Age, Roman and medieval periods, such as on Barracker Rigg. Here, a round cairn lies amongst remains of a Roman period settlement and field system. At Todlaw Pike, a round cairn and enclosed cremation cemetery have been discovered, and another round cairn cemetery stands on Levey Bog. Many more round cairns have been discovered across the parish, suggesting there was a great deal of activity here in the Bronze Age. Few bronze objects have been discovered, but those that have include a spearhead and axe head.

2.3.3 The oldest settlements in the parish are Iron Age. Two different types of settlement have been found in Otterburn: defended settlements on Colwell Hill and Fawdon Hill and an unenclosed hut circle settlement on Todlaw Pike. The first settlement is encircled by three ramparts and ditches, while the latter sits unprotected amidst its field system of cairnfields and small rectangular plots. None of these settlements seems to have been used in the Roman period and a series of small farmsteads appear to have been established instead. For example at Woodhill East, Wood Hill, Greenchesters, Little Crag and Barracker Rigg. On Fairney Cleugh there are at least four Roman farmsteads and one of the most extensive cord rig field systems in the county. The Roman army built two roads through this area: the High Rochester to Bridge of Aln road and Dere Street.

2.3.4 Otterburn also lay on medieval route ways, such as the Elsdon to Gamelspath road. One of the most notable medieval events in the parish was the Battle of Otterburn, fought in 1388 between the Scots and the English. The dangers of living so close to the Scottish border meant that some people built defensive buildings called tower houses, such as at Otterburn Tower Hotel and Greenchester. There appear to have been few villages in the area at this time although Roman farmsteads on Barracker Rigg and near Shittleheugh were reoccupied at this time, and there may have been a village at Heatherwick, Davyshiel and Branshaw.

Medieval

2.3.5 In the 16th and 17th century, Otterburn lay in the midst of Border reiver country. Those who could afford it built defensive farmhouses, now called bastles. Some of these buildings have survived, albeit in ruins, at Shittleheugh, Branshaw and Girsonfield. A circular stone feature located close to the site is currently identified as a stack stand west of Silloans (HER N355) but has similarities to the prehistoric ring feature being investigated in this project.

2.3.6 The 18th century brought a more peaceful way of life to the area and people began to build less defensive homes, such as Monkridge Hall, The Vicarage, Old Town Farmhouse and Overacres, whose gate piers are all that survive. Later, Otterburn Hall was built as a county retreat for Lord James Douglas. The parish registers record many farmsteads in the parish, including Potts Durtrees, Hopehead East, Hopeshield West and Hopefoot. People also adopted new ideas in farming that came from the Agricultural Revolution at this time and a new, planned farm, was built at Otterburn Hall Farm.

2.3.7 The boundaries of landownership seem to have been formalised at this time and a series of boundary stones were erected from Rigg Moss to White Crag, Black Hill to Todlaw Pike, Cowey's Cairn to Cooper Stones and elsewhere. Transport links were improved in the late 18th century when the Jedburgh to Newcastle turnpike opened. Some early 19th century milestones still stand alongside the road (A696) at Shittleheugh Bridge and north of Otterburn. Alongside farming, other economic activities were established, including a woollen mill at Otterburn, coal mining near Hopefoot, a tile kiln at Garretshields, corn mills at Davyshiel and Troughend, and lime burning at Greenchesters. The spiritual side of life was also provided for with a Presbyterian chapel, Church of St John the Evangelist and Quaker burial ground.

Modern

2.3.8 The modern village grew up around a coaching inn and Otterburn Tower. It was enlarged in the 1950s with the addition of Brierley Gardens, a council estate which was expanded in the 1970s. The village further expanded in the 1990s and 2000s with the new housing development on former farm land at Willow Green.

2.3.9 More recently, Otterburn has been adopted by the Ministry of Defence as a training area and military remains from the 20th century are becoming important monuments in their own right, such as the target operator bunkers north of Hopehead.

3 AIMS AND OBJECTIVES

3.1 General aims

3.1.1 The general aims of the fieldwork, as stated in the WSI (Wessex Archaeology 2021a) and in compliance with the CIfA' *Standard and guidance for archaeological field evaluation* (CIfA 2014a), were:

- provide information about the archaeological potential of the site; and
- inform either the scope and nature of any further archaeological work that may be required; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.
- examine the archaeological resource within a given area or site within a framework of defined research objectives;
- seek a better understanding of the resource;
- compile a lasting record of the resource; and
- analyse and interpret the results of the excavation, and disseminate them.

3.2 General objectives

3.2.1 In order to achieve the above aims, the general objectives of the fieldwork were:

- determine the presence or absence of archaeological features, deposits, structures, artefacts or ecofacts within the specified area;
- establish, within the constraints of the evaluation, the extent, character, date, condition and quality of any surviving archaeological remains;

- place any identified archaeological remains within a wider historical and archaeological context in order to assess their significance; and
- make available information about the archaeological resource within the site by reporting on the results of the evaluation.

3.3 Site-specific objectives

3.3.1 Following consideration of the archaeological potential of the site the project as a whole, places the experience of veterans and volunteers at its core. It is essential that the following key aims are met with regard to veterans and volunteers taking part in the excavations:

- To provide volunteers from the local community and wounded, injured and sick (WIS) veterans from the military community with a high-quality experience of archaeological fieldwork by the implementation of 'on-the job' training in archaeological fieldwork techniques;
- Wider public engagement with heritage assets;
- The development of new skills for volunteers;
- Volunteers learning about the heritage of Northumberland;
- Greater wellbeing for volunteers and those who support them;
- New or strengthened peer support networks for volunteers;
- Increased employment opportunities for those taking an interest in the heritage sector; and
- Identification of individuals who may be inclined to take up further education in archaeology or a related discipline.

4 METHODS

4.1 Introduction

4.1.1 All works were undertaken in accordance with the detailed methods set out within the WSI (Wessex Archaeology 2021a) and in general compliance with the standards outlined in CIfA guidance (CIfA 2014a). The methods employed are summarised below.

4.2 Fieldwork methods

General

4.2.1 Two trenches excavation areas were stripped by machine and cleaned by hand with hand excavation of features. Excavation Area 1 was located in the central part of the Site 1 enclosure and cairn. It covered the southern part of the enclosure and cairn and was 158 m^2 in area. Excavation Area 2 was located in the central and southern part of the Site 2 enclosure and covered an area of 238.6 m^2.

4.2.2 The fieldwork locations were set out using GPS, in the approximate positions as those proposed in the WSI, from the inferences made on the LiDAR findings of proposed earthworks sites.

4.2.3 Two separate area were excavated in level spits using a 360º excavator equipped with a toothless bucket, under the constant supervision and instruction of the monitoring archaeologist. Machine excavation proceeded until either the archaeological horizon or the natural geology was exposed.

4.2.4 The base of the two sites of archaeological deposits were cleaned by hand. A sample of archaeological features and deposits identified was hand-excavated, sufficient to address the aims of the evaluation. The soil taken from the hand excavations of both sites was stored neatly at a distance of no more than 2 metres from either side of the excavation. Spoil from the excavated areas with features was visually scanned for the purposes of finds and retrieval.

4.2.5 All artefacts from excavated contexts were retained.

4.2.6 Trenches completed to the satisfaction of the client and the National Park Authority Archaeologist were backfilled using excavated materials in the order in which they were excavated, and left level on completion. No other reinstatement or surface treatment was undertaken.

Recording

4.2.7 All exposed archaeological deposits and features were recorded using Wessex Archaeology's pro forma recording system. A section line was drawn at a 1:10 scale of the adjacent annex to site 1 by volunteers and was supervised by Wessex Archaeology staff.

4.2.8 A Leica GNSS connected to Leica's SmartNet service surveyed the location of archaeological features. All survey data is recorded in OS National Grid coordinates and heights above OD (Newlyn), as defined by OSGM15 and OSTN15, with a three-dimensional accuracy of at least 50 mm.

4.2.9 A full photographic record was made using digital cameras equipped with an image sensor of not less than 16 megapixels. Digital images have been subject to managed quality control and curation processes, which has embedded appropriate metadata within the image and will ensure long term accessibility of the image set.

4.3 Artefactual and environmental strategies

4.3.1 Appropriate strategies for the recovery, processing and assessment of artefacts and environmental samples were in line with those detailed in the WSI (Wessex Archaeology 2021a). The treatment of artefacts and environmental remains was in general accordance with: *Guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2014b) and *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (English Heritage 2011).

4.4 Monitoring

4.4.1 The Principal Archaeologist for the National Park Authority, on behalf of the LPA, and DIO Archaeologists monitored the evaluation on behalf of the LPA. Any variations to the WSI, if required to better address the project aims, were agreed in advance with both the client and the for the National Park Authority.

5 ARCHAEOLOGICAL RESULTS

5.1 Introduction

5.1.1 Both of the two sites excavated contained archaeological features and deposits, indicating archaeological remains are present across the site.

5.1.2 The uncovered features comprised of possible structural elements of a cairn and banked enclosures. A lack of artefactual evidence means their chronology is currently uncertain,

however based upon typological grounds both structures would fit within the Early Bronze Age.

5.1.3 Detailed descriptions of individual contexts are provided in the context summary tables (**Appendix 1**).

5.2 Soil sequence and natural deposits

5.2.1 The excavations were conducted on a semi level part of a sloping hillside from north to south.

5.2.2 The natural substrate across the site is a mid-yellowish brown sandy clay with large deposits of fragmented sandstone pieces, and large pockets of shallow to deep peat. On top of this layer was a thin dark brown sandy silt with possible organic material forming a hard layer up to 0.05 m thick which was interpreted as an old land surface relating to the use of the monuments, this layer was previously discovered within trenches 1–2 and 4–15 from the 2020 evaluation.

5.2.3 Both trenches contained a pale pinkish grey fine sand and silt podsol/subsoil, suspected to have built up over the old land surface since the monuments fell out of use

5.2.4 The topsoil was a dark to greyish brown sandy silt with large amounts of rooting disturbance. The roots were larger in quantity around the archaeological features and minimal in areas outside of this. They could be seen at depths of 0.2 m below the surface.

5.3 Site 1

5.3.1 Excavation Area 1, covering an area of 158 m^2, was located in the central part of the monument (**Fig. 2**). Following the removal of the subsoil layer 1002 a number of features were exposed, including the previously recorded old land surface 1003.

5.3.2 To the south-west of the trench was ring ditch 1008/1018 (**Fig. 4.a**). This ditch was curvilinear in plan curving east to west, with shallow concave sides and an irregular base. Two slots were excavated, one in the north and one in the south terminus, measuring 1 m and 1.5 m in length. The overall measurements for the feature were 10 m x 0.7 m x 0.1 m. The fills 1009/1019 were a dark greyish black sandy silt and had accumulated naturally.

5.3.3 A continuation of the ring ditch was discovered to the east of the excavation area. This ditch was curvilinear in plan curving from north-east to south-west, with shallow concave sides and a flat/concave base. Three slots were excavated (1011/1014/1016), two to the north-east and one terminus slot at the south-west end. The overall measurements for the ditch were 11 m x 1.8 m x 0.2 m. The fills 1012/1015/1017 were a dark greyish black sandy silt and had accumulated naturally. Both of these sections of ring ditch followed the inner line of the enclosing bank.

5.3.4 A small area of flat sandstone slabs, 1032, created a small entrance pavement between the ends of the ring ditch in the southern corner of the trench. The paved area measured 0.7 m x 0.3 m x 0.1 m.

5.3.5 To the south-east of the ring ditch was bank 1013 (**Fig. 4.b**). It consisted of a mid yellowish brown and pinkish brown silty sand with frequent angular sandstone fragments. The bank measures 15 m x 5.5 m x 0.25 m. A single 1.5 m slot was excavated by machine following two hand dug slots (205/304) in the 2020 season.

5.3.6 Within the ring ditch was 1010, a circular deposit of pale pinkish grey, silty sand material with sandstone fragments. This deposit was originally discovered in the 2020 season in trench 9 (908) with one quarter being exposed and excavated. Very similar to podsol 1003 but containing more frequent sandstone, likely to be highly eroded cairn material. Deposit 1010 overlay and filled central cut 1030 (**Pl. 1**). Cut 1030 was potentially a burial cut into the bedrock measuring 2.14 m long by 1.5 m wide, it was an oval cut with a possible linear cut 1.8 m long by 0.5 m wide approaching it from the WSW (**Pl. 2**). A lower fill 1031, a mid brown and pale yellow silty sand was compacted within the base of burial cut 1030.

5.3.7 To the east of the excavation area was cut 1006, a later ditch cut through cairn material 1010 and bedrock 1004. The fill 1007 was a dark greyish black sandy silt and had accumulated naturally. Layer 1005 to the east is likely also part of the original cairn, topped with upcast material from the ditch 1006.

5.4 Site 2

5.4.1 Excavation Area 2, covering 238.6 m^2, was located in the central part of site two (**Fig. 3**). Following the removal of subsoil layer 1002, two termini of the earth and stone bank, two single sandstone blocks and a modern drainage ditch were revealed in this trench. After stripping off the topsoil it was found that the interior of the enclosure was devoid of features (**Pl. 3**).

5.4.2 Deposit 1026 is a terminus of the earth and stone bank (**Fig. 5**) of the northern segment of the circular enclosure and demonstrates that the bank is segmented towards the south side. Made up of rounded sandstone fragments with larger stones around the inner side of the bank and smaller stones in the main part. Dimensions of this northern segment were 15 m x 1.5 m x 0.3 m, the excavated terminus measured 2 m in length.

5.4.3 Deposit 1029 is a further terminus of the earth and stone bank (**Fig. 6**), this time on the long western side of the enclosure. As with 1026, this demonstrates that the enclosure has segmented banks along the southern side. It is made up of rounded sandstone fragments, larger stones forming the inner kerb with smaller stones on the inside. Dimensions of the full segment were 30 m x 1.5 m x 0.25 m, the excavated terminus measured 2 m in length.

5.4.4 1022 is a sub-rectangular cut with steep concave sides and an irregular undulating base. This cut is located to the west of the earth and stone bank and is potentially for recumbent stone 1025 which has fallen over (**Fig. 7**). Stone 1025 is a single large sandstone block with two possible cup marks. It measures 2.5 m x 2 m x 0.4 m.

5.4.5 1020 is an irregular cut with steep concave sides and an irregular/undulating base. This cut is located to the west of the earth and stone bank and is a cut for possible standing stone 1024. Stone 1024 is a single sandstone block measuring 1.1 m x 0.35 m x 0.35 m, potentially placed within socket 1020 and now fallen over (**Pl. 4**). Both stones 1024 and 1025 are located within a gap in the stone bank.

5.4.6 Cut 1027 is a later drainage ditch located in the southern end of the trench (**Fig. 4.c**). It is a linear ditch with shallow concave sides with a flat base, orientated north-west to south-east. The exposed length of the ditch was 10 m, a 1 m slot was excavated revealing a width of 0.6 m and depth of 0.1 m.

6 ARTEFACTUAL EVIDENCE

6.1.1 Very few finds were recovered from the excavation. These comprise two fragments of stone, considered on site to be possible quern fragments, and one piece of worked flint.

6.1.2 The two pieces of stone, one from each of the two slots excavated across ring ditch 1008/1018, are similar in appearance. Both are irregular blocks of pale grey sandstone. Neither shows any obvious sign of working and their origin is uncertain, although they may well represent redeposited cairn material.

6.1.3 The piece of worked flint, extracted from a sieved soil sample taken from ring ditch fill 1009, is a small broken blade fragment. On its own, this cannot be dated more closely with any degree of confidence, but it can be noted that blade technology is characteristic of the Mesolithic/early Neolithic period. This was the only artefactual evidence recovered from the ring ditch, but given the likely date it seems probable that this represents a redeposited item.

7 ENVIRONMENTAL EVIDENCE

7.1 Introduction

7.1.1 Five bulk sediment samples were taken from a ring ditch, a potential burial cut and a potential standing stone socket of suspected Early Bronze Age date. These were processed for the recovery and assessment of environmental evidence.

7.2 Aims and methods

7.2.1 The aim of this assessment is to determine the nature and significance of the environmental remains preserved at the site and their potential to address the project aims. Appropriate recommendations for further work are provided. This assessment follows recommendations from Historic England (English Heritage 2011).

7.2.2 The size of the bulk sediment samples varied between 6 and 35 litres, with an average volume of approximately 19 litres. The samples were processed by standard flotation methods on a Siraf-type flotation tank; the flot retained on a 0.25 mm mesh, residues fractionated into 4 mm and 1 mm fractions. The coarse fractions of the residues (>4 mm) were sorted by eye for artefactual and environmental remains and discarded. The fine residue fractions and the flots were scanned and sorted using a stereomicroscope (Leica MS5) at up to x40 magnification.

7.2.3 Different potential indicators of bioturbation were considered, including the percentage of roots, alongside the abundance of modern seeds and insects. The preservation and nature of the charred plant and wood charcoal remains was recorded. Remains are recorded semi-quantitatively on an abundance scale: C = <5 (‘Trace’), B = 5–10 (‘Rare’), A = 10–30 (‘Occasional’), A* = 30–100 (‘Common’), A** = 100–500 (‘Abundant’), A*** = >500 (‘Very abundant’/Exceptional’).

7.2.4 Plant remains were identified through comparison with modern reference material held by Wessex Archaeology and relevant literature (eg, Cappers *et al.* 2006). Selected charcoal fragments were identified through examination of the transverse (TS), tangential longitudinal (TLS) and radial longitudinal (RLS) sections at up to x400 magnification using a Kyowa ME-LUX2 microscope. Charcoal identifications were assisted by the descriptions of Gale and Cutler (2000), Hather (2000) and Schweingruber (1990), together with modern reference material held by Wessex Archaeology.

7.3 Results

7.3.1 The results are presented in Appendix 2, Table 1. The samples were broadly similar in composition and contained abundant modern roots and modern/uncharred seeds. Charcoal and charred plant remains are present in varying concentrations, including heather-type

(*Calluna vulgaris* tp.) stems, heather flower buds, heather leaves, monocotyledon stems, and rhizomes/tubers.

Site 1

7.3.2 The samples from ring ditch slots 1008/1018 (fills 1009/1019) produced large flots dominated by modern roots. Charred plant remains consisted of small monocotyledon stems and rhizomes/tubers (which probably derive from monocotyledons), together with fragments of indeterminate amorphous vegetative material tentatively identified as burnt turf/peat. Small diameter heather-type stems were abundant, with some of these lacking both pith and bark which suggests that they are root/basal stem fragments. There are occasional fragments of oak (*Quercus* sp.) stemwood charcoal and one very small charcoal fragment of an indeterminate non-oak species. Fragmented coal occurred in the sample residue and flot in small quantities in ditch fill 1009, although this is likely to be natural in origin.

7.3.3 Ring ditch slot 1011 (fill 1012) yielded an exceptionally large flot, which was dominated by small diameter heather-type stem fragments. Many of the heather-type stems retained both pith and bark. Heather flower buds were abundant and there are some heather leaves. Large fragments of probable burnt turf/peat were also recovered, alongside rhizomes/tubers.

7.3.4 The samples from burial cut 1030 (fill 1031) were dominated by modern roots. There were no charred plant remains, but very small quantities of highly fragmented charcoal, including heather-type stems, as well as fragmented coal.

Site 2

7.3.5 The possible standing stone socket 1020 (fill 1021) contained very few remains, with a small fragment of probable burnt turf/peat. Charcoal is restricted to very poorly preserved fragments of a probable birch family species (cf. Betulaceae) and a very small fragment of oak.

7.4 Discussion

7.4.1 There are relatively few well-preserved and securely dated archaeobotanical assemblages from earlier prehistoric funerary sites in this area of Northumberland (Hall and Huntley 2007; Huntley 2010). Domestic debris such as evidence for cereal-based agriculture and crop processing activities are absent, although Early Bronze Age funerary sites typically contain very few remains, other than charcoal. This is consistent with the evidence from Todlaw Pike.

7.4.2 A small quantity of oak charcoal is recorded in the ring ditch fills and this is relatively typical of Early Bronze Age funerary sites in northern England, with oak often being used in cremations (Huntley 2010). The oak charcoal is potentially a good candidate for radiocarbon dating, although it probably incorporates a significant age offset due to the 'old wood effect'. Despite this, it could provide a *terminus post quem* (TPQ) for activity at the site, or to distinguish between broad phases of activity.

7.4.3 The majority of the charred plant material potentially derives from the clearance of heathland vegetation associated with the construction and/or maintenance of the cairn. These samples illustrate some of the characteristic range of evidence associated with turf/peat burning, including heather stems which lack bark and pith, monocotyledon stems, rhizomes/tubers, and fragments of indeterminate amorphous vegetative material which is likely the burnt turf/peat itself (cf. Hall 2003). The presence of heather flower buds and leaves suggests that some above ground vegetation has also been burnt. While material

under the cairn was not sampled, charcoal deposits below cairns and barrows have been identified elsewhere and these could be related to clearance episodes before their construction (cf. Huntley 2010). There are also parallels from other areas to indicate that burning of heathland habitats was potentially linked to the construction and maintenance of Early Bronze Age funerary sites. The sample compositions from Todlaw are almost identical to those recovered from an Early Bronze Age barrow on Beacon Hill, Mendip, where a burial soil beneath the barrow and turves used within the barrow contained charred heather stems, peat or turf, grass or sedge plant stems, monocotyledon root material, and fine woody twigs (Leach 2013). At Beacon Hill, this evidence was interpreted as potentially deliberate heathland burning prior to the barrow construction (Leach 2013). Similar evidence for burning of a heathland habitat was identified below an Early Bronze Age round barrow at Emmets Post, Dartmoor (Bayer *et al*. 2017). Further afield in western Denmark, Karg (2008) provides compelling evidence for a fire-managed heathland in association with an Early Bronze Age grave mound (Karg 2008). It is, however, difficult to differentiate between a charred assemblage generated through anthropogenic heathland burning and natural wildfires.

7.4.4 Heathland vegetation communities expanded significantly from the Bronze Age onwards in Northumberland, as elsewhere in Britain, likely due to human clearance of woodland and climatic change (cf. Macklin 1991; Moores 1998; Dark 2005). Heathland habitats were extensively exploited as sources of animal fodder, pasture, roofing material and as fuel throughout the later prehistoric, Romano-British, and medieval periods across northern England (Hall and Huntley 2007). There is extensive evidence for Iron Age, Roman and medieval activity around Todlaw Pike and the Otterburn Training Area (Wessex Archaeology 2021c; Petts and Gerrard 2006). Previous work conducted by Wessex Archaeology in Otterburn Training Area indicates that heather was abundant in the local area during the Iron Age and Romano-British periods (Wessex Archaeology 2017; 2021b). Similarly, heather moorland has often been burned in the recent past to manage these habitats and natural wildfires are not uncommon in these areas.

7.4.5 Due to these factors, some of the heather-type stems may have been reworked into the features (ie, intrusive/residual) through bioturbation, and this material potentially bears no relation to the suspected Early Bronze Age funerary activity identified the site. Equally, some of the heather could already have been ‘old’ (eg, Mesolithic in date) when burnt if some of these stems derive from burnt peat, as opposed to above ground vegetation. The potential problems of vegetation growing in heathland habitats is seen at Emmets Post, Dartmoor (noted above), where an extensive programme of radiocarbon dating demonstrated the presence of both intrusive and residual plant material within the area of the barrow (Bayer *et al.* 2017). Despite this, Bayer *et al.* (2017) were able to provide potential evidence for burning of the landscape prior to the barrow construction at Emmets Post, although they note this may have been due to wildfires. At Beacon Hill, seemingly reliable radiocarbon dates were obtained on charred heather stems beneath the barrow mound (Leach 2013).

7.4.6 The tiny fragments of probable birch family (cf. Betulaceae) charcoal in standing stone socket hole 1020 may not have any association with the construction of the monument.

7.5 Further potential

7.5.1 No further analysis is required for these samples since this would not significantly add to the information outlined in this excavation report. However, the results should be updated once any radiocarbon dating be carried out.

7.5.2 Samples could be submitted for radiocarbon dating to confirm the chronology of the site (ie, infill of the ring ditch). However, due to the factors stated above, radiocarbon dating of heather stems should be undertaken with caution.

7.5.3 The tiny fragments of probable birch family (cf. Betulaceae) charcoal in standing stone socket hole 1020 could have been reworked into the feature and these are unlikely to provide a secure radiocarbon date for the construction of the monument.

7.6 Scientific dating

7.6.1 Material recommended for radiocarbon dating is presented in Appendix 2, Table 2. The sample selection for radiocarbon dating takes into account the project aims to date the features, as well as the nature of the available material. As discussed above, heather-type stems and oak wood charcoal are the most suitable materials available from the samples, although the possibility that some of this material is intrusive or residual should be noted. As a mitigating strategy, a minimum of two single-entity samples per context should be submitted to confirm whether the ring ditch contains intrusive/residual material. If the samples return statistically consistent results, this could provide secure dating evidence for the cairn, notably the infilling of the ring ditch. Deposits where no suitable pairs of samples are available have not been selected for radiocarbon dating.

7.6.2 In total, six samples (three paired dates) have been identified as being suitable for radiocarbon dating, these samples are derived from slots excavated through the ring ditch (fills 1009, 1019 and 1012). If taken forward, it is recommended that the samples be submitted to the 14CHRONO Centre, Queen's University, Belfast.

7.6.3 Of these, the samples taken from context 1019, intervention 1018 from the ring ditch will be submitted for dating namely one sample of oak and one of heather (Appendix 2, Table 2). It is recommended that consideration is given to also dating of the samples from contexts 1009 and 1012.

7.6.4 Reporting of the radiocarbon dating results will follow international conventions (Bayliss 2015; Millard 2014). All results will be reported as follows: uncalibrated years before present (BP), laboratory code and calibrated date range (cal BC/AD). Dates are calibrated with OxCal 4.4 (Bronk-Ramsey 2009) using the IntCal20 curve (Reimer *et al.* 2020). Calibrated dates are reported at 95.4% probability, with end points rounded out to the nearest 10 years. Any modelled dates will be given in italics (Bayliss 2015) and the models used will be given in the text or in each figure's footnotes. The reliability of association between the radiocarbon date and the event which is aimed to be dated will be assessed following Waterbolk (1971).

7.7 Selection strategy

Environmental material

7.7.1 The flots and extracted materials retrieved from environmental samples merit retention with the site archive for future access. A summary of proposals for a site-specific Selection Strategy is presented in Appendix 3.

7.7.2 The residues of all samples have been fully sorted and discarded.

8 CONCLUSIONS

8.1 Summary

8.1.1 The evaluation achieved its main aim of further exploring the two LiDAR anomalies and initially investigated in 2020.

8.1.2 It has answered some of the research questions on their construction and form. The current lack of datable material places severe restrictions upon how a site such as Todlaw Pike can be understood to have developed and functioned over time. The recovery of a series of environmental samples from the fills of the ring ditch surrounding the cairn present an opportunity for dating one aspect of Site 1, namely the infilling of the ring ditch if such a programme of radiocarbon dating is pursued.

8.1.3 In the meantime, a number of normative assumptions and tentative interpretations can be drawn once Todlaw Pike is contextualized within the wider body of regional and national research.

8.2 Discussion

Site 1

8.2.1 Site 1 consists of a cairn containing a grave cut 1030. No evidence was recovered for any material originally interred within 1030 however the taphonomic processes associated with the area's acidic soils would normally result in the complete destruction of any organic remains.

8.2.2 In addition to the main cut of 1030 was the possible further cut to the south-west. If this is a real feature, then this may represent a second interment dating to either before or after the large central cut had been made and may indicate reuse of the monument for the burial of more than one individual.

8.2.3 The initial interment was covered over by earth and stone to form a small mound, 1010. This material was probably in part derived from the excavation of stretches of ditch (1008/1018 and 1011/1014/1016) and surface clearance of stone around the cairn. After being cut by ditch 1006, the mound survives as a pear shape measuring 8.2 m by 5.8 m at its widest. The line of the ring ditch however may suggest that the cairn originally had a diameter of 11.5 m.

8.2.4 In the 2020 excavations trench 9 revealed evidence for an 'edging kerb wall (907)' revetting the cairn material (Wessex Archaeology 2021b) however no evidence for this structure was observed elsewhere in the 2021 excavations and this element may have been created to resolve a specific localized structural problem during construction.

8.2.5 Cairns such as this are typically dated to the Early Bronze Age and what is probably a similar cairn (N8175) is situated about 400 m to the north-east of site 1 with a possible enclosed Early Bronze Age cremation cemetery a further 100 m to the north-east of that (Frodsham 2004, 29).

8.2.6 Bank 1013 would appear to be a continuation of that investigated in 2020 evidently forming an oval shaped enclosure measuring roughly 26 m by 23 m. The cairn is situated at its southernmost end. The 2020 evaluation found that there was a break in the bank to the north and the entrance may have been situated here although in places the bank would have been quite slight. It is also possible that there was a break in the bank corresponding with the causeway in the ring ditch at the southernmost tip of the enclosure.

8.2.7 The coincidence of cairn and enclosure probably illustrates time depth to the creation of a compound monument although which elements came first is not known.

8.2.8 Ditch 1006 which cuts the monument is evidently later than the compound monument but to which period it dates is unknown.

Site 2

8.2.9 The enclosure at site 2 is approximately 33 m by 29 m and like site 1, the north-south axis is slightly longer than the east-west axis. It was formed by the creation of a low bank that survives in places as a 1.5-2 m wide feature. The bank appears to have been intermittent with three gaps observed during the two seasons of fieldwork. Inner kerb stones were observed in three locations around the bank and may have revetted most of the inner face of the bank.

8.2.10 The western bank gap contained two recumbent stones 1024 and 1025 with evidence for their original sockets. It is unclear whether all the gaps in the bank contained stones that are now fallen.

8.2.11 No features were observed within the area investigated in the interior of the enclosure and it seems unlikely that the structure contained a settlement at any time during its history.

8.2.12 There is a large variety of forms of ring cairns, with that at site 2 falling closest to Lynch's 'complex ring cairn' form (Lynch 1972) or perhaps, in plan form at least, an 'embanked stone circle'. Excavated examples often show varied stages of construction in 'fluid' sequences (Bradley 1998, 134) suggesting that most had unique biographies. For site 2, it is possible that it was constructed in a single phase of bank, kerbs and standing stones or with different elements added at different times. An example of such a multistage construction was found at Temple Wood, Kilmartin, Argyll where a stone circle was later embanked with the stones acting as an inner kerb when the structure morphed from a ritual to funerary function (Scott 1989).

8.2.13 The inner kerb stones at Todlaw Pike would be quite modest for a stone circle and a local parallel, albeit on a smaller scale, can be found at Blawearie, near Wooler further north-east in Northumberland where a circle of kerb stones was excavated during the 1990s (Hewitt & Beckensall 1996). This feature, reused as a cist cemetery during the Early Bronze Age, was demonstrated to have a potentially ritual function earlier in prehistory. Similarly, although such structures are normally placed within the Early Bronze Age, different phases of construction have been shown to extend into the Middle Bronze Age (Nimura and Bradley 2016) and an extended chronology cannot be ruled out here.

9 ARCHIVE STORAGE AND CURATION

9.1 Museum

9.1.1 The archive resulting from the evaluation is currently held at the offices of Wessex Archaeology in Edinburgh. The Great North Museum has agreed in principle to accept the archive on completion of the project, under a museum-specific accession code. Deposition of any finds with the museum will only be carried out with the full written agreement of the landowner to transfer title of all finds to the museum.

9.2 Preparation of the archive

9.2.1 The archive, which includes paper records, graphics, artefacts, ecofacts and digital data, will be prepared following the standard conditions for the acceptance of excavated

archaeological material by the Great North Museum, and in general following nationally recommended guidelines (SMA 1995; CIfA 2014c; Brown 2011; ADS 2013).

9.2.2 All archive elements will be marked with the **site/accession code**, and a full index will be prepared. The physical archive currently comprises the following:

- 1 cardboard box of artefacts
- 1 file of paper records and A3/A4 graphics.

Digital archive

9.2.3 The digital archive generated by the project, which comprises born-digital data (eg site records, survey data, databases and spreadsheets, photographs and reports), will be deposited with a Trusted Digital Repository, in this instance the Archaeology Data Service (ADS), to ensure its long-term curation. Digital data will be prepared following ADS guidelines (ADS 2013 and online guidance) and accompanied by full metadata.

9.3 Selection strategy

9.3.1 It is widely accepted that not all the records and materials (artefacts and ecofacts) collected or created during the course of an archaeological project require preservation in perpetuity. These records and materials will be subject to selection in order to establish what will be retained for long-term curation, with the aim of ensuring that all elements selected to be retained are appropriate to establish the significance of the project and support future research, outreach, engagement, display and learning activities, ie the retained archive should fulfil the requirements of both future researchers and the receiving Museum.

9.3.2 The selection strategy, which details the project-specific selection process, is underpinned by national guidelines on selection and retention (Brown 2011, section 4) and generic selection policies (SMA 1993; Wessex Archaeology's internal selection policy) and follows CIfA's *Toolkit for Selecting Archaeological Archives*. It should be agreed by all stakeholders (Wessex Archaeology's internal specialists, external specialists, local authority, museum) and fully documented in the project archive.

9.3.3 Project-specific proposals for selection are presented in Appendix 3. These proposals are based on recommendations by Wessex Archaeology's internal specialists and will be updated in line with any further comment by other stakeholders (museum, local authority). The selection strategy will be fully documented in the project archive.

9.3.4 Any material not selected for retention may be used for teaching or reference collections by Wessex Archaeology.

9.4 Security copy

9.4.1 In line with current best practice (eg, Brown 2011), on completion of the project a security copy of the written records will be prepared, in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

9.5 OASIS

9.5.1 An OASIS (online access to the index of archaeological investigations) record (http://oasis.ac.uk/pages/wiki/Main) has been initiated, with key fields completed (Appendix 4). A .pdf version of the final report will be submitted following approval by the NNPA

Archaeologist on behalf of the LPA. Subject to any contractual requirements on confidentiality, copies of the OASIS record will be integrated into the relevant local and national records and published through the Archaeology Data Service (ADS) ArchSearch catalogue.

10 COPYRIGHT

10.1 Archive and report copyright

10.1.1 The full copyright of the written/illustrative/digital archive relating to the project will be retained by Wessex Archaeology under the *Copyright, Designs and Patents Act* 1988 with all rights reserved. The client will be licenced to use each report for the purposes that it was produced in relation to the project as described in the specification. The museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use conforms to the *Copyright and Related Rights Regulations* 2003. In some instances, certain regional museums may require absolute transfer of copyright, rather than a licence; this should be dealt with on a case-by-case basis.

10.1.2 Information relating to the project will be deposited with the Historic Environment Record (HER) where it can be freely copied without reference to Wessex Archaeology for the purposes of archaeological research or development control within the planning process.

10.2 Third party data copyright

10.2.1 This document and the project archive may contain material that is non-Wessex Archaeology copyright (eg, Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which Wessex Archaeology are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferable by Wessex Archaeology. Users remain bound by the conditions of the *Copyright, Designs and Patents Act* 1988 with regard to multiple copying and electronic dissemination of such material.

REFERENCES

ADS 2013 *Caring for Digital Data in Archaeology: a guide to good practice*. Archaeology Data Service and Digital Antiquity Guides to Good Practice

Archaeological Services, 2004, *Otterburn Training Area Options for Change Development: archaeological investigations 2002, assessment report*, Vols. IIII, unpublished report 1096, for RPS Group PLC, Archaeological Services Durham University

Archaeological Services, 2005a, *Otterburn Training Area, Northumberland, Options for Change Development, AS90/MLRS Project archaeological investigations 2002-2005 post-excavation analysis report*, unpublished report 1284, for RPS Group PLC and Mowlem plc, Archaeological Services Durham University

Archaeological Services, 2005b, *Otterburn Training Area, Northumberland, Options for Change Development, AS90/MLRS Project construction phase archaeological works 2003-2005,* unpublished report 1280, Archaeological Services Durham University

Bayer, O, Simmonds, A, Welsh, K, Boardman, S, Dunbar, E, Hogg, A, Marshall, P, McKenzie, J, Quinnell, H, Reimer, P and Rutherford, M, 2017 Excavation of an early Bronze Age Round Barrow at Emmets Post, Shaugh Prior, Dartmoor. *Proc Devon Archaeol Soc* 75, 51-95

Bayliss, A 2015 Quality in Bayesian chronological models in archaeology. *World Archaeol* 47, 677–700

Bradley, R. 1998 *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*. London, Routledge

British Geological Survey online viewer http://mapapps.bgs.ac.uk/geologyofbritain/home.html (accessed September 2021)

Bronk Ramsey, C 2009 Bayesian analysis of radiocarbon dates. *Radiocarbon* 51, 337–60

Brown, D H 2011 *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (revised edition). Archaeological Archives Forum

CIfA 2014a *Standard and Guidance for Archaeological Field Evaluation*. Reading, Chartered Institute for Archaeologists

CIfA 2014b *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*. Reading, Chartered Institute for Archaeologists

CIfA 2014c *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*. Reading, Chartered Institute for Archaeologists

Cappers, R T J, Bekker, R M and Jans, J E A 2006 *Digital Seed Atlas of the Netherlands*. Groningen, Barkhuis Publishing

Charlton, D B, 1996, *Fifty Centuries of Peace and War; an Archaeological Survey of the Otterburn Training Area*, Beryl Charlton and the Ministry of Defence

Charlton, D B, and Day, J, 1977, *An Archaeological Survey of the MoD Training Area Otterburn, Northumberland*, Ministry of Defence

Dark, P, 2005 Mid-to late-Holocene vegetational and land-use change in the Hadrian's Wall region: a radiocarbon-dated pollen sequence from Crag Lough, Northumberland, England. *J Archaeol Sci* 32, 601-618

English Heritage 2011 *Environmental Archaeology: a guide to theory and practice of methods, from sampling and recovery to post-excavation*. Swindon, Centre for Archaeology Guidelines

Frodsham, P. 2004 *Archaeology in Northumberland National Park*. York, CBA Research Report 136.

Gale, R and Cutler, D 2000 *Plants in Archaeology: identification manual of vegetative plant materials used in Europe and the southern Mediterranean to c. 1500*. Otley, Westbury and Royal Botanic Gardens, Kew

Hall, A R 2003 *Recognition and characterisation of turves in archaeological occupation deposits by means of macrofossil plant remains.* English Heritage Centre for Archaeology Report 16/2003. Portsmouth, Historic England

Hall, A R and Huntley, J P 2007 *A Review of the Evidence for Macrofossil Plant Remains from Archaeological Deposits in Northern England*. English Heritage, Research Department Report Series 87

Hather, J G 2000 *The Identification of Northern European Woods: a guide for archaeologists and conservators*. London, Archetype

Hewitt, I and Beckensall, S 1996 The Excavation of Cairns at Blawearie, Old Bewick, Northumberland. *Proceedings of the Prehistoric Society* 62 pp.255-274

Huntley, J 2010 *A Review of Wood and Charcoal recovered from Archaeological Excavations in Northern England. Environmental Studies Report*. English Heritage, Research Department Report Series 68

Karg, S, 2008 Direct evidence of heathland management in the early Bronze Age (14th century BC) from the grave-mound Skelhøj in western Denmark. *Veget Hist Archbot* 17, 41-49

LUAU/NUAP, 1996 *OTA Archaeological Evaluation Final Report*, unpublished report for Ministry of Defence, Lancaster University Archaeological Unit and Newcastle University Archaeological Practice

LUAU/NUAP, 1997 *OTA Archaeological Report on Second Evaluation*, unpublished report for Ministry of Defence, Lancaster University Archaeological Unit and Newcastle University Archaeological Practice

Leach, P 2013 A Bronze Age burial and barrow on Beacon Hill, Mendip: excavations and analysis 2007-8. *Proc Somerset Archaeol Nat Hist Soc* 156, 18-40

Lynch, F. M. 1972 Ring Cairns and Related Monuments in Wales, *Scot Archaeol Forum* 4, 61-80

Macklin, M G, Passmore, D G, Stevenson, A C, Cowley, D C, Edwards, D N, and O'Brien, C F, 1991 Holocene alluviation and land-use change on Callaly Moor, Northumberland, England. *J Quat Sci* 6, 225-232

Millard, A R 2014 Conventions for reporting radiocarbon determinations. *Radiocarbon* 56, 555–9

Moores, A J 1998 *Palaeoenvironmental Investigations of Holocene Landscapes in the North Tyne Basin, Northern England.* Unpublished PhD Thesis, University of Newcastle upon Tyne

Nimura, C. and Bradley, R. 2016 *The use and reuse of stone circles: fieldwork at five Scottish monuments and its implications*. Oxford, Oxbow Books

Petts, D and Gerrard, C 2006 *Shared Visions: The North-East Regional Research Framework for the Historic Environment.* Durham, Durham County Council

Reimer, P J, Austin, W E N, Bard, E, Bayliss, A, Blackwell, P G, Bronk Ramsey, C, Butzin, M, Cheng, H, Edwards, R L, Friedrich, M, Grootes, P M, Guilderson, T P, Hajdas, I, Heaton, T J, Hogg, A G, Hughen, K A, Kromer, B, Manning, S W, Muscheler, R, Palmer, J G, Pearson, C, van der Plicht, J, Reimer, R W, Richards, D A, Scott, E M, Southon, J R, Turney, C S M, Wacker, L, Adolphi, F, Büntgen, U, Capano, M, Fahrni, S M, Fogtmann-Schulz, A, Friedrich, R, Köhler, P, Kudsk, S, Miyake, F, Olsen, J, Reinig, F, Sakamoto, M, Sookdeo, A and Talamo, S 2020 The IntCal20 Northern Hemisphere Radiocarbon Age Calibration Curve (0–55 cal kBP). *Radiocarbon* 62, 725–57

Schweingruber, F H 1990 *Microscopic Wood Anatomy* (3rd edition). Birmensdorf, Swiss Federal Institute for Forest, Snow and Landscape Research

Scott, J.G. 1989 The stone circles at Temple Wood, Kilmartin, Argyll, *Glasgow Archaeological Journal* 15, 53–124

SMA 1993 *Selection, Retention and Dispersal of Archaeological Collections*. Society of Museum Archaeologists

SMA 1995 *Towards an Accessible Archaeological Archive*. Society of Museum Archaeologists

Waddington, C 1998 *A chambered tomb on Dour Hill, Northumberland. A detailed survey and re-assessment of the Dour Hill 'long cairn'* https://www.researchgate.net/publication/312372146_A_chambered_tomb_on_Dour_Hill_Northumberland_A_detailed_survey_and_re-assessment_of_the_Dour_Hill_%27long_cairn%27

Waterbolk, H T 1971 Working with radiocarbon dates. *Proc Prehistoric Soc* 37, 15–33

Wessex Archaeology 2017 *Excavations at Burdhopecrag Roman Camp, Otterburn: Excavation Report*. Report ref: 117950.03

Wessex Archaeology 2020 *Bellshiel's Rig, Otterburn, Northumberland: Archaeological Evaluation.* Report ref: 221930.04

Wessex Archaeology 2021a *Operation LiDAR Truth, Otterburn, Northumberland Evaluation Written Scheme of Investigation for Archaeological Evaluation* Unpublished client report ref 221932.02

Wessex Archaeology 2021b *Operation LiDAR Truth, Otterburn, Northumberland Evaluation Report*. Unpublished client report ref 221931.03

Wessex Archaeology 2021c *Yatesfield, Otterburn Training Camp, Northumberland: archaeological evaluation*. Salisbury, unpublished client report 247270.04

APPENDICES

Appendix 1 Context appendix

Context Number	Type	Category	Fill of/Filled With
101	**Cut**	**Unknown interpretation**	**n/a**
Unidentified feature.			
1001	**Layer**	**Topsoil**	**n/a**
Very dark brownish black proto peat with turf and rooting with occasional angular sandstone fragments			
1002	**Layer**	**Podsol**	**n/a**
Pale pinkish grey fine sand and silt with very occasional angular sandstone fragments			
1003	**Layer**	**Subsoil**	**n/a**
Mid brown sandy silt with occasional root staining and iron pan on transition to 1004 below			
1004	**Layer**	**Natural**	**n/a**
Mid yellow with patchy orange coarse sand and bedded sandstone			
1005	**Layer**	**Deliberate dump**	**n/a**
Pale pinkish grey silty sand with moderate angular sandstone fragments			
1006	**Cut**	**Ditch**	**1007**
Curvilinear ditch aligned curving N to S with shallow, concave sides and an irregular/undulating base. Length: 7.00 m. Width: 0.60 m. Depth: 0.15 m.			
1007	**Fill**	**Secondary fill**	**1006**
Dark greyish black sandy silt with moderate rooting, occasional sub-rounded sandstone stones			
1008	**Cut**	**Ring ditch**	**1009**
Curvilinear ring ditch aligned Curves E to W with shallow, concave sides and an irregular/undulating base. Length: 5.50 m. Width: 0.70 m. Depth: 0.05 m.			
1009	**Fill**	**Secondary fill**	**1008**
Dark greyish black sandy silt with moderate rooting			
1010	**Layer**	**Cairn material**	**19030**
Pale pinkish grey silty sand with moderate to frequent angular sandstone fragments			
1011	**Cut**	**Ditch**	**1012**
Curvilinear ditch aligned Curved from NE to SW with shallow, concave sides and a flat base. Length: 10.00 m. Width: 1.50 m. Depth: 0.25 m.			
1012	**Fill**	**Organic material**	**1011**
Dark greyish black sandy silt with occasional rooting, rounded stones in base			
1013	**Layer**	**Embankment**	**n/a**
Mid yellowish brown and pinkish brown silty sand with frequent angular sandstone fragments			
1014	**Cut**	**Ditch**	**1015**
Curvilinear ditch aligned Curving NE to SW with shallow, concave sides and a concave base. Length: 15.00 m. Width: 3.50 m. Depth: 0.25 m.			
1015	**Fill**	**Secondary fill**	**n/a**
Dark greyish black sandy silt with occasional rooting, rounded sandstone stones in base			
1016	**Cut**	**Ditch terminal**	**1017**
Curvilinear ditch terminal with moderate, concave sides and an irregular/undulating base. Length: 11.00 m. Width: 1.80 m. Depth: 0.20 m.			
1017	**Fill**	**Secondary fill**	**1016**
Dark greyish black sandy silt with occasional rooting, rounded stones in base			
1018	**Cut**	**Ring ditch**	**n/a**
Curvilinear ring ditch aligned Curving S to N with shallow, concave sides and an irregular/undulating base. Length: 10.00 m. Width: 0.70 m. Depth: 0.10 m.			
1019	**Fill**	**Secondary fill**	**1018**
Dark greyish black sandy silt with moderate rooting			
1020	**Cut**	**Socket for standing stone**	**n/a**
Possible irregular construction cut with steep, concave sides and an irregular/undulating base. Length: 0.30 m. Width: 0.15 m. Depth: 0.15 m.			
1021	**Fill**	**Secondary fill**	**1020**

Context Number	Type	Category	Fill of/Filled With
Mid brown sandy silt with occasional stone fragments			
1022	**Cut**	**Socket for standing stone**	**1023, 1025**
Sub-rectangular construction cut with steep, concave sides and an irregular/undulating base. Length: 2.30 m. Width: 0.35 m. Depth: 0.25 m.			
1023	**Fill**	**Secondary fill**	**1020**
Mid brown sandy silt with occasional stone fragments			
1024	**Fill**	**Fallen standing stone**	**n/a**
Mid greyish brown sandstone			
1025	**Fill**	**Fallen recumbent stone**	**1022**
Mid greyish brown sandstone			
1026	**Layer**	**Bank terminal**	**n/a**
Mid greyish brown rounded sandstone fragments			
1027	**Cut**	**Ditch**	**1028**
Linear ditch aligned NW-SE with shallow, concave sides and a flat base. Length: 10.00 m. Width: 0.60 m. Depth: 0.10 m.			
1028	**Fill**	**Secondary fill**	**1027**
Dark blackish brown proto peat with rooting and stone fragments			
1029	**Layer**	**Bank terminal**	**n/a**
Mid greyish brown rounded sandstone fragments			
1030	**Cut**	**Grave cut**	**1010, 1031**
Possible irregular burial chamber aligned E-W with moderate, concave sides and an irregular/undulating base. Length: 4.50 m. Width: 2.00 m. Depth: 0.30 m.			
1031	**Fill**	**Floor Surface**	**1030**
Mid brown and pale yellow silty sand with occasional rounded stones			
1032	**Layer**	**Surface**	**n/a**
Mid greyish brown flat sandstone slabs			

Appendix 2: Tabulation of environmental samples

Table 1: Environmental Assessment: charred plant remains and charcoal

Area	Phase	Feature Type	Feature	Context	Sample Code	Sample vol. (l)	Flot vol. (ml)	Bioturbation proxies	Grain	Chaff	Cereal Notes	Charred Other	Charred Other Notes	Plant remains Preservation	Charcoal >2mm (ml)	Charcoal	Charcoal Preservation	Other
Tr1	Prehistoric ?BA	Gully / ring ditch	1008	1009	221932_101	18	1000	90%, I	-	-	-	A**	Monocot. stems, rhizomes/tubers, fragments of burnt ?turf/peat	H	5	*Calluna vulgaris*-type stems (small diameter stems), *Quercus* sp. fragment	P	Coal C
Tr1	Prehistoric ?BA	Gully / ring ditch	1018	1019	221932_102	19	1000	90%, I	-	-	-	A	Rhizomes/tubers, fragments of burnt ?turf/peat	H	3	*Calluna vulgaris*-type stems (with no bark or pith, small diameter stems), *Quercus* sp. stemwood fragments (>20 frags.). One small unidentifiable fragment (diffuse porous)	G	-
Tr2	Prehistoric	Standing stone socket	1020	1021	221932_103	6	250	90%, C	-	-	-	B	Fragments of burnt ?turf/peat	H	1	cf. Betulaceae and a very small *Quercus* sp. fragment	P	-
Tr1	Prehistoric ?BA	Gully/ ring ditch	1011	1012	221932_104	35	1250 (50% sub-sample)	80%, C, I	-	-	-	A***	Monocot. Stems, rhizomes/tubers, fragments of burnt ?turf/peat	H	120 (estimate)	*Calluna vulgaris*-type stems (small diameter stems, some with bark), *Calluna vulgaris* flower buds and leaves, Ericaceae leaves	G	-
Tr1	Prehistoric ?BA	Burial cut	1030	1031	221932_105	18	500	0.95	-	-	-	-	-	H	<1	*Calluna vulgaris*-type stems (small diameter stems). Highly fragmented charcoal	P	Coal (C)

Scale of abundance: C = <5, B = 5–10, A = 10–30, A* = 30–100, A** = 100–500, A*** = >500; Bioturbation proxies: Roots (%), Uncharred seeds (scale of abundance), I = insects. Preservation: H = heterogeneous, P = Poor, F = Fair.

Table 2: Radiocarbon dating recommendations

Area	Feature Type	Feature	Context	Sample Code	Single entity (1st choice)	Weight	Notes	Single entity (2nd choice)	Weight	Notes
Tr1	Ring ditch	1008	1009	221932_101	*Calluna vulgaris*-type stem	20mg	Pith and bark present, excellent condition	*Calluna vulgaris*-type stem	10mg	Pith and bark present, excellent condition.
Tr1	Ring ditch	1018	1019	221932_102	*Quercus* sp. charcoal	42mg	Stemwood fragment, some vitrification and radial cracking, 4 growth rings, good condition	*Calluna vulgaris*-type stem	10mg	Pith and bark present, excellent condition. 3rd choice: *Quercus* sp. stemwood fragment, some vitrification and radial cracking, 4 growth rings, good condition
Tr1	Ring ditch	1011	1012	221932_104	*Calluna vulgaris*-type stem	103mg	Twisted fragment, difficult to count growth rings, pith and bark present, excellent condition	*Calluna vulgaris*-type stem	14mg	Pith and bark present, difficult to count growth rings (>5 rings)

Appendix 3: Selection Strategy

221932

Exercise Lidar Truth Todlaw Pike, Archaeological Excavation

Version 1 15/11/21

Selection Strategy

Project Information

Project Management		
Project Manager	Chris Swales	
Archaeological Archive Manager	Lorraine Mepham	
Organisation	Wessex Archaeology (WA)	
Stakeholders		**Date Contacted**
Collecting Institution(s)	Andrew Parkin, Great North Museum Archaeology Data Service	15/11/2021
Project Lead / Project Assurance	Lead: Ben Saunders/Andrew Valdez-Tullett Assurance: Chris Swales	N/A
Landowner / Developer	Ministry of Defence 3 Doe Crag Houses, Otterburn, Newcastle upon Tyne NE19 1NX, UK, England.	TBC
Other (external)	Northumberland National Park Authority Archaeologist DIO Archaeologists Breaking Ground Heritage, Operation Nightingale	N/A
Other (internal)	WA Finds Officer (Jessica Irwin) WA Environmental Officer (Sander Aerts) WA Geomatics & BIM Manager (Chris Breeden) WA internal finds & environmental specialists (see WSI)	N/A; briefed as part of standard project process
Resources		
Resources required	WA Finds and Environmental specialists; external finds and	

	environmental specialists; WA archives team

Context

This overarching selection strategy document is based on the CIfA Archives Selection Toolkit (2019) and relates to archaeological project work being undertaken by Wessex Archaeology as defined in the WSIs.

Relevant standards, policies and guidelines consulted include:

General

- *Selection, Retention and Dispersal of Archaeological Collections* (Society of Museum Archaeologists, 1993)
- *Archaeological archives: a guide to best practice in creation, compilation, transfer and curation* (AAF, revised edition 2011, section 4)
- *Great North Museum: Hancock. Archaeological Archive Deposition Policy (February 2017)*

Relevant research agendas

- *Shared visions: North-East Regional Research Framework for the Historic Environment* (NERRF 2006)

Finds

- *Standard Guidance for the collection, documentation, conservation & research of archaeological materials* (CIFA, 2014)
- *A Standard for Pottery Studies in Archaeology* (Prehistoric Ceramics Research Group, Study Group for Roman Pottery, Medieval Pottery Research Group 2016)

Environmental

- *Environmental Archaeology: A Guide to the Theory, Practice of Methods, from Sampling and Recovery to Post-excavation* (English Heritage 2011)
- *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record* (Historic England 2015)
- *Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains* (English Heritage 2008)

Research objectives of the project

Following consideration of the archaeological potential of the site, the research objectives of the evaluation were to:

- determine the presence or absence of archaeological features, deposits, structures, artefacts or ecofacts within the specified area;
- establish, within the constraints of the evaluation, the extent, character, date, condition and quality of any surviving archaeological remains;
- place any identified archaeological remains within a wider historical and archaeological context in order to assess their significance.

REVIEW POINTS

Consultation with all Stakeholders regarding project-specific selection decisions will be undertaken at a maximum of two project review points:

1. End of data gathering (assessment stage)
2. Archive compilation

1 – Digital Data

Stakeholders

WA Project Manager; WA Archives Manager; WA Geomatics & BIM Manager; Northumberland National Park Authority Archaeologist; ADS

Selection

Location of Data Management Plan (DMP)

This document is designed to link to the project Data Management Plan (DMP), which can be supplied on request.

To promote long-term future reuse deposition file formats will be of archival standard, open source and accessible in nature following national guidance from ADS 2013, CIfA 2014c and the requirements of the digital repository.

Any sensitive data to be handled according to Wessex Archaeology data policy to ensure it is stored and transferred securely. The identity of individuals will be protected in line with GDPR. If required, data will be anonymised and redacted. Selection and retention of sensitive data for archival purposes will occur in consultation with the client and relevant stakeholders. Confidential data will not be selected for archiving and will be handled as per contractual obligation.

Document type	Selection Strategy	Review Points
Site records	Most records will be completed digitally on site (with the exception of registers). All will be selected for deposition.	2
Reports	To include WSIs, Interim reports, post-excavation assessment reports, publication reports. Final versions only will be selected for deposition.	1, 2
Specialist reports	Specialist reports will generally be incorporated in other documents with only minimal editing (reformatting, etc), and will be selected only if the original differs significantly from the incorporated version.	1, 2
Photographic media (site recording)	Substandard and duplicate images will be eliminated; pre-excavation images may not be selected where duplicated by post-excavation shots; working shots will be very rigorously selected to include only good quality images with potential for reuse and those integral to understanding features, their inter-relationships and location on site; site condition and reinstatement photos will not be selected.	1, 2
Photographic media (community engagement and other activities)	General shots, promotional videos, etc. None will be selected, unless images are generated that are not duplicated in the main site record, but which have specific archaeological value.	2
Survey data	Site survey data will be used to generate CAD/GIS files for use in post-excavation activities. Shapefiles of	1, 2

	both the original tidied survey data, and the final phased drawings will be selected.	
Databases and spreadsheets	Context, finds and environmental data in linked databases. Final versions will be selected. Any specialist data submitted separately will also be selected.	1, 2
Administrative records	Includes invoices, receipts, timesheets, financial information, email correspondence. None will be selected, with the exception of any correspondence relating directly to the archaeology.	2

De-Selected Digital Data

De-selected data will be stored on WA secured servers on offsite storage locations. The WA IT department has a backup strategy and policies that involves daily, weekly and monthly and annual backups of data as stated in the DMP. This strategy is non-migratory, and original files will be held at WA under their unique project identifier, as long as they remain useful and usable in their final version format. This data may also be used for teaching or reference collections by the museum, or by WA unless otherwise required by contractual or copyright obligations.

Amendments

Date	Amendment	Rationale	Stakeholders

2 – Documents

Stakeholders

WA Project Manager; WA Archives Manager; Great North Museum: Hancock; Northumberland National Park Authority Archaeologist

Selection

A security copy of all paper/drawn records is a requirement of CIfA guidelines. This will be prepared on completion of the project, in the form of a digital PDF/A file. If the security copy is not required for deposition by Stakeholders, it will be retained on backed-up servers belonging to Wessex Archaeology.

Note that some information may be redacted to comply with GDPR legislation (personal data).

Document type	Selection Strategy	Review Points
Site records	Selected records only will be completed in hard copy on site (registers, some graphics). All will be selected for deposition.	2
Reports	Hard copies of all reports (SSWSIs, Interim reports, post-excavation assessment reports, publication	1, 2

	reports). All will be selected for deposition, with the exception of earlier versions of reports which have been clearly superseded.	
Specialist reports & data	Specialist reports will generally be incorporated in other documents with no significant editing. Supporting data is more likely to be included in the digital archive, but if supplied in hard copy and not incorporated elsewhere, this will be selected.	1, 2
Photographic media	X-radiographic plates: all will be selected.	2
Secondary sources	Hard copies of secondary sources will not be selected.	2
Working notes	Rough working notes, annotated plans, preliminary versions of matrices etc, will not be selected.	2
Administrative records	Invoices, receipts, timesheets, financial information, hard copy correspondence. None will be selected, with the exception of any hard copy correspondence relating directly to the archaeology.	2

De-Selected Documents

De-selected sensitive analogue data will be destroyed (shredded) subject to final checking by the WA Archives team with the remainder recycled. Possible exceptions include records retained for business purposes, including promotional material, teaching and internal WA library copies of reports.

Amendments

Date	Amendment	Rationale	Stakeholders

3 – Materials

Material type	Artefacts (bulk and registered finds)	Section 3.	3.1

Stakeholders

WA Archives Manager; WA Finds Manager; WA internal specialists; Great North Museum: Hancock; Northumberland National Park Authority Archaeologist; landowner (MOD)

Selection

The following proposals have been prepared by WA internal specialists following scanning and recording conducted during the assessment stage.

Find Type	Selection Strategy	Review Points

Stone, unworked (2 obj)	Believed to be quern when collected, no identifiable surfaces. Retain none.	1, 2
Worked flint (1 obj)	Negligible quantity, and probably redeposited, but only artefactual evidence recovered from monument. Retain.	1, 2

De-Selected Material

Consideration will be given to the suitability for use for handling or teaching collections by the museum or Wessex Archaeology, or whether they are of particular interest to the local community. De-selected material will either be returned to the landowner or disposed of. All will be adequately recorded to the appropriate level before de-selection.

Amendments

Date	Amendment	Rationale	Stakeholders

3 – Materials

Material type	Palaeoenvironmental material	**Section 3.**	3.2

Stakeholders

WA Archives Manager; WA Environmental Officer; WA internal specialists; Great North Museum: Hancock; Northumberland National Park Authority Archaeologist;

Selection

All contexts suitable for environmental sampling will be considered for sampling. All environmental sampling will be undertaken following Wessex Archaeology's in-house guidance, which adheres to the principles outlined in Historic England's guidance (English Heritage 2011 and Historic England 2015a) and as stated in relevant WSI.

Env Material Type	Selection Strategy	Review Points
Unprocessed samples	In the event of any samples being eliminated from processing due to lack of archaeological significance, these will not be retained.	1, 2
Unsorted residues	Residues from samples not proposed for further analysis will be de-selected, with the possible exception of any taken for the recovery of human remains.	1, 2
Assessed flots with no extracted materials	Assessed flots with no extracted materials are considered to be devoid of any significant environmental evidence and will be de-selected.	1, 2

Assessed or analysed flots with extracted materials	The assessed flots and extracted materials should be retained in the site archive in case of further work and radiocarbon dating queries. The residues of all samples have been fully sorted and discarded.	1, 2
Charred & waterlogged plant remains	All extracted plant remains will be selected	2

De-Selected Material

De-selected material and finds from samples will be responsibly disposed of after processing and post-ex recording.

Amendments

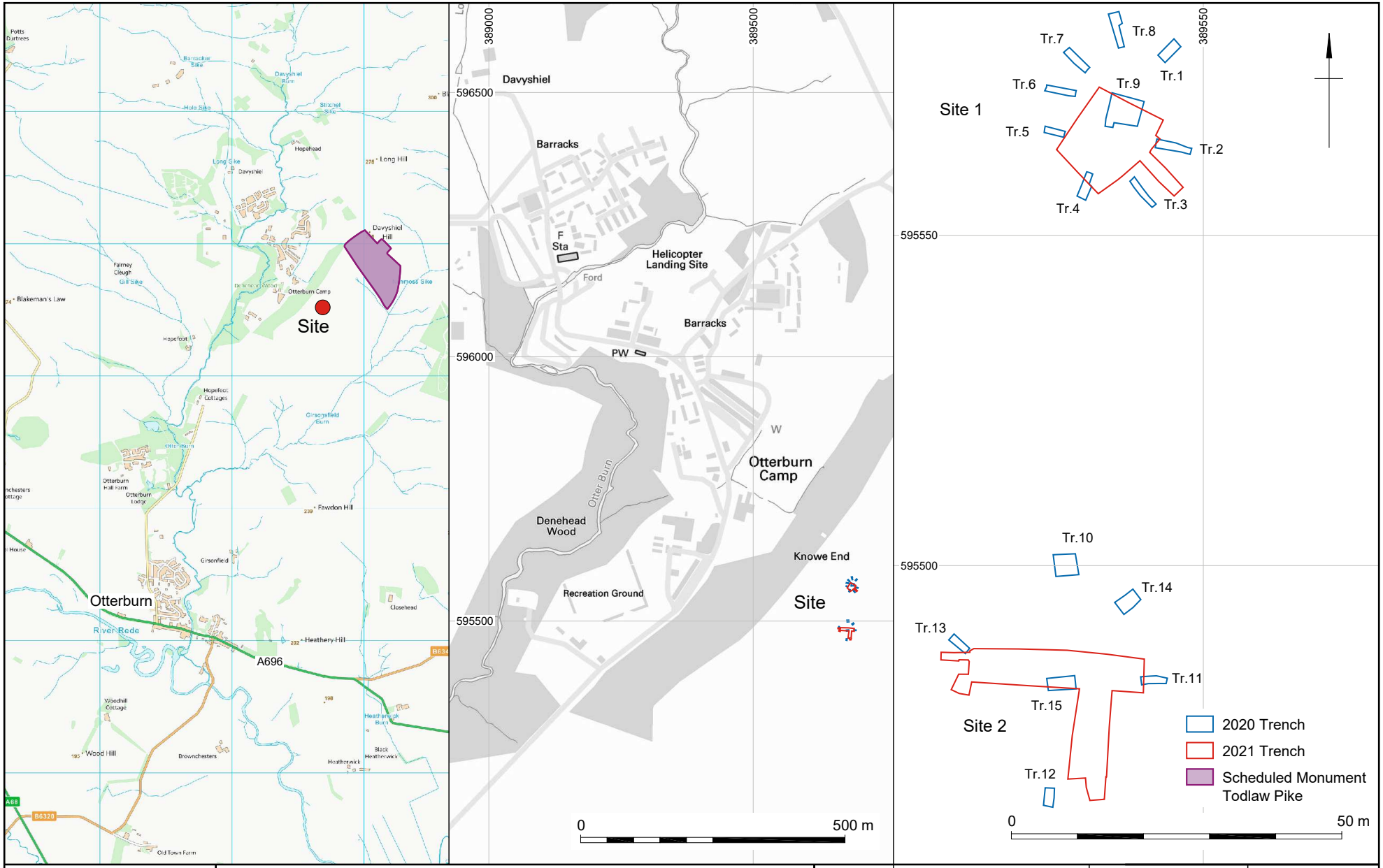
Date	Amendment	Rationale	Stakeholders

Appendix 4: OASIS entry

Summary for wessexar1-502905

OASIS ID (UID)	wessexar1-502905
Project Name	Exercise Lidar Truth, Otterburn Training Area
Activity type	Evaluation
Project Identifier(s)	221932
Planning Id	
Reason For Investigation	Heritage management
Organisation Responsible for work	Wessex Archaeology
Project Dates	31-Aug-2021 - 10-Sep-2021
Location	Todlaw Pike, Otterburn training Area NGR : NY 89675 95500 LL : 55.2535672270961, -2.16397306003163 12 Fig : 389675,595500
Administrative Areas	Country : England County : Northumberland District : Northumberland Parish : Otterburn
Project Methodology	The trench locations were set out using GPS, in the approximate positions as those proposed in the WSI, from the inferences made on the LiDAR findings of proposed earthworks sites. Two trial trenches, were excavated in level spits using a 360º excavator equipped with a toothless bucket, under the constant supervision and instruction of the monitoring archaeologist. Machine excavation proceeded until either the archaeological horizon or the natural geology was exposed. The base of the two sites of archaeological deposits were cleaned by hand. A sample of archaeological features and deposits identified was hand-excavated, sufficient to address the aims of the evaluation. The soil taken from the hand excavations of both sites was stored neatly at a distance of no more than 2 metres from either side of the excavation. Spoil from the excavated areas with features was visually scanned for the purposes of finds and retrieval. All artefacts from excavated contexts were retained. Trenches completed to the satisfaction of the client and the National Park Authority Archaeologist were backfilled using excavated materials in the order in which they were excavated, and left level on completion. No other reinstatement or surface treatment was undertaken.
Project Results	Site 1 - a cairn with a possible grave cut was excavated. This was surrounded by a shallow ditch and then a low bank. No finds were recovered or dating evidence but it is assumed to be of Early Bronze Age date. A later ditch ran through the eastern half of the cairn in a roughly NNW-SSE direction. Site 2 - was located 50m to the south of site 1. It consisted of a low bank with at least 3 breaks in the circuit. The bank consisted of piled stone and possible internal kerbs were found in three locations. Two recumbent stones were located in the western break in the bank and the presence of sockets indicates that they were originally standing. No features were identified within the interior with the exception of a later ditch that cut the bank of a roughly NNW-SSE alignment.

Keywords	Burial Cairn - EARLY BRONZE AGE - FISH Thesaurus of Monument Types Ring Cairn - EARLY BRONZE AGE - FISH Thesaurus of Monument Types
HER	Northumberland HER - unRev - STANDARD
HER Identifiers	HER Event No - NO REPORT
Archives	



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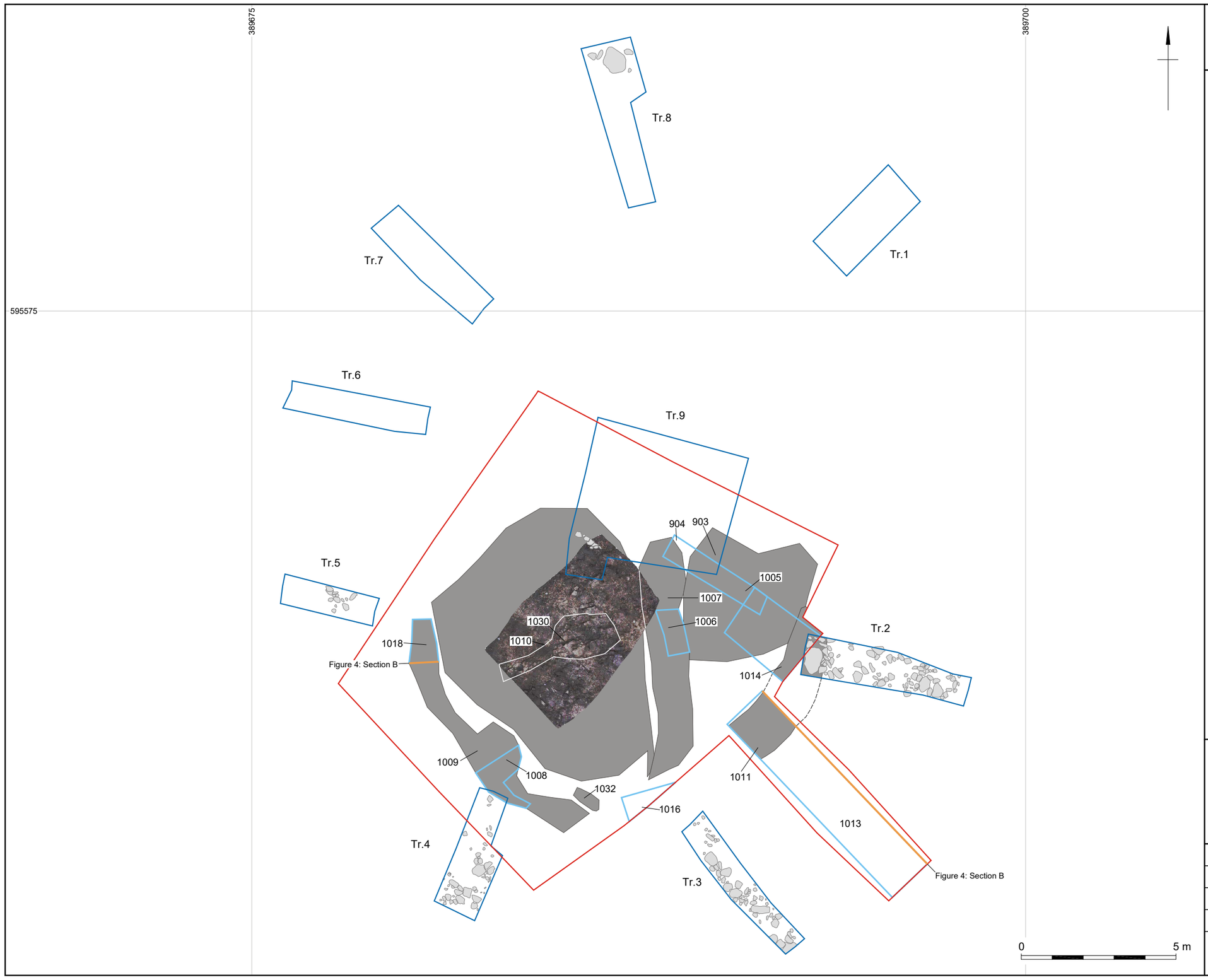
Coordinate system: OSGB36

Site location plan

Figure 1



2020 Trench
2021 Trench
Archaeology
Stone
Slot
Section line

Coordinate system: OSGB36

Date:	19/11/2021
Revision Number:	0
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Site 1

Figure 2

389675

595475

Tr.13

1024

1026

1020

1025

1022

Tr.15

Tr.11

Tr.10

Tr.14

Tr.12

1027

Figure 4: Section C

1028

1029

0 5 m

0 5 m

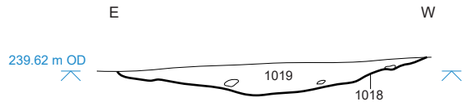
2020 Trench
2021 Trench
Archaeology
Stone
Slot
Section line

Coordinate system: OSGB36

Date:	19/11/2021
Revision Number:	0
Scale:	1:125 at A3
Illustrator:	ND
Path:	T:\Projects\221932\Graphics_Office\Rep figs\Eval\2021_11_17

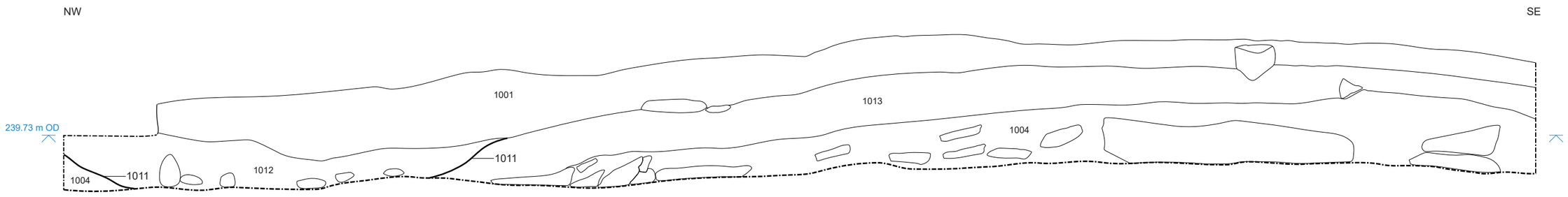
Site 2

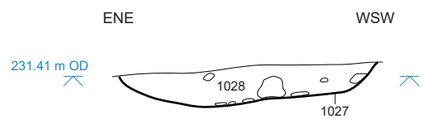
Figure 3



A. North facing section through ring ditch 1018

B. South-west facing section through bank 1013 and ditch 1011





C. North-north-west facing section through ditch 1027

0 1 m

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Sections

Figure 4

Date:	16/11/2021	Revision number:	0
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Orthographic plan view of photogrammetric model of bank 1026

Figure 5

Date:	16/11/2021	Revision number:	0
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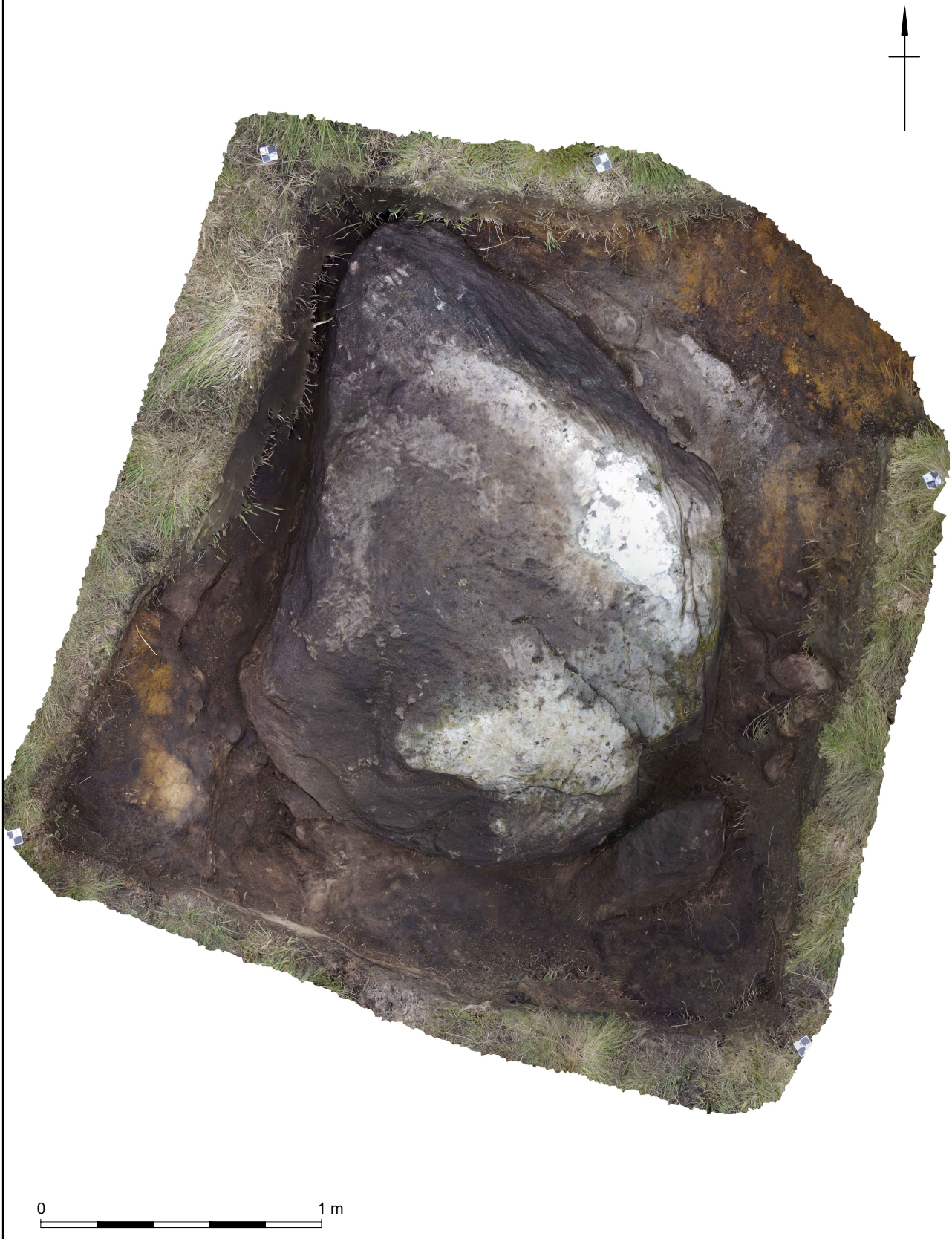
Orthographic plan view of photogrammetric model of bank terminal 1029 Figure 6



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Orthographic plan view of photogrammetric model of fallen standing stone 1025 Figure 7

Plate 1: Cairn after cairn mound 1010 removed

Plate 2: Grave cut 1030 fully excavated

Date:	17/11/2021	Revision Number:	0
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Plate 3: Central part of trench two after cleaning

Plate 4: Fallen standing stone 1024 and socket 1020

Date:	17/11/2021	Revision Number:	0
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