Dunragit

The Prehistoric Heart of Galloway

By Warren Bailie

With Iraia Arabaolaza, Kenneth Brophy, Declan Hurl, Maureen Kilpatrick,
Dave McNicol, Christine Rennie, Richard Tipping and Ronan Toolis




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Specialist contributors

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Radiocarbon dates were produced by

Paula Reimer and Stephen Hoper of Queen's University Belfast (CHRONO Lab) and Scottish Universities Environmental Research Centre (SUERC)

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GUARD archaeology

This book is dedicated to the memory of the late Jane Brann (1958-2014) who was so very passionate about the archaeology of Dumfries & Galloway in her role as Council Archaeologist. We had the privilege of a site visit from Jane during the early stages of the works, and the first ever Dunragit lecture was arranged by Jane for the Dumfriesshire & Galloway Natural History & Antiquarian Society, entitled, 'Dunragit: The Prehistoric Heart of Galloway'.

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Summary

This publication sets out the results of archaeological investigations undertaken in advance of the construction of a bypass on the A75 around Dunragit, Dumfries and Galloway, and the results of the subsequent specialist analysis and dating undertaken by GUARD Archaeology Ltd (hereafter GUARD Archaeology) on behalf of Transport Scotland.

Although the archaeological work on the road line effectively provided a random sample of the landscape, the road line ran past, in in one small area, major Neolithic ceremonial complexes, part of which had previously been investigated. It was therefore expected that remains of activity from the same period might be affected by the road.

Following an initial trial trench evaluation of 10% of the 7.4 km development route (between August 2012 and February 2014), a series of 11 main areas of potential archaeological significance were identified. This revealed activity at 11 locations of a range of periods and site types represented by pits, posts, structures and artefacts.

The evaluation work led to the larger-scale investigation of 11 areas, which can be summarised in numerical order as follows: Site 1 (NX 217291 556950): burnt mound deposits (Boreland Cottage Lower, illus 2.147); Site 2 (NX 173400 569960): burnt deposit adjacent to cremation complex (Boreland Cottage Upper, illus 2.107); Site 3 (NX 217387 556854): burnt mound deposit (Boreland Cottage Lower, illus 2.147); Site 4 (NX 217489 556840): burnt mound deposit (Boreland Cottage Lower, illus 2.147); Site 5 (NX 216759 556954): prehistoric structures and pits (East Challoch, illus 2.84); Site 6 (NX 216543 556877): Iron Age settlement (Myrtle Cottage, illus 2.64); Site 7 (NX 215933 557027): Mesolithic structure and other activity (West Challoch, illus 2.42); Site 8 (NX 215343 557069): possible burnt mound trough system with sluice (Droughduil Bridge, illus 2.141); Site 9 (NX 214364 557657): structures and pits of possible Bronze Age and Iron Age date (Drumflower, illus 2.19a and 2.19b); Site 10 (NX 217232 557028): Bronze Age cremation complex and posthole alignments (Boreland Cottage Upper, illus 2.107); and Site 11 (NX 215368 557097): In situ wooden stakes and burnt stone (Droughduil Bridge, illus 0.2). Two parts of the Dunragit Scheduled Monument (SM A, illus 2.14 and SM B, illus 2.17) were also investigated, and became part of investigations at Droughduil Holdings (illus 2.18, NX 14971 57115). Later expansions of other evaluation areas during the construction phase for the bypass revealed sites at Whitecrook Bridge (illus 2.142, NX 154890 570520): burnt mound; Mid Challoch (illus 2.144, NX 161740 570010): burnt mound; and Mains of Park (illus 2.154, NX 17867 56811): Mesolithic and Neolithic pits and structures. The locations of all sites are shown on illus 0.2.

For each site a range of specialists were involved in the analysis of ecofacts from soil samples, and artefacts recovered. Archaeobotanical material was identified from all sites, with suitable short-lived charcoal samples selected for radiocarbon dating. Cremated bone from Boreland Cottage Upper and Drumflower was analysed to determine pathologies present, with sex and age determined where possible. Suitable bone samples from selected cremations were dated, and stable isotopes from these same samples were also analysed to provide information on the mobility of the populations. Samples of inorganic sand layers were dated using Optically Stimulated Luminescence (OSL) at Myrtle Cottage, and soil samples were used to analyse the micromorphology of the sand deposition on this same site. Soil samples were analysed for multi-elements at West Challoch and Myrtle Cottage. Jet jewellery from the burial pits at East Challoch was analysed and restrung. Prehistoric pottery, daub, stone and lithic artefacts from all sites were analysed, as were the small quantities of metal, glass, post-medieval pottery, animal bone and shell.

Taking into consideration the stratigraphy and various site interpretations the calibrated radiocarbon and OSL dates underwent Bayesian Analysis to determine chronologies for the occupation of the Iron Age settlement at Myrtle Cottage, for the successive uses of Boreland Cottage Upper for its funerary activities, and for the burial pits and settlement activity at East Challoch.

Additionally, a palaeoenvironmental study was commissioned to set the project and its landscape within a wider context. This study looked at changes in the local and wider environment during the Holocene period, the last 12,000 years. This study identified key changes in sea level and plant resources through time and discusses how these changes may have affected the past human populations utilising this landscape.

The archaeology discovered during the advance and construction phase works represents a rich tapestry of prehistoric use of this area of the Dumfries and Galloway coastline over some eight millennia, with hints of earlier activity some six millennia earlier (14,000 BC). The highlights include the earliest Mesolithic structure in Southwest Scotland, Neolithic monumental structures, a Bronze Age funerary complex including urn cremations and grave goods such as jet bead jewellery, decorative pots and flint tools, and an extensive unenclosed Iron Age settlement.

Foreword

This illustrated monograph publication, ‘Dunragit – The Prehistoric Heart of Galloway’ is the culmination of eight years’ work (2012–2020) on the archaeological remains discovered along the route of the A75 Dunragit Bypass.

This publication presents the detailed results of the extraordinary archaeological investigations and the subsequent post-excavation analysis. A Popular Publication book presenting these results written in an accessible format to a wide-ranging audience has also been published.

The £17.1 million trunk road bypass project opened in March 2014. This involved the construction of a new 5.3 kilometre stretch of the A75 and delivers a number of benefits for the economy and road users, including improved journey time reliability, safety and connectivity.

Transport Scotland place great importance on meeting our environmental obligations as we plan and construct essential new infrastructure. In advance of the construction of the bypass, several archaeological mitigation measures as identified in the Environmental Statement were incorporated into the works.

Extensive archaeological surveys were undertaken prior to and during the construction works and significant finds dating back over 9,000 years were recorded. These included archaeological remains from the Mesolithic, Neolithic, Bronze Age and Iron Age periods. These discoveries are documented within this publication and provide a fascinating glimpse into the past.

This publication also represents the work of many dedicated archaeologists. I would like to take this opportunity to thank all those at GUARD Archaeology, in particular Warren Bailie and John Atkinson, for undertaking the necessary investigations and producing this detailed account of the lives of our prehistoric ancestors in Galloway.

The funding of the archaeological investigations and this publication is testament to Transport Scotland’s commitment to protecting and promoting Scotland’s Historic Environment.

Transport Scotland is proud to deliver this publication, and I hope you enjoy this informative account of the Prehistoric Heart of Galloway.

Roy Brannen

Chief Executive, Transport Scotland

Illustration 0.1: Site location

Introduction

Warren Bailie

Transport Scotland (TS) proposed to construct a bypass road on, the A75 Trunk Road in the western part of Dumfries and Galloway. The road is the main route to and from the ferry ports at Cairnryan, carrying substantial numbers of vehicles through the village of Dunragit and under a low bridge on a bend. Many heavy vehicles were too tall for the low bridge. Although an alternative route was signposted and height sensors were installed, this did not stop ‘bridge strike’ incidents from occurring. It was in response to this situation that Transport Scotland (TS) decided that a bypass was required (Illus 0.1)

This publication sets out the results of archaeological investigations undertaken in advance of the construction of the A75 Bypass around Dunragit, and the results of the subsequent specialist analysis and dating that was undertaken by GUARD Archaeology on behalf of Transport Scotland. An archaeological evaluation was initially undertaken by GUARD Archaeology in 2012 on the proposed bypass line, commissioned by Amey plc on behalf of Transport Scotland (Illus 0.1). The evaluation involved the excavation of an almost continuous 25 sections of central trench (Central (C) Trench C1 - C25) along the road line, 216 off-set trenches, side roads and ponds (Illus 0.2). The archaeological deposits uncovered were evaluated and 11 areas subsequently highlighted as having significant archaeological potential. Ten of the 11 areas were investigated in advance of the road construction phase. GUARD Archaeology was subsequently commissioned by R.J. McLeod on behalf of Transport Scotland to undertake a watching brief during groundworks for the construction of the new bypass route, taking account of areas of high potential and sensitivity highlighted by the advance works. During the construction phase an additional 29 sites were excavated and recorded.

The archaeological sites discovered along the route of the A75 Bypass road span a time period of around eight millennia and provide evidence of the utilisation of this landscape, at least periodically from the Mesolithic period through to the Iron Age, with ritual, domestic, small-scale industrial, and funerary activity represented.

A series of 3190 bulk samples, 2839 multi-element samples of which 2472 were also dry-sieve samples, 13 OSL (Optically Stimulated Luminescence) samples, and three kubiena tins (50 mm by 70 mm by 100 mm aluminium soil sample tins) were collected over the course of the project. A broad range of material culture was also recovered during the works; this included jet jewellery, lithic debitage and tools, coarse stone tools, querns, metal objects, glass, and prehistoric and more recent pottery. Other materials recovered included cremated human bone, animal bone, and wood samples. A series of 220 radiocarbon dates was returned alongside 13 OSL dates. The samples and materials were processed and analysed as part of an agreed post-excavation specification and programme and the results are presented here alongside the results and interpretation of the various sites and contexts investigated and recorded during the fieldwork.

Part 1 of this volume provides a background to the project, including an environmental history and archaeological background. Part 2 is a reference section, with discussions on a site by site basis, that does not need to be read to understand the results of the Dunragit archaeological excavations and post-excavation works, and is aimed at the specialist reader. Part 3 discusses the changing environment, resources and economies based on the new and existing evidence for the area around Dunragit. Part 4 discusses the various sites discovered collectively by period. Part 5 provides an overall discussion, and Part 6 conclusions.

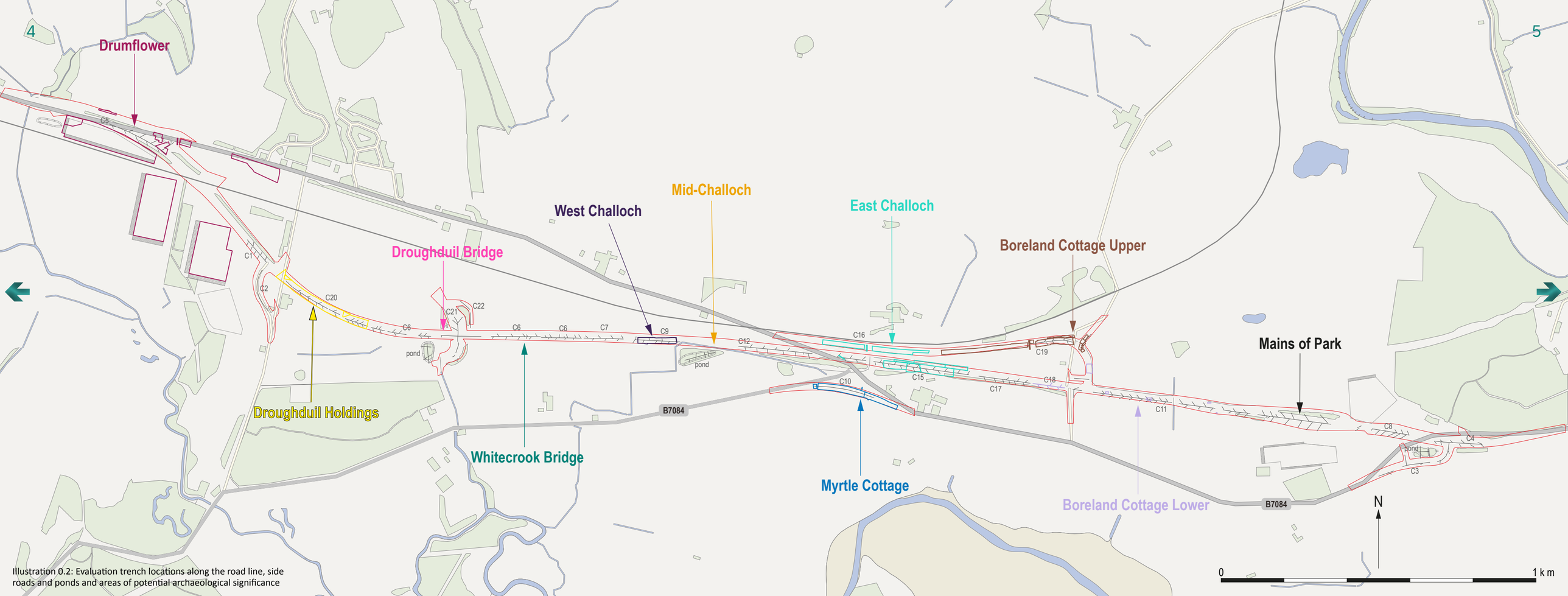


Illustration 0.2: Evaluation trench locations along the road line, side roads and ponds and areas of potential archaeological significance

Site Location and Description

The village of Dunragit is located at NGR: NX 14911 57544, 10 km south east of Stranraer and 2.5 km north of Luce Bay (Illus 0.1). Between Stranraer and Dunragit the A75 lies on a level surface, lower than 20 m OD, of well-drained glacifluvial sands and gravels deposited by a retreating melting glacier at the end of the last glaciation c. 18,000 years ago. The terrace supports brown earth soils, giving at present high yields for a range of crops. At Drumflower, this plain begins to be backed to the north by steep but rounded hills rising to 140 m OD or so on Glenwhan Moor, the lower slopes smeared in glacial till (boulder clay), higher slopes in bedrock of Ordovician shales and mudstones. East of Drumflower the A75 Bypass swings south and falls into a broad, shallow east-west trending basin, the Whitecrook Basin, eroded into sands and gravels by freshwater streams falling from the hills to narrow exits at Droughduil Bridge and Whitecrook Bridge. The basin was later filled with estuarine silts formed as a result of sea-level rise between 10,000 and 7000 years ago (Part 1, 1.2 below). The southern ridge of this basin carries thick wind-blown sand over the meltwater gravels. By Whitecrook Farm (Illus 0.3) the bypass has risen to run across the sand and gravel terrace once more. A more detailed study of the landscape and land use around Dunragit and the old county of Wigtownshire is presented in Part 1, 1.2.

Illustration 0.3: Aerial image of the route with the sites marked

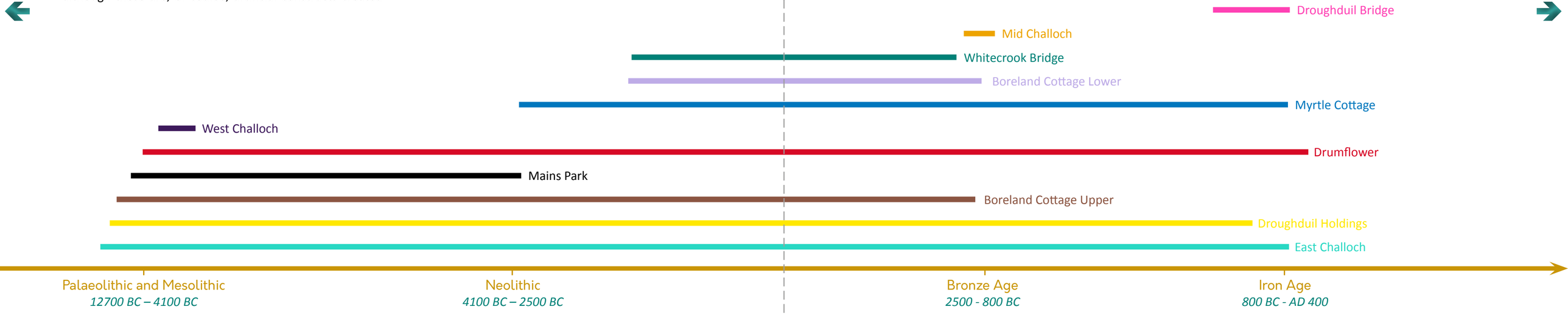
Part 1. Background to the Project

1.1 Periods and Dating

The Scottish Archaeological Research Framework provides a useful guide to the general reader to the approximate boundaries between prehistoric/historical periods, although these are, of course, artificial constructs created for the convenience of scholars and have no meaning beyond that. (www.socantscot.org/research-projects/scarf/).

Period	Palaeolithic and Mesolithic	Neolithic	Bronze Age	Iron Age	Roman	Medieval	Modern
Approx. date range	12,700 BC – 4,100 BC	4,100 BC – 2,500 BC	2,500 BC – 800 BC	800 BC – AD 400	AD 77 – AD 211	AD 400 – 1500	1500 onwards

Table 1.1: Date Ranges by period



1.2 An Environmental History

Richard Tipping[1]

1.2.1 Introduction

Dunragit is roughly in the centre of the old county of Wigtownshire, at the boundary of four distinct landscapes: the uplands to the north and northeast, the rich agricultural lands of the Stranraer Isthmus to the west and southwest, the Machars to the east and south east, and the coast to the south. Below, the Holocene environmental changes are reviewed, that is the last 12,000 or so years, and how they relate to the archaeology and history of land uses of these four landscapes. They have different environmental histories. The review is confined by the boundaries of old Wigtownshire, from the Cree estuary in the east, north to Loch Dorral and across to Beneraid above Cairnryan. Ages before the start of the Holocene epoch are referred to as 'years ago' (cal BP). Within the Holocene they are referred to cal BC/cal AD, calibrated and quoted to 95.4% probability unless otherwise indicated. Radiocarbon assays obtained by workers before AD 2000 have been re-calibrated in this review using Oxcal 4.3 (Bronk Ramsey 1995) and Intcal13 (Reimer *et al*. 2013).

The solid geology of Wigtownshire is simple enough. Forming the uplands west and east of Loch Ryan, to Glen Luce and northeast to Newton Stewart are Ordovician shales and mudstones; to the south, including the southern Rhins, are more easily eroded Silurian sandstones, shales and mudstones. North of Newton Stewart the mountains of the Merrick range and the Rhins of Kells are also of Silurian shale and mudstone, although metamorphosed and baked hard by the granitic Loch Doon pluton, which forms the floor of the deep glacial trench of the Cooran Lane. At Burrow Head a thin sliver of tougher Silurian mudstone once had workable copper veins (Britton 1963; Hunter *et al*. 2006; Hunter in Toolis 2007), and similar rocks are mineralised, though unworkable, inland at Barlockhart near Glenluce. There is very little limestone in Wigtownshire (Donnachie 1971): cockle shells pushed shoreward on storms and surviving from higher mid-Holocene sea levels (below) provided lime (Symson 1684, 42; Maclean 1795, 546) until powdered lime could be imported from Cumbria, in the nineteenth century, though precociously also in the monastic settlement at Whithorn. Coalfields similarly lie across the Firth near Whitehaven.

1.2.2 The uplands

The uplands – open, exposed, bleak, low-relief plateau moors around 400m OD, rising to Beneraid at 424 m OD – are mantled by waterlogged glacial till (boulder clay) and overlain by vast expanses of deep, nutrient-poor unconfined or blanket peat: 'Upland bleakness starts low in Galloway. Improved land reaches only to about … 150m above sea-level' (Morrison 1991, 13). The high ground rises gradually north of the Machars, exemplified by Castle and Mochrum Lochs being shallow ice-scoured bedrock basins, like Lochs Dornal, Maberry and Ochiltree in the hills above Newton Stewart (Jardine 1966), and not inter-drumlin basins as in the Machars (below). Yates (1984) mapped characteristic upland monuments like later prehistoric cairnfields around and north of Castle Loch. The uplands rear more steeply above Dunragit and the Stranraer isthmus. Ice-scoured bedrock is more abundant and the strike of the rocks less distinct in the topography. Ribbons of riverine alluvium, from meltwater streams and Holocene rivers, are rare, found only along the River Cree to Creebank and the Water of Luce and its tributaries, with peat-rich alluvium draining Beneraid. Soils are organo-mineral complexes of the Ettrick Association, capable with effort of becoming improved grassland.

1.2.2.1 Peat and peat inception

Above all, there is blanket or hill peat, sprawling everywhere, originating in deep basins but not confined to them (Illus 1.2), fed by run-off over acid, nutrient-poor substrates, today thought good only for rough grazing. Bown and Heslop (1979) found depths of 2 m common and a maximal 7.7 m north west of Dunragit. Northeast of Dunragit, above the Flow of Dergoals, is 'an almost continuous expanse of deep (3-4 m) blanket mire totalling approximately 2000 hectares' (ibid, 182). To the northeast, Durno (in Bown and Heslop 1979) dated the 7 m deep basin peat at Blairderry Moss to before 6000-6500 cal BC.

Peat inception on the hillside at Lagafater Lodge, from 230-400 m OD, just below Beneraid in the west, was earliest in shallow basins from c. 4400 cal BC to c. 3250 cal BC, perhaps driven by climate change (cf. Tipping 2010; Roland *et al.* 2015) but its spread to lower slopes around 230 m OD between 3500 and 2700 cal BC was argued by Flitcroft to have been accelerated by human activity. The hillside was effectively covered in blanket peat by around 1800 cal BC (Flitcroft 2005, 229-237).

These data suggest later blanket peat inception than in other Scottish uplands (Tipping 2008) but near Loch Dee, north of Newton Stewart, basin peat dates to the beginning of the Holocene and peat began to spread from confined basins after c. 5500 cal BC (Jones *et al*. 1989). Nearby in the Cooran Lane, the huge mosses are 4-5 m deep and date from pollen analyses to before 7250 cal BC (Ratcliffe and Walker 1958; Birks 1972). Even shallow blanket peat on slopes may have formed by c. 4150 cal BC (Edwards *et al*. 1991), earlier than at Lagafater Lodge in the west.

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A lower woody horizon in these deep peats contains remains of trees like birch and alder, and Scots pine at the Flow of Dergoals (Moar 1969). This phase of pine growth is dated high in the Dee catchment to between c. 6700 and c. 5300 cal BC, peaking at c. 6100 cal BC, within a phase of 'climatic dryness' (Birks 1972, 216; Birks 1975; Jones *et al.* 1989) that would be seen today as encompassing the brief climatic deterioration at 6200 cal BC (Alley and Ágústdóttir 2005). Upper peat horizons are a sedge-*Sphagnum* peat with no tree remains beneath a surface of *Calluna* and other Ericaceae, sedges, grasses and *Sphagnum*.

1.2.2.2 Vegetation change and human impact on mineral soils

Mineral soils, acidic from c. 7000 cal BC (Jones *et al.* 1989) and possibly podzolic from around then (Edwards *et al.* 1991; Davidson in Cummings and Fowler 2007, 156) supported a mixed deciduous woodland of oak, elm, hazel, birch, aspen and holly in the hills in the north of the region around Merrick (Birks 1972). John Birks (1988, 42) proposed a natural tree line at around 460 m OD. The bog-ridden floor of the Cooran Lane at around 250 m OD appears from pollen analyses to have been almost unvisited by people, though the peat surface was disturbed by fires in the seventh millennium cal BC, which may have been induced by dry climate or set by hunter-gatherers (Birks 1975). Edwards *et al*. (1984) and Edwards (1989, 1996) documented many Mesolithic findspots north from the Cairnsmore of Fleet east of Newtown Stewart (Edwards 1990).

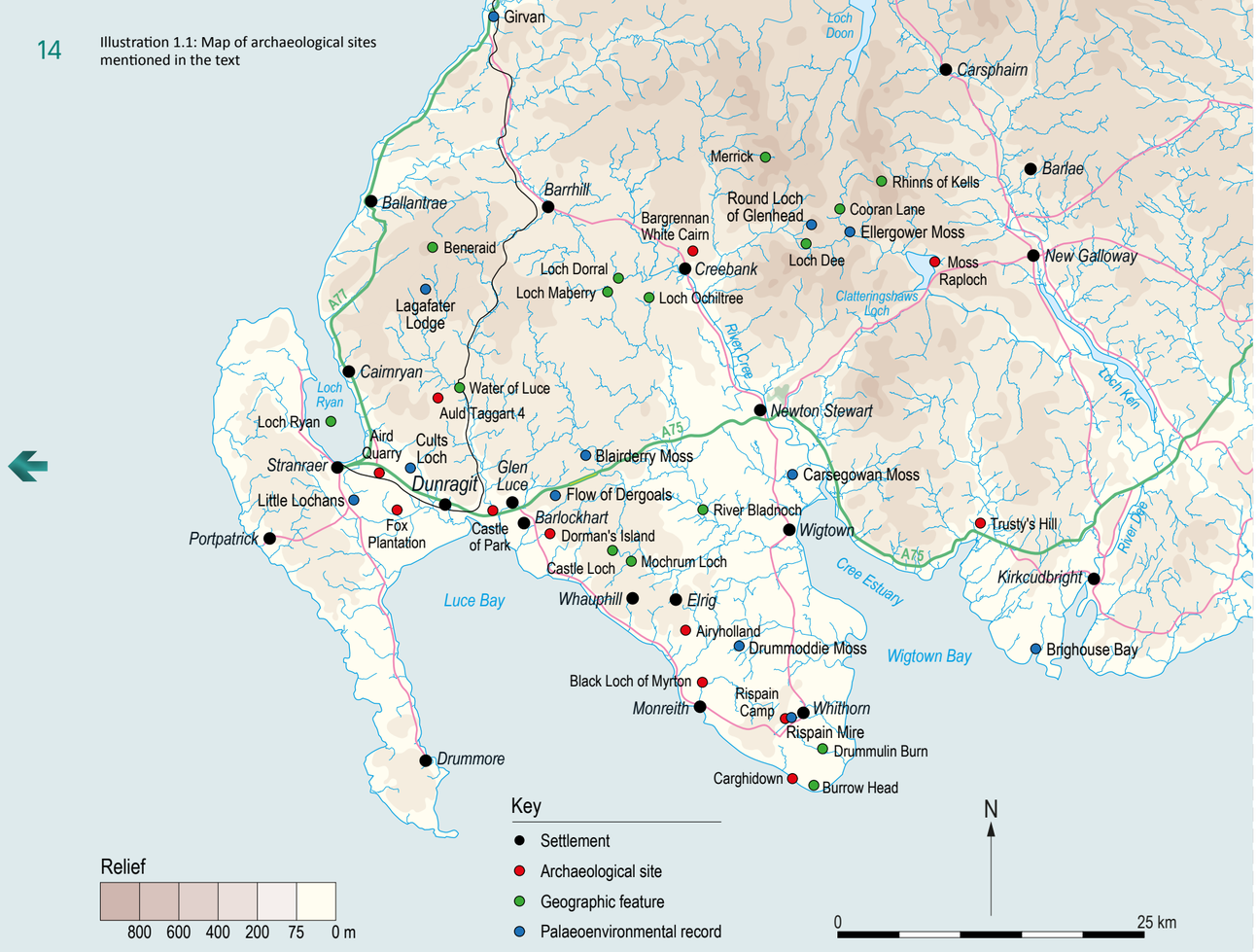
Indicators of grazing are recorded at the Round Loch of Glenhead, in the north of the region, at c. 4200 cal BC, before the decline in *Ulmus* pollen, but are continuously represented only from c. 2500 cal BC. Large grass pollen grains that might be from cultivated species are recorded commonly from c. 1000 cal BC (Jones *et al.* 1989). Cummings and Fowler (2007) retrieved charred barley grains at Bargrennan White Cairn but these are undated. The scale of human presence around the Round Loch of Glenhead is hard to estimate because 'fields' were surrounded after c. 2800 cal BC, not by trees but by *Calluna*-grass-sedge blanket peat which replaced them, strictly a pedological and arguably natural change (Jones *et al.* 1989, 12) although later in the same paper, woodland loss is ascribed to anthropogenic clearance (*ibid*, 17). Edwards *et al.* (1991) recorded limited soil erosion associated with woodland loss, cereal type pollen and grazing indicators near Loch Dee at a date probably affected by the Halstatt radiocarbon 'plateau', of 895-546 cal BC.

At Ellergower Moss to the east of Loch Dee, Dumayne-Peaty (1999) described a largely wooded hazel-oak-alder landscape from c. 1750 cal BC, though *Calluna* will have dominated (it is not included in Dumayne-Peaty's pollen sum), with little grassland, although that was grazed. Woodland regeneration between c. 1250 and c. 700 cal BC was followed by gradually expanding areas of grazed grassland but with limited woodland clearance. Further woodland regeneration followed from around the BC-AD boundary. Although a whetstone was recovered from the late Iron- Roman Iron Age settlement at Moss Raploch, northeast of Newton Stewart, no botanical evidence for the economy was retrieved (Condry and Ansell 1978): the detailed pollen record is unfortunately not dated. It is possible that people were absent there from c. cal AD 500 to c. cal AD 700. Large-scale woodland loss and expansion of pasture around Loch Dee occurred after c. cal AD 700 and continued beyond c. cal AD 1100 (Birks 1988; Dumayne-Peaty 1999). Battarbee *et al.* (1989) argued for little land-use change since the high medieval period when sheep were introduced onto monastic holdings. Activities conserving woodland might have included smelting, archaeological evidence suggesting from the Iron Age (Williams, J. in Condry and Ansell (1978), geochemical evidence for larger-scale activity from c. cal AD 1500 (Williams, T.M. 1991).

At Lagafater Lodge, mineral soils around 4500 cal BC supported open hazel-alder-birch woodland, *Calluna* and grasses but after c. 1000 cal BC at the latest, *Calluna* and grasses dominated, and this vegetation has persisted until the last few hundred years (Flitcroft 2005). Estimating human impact is difficult because of the dominance of *Calluna* heath, because woodland loss may have been through pedogenic change, and because Flitcroft's analyses focused on peat inception. Losses of birch woodland at c. 2700 and 1300 cal BC may have been anthropogenic. There is some pollen-analytical evidence for (a) small-scale arable agriculture from c. 3850 to c. 3500 cal BC, (b) for a phase when grazing indicators are unaccompanied by evidence for crops, between c. 1700 and c. 1300 cal BC, (c) for cereal-type pollen c. 2250-2000 cal BC, (d) for herbs associated as weeds in cultivated fields, and grazing indicators, being particularly common, from c. 1300 to c. 500 cal BC, and (e) for a time, broadly from c. 100 cal BC to c. cal AD 1500, when agricultural activities are hard to identify.

Unusual features of the uplands near the Water of Luce, north of Dunragit, in the medieval period are burnt mounds (Russell-White 1990; Moore and Suddaby 2012). Their function is, as ever, enigmatic (Buckley 1990, 9), but one at Auld Taggart 4, above New Luce, contained charred oat and barley. These burnt mounds do not imply, within the medieval warm period, that 'landscape had reverted from landscape to 'wildscape'' (Barber 1990, 99). This was a time of increased upland occupation and the possible establishment of shielings (*airigh*: Oram 2000, 247-250), although Winchester (2012) reported an absence in Wigtownshire of other Gaelic and Norse place-names (*shele*/*skali*/*schole*) usually related to shielings. Upland pasture has been argued to have declined in yield with the beginnings of the 'Little Ice Age', from the fourteenth century (Oram and Adderley 2008; Oram 2014) when the wool trade played a larger part in the economy (Oram 2000, 252).

Illustration 1.1: Map of archaeological sites mentioned in the text



Blanket peat has been degrading for some time. From when exactly is hard to define but on the granite of the Merrick range, there is evidence of old carbon from eroding peat being introduced to the Round Loch of Glenhead after, at the youngest, the eighth to nineth centuries AD (Jones *et al.* 1989). Stevenson, Jones and Battarbee (1990) suggested erosion to have commenced (or re-commenced) between c. cal AD 1500 and c. cal AD 1700 (Rhodes and Stevenson (1997) were more precise, suggesting a date of c. cal AD 1660), although whether through changes in indirect anthropogenic pressures such as grazing or climatic deterioration within the 'Little Ice Age' is unclear. A regional decline in *Calluna*, replaced by nutrient-impoverished grasses and sedges, began around this time in most localities but at some pollen sites in the Merrick range it was significantly later, associated with nineteenth-century sheep-ranching (Stevenson and Thompson (1993).

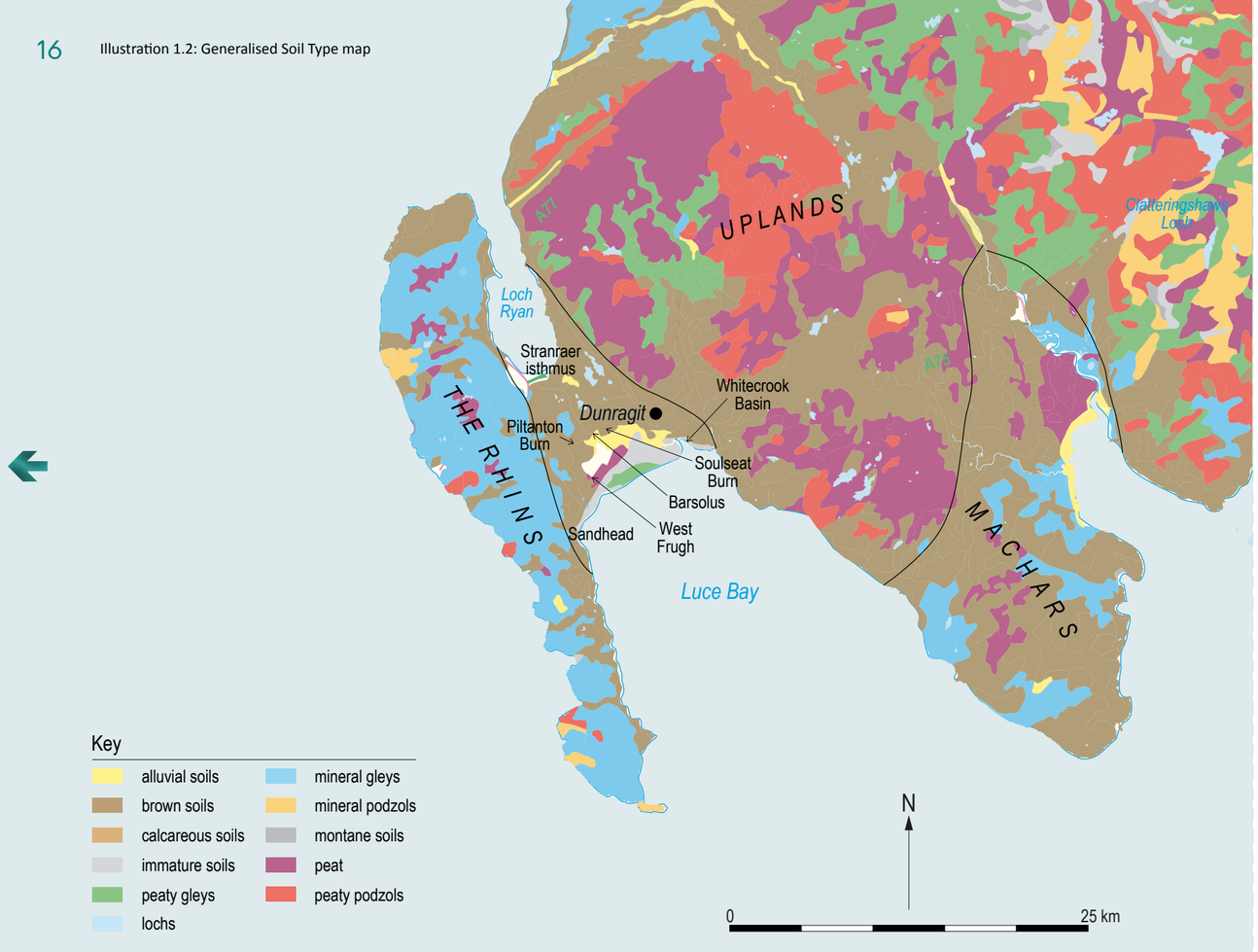
1.2.3 The Stranraer isthmus

Between Loch Ryan and Luce Bay (Illus 1.1) lies the Stranraer isthmus, floored by Permian sandstone, a very ancient fault-controlled trough (Jardine 1966), but bedrock is nowhere to be seen on land because it is covered by a flat plain of 40 m thick sheets of gravel and sand, most derived from shales and mudstones, laid down by melting ice at the end of the last glaciation. This was dissected soon after by meltwater rivers, leaving deep, narrow glacial meltwater troughs and lakes formed by melting ice, filling with sediment and peat (Moar 1969; Crone *et al.* 2018; Fonville *et al*. in Cavers and Crone 2018). The flat-topped sand and gravel terraces give rise to coarse-textured sandy brown earth soils of the Yarrow Association (Illus 1.2) which at present give consistently high yields for a range of crops (Bown and Heslop 1979). Some soils prior to the Holocene, like Little Lochans near Stranraer, had calcium sufficient to form marl (Moar 1969) but soils today and for most of the Holocene have been acidic.

These surfaces produce high densities of cropmarked archaeological sites (Cowley 2002; Cowley and Brophy 2001; Cavers and Crone 2018). Alluvium (Illus 1.2) is invariably estuarine/marine near the coast, penetrating a long way up the meltwater-formed valleys into the interior during the highest Holocene sea levels (below; Smith *et al.* in press). Higher, above 10 m OD the very low relative relief means that streams have no power, flowing as 'misfits' on the floors of steep-sided troughs made during deglaciation by much bigger rivers. Peat or poorly drained peaty gley soils fill most valleys and former lake basins. Sedimentological evidence for soil erosion in these valleys is absent (Moar 1969; Smith *et al.* 2020).

Extant lochs are generally the largest, the ones not yet infilled with surrounding fen vegetation. Early-mid Holocene woodland was of deciduous trees, oak and elm, with hazel most abundant on calcareous soils (Moar 1969).

Illustration 1.2: Generalised Soil Type map



Nothing else is known from landscape-scale analyses. Cults Loch is the only sediment stratigraphy analysed to modern standards (Fonville *et al*. in Cavers and Crone 2018) but the sediment and pollen records are not interpretable because of severe difficulties in radiocarbon dating, whereby old carbon was pushed into the lake during soil erosion of mineral soils, probably triggered by anthropogenic activities like ploughing (Tipping *et al*. in Crone 2000; Edwards and Whittington 2001): an attempted 'fix' of the problem using geochemical data is unconvincing, suggested also by the absence of dates for times of environmental change given by Fonville *et al*. (*infra*). The pollen record is younger than the palynological elm decline. Oak was a very common component of the woodland around the lake. There is no evidence of woodland clearance and agricultural intensification of the kind found elsewhere in southern Scotland in later prehistory (Tipping 1997). The archaeological record for past land uses is largely restricted to the time after c. 500 cal BC. Excavation at the Bronze and Iron Age Aird Quarry settlements near Stranraer did not yield economic evidence (Cook 2006). The promontory fort of Cults Loch 4 may date to the later Bronze Age but there is little economic evidence though, intriguingly, Scots pine wood was burnt. The presence of genera-specific lice at the Cults Loch 3 crannog indicated both sheep and goat (Cavers and Crone 2018, 85), and cattle and sheep or goat bone were reported from the Black Loch of Myrton crannog in the Machars (Crone *et al.* 2018).

Early ploughs called bow ards are surprisingly common finds on Iron Age and Roman Iron Age crannogs, as at Cults Loch 3 and elsewhere (Fenton 1968; Cavers and Crone 2018, 94-98), hinting at the social significance of arable farming. They are associated with cultivation of emmer wheat and barley. Bread/club wheat is also a consistent if rare find on crannogs, where it is seen as acquired from contact with Rome, though in what context is unknown (Wilson 2001; Cavers *et al.* 2011, 88). It is also found in pre-Roman Iron Age contexts on crannogs at Cults Loch 3 and Black Loch of Myrton, and at the late Iron-Roman Iron Age dryland settlement at Fox Plantation (MacGregor 1999), suggesting trade with communities in southern Britain (Cavers and Crone 2018, 85; Crone *et al.* 2018). Cavers (2008, 21) argued for a shared architectural tradition with Southwest England in the late Iron Age from the rectilinear shape of Rispain Camp in the Machars (Haggerty and Haggerty 1983), where bread/club wheat was also found. Haggerty and Haggerty (1983, 43) assumed local cultivation, acknowledging that on Machars soils this would have required high fertiliser and work inputs, a style of crop-growing later associated with England north of the River Tyne, a preference for small but intensively-worked fields, but in which bread wheat played no part (van der Veen 1992). On not dissimilar soils but slightly later in time and, perhaps, more privileged consumers, Holden (in Lowe 2006, 152) at Hoddom in Annandale considered bread wheat, the overwhelmingly dominant charred grain, to have been imported. Excavation

at the enclosure of Cults Loch 5 identified a souterrain beneath Roundhouse B, dated after 190BC–AD90, though a second-first century cal BC date was preferred (Cavers and Crone 2018, 170). The storage of agricultural surplus is a presumed function, and 'the emergence of local 'potentates' (ibid, 181), but despite recent aerial survey (Cowley 2000; Cowley and Brophy 2001), souterrains are still rare in Wigtownshire: all to date are on the Stranraer isthmus.

1.2.4 The Machars

The gently undulating lowland of the Whithorn peninsula, the Machars, here defined as the lowland south of a line from Whauphill, through Elrig to Wigtown, is covered in thick till shaped into ovoid glacial drumlins streaming south and southwest from the Cree Valley, largely impermeable and so cradling confined basins of equally nutrient-poor peat, often several metres thick, some of which are now rain-fed raised peat-mosses (Illus 1.2). Although characterised in the east by glacial till, large expanses of ground east of Monreith, around Whithorn and Burrow Head are of Silurian rocks, the hills and valleys stretched southwest/northeast along the strike of the rocks, not high, rarely exceeding 70-80 m OD, but exposed. This topographic complexity leads to rapid variation in soils over short distances, particularly in waterlogging and so organic content. Below these plateaux are thin valleys, most following the strike of the rocks, lined with alluvium, more common than in the Stranraer isthmus. The largest river, the Bladnoch, cuts across the strike but flows through thick glacial till, twisting between drumlins. Similarly, the lower course of the Drummulin Burn, north of Whithorn, flows east on a bed of glacial till. Other patches of alluvium are more isolated, probably representing infilled ponds and small lakes. If the alluvial spreads are of Holocene age (none have been investigated) then the surrounding slopes have shed more soil than in the Stranraer isthmus.

1.2.4.1 Peat and peat growth

There are also huge spreads of peat in complex inter-drumlin basins, separated only by drumlins topped by imperfectly drained brown earth soils, 'islands' of workable land being drowned by a 'sea' of rising peat. West of Whithorn, peat comprises around 20% of the soils. In a Herculean effort, Bown and Heslop (1979) recorded peat depths over a large area. Drummoddie Moss in the centre of the peninsula and one of the smaller mosses, proved to be >8 m deep. Pollen analyses showed Drummoddie to have formed well before 6500 cal BC and seems to extend to the present (Durno in Bown and Heslop 1979). Pollen records at Drummoddie and Rispain Mire (Ramsay *et al*. 2007) strongly suggest Scots pine grew on dry peat in the Machars, probably when pine grew in the uplands c. 6700 to c. 5300 cal BC, before being displaced by alder.

1.2.4.2 Vegetation change and human impact on mineral soils

Given this potential, the pollen analyses of Ramsay *et al*. (2007) pollen analysis of Rispain Mire, close to Whithorn, are problematic in too many ways to detail in this review. If the authors' assumption that the 130 cm thick stratigraphy is a complete record is correct, which is very uncertain, the temporal resolution of pollen analyses post-c. 4000 cal BC is too poor (>500 cal years between analyses) to define human impact with any clarity. The diagram seems to indicate gradual and sustained grassland expansion from c. 3800 cal BC, early in the Neolithic, grazed and with arable, at the expense of the deciduous woodland, to close to the present day, but it is the gaps between samples that are of concern.

At Brighouse Bay, across Wigtown Bay but in a Machars-like landscape, the pollen record has only two radiocarbon assays post-c. 4000 cal BC and one of these is imprecise through being affected by the Halstatt 'plateau' (Beta-83471: Wells *et al.* 1999). Purported Mesolithic activity within the deciduous woodland is uncertain. The first substantive human impact is probably seen in declining oak pollen values from c. 2800 cal BC. Hazel initially produced more pollen in the opening woodland but was then cut back abruptly at c. 2300 BC as grazed grassland expanded, rapidly at c. 2000 cal BC. Hazel, probably easier to clear than oak, then declined gradually. Fire may have been used to clear the ground, and erosion of mineral soils seems to have accompanied this disturbance. At c. 1400 cal BC a limited recovery of woodland, emphasised by increases in alder, may imply less human pressure, though not its absence. Abruptly, although radiocarbon dated only between 760 and 230 cal BC because of the Halstatt 'plateau' (Beta-83741: above), all woodland was cleared, probably by axe and not by fire, lost also to heavily grazed grassland, though soil erosion was seemingly not aggravated. Trees never returned. Cereal type pollen is not recorded, however, until c. cal AD 1000.

The till-smeared coastal plain at Girvan is close in landscape to the Machars, and here in a very slow-growing peat dated by two radiocarbon assays, Miller and Ramsay (in Banks *et al*. 2007) recorded a substantial expansion of grazed grassland at 790-410 cal BC, an estimate probably affected by the Halstatt 'plateau', but this need not have been the major episode of woodland clearance it is described as (ibid, 17) because dryland trees (hazel, elm) may have been impacted more significantly earlier, around 1500 cal BC.

Carsegowan Moss, just north of Wigtown, has a pollen source area that describes much of the Machars and the upland to the west, a generalised, imprecise impression different from the detail of the smaller-diameter peat at Brighouse Bay. Dumayne-Peaty (1999) pollen-analysed the

uppermost 3 m of peat, above c. 900 cal BC, dated by three radiocarbon assays clustered in the later Iron Age and the Roman Iron Age, of principal interest to the analyst. Grazed grassland was present from c. 900 cal BC within hazel-rich deciduous woodland, gradually expanding from c. 350 cal BC–cal AD 1 (the latter being the calibrated age-range of assay SRR-4537) and sustained to c. cal AD 50, with cereal type pollen from c. 150 cal BC. But in this phase, although hazel and alder lost ground, woodland was by no means significantly diminished. Human pressures instead waned after c. 150 cal BC and at cal AD 230–530 (SRR-4535) it is possible that the pollen source area was not farmed and was over-run by trees. Above this date, the pollen record is less well resolved but recovery occurred around cal AD 700, as it did, from pollen analyses, for many regions of the British Isles (Rippon and Fyfe 2018; Davies 2019; Strachan *et al*. 2019, 140-143), though crop-growing is consistently recorded only from c. cal AD 1400.

1.2.4.3 Oak

Unless imported, the persistence of mature woodland in lowland Wigtownshire is indicated by the abundance of oak as structural timber in later first millennium BC crannogs (e.g. Cavers *et al.* 2011; Cavers and Crone 2018) and other structures (Haggerty and Haggerty (1983), and by Crone's (1998; Crone and Mills 2002) oak tree-ring chronology from building timbers at Whithorn from cal AD 278 to cal AD 752. Crone *et al.* (2018) noted the presence of planks from mature (>500-year old) oaks at the Black Loch of Myrton crannog (albeit on the Stranraer isthmus), and it is hard to think a tree this old grew in other than semi-natural woodland: 'their felling, transportation and working must have represented a major investment in energy and resources' (ibid, 142) as with equally large oaks earlier in prehistory (Strachan 2010). The selective conservation of oak is also possible (Tipping *et al*. 2006), although, for smaller structural oak timbers (Cavers *et al.* 2011; Crone *et al.* 2018), trees <80 years old, 'young oak woodland that had been frequently been cut over' (Cavers and Crone 2018, 231).

Oak pollen is a constant 10-12% of land pollen at Carsegowan Moss (Dumayne-Peaty 1999) from c. 900 cal BC to cal AD 230-530 (SRR-4535), little more as a proportion of trees and tall shrubs, a regional signal unaffected by vegetation change around the moss (above). This constancy does not indicate that oak was unaffected by woodland clearance because of its conservation value, just that it cannot be recognised in a pollen source area as large as that around Carsegowan Moss. A site with a pollen source diameter of only tens of metres was needed to differentiate local total oak woodland loss in Bronze Age Kilmartin Glen from regional 'noise' (Tipping *et al.* 2011). The pollen site at Brighouse Bay, across the bay, has a smaller pollen source area than Carsegowan Moss (above), small enough to record local woodland loss, and it is clear here that oak was abundant in the mid-Holocene, but was also cleared when all other trees were cleared sometime between 760 and 230 cal BC (Well *et al.* 1999). There are no crannogs near Brighouse Bay: might this mean that conservation of oak was unnecessary?

Elsewhere in southern Scotland, woodland was carefully managed by the high medieval period (Gilbert 2012). Toolis and Bowles (2017) suggested this for the early medieval period also, implying elite control of a resource greatly diminished by earlier extensive deforestation, but their model for this (Tipping 1997) draws on evidence away from Galloway. Hazel, the specific resource consumed in the light wattle-like structures at Trusty's Hill, was probably managed before this time (Boyd 1988; Cavers and Crone 2018, 129).

By the sixteenth century, oak was imported for the Castle of Park (Mills and Crone 2012), and Symson (1684, 71) dismissed there being any trees other than 'planting about gentlemen's houses.' Yet the Wood of Cree yielded 'abundance of good strong oak' in the late seventeenth century (Symson 1684, 72) as it clearly had in earlier times (Mitchell 1862; Gladstone 1962; MacLeod 2001, 14-16): perhaps its liminal position (Cree can mean boundary in Gaelic: Brooke 1992, 307) meant that it was a resource held in common.

1.2.4.4 The archaeological record for land use

The mineral soils of the Machars are good for growing barley and oats as well as grass, as they were in the late seventeenth century (Symson 1684, 72), together, then, with bere barley: Symson did not mention wheat or rye. A few decades on, Sir John Clerk noted that 'ground which I saw carrying bear has produced nothing else in the memory of man', hinting that crop rotation before 'improvement' was rare (Prevost 1962). Webster (1794) considered that barley was, by the late eighteenth century, little cultivated. Cereals were processed on some crannogs (Cavers *et al.* 2011). The undated homestead at Airyholland, Mochrum, produced charred barley and oats (Cavers and Geddes 2010). Querns were recovered from the late Iron-Roman Iron Age complex at Carghidown but not charred crop remains (Toolis 2007). Haggerty and Haggerty (1983) saw the late Iron and Roman Iron Age rectilinear enclosure of Rispain Camp as a predominantly arable farm. Hill and Kucharski (1990) argued for mould-board ploughing on monastic land at Whithorn as early as anywhere in Britain, from the sixth-seventh centuries cal AD, though this advanced technology may not have been available away from monastic holdings (Oram 2000, 244). Barley was the dominant crop at Whithorn in the ninth century AD (Dickson and Dickson 2000, 138). Very little evidence for plant foods came from Trusty's Hill, east of our region but recently excavated (Toolis and Bowles 2017), odd if the site was a sixth-seventh century AD nuclear fort.

Evidence for livestock is rare because bone is not preserved, but they must have been important, not least, as Symson (1684, 98) noted in the *harshest* phase of the 'little ice ige', and Webster (1794) and Donaldson (1816, 431) later endorsed, calves were not slaughtered in the autumn but were over-wintered outside, implying either an abundance of hay or, as in Ireland, no need for it. Livestock can be glimpsed as housed for some part of the year on at least one later Iron Age crannog, Dorman's Island (Cavers *et al.* 2011), and bones of cattle, sheep and pig, and possibly of deer, were identified at Rispain Camp (Haggerty and Haggerty 1983). A similar assemblage, including deer, was found in early medieval Whithorn (McCormick and Murphy in Hill 1997, 605). Cattle always dominated, providing >80% of the meat consumed prior to the twelfth-thirteenth centuries AD. From the mid-eighth century AD to around the turn of the millennium, younger cattle 'bred specifically for the urban meat market' (ibid, 608) were more commonly slaughtered: Oram (2000, 246) interpreted this evidence to imply render to the lordship. Cattle also dominated the bone assemblage at Trusty's Hill (Toolis and Bowles 2017). The Old English placename for Wigtown, *wic-tun*, means cattle-farm (Brookes 1992). Sheep became more important at Whithorn for a time after c. cal AD 800, possibly in industrial wool production (McCormick and Murphy in Hill 1997, 608; cf. McCormick 2008; Kerr in McCormick *et al.* 2014, 66) when Anglian estate management emerged (Oram 2000, 246).

1.2.5 The coast

The coastline away from the embayments is largely rocky, the shore frequently inaccessible. Till creates slumped cliffs in the Machars. Harbours (Graham 1979) were largely for trade: Symson (1684) mentioned *haaf*-netting, and taking salmon, herring and mackerel at the mouth of the Water of Luce, but 'our sea is better stor'd with good fish, than our shore is furnished with good fishers … having such plenty of flesh on the shore, they take little paines to seek the sea for fish' (Symson 1684, 93). Fish at Whithorn (Hamilton-Dyer in Hill 1997) were almost all available from local coastal waters. Cod was not present before c. cal AD 1250, presumably reflecting the medieval intensification of sea-fishing (Barrett *et al*. 2004). Bishops and clerics in thirteenth and fourteenth century Whithorn ate fish; people lower down the social scale did not (Müldner *et al.* 2009).

Water depth west of the Mull is >50 m but in the Firth rarely exceeds 30 m. It is a macro-tidal estuary: the Spring tide range in Kirkcudbright Bay is 6.7 m, in Luce Bay is 5.7 m but at Stranraer is only 2.8 m. These ranges probably persisted through the Holocene (Ward *et al.* 2016). North-flowing Irish Sea bottom currents and wind-generated waves push sea-floor sediment, most glacial, east into the Firth. Wave currents build extensive sub-tidal sandbanks off Wigtown and Luce Bays (Solway Firth Review 1996).

1.2.5.1 Early-mid Holocene sea level rise

When ice-sheets several kilometres thick grew globally in the last ice age, 26,000 to 20,000 years ago, they had two major effects on coastlines. First, they stored as ice, water that should have been in the oceans, and lowered global sea level by some 130 m. Second, the weight of the ice-sheets forced down the Earth's crust. At the end of the last ice age some 12,000 years ago these changes were set in reverse but at different rates. Ice-sheet melting elevated global sea levels very rapidly so that by 5000 cal BC they were as high as they naturally could be: unnatural 'global warming' is melting ice-sheets that wouldn't naturally melt. The rate the land rose when released from the weight of the ice-sheets, was much slower. Because both land and sea level rose at the same time, people refer to relative sea level change, as viewed from land. How these different rates of response to the melting ice-sheets led to complex landscape changes can be detailed in Wigtown and Luce Bays. It should be borne in mind that present mean sea level around Wigtownshire is close to +4 m OD and not at 0 m.

Around 16,000 years ago it might have been possible to walk from Galloway to Ireland: by 14,000 years ago it was not (Ward *et al.* 2016). Early Holocene sediment was found at -12 m OD in Wigtown Bay (Smith *et al.* 2003). Around 7500 cal BC relative sea level lay about 5 m below OD: it was possible to walk from the tips of the Rhins across a much wider Stranraer isthmus and between the tips of the Whithorn and Kirkcudbright peninsulas (Smith *et al.* 2003; Sturt *et al*. 2011). The Scottish land-mass was rising but sea level was rising faster, around 3 mm per year, flooding what had been dry land. Three times between 6800 and 6270 cal BC sea level rose much faster, in jumps of several decimetres over decades as the huge North American ice-sheet collapsed into the Atlantic Ocean (Lawrence *et al.* 2016). By around 5500 cal BC the sea in Wigtown Bay reached Newtown Stewart, having risen some 10 m in c. 2000 cal years to reach 9 m OD, nudging higher to just shy of 10 m OD by 4000 cal BC (Smith *et al.* 2003). The sea broke into the Whitecrook Basin at the head of Luce Bay (Illus 1.3), filling it to nearly 10.5 m OD around 4400 cal BC (Tipping, Smith and Jordan 2015).

1.2.5.2 Coastal change

Because it is a simple wedge shape, Wigtown Bay filled with salt marshes save for rare gravel barrier ridges constructed by longshore drift, perhaps in stormier periods, and now buried (Wells 1999; Smith *et al.* 2003). Luce Bay is topographically more complex (Illus 1.3) because gravel ridges older than the Holocene, and higher than the sea would reach in the Holocene, extend northeast from Sandhead (Single and Hansom 1994). This created a lowland behind them, now the Piltanton Burn, the mouth of which

was flooded by the sea, reaching Barsolus by around 6500 cal BC, creating an almost land-locked estuarine lagoon which rose at Mahaar and Kirminnoch to 10.5 m OD by 4400 cal BC, as in the Whitecrook Basin (Smith *et al.* in press).

Where glacial till, meltwater deposits and softer rocks allow, higher than present sea levels can be marked by clear shorelines cut in cliffs. Three were mapped in Wigtown Bay by Smith *et al.* (2003), the oldest (*c.* 5500–6000 cal BC)

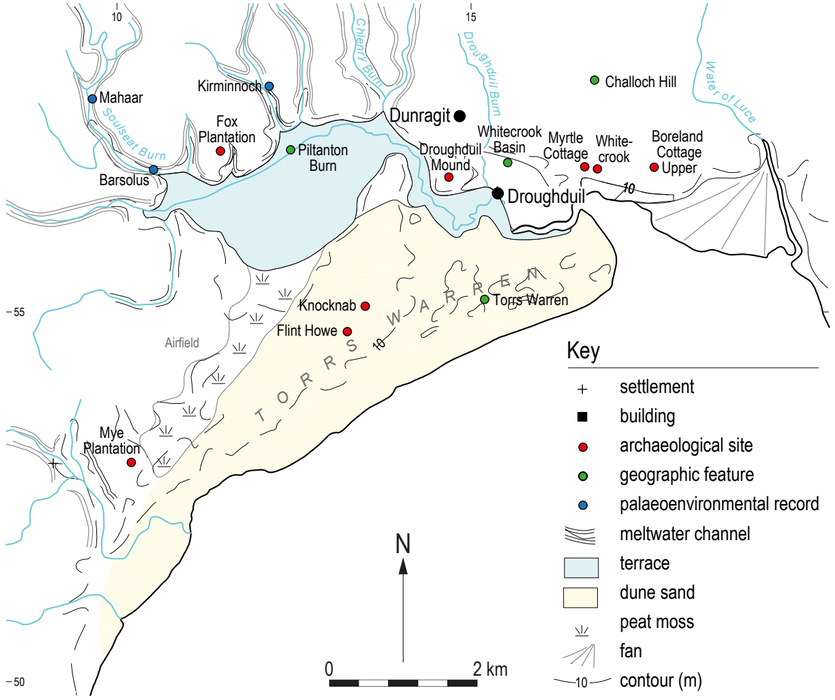


Illustration 1.3: Topographical context for key sites of archaeological interest around the Piltanton Burn river terrace

between 7.7-10.3 m OD. This shoreline is nearly continuous from Burrow Head to Monreith. It is also seen cut into meltwater gravels along the B7084 between Whitecrook and Droughduil in Luce Bay. Jardine and Morrison (1976) noted the common occurrence of Mesolithic sites directly on top of cliffs cut during this marine transgression, with an inferred relation to accessing peri-marine and marine resources.

1.2.5.3 Dune formation and growth

Sand dunes began to accumulate on top of the gravel ridges at Clayshant, pushed onshore by rising sea level (*contra* Cowie 1996, 92) and probably drifting northward to Torrs Warren over time. One of seven 3 m deep trial pits across the Piltanton Burn dug for the Scotland-Northern Ireland Gas Pipeline 260A (BGS Geoindex: NX 212289 56947) recorded blown sand beneath alluvium, the basal estuarine-marine silts radiocarbon dated to the west at Barsolus (Illus 1.3) to 6653–7025 cal BC (SUERC-38782: Smith *et al.* in press; above). In Wigtown Bay, dune sand covering peat is dated to 5207–4783 cal BC (Beta-83743: Wells *et al.* 1999), and woodland instability associated by Wells *et al.* (1999) with Mesolithic human disturbance. Mesolithic flints have been reported in the Torrs Warren dunes (Coles 1964; Cowie 1996; Coles 2011). The earliest radiocarbon- or pottery-dated archaeological sites in them, on a 'reasonably stable soil surface' in the high dunes at Knocknab, date to 3940–3700 cal BC (SUERC-23679), very early Neolithic, though Mesolithic microliths were also reported (Coles, *et al*. 2011, 44). These sites lie on unknown depths of earlier-deposited sand, as do those containing early Neolithic Carinated Bowl assemblages on Flint Howe (Cowie 1996). Of relevance also are the late Neolithic pits at Mye Plantation, near Clayshant (Mann 1903), dated to 2560–2210 cal BC (UB-3882: Sheridan 2002) because these were cut through 1.5-2 m of probably blown sand. There is no evidence *contra* McCarthy (2004, 119) that Wilson (1899) identified mid-Holocene pre-dune settlement.

Sand was also blown northeast across the Piltanton Burn, which was wider then, and stacked up on the southern side of the Whitecrook Basin in what is now Mote Wood. Sand described as aeolian underlay the later prehistoric structures at Whitecrook, around 10 m OD (Gordon 2009). No further discussion is given of the relation between archaeological features and sand here. Posthole 190, presumably cut into sand, has a radiocarbon date on birch charcoal of 3340–2930 BC (SUERC-15878) but its fill [191] is not blown sand. This might be regionally significant if the development of a complex soil on Torrs Warren, implying some stability, is of early-mid Neolithic date (Bown in Cowie 1996, 75-80, 92).

Sand is found at the base of the Droughduil Mound, finely bedded, which had 'naturally accumulated' (Thomas

et al. 2015, 97) but by what process is not discussed. It is described as a mound, the mould, as it were, for the later artificial mound. It was intensively OSL dated by five internally consistent assays from c. 8.7 m OD (Sanderson pers. comm) at 2520 ± 250 cal BC (OSL-10) to 9.4 m OD at 1200 ± 240 cal BC (OSL-6: Thomas *et al.* 2015, figure 4.5), beneath a ground surface at around 10 m OD. Over this long a time, aeolian deposition is more likely than by waves on a beach. East of the Droughduil Mound there is c. 3 m of sand on a buried gravel surface at c. 7 m OD. If the age of the base of the sand is extrapolated using the average rate of sand accumulation (c. 20 cal yrs per cm) from the OSL age estimates at the base of the Droughduil Mound (above: Thomas *et al.* 2015) the earliest sand here was dated to c. 2700 cal BC, similar to assay OSL-10 under the Droughduil Mound. These age estimates might accord with Cowie's (1996, 92) suggested re-activation of blown sand on Torrs Warren by the second millennium BC: Arnott (1964) identified Droughduil and Whitecrook as principal recipients of sand blown from Torrs Warren in the twentieth century.

The last dated evidence for blown sand accumulation around the Droughduil Mound was c. 1200 cal BC (Thomas *et al.* 2015). Dune slack peat in the foredunes of Torrs Warren (Newell in Cowie 1996), poorly dated from 1385–590 cal BC (GU-1355) to cal AD 333–770 (GU-1399), accumulated without blown sand burying the vegetated surface of the bog in this period. The likely later Bronze Age pottery assemblage at Whitecrook was heavily abraded, however, by blown sand (Johnson in Gordon 2009, 34). The depositional environment of the silty sand fill [163] of the ditch of a later Bronze-early Iron Age palisaded enclosure, its single radiocarbon assay on hazel charcoal (800-–510 cal BC) probably affected by the Halstatt 'plateau', and of the silty sand fill [115] of a broadly contemporary ring-groove house (Gordon 2009), is more difficult to interpret. Two soils stabilised dune sand in Brighouse Bay, the older carrying cord rig, the younger associated with shell middens and dated by portable archaeological finds to the Roman Iron Age (Maynard 1994), though sand continued to be deposited after the first centuries AD. Sand was and is still moved around on Torrs Warren (Arnott 1964, 339-40; Idle and Martin 1975).

1.2.5.4 Land use history of the sand dunes

The image of Torrs Warren as a major focus for sea-going communities throughout the Irish Sea (Bradley *et al.* 2016), perhaps into the early medieval period (Griffiths 2001), can explain the abundance of later prehistoric finds on substrates always far from central to agrarian activities.

Within Torrs Warren, Newell (in Cowie 1996) described from some time in later prehistory to the first millennium AD, major ecological shifts in plant communities that, on the dunes, were sensitive to change. Multi-species woodland is not apparent. Individual tree taxa dominate and were replaced by other individual tree taxa, abruptly unless truncated by hiatuses: birch to oak at, maybe, c. 600 cal BC, oak to alder at c. 300 cal BC, alder to an open landscape with no trees c. 200 cal BC, and to birch at c. 50 cal BC before *Calluna*-grass heath appeared around cal AD 350. Water-level change may have driven most of these shifts. A human presence in determining woodland change is not apparent unless it was in the total removal of wetland alder for the expansion of pasture in the final centuries BC, or in the growth of the later prehistoric mono-dominant, possibly single-generation oak wood, perhaps for charcoal (cf. McInnes 1964, 41 for a medieval example). Charred *Hordeum* (barley) grain at Whitecrook was radiocarbon dated to 2280–1980 cal BC (SUERC-15870: Gordon 2009).

Apparent stability of the sand in the fifteenth and sixteenth centuries AD (Jope and Jope 1959; Idle and Martin 1975) is unlikely (cf. 'Little Ice Age' storminess: Dawson *et al.* 2004).

1.2.5.5 Sea level fall

Sea level in Wigtown Bay was still around 7-8 m OD at c. 1700 cal BC (Smith *et al.* 2003) and north of the Mull at Girvan, Smith *et al.* (2007) record high sea level, around 9 m OD, at c. 2000 cal BC. The sea had fallen below 7.5 m OD, and vacated the Whitecrook Basin at Dunragit, after c. 2500 cal BC (Tipping *et al.* 2015). In Wigtown Bay, Wells and Smith (1999) include one final index-point dated to cal AD 87–412 (Beta-84193) when sea level was around 4 m OD. Much of the Piltanton Burn lowland to the west of Dunragit may have remained tidal as late as c. 300 cal BC (Smith *et al.* in press), a fall in sea level much slower than that modelled for Luce Bay by Sturt *et al.* (2013; see also Bradley *et al.* 2016). This slower fall has implications for later prehistoric settlement and resource availability, especially near the Piltanton Burn lowland (cf. MacGregor 1999) where later prehistoric settlements are largely confined to the north side of the burn.

Surface currents and longshore drift have prevented salt marsh formation In Loch Ryan and Luce Bay. Wigtown Bay has always trapped mud, allowing rivers to shift course as at the ill-fated Wigtown harbour (Graham 1979). Land-claim of intertidal mudflats has been practised in Wigtown Bay in recent centuries.

1.3 Archaeological Background to the Project Area

Warren Bailie, Kenneth Brophy and Declan Hurl

Baseline information was provided from the Dumfries and Galloway Council Archaeologist (DGCA hereafter) using the Historic Environment Record (HER) and the National Record of the Historic Environment (NRHE). The Garden History Society in Scotland and the Wigtownshire Antiquarian and Natural History Society were also consulted and provided additional information and comment.

The study area identified by the DGCA comprised an area approximately 1 km around the proposed scheme. There are five Scheduled Monuments, 10 listed buildings, and 62 unscheduled sites recorded within the study area. There are also numerous Areas of Archaeological Interest (AAI) close to the proposed scheme, many of which surround findspots or Scheduled Monuments, with a particular concentration around the village of Dunragit (Illus 1.4).

The area around Dunragit contains a number of significant known archaeological sites, most notably those reflecting the use of this landscape during the Neolithic period.

The Neolithic elements are represented by three Scheduled Monuments at the west end of the route of the new Dunragit Bypass: the Dunragit cropmark complex (NX15NW 69 and 76), the Droughduil 'motte' (NX15NW 6) (although the schedule refers to this as *Droughdool*, the spelling Droughduil is favoured here as this was used by Thomas (2015), and is also noted in mapping of the area), and the cropmark complex at Drumflower Bridge (NX15NW 25). Excavations at the first two monuments by Julian Thomas (1999-2002), coupled with the recent investigations adjacent to Drumflower Bridge during the A75 Bypass project, have shed light on one of the most significant ceremonial complexes of the third millennium BC in Britain.

The Dunragit cropmark complex was initially identified from the air by the former Royal Commission for the Ancient and Historic Monuments of Scotland (RCAHMS, now HES) Aerial Survey programme in the productive cropmark season of 1992 (Mercer 1993; Thomas 2015, 3). Since then, aspects of this cropmark complex, which straddles two fields north and south of the railway line, have been repeatedly photographed. Several key aspects were identified as early as 1992: a triple concentric post-defined enclosure (known in the literature as the palisaded enclosure), assorted ring-ditches, and multiple pits, some in alignments, of which some are likely to be postholes.

Discussion of Dunragit has tended to focus on the palisaded enclosure complex and to place the monument in the late Neolithic period, initially on the basis of site morphology. For instance, Dunragit was discussed in a synthesis of

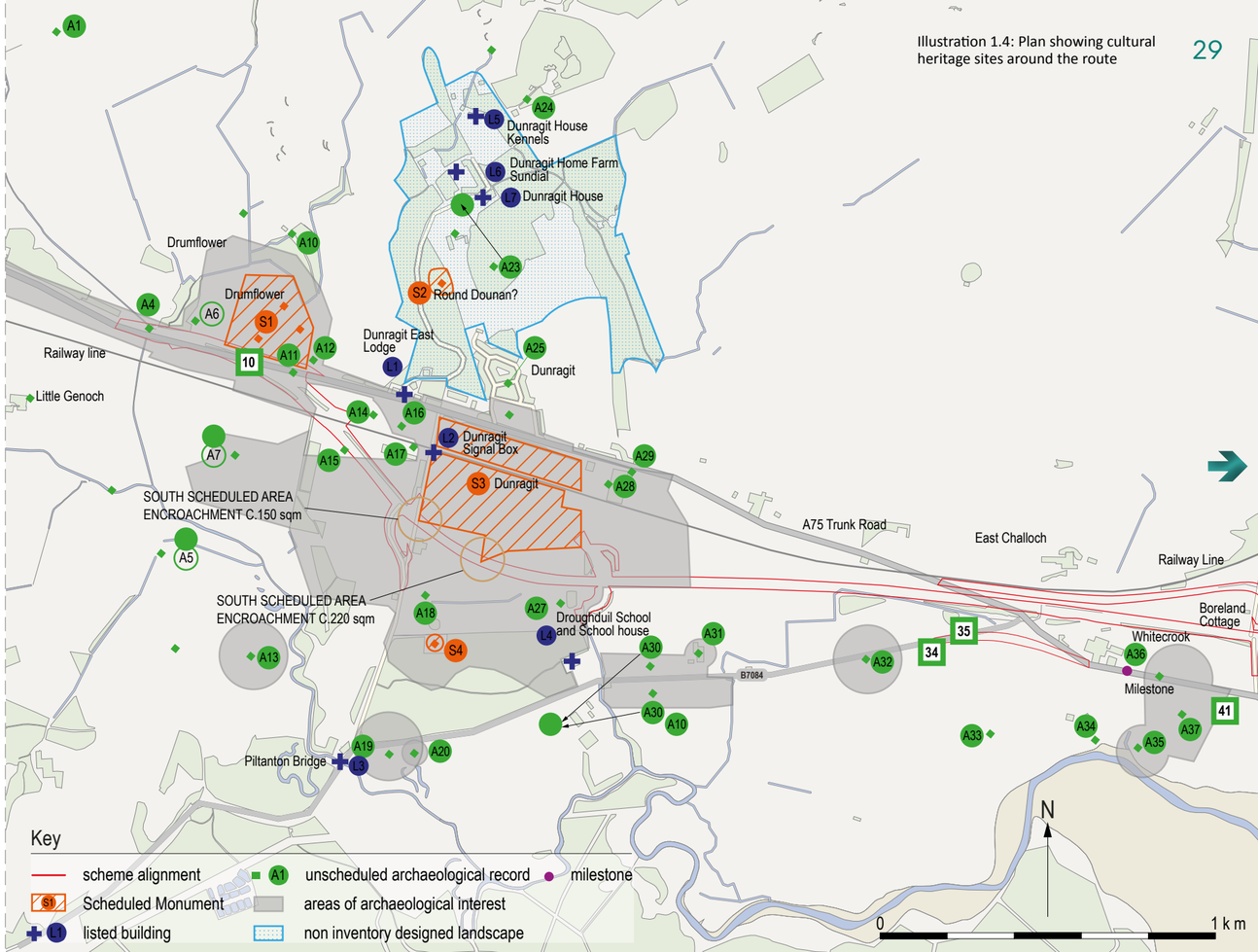


Illustration 1.4: Plan showing cultural heritage sites around the route

Neolithic enclosures in Scotland by Barclay (2001) and was included in Gibson's gazetteer of palisaded enclosures in the UK, one of four listed for Scotland (2003, 17). Gibson described the monument, from air photo transcriptions, as

> *'a triple, roughly circular enclosure of well-spaced posts enclosing an area of just over 7ha. The innermost enclosure has a diameter of c. 110m (enclosing approximately 0.95 ha), the middle enclosure has a diameter of c. 140 (enclosing approximately 1.54 ha) and the outermost enclosure has a diameter of c. 300m. A double post avenue with slightly bowed sides leads from the middle palisade to the S'*.

Excavations of a limited area of this element of the Dunragit palisaded enclosure north of the railway line were undertaken under the direction of Julian Thomas between 1999 and 2002. Interim accounts (e.g. Thomas 2001, 2004), and a monograph (Thomas 2015), set out the results of this excavation, which are therefore only briefly summarised here. One large trench was excavated over four seasons (area J, AA, A, and F) over the middle and inner enclosure boundary, while smaller trenches (E, C, D) focused on features to the north of the outer enclosure boundary (Illus 1.5; Thomas 2015, 18ff).

Thomas's excavations showed that this was a complicated, multi-phase monument. Evidence for Mesolithic activity was restricted to a few artefacts. The earliest indication of monumentality was the construction of a timber cursus monument in the 36th to 37th century BC, a date that is typical for such structures (see Thomas 2006; Brophy and Millican 2015). The three phases of palisaded enclosure were erected in a location that overlapped the cursus monument between the 29th and 27th century cal BC, although this was based on only five radiocarbon dates (Thomas 2015, 143). Again, this date range is typical for such monuments (Gibson 2002; Noble and Brophy 2011). Statistical analysis suggests the monument was in use for 25 to 350 years (Thomas 2015, 141). This monument was defined by oak posts which posthole depths suggest could have stood up to 4 m above ground level (Thomas 2015, 163). Some posts were charred before erection presumably so they would stand for longer. Most were left to rot rather than being removed or burned down. The interior ring probably consisted of free-standing timbers, while the outer rings were 'effectively fences' (Thomas 2015, 160).

Other aspects of the cropmark complex excavated included possible ring-ditches, quarry pits, and assorted postholes. A ring-ditch investigated in Trench C was thought to be a funerary monument, although no funerary remains or material culture were recovered. A second possible ring-ditch, exposed within Trench D, turned out to be a rough arc of pits and cut features. Little diagnostic material was found here, with a tentative suggestion this represented the remains of a heavily truncated later prehistoric roundhouse

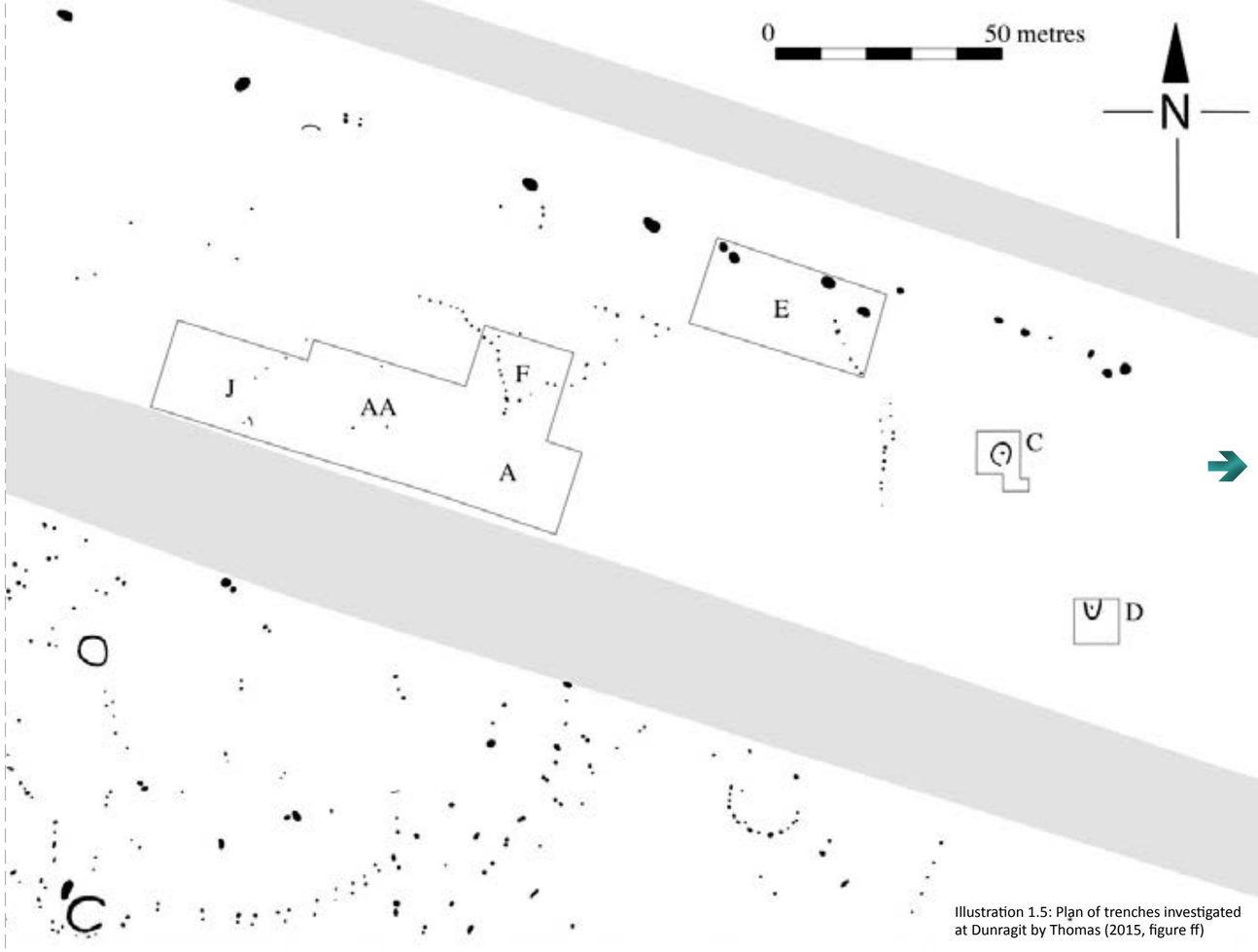


Illustration 1.5: Plan of trenches investigated at Dunragit by Thomas (2015, figure ff)

(Thomas 2015, 82-4). Finally, in Trench E, postholes of the outer palisade were identified. Various postholes and truncated features were identified, one of which contained remains of a Bronze Age cremation deposit. Two large oval pits within this trench were interpreted as road quarry pits.

A relatively limited range of material culture was found in association with timber posthole features. The pottery assemblage was dominated by late Neolithic Grooved Ware sherds, mostly found in postholes of the inner ring and pits contained with the area of the timber cursus (Leivers within Thomas 2015). Beaker and Food Vessel sherds were found in very small quantities, in two features within the bounds of the palisaded enclosure. A small lithic assemblage was again dominated by pieces diagnostic to the late Neolithic periods, mostly found in inner posthole ring features, and of mixed material. A sandstone axe was recovered from a feature where the inner post-ring overlaps with a cursus posthole (Healey 2015). Two unurned cremation burials, of late Neolithic, and early Bronze Age date, were recovered, the former from an inner post-ring posthole, the latter in a feature from area E (McKinley 2015).

Variability in post size and treatment, and the scalloped appearance of the outer two palisade fences at Dunragit, led Thomas (2015, 160) to suggest that, 'the monument was created by an aggregation of semiautonomous social units, rather than a tightly integrated hierarchical entity'. This site, Thomas concluded, was a gradually developed complex of enclosures used for ceremonial gatherings, with access controlled by a narrow entrance avenue, and such should be regarded as one of the most extensive monument complexes of the late Neolithic period in northern Britain.

This interpretation was reinforced by the identification of the Droughduil Mote as being an artificially augmented sand dune, with recently-postulated origins in the Neolithic period. RCAHMS fieldworkers visited in 1986 and concluded:

> *'The motte is known locally, and on the schedule, as Droughdool Mote. On level ground … there is a prominent mound which is probably a motte. It appears to have been built on a natural knoll and now stands to a height of 10m on the northeast; its roughly level summit measures about 12m in diameter* (Canmore ID: 61278).'

This site has traditionally been regarded as being medieval, hence the name. Proximity to the Neolithic cropmark complex led to the suspicion that the mound was in fact contemporary with the Dunragit complex (Thomas *et al.* 2015). This suspicion was tested by limited excavation of the mound undertaken by the Manchester University team in 2002. This investigation indicated the mound was a natural feature, probably a sand dune, with no surrounding ditch, but with a series of steps cut into its flanks. There was some dating evidence at the summit of the mound, consisting of a round cairn containing burnt bone and flint scrapers, a Bronze Age phase of activity. The monument was topped with the ruins of a Victorian folly (Thomas *et al.* 2015, 100). The prehistoric alteration of the mound was dated approximately using OSL dating. These dates suggested a sequence of activity that shows the cairn had collapsed by 1200 BC, and that there had been activity on the mound in the third millennium BC, before the building of the cairn. The excavators concluded that this mound was, in the late Neolithic, a platform from which activity within the palisaded enclosure could be viewed, and that it connected to the monument also via the alignment of the avenue.

A third Scheduled Monument, Drumflower Bridge (SM5790), is located approximately 1 km WNW of the Dunragit complex, and has similarities to Dunragit: it comprises the remains of a palisaded enclosure (probably a later prehistoric settlement), a pit-defined enclosure and an avenue of pits (probably of ritual significance), all part of an extensive complex of Neolithic and/or Bronze Age date, which may well link with the Dunragit complex and the wider Neolithic and Bronze Age activity in this landscape. The features at Drumflower Bridge are all represented by cropmarks visible on oblique aerial photographs (NX 15 NW 25).

The scheduling states:

> *'The palisaded enclosure is sub-circular with a diameter of approximately 70m. There are indications of possible internal circular structures, but the background geology of the field masks much of the detail of these features. Some 60-70m SW of the enclosure are the remains of a series of pit-defined features. An avenue formed by a double alignment of pits runs NNE-SSW for approximately 50m. It appears to be centrally situated within a pit-defined annular enclosure some 120m in diameter, although only the W arc of the latter is unambiguous. Numerous other pits and possible annular features are located around these principal features.'*

A watching brief was undertaken during ground-breaking works associated with the A75 trunk road improvement scheme between Planting End and Drumflower (McMorran 2007). No significant features or artefacts were encountered here despite its proximity to known prehistoric archaeology in the scheduled area to the northeast, suggesting that the Drumflower Bridge complex either does not survive in this locale, or did not extend that far.

The proposed route corridor ran for a total of 7.4 km, including side roads, from Ballancollantie Bridge in the west to the Wood of Park, outside Glenluce, in the east. It ran south of the existing road for the western 2.9 km but crossed the old road line west of Whitecrook, thereafter running to the north of the old line (Figure 1.4). The bypass route in the west took it through the Neolithic landscape dominated by the Dunragit and Drumflower complexes and Droughduil Mound and indeed 100 m2 (SM A) of the southwest corner and 150 m2 (SM B) of the south corner

of the Dunragit Scheduled area would be required to accommodate the new road. As well as the main bypass route, a system of side roads, totalling approximately 2.4 km length, were planned to link the new road to side roads and farm lanes. Three substantial Sustainable Drainage System (SuDS) ponds were also planned; one was located just south of the route approximately 270 m ESE of the Dunragit complex (Droughduil Holdings), a second was sited 800 m further east (Mid-Challoch), and a third at the east end of the bypass route southeast of the Mains of Park site (Illus 0.2).

An Environmental Impact Assessment was undertaken by Young Associates/Mouchel Parkman (2006) to identify the recorded archaeological sites within 1 km of the route corridor, to evaluate the potential impacts of the scheme on the known and unknown archaeological remains along the route, in particular upon the Neolithic monuments and landscape, and to recommend a scheme of field evaluation.

They identified two further Scheduled Monuments within the study area: Round Dounan, a motte just north of Dunragit village; and Castle of Park 480 m west of Glenluce. They also listed a further 62 recorded archaeological sites within the Study Area for the project, as identified in their Environmental Statement (Young Associates/Mouchel Parkman 2006). These included five urn burials, five ring-ditches, five cropmark sites, 17 find spots, five farmsteads, nine modern/industrial sites, and further cropmark sites ranging from a barrow and hut circles to cultivation marks.

Of those sites, two were on the line of the west end of the Scheme route:

1. NX15NW 113, a series of linear features (cropmarks) of unknown date and origin, and a pit, removed earlier during gravel extraction (Pickin 2000b); and

2. NX15NW 74, a series of cropmarks, just south of Drumflower Bridge Scheduled Monument, but part of the broader Drumflower cropmark complex.

The site of the linear features and pit was an abandoned quarry, with these archaeological features already removed; therefore, it would not be affected by the Scheme. Cropmarks south of Drumflower Bridge were investigated as part of excavation on the road line at Drumflower (see 2.5.1). The list in this Environment Statement was refined to remove duplicated entries and natural features, and to introduce significant sites and references not previously included, resulting in a total of 64 relevant sites (Table 1.2 and 1.3).

Site No./SM No.	NMRS/D&GSMR	Location/Name	NGR	Category
S1- SM5790	NX15NW25 DG1295, 5063, 9231	Drumflower Bridge	NX14365785 NX14395782 NX14335786	Enclosures and pit alignments
S2- SM1995	NX15NW4 DG1308	Round Dounan	NX14835795	Motte
S3-SM5852	NX15NW69, 76 Various DG Nos.	Dunragit	Varies with DG No.	Enclosures, ring-ditches and pit alignments
S4-SM2016	NX15NW6 DG1335	Droughduil Mote	NX14825686	Mound/Motte
S5- SM90066	NX15NE9 DG1277	Castle of Park	NX18815712	Tower house

Table 1.2: Scheduled Monuments

Site No.	NMRS Ref.	Site Name	National Grid Reference	Monument Type
A1	NX15NW 106 137	Drumflower	NX13695870 DG13382	Linear cropmarks
A2	NW97SE 11 970 707	Little Genoch	NX13605761 DG574	Findspot
A3	NX15NW 10 c. 138	Piltanton	NX13855732 DG1279	Findspot
A4	NX15NW 104.01 1396 5781	Ballancollantie Bridge	NX13965781 DG13338	Road bridge
A5	NX14NW 44 1401 5715	Genoch Mill/ Genoch Mains	NX14005715	Watermill
A6	NX15NW 73 1410	Drumflower	NX14105783 DG5064	Linear cropmarks
A7	NX15NW 64 141 574	Bareagle Nursery	NX14215742 DG1340	Linear feature
A8	N/A	Genoch Mains	NX14045685 DG9353	Geological Crop Marks
A9	NX15NE 69.00	Dunragit	NX14255815 DG4997	Site
A10	NX15NW 110 144 581A	Orchard	NX14395810 DG14183	Farmstead

Table 1.3: Recorded Archaeological Sites

Site No.	NMRS Ref.	Site Name	National Grid Reference	Monument Type
A11	N/A	Drumflower	NX14395767 DG5062	Ring ditch
A12	NX15NW 36 144 577	Orchard	NX14445772 DG1305	Urn
A13	NX15NW61 142 568	Swamps	NX14275683 DG1337	Ring ditch
A14	NX15NW60 c.152 573	Dunragit	NX14645755 DG1270	Findspot
A15	NX145 575	Cairnglen	NX 14555734 DG13012	Site
A16	N/A	Parkneuk	NX14725751 DG17217	Barrow; pit
A17	NX15NW109 1476	Bareagle	NX14765746 DG14182	Building
A18	NX15NW 105 148 570	Dunragit	NX14795701 DG13381	Linear crop mark
A19	NX15NW63 146 565	Piltanton	NX14645652 DG1339	Linear crop mark
A20	NX15NE62 1476 5655	Piltanton	NX14765654 DG1338	Ring ditch
A21	NX15NW 4 1483 5795	Round	NX14835795 DG1308	Motte; Fort
A22	NX15NE.1.0	Dunragit Moor Fort	NX14995864	Hill Fort
A23	NX15NW 71	Stair	NX15005800 DG9296	Findspot
A24	NX15NW8	Dunragit Moor	NX15105850	Hut circles
A25	N/A	Dunragit	NX15055765	Findspot
A26	NX15NE 29	Dunragit	NX15055755	Axe hammer Findspot
A27	NX15NE 93 152 570	Droughduil	NX15205699 DG13422	Site; Square
A28	NX15NE 29 150 576	The Creamery	NX15345734 DG1238	Findspot
A29	NX15NE78.00 1999 to 1500 5761	Ballochjarg	NX15415738 DG13336	Bridge

Table 1.3: Recorded Archaeological Sites (continued)

Site No.	NMRS Ref.	Site Name	National Grid Reference	Monument Type
A30	NX15NE 27 152 566	Droughduil	NX15475680 DG1236	Findspot
A31	NX15NE 14 1562 5684	Droughduil	NX15625683 DG1225	Cinerary urn
A32	N/A	Whitecrook	NX16215682 DG9382	Pit; Ring ditch
A33	NX15NE 88 165 566	Whitecrook	NX16495660 DG15179	Field
A34	N/A	Piltanton	NX16805657	Findspot
A35	NX15NE 75 1694 5655	Whitecrook	NX16945654 DG9340	Enclosure
A36	NX15NE 78.00 1999 5757 to 15800 5761 NX15NE 78.01 1549 5739	Bridge of Sark – Portpatrick Military Road	NX17005677 DG13335	Military road
A37	N/A	Whitecrook	NX17085664 DG4757	Cultivation marks
A38	N/A	Whitecrook	NX17445654 DG12725	Findspot
A39	N/A	Whitecrook / Cutty Batty Ford	NX17495638 DG12724	Findspot
A40	N/A	Piltanton	NX17595607 DG1273	Landing Point
A41	NX15NE 87 1784 5630	Nathan's Corner	NX17835629 DG14178	Farmstead
A42	NX178 559	Luce Sands / Piltanton Burn	NX17855594 DG13168	Findspot
A43	NX15NE 5 1837 5696	Wood of Park	NX18375695 DG1259	Settlement
A44	NX15NE 86 1843 5697	Daisy Knowe	NX18435697 DG14177	Farmstead
A45	NX15NE 89 1879 5702	Castle of Park	NX18795701 DG14180	Farmstead

Table 1.3: Recorded Archaeological Sites (continued)

Site No.	NMRS Ref.	Site Name	National Grid Reference	Monument Type
A46	NX15NE 032 190 573	Bridge Mill of Park	NX19015736 DG1241	Leat; Mill
A47	NX15NE 35 19 57	Ballinclach	NX19005699 DG1244	(Burgh)
A48	NX15NE24	Glenluce	NX19005700 DG1234	Findspot
A49	NX15NE68	Stair Estates / Glenluce	NX19005699 DG5204	Findspot
A50	NX15NE 37	Glenluce	NX19005700 DG1246	Cist; Urn
A51	NX15NE64 19 57	Glenluce	NX19005700 DG1272	Findspot
A52	NX1918 5757	Kiln Croft	NX19175757 DG13089	Farmstead
A53	NX15NE 17 1915 5735	Bridge of Park	NX19145734 DG1228	Road Bridge
A54	NX15NE 62	Luce Viaduct / Glenluce Viaduct	NX19175732 DG12112	Railway Viaduct
	1911 5730	Water of Luce		
A55	NX15NE 12 1938 5733	Mote Hill	NX19355732 DG1224	Earthwork
A56	NX15NE 36	Old Luce	NX19295720 DG1245	Urn; Cairn
A57	NX15NE 34 c.195	Bankfield	NX19545645 DG1243	Cinerary Urn, Findspot
A58	NX15NE59 196	Corse Head	NX19645654 DG1268	Flint scatter
A59	NX15NE.59.0	Corse Head	NX196565	Flint scatter
A60	N/A	Glen Luce	NX19565628 DG9427	Pit alignment; ring ditch
A61	NX15NE 72	Glen Luce	NX19855664 DG9248	Temporary Camp
A62	NX15NE 70.00 1500 5748 - 198 561	Glenlochar- Gatehouse of Fleet-Loch Ryan	NX19855615	Roman Road

Table 1.3: Recorded Archaeological Sites (continued)

1.3.1 Origin of the project and its research aims

Aims and Objectives

The aim of the archaeological evaluation was to determine the archaeological presence on and archaeological potential of the land affected by the road in general and in the vicinity of Dunragit and Drumflower Bridge Scheduled Monuments in particular, to locate suitable palaeoenvironmental resources and to use them to place human activity in a wider context. The aims of the construction phase watching brief were to monitor topsoil stripping to establish the extent of any archaeological sites previously known, or found during earlier phases of work, and to recover suitable palaeoenvironmental samples before the construction of the bypass.

In pursuit of these aims GUARD Archaeology conducted an archaeological evaluation of 10% of the development area, by machine-cut trial trench excavation, to establish the presence or absence of any archaeological remains, and their character, date, and extent if surviving. GUARD subsequently submitted a 'data structure report' on completion of all stages of the archaeological fieldwork, which included an outline of any further necessary archaeological works, including post-excavation analysis and publication.

1.3.2 Introduction to the fieldwork

1.3.2.1 Site Methodologies

At the time when the fieldwork was carried out Historic Scotland (hereafter HS, now Historic Environment Scotland) advised Transport Scotland on archaeological works. Historic Scotland's representative, Rod McCullagh conducted regular monitoring visits during the works in consultation with GUARD Archaeology, Amey plc, Mouchel, and RJ McLeod, providing advice on specific approaches on a site by site basis.

GUARD Archaeology are a Chartered Institute for Archaeologist (CIfA) Registered Organisation and all works were carried out in accordance with CIfA's

- *Code of conduct* (2019);
- *Standard and guidance for archaeological field evaluation* (2014),
- *Standard and guidance for an archaeological watching brief* (2014),
- *Standard and guidance for archaeological excavation* (2014),

- *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (2014).

1.3.2.2 Evaluation Methodology

After consideration of various strategies employed on such projects, it was recommended that the evaluation would follow the sampling strategy used on large-scale NRA (National Roads Authority) projects (O'Rourke 2005), which would entail, one central trench, 1.8 m wide, down the centre of the entire main route and all significant secondary routes, revealing 6.2% of the route; and 216 oblique trenches offset from the central trench, each measuring approximately 13 m by 1.8 m, positioned at 20 m intervals and on alternate sides of the central trenches and oriented at 45º These were dug only where the land-take exceeded 22 m in width and in total exposed a further 4% of the route.

The frequency of the offset trenches was varied along the route, for example, to allow for a greater density of trenches in more sensitive areas, particularly around the Dunragit Neolithic complex.

Three substantial SuDS ponds were planned to ensure sustainable drainage for the new bypass, and these also had to be subject to archaeological evaluation: one, located just south of the route where it passed the Dunragit Scheduled Monument (Droughduil Holdings), measured approximately 75 m by 37 m; and a second lay 800 m further east (Mid-Challoch), measuring approximately 230 m by 30 m; the third was situated at the eastern extent of the bypass route and measured 75 m by 35 m. For the first pond one 75 m long trench was excavated north/south, with two transverse trenches east/west measuring 37 m and 28 m long, excavated near the north and south ends of the pond. The other two ponds were subjected to the same trenching regimen as the road route, with one central trench and staggered offset trenches at 20 m intervals.

When features or complexes extended beyond the assessment trenches, and they were judged by the project archaeologist and HS to warrant further investigation, the assessment trenches were extended within the confines of the route land take to the minimum area necessary to investigate those features.

The potential for and nature of substantive remains was assessed using the maps of recorded sites along the route compiled by Mouchel Parkman/Young Associated to accompany their Stage 3 Environmental Statement. New, previously unknown complexes, features and artefacts were discovered beyond the areas where significant archaeology was suspected.

Seven geotechnical test trenches, c. 1 m² and several metres deep, were excavated along the route were monitored by the Project Archaeologist to record any relevant features or changes in stratigraphy.

1.3.2.3 Dunragit Scheduled Monument Excavation

A maximum of 100 m² at Scheduled Monument Area A, (hereafter SM A) of the southwest corner and 150 m² at Scheduled Monument Area B (hereafter SM B) of the south corner of the Dunragit Neolithic Complex, a Scheduled Monument, was directly impacted by the scheme and required full archaeological excavation, once Scheduled Monument Consent (SMC) had been granted by HS. SMC was also sought and granted for works at SM C at Drumflower.

Considering the archaeological significance of this monument and the magnitude of the impact of the scheme on the two areas within the Scheduled Monument, a strategy of full excavation was employed. Therefore, after half-sectioning, the remaining fill of the sampled features was removed, following initial cleaning, investigation, and a period of weathering out of around 3-5 days.

Soil samples were taken to assist with the palaeoenvironmental research element of the project, according to a sampling strategy agreed with HS. All features were at a minimum 50% sampled within the Scheduled Areas, with the exception of larger linear features which were 20% sampled.

1.3.2.4 Archaeological Methodology outwith the Scheduled Monuments

In all areas of trenching, soil removal was undertaken by mechanical excavator, utilizing a c. 2 m wide flat-bladed (toothless) ditching bucket under the direct supervision of a GUARD archaeologist, down to the first archaeological horizon or to natural subsoil, whichever was encountered first. The depth of stratigraphy apparent in all areas of stripping was recorded.

Any archaeological features encountered were cleaned by hand to determine their character and extent. Where negative-cut features were encountered, a representative sample was 25-50% was excavated to determine significance, date, and function. A full record of excavated features was made using a single context recording system using pro forma sheets, drawings, and photographs. All archaeological features were photographed and recorded at an appropriate scale. Sections were drawn at 1:10, plans at 1:20 scale.

Cremated bone was observed and investigated in two main areas, Drumflower and Boreland Cottage Upper, and possible burial pits containing grave goods such jet jewellery, pottery vessels and flint tools were investigated at East Challoch.

Any features requiring further investigation, which we termed 'Areas of Archaeological Significance', were identified and left open for further work.

1.3.2.5 Weathering of Subsoil

Natural gravel subsoils in lowland Scotland often share a characteristic: that while after initial cleaning few archaeological features are visible, in the following days after the subsoil had been exposed to the elements, and with differential drying, archaeological features would begin to reveal themselves. (Barclay *et al.* 2002, 75).

During the bypass works, in some cases areas where only occasional features were noted, we would see a four or five-fold increase in the number of features over a period of a few days. In other cases, such as the large, supposed quarry pits encountered at Drumflower, subtle changes in the subsoils became starkly clear in the days following initial exposure. Most of the features encountered during these works were relatively sterile and, in some cases, unconvincing as artificial features, at least initially.

1.3.2.6 Areas of Archaeological Significance

After the evaluation places identified as 'Areas of Archaeological Significance' (Sites 1-11, Illus 1.6) were proposed for further investigation after consultation with

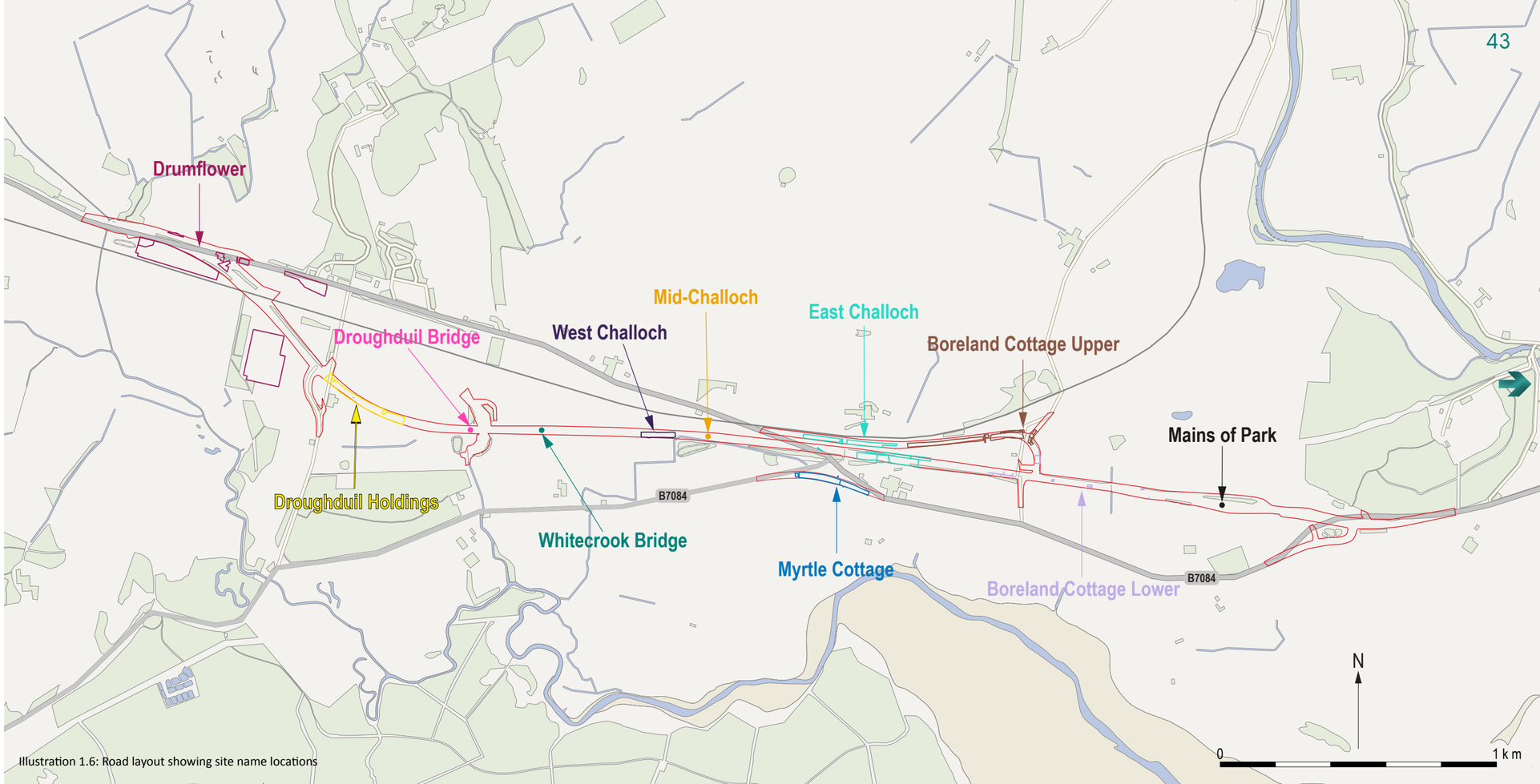


Illustration 1.6: Road layout showing site name locations

HS, Mouchel, Transport Scotland, and Amey plc. In each area of archaeological significance an arbitrary area was expanded around the initial location of the significant archaeology to provide an opportunity to establish the nature, character, and date of the archaeology. The findings from each area of archaeological significance are summarised below in numerical order with a note of site name eventually applied:

Site 1: Burnt mound deposits (Boreland Cottage Lower),

Site 2: Burnt deposit adjacent to cremation complex (Boreland Cottage Upper),

Site 3: Burnt mound deposit (Boreland Cottage Lower),

Site 4: Burnt mound deposit (Boreland Cottage Lower),

Site 5: Prehistoric structures and pits (East Challoch),

Site 6: Iron Age settlement (Myrtle Cottage),

Site 7: Mesolithic structure and other activity (West Challoch),

Site 8: Possible burnt mound trough system with sluice (Droughduil Bridge),

Site 9: Structures and pits of possible Bronze Age and Iron Age date (Drumflower),

Site 10: Bronze Age cremation complex and posthole alignments (Boreland Cottage Upper),

Site 11: *In situ* wooden stakes (Droughduil Bridge) - it was not feasible to expand upon this site due persistent water ingress, it being at or below the current water table. However, fragments of wood were retained for further study. Two *in-situ* wood fragments were identified to species level and one was dated as part of this work.

1.3.2.7 Construction Phase

On completion of the investigations of ten of the 11 areas of archaeological significance established by the evaluation, it was decided that it was necessary for a watching brief to be conducted during the construction phase of works on behalf of RJ McLeod. All groundworks were monitored on the basis of one archaeologist per machine and any resulting significant archaeological deposits uncovered were investigated and recorded. The concordances for contexts and finds from all investigations are provided digitally as Appendix 23; the Data Structure Report (DSR) is also provided digitally as Appendix 24. All documentation resulting from the investigations are deposited with the National Record of the Historic Environment (NRHE) as part of the archive.

1.4 Post-excavation Aims

The central aim of the post-excavation work is to present a meaningful body of work for use by academics and heritage professionals in perpetuity, whilst providing value for public money and open access to the results in an engaging format. The processes of dissemination have involved formal presentations tailored to a wide-ranging audience, from young children in local and regional schools to local, regional and national community groups, societies, and interested public and private sector companies, and organisations. There is also a 'popular' publication (GUARD Archaeology 2020) and a blog (https://guard-archaeology.co.uk/DunragitBlog/) was set up to document the post-excavation process.

1.4.1 Post-excavation Research Strategy

1.4.1.1 Research Techniques and Objectives

The research goals of this intended programme of works recognise the research agendas of the Mesolithic, Neolithic, Bronze Age and Iron Age sections of the Scottish Archaeological Research Framework (ScARF), as well as those of the scientific and dating sections.

In consultation with our Academic Editor, Dr Kenneth Brophy, the following research framework was agreed with Transport Scotland's Archaeological Advisor. This framework endeavours to provide an understanding of:

- the relevance of the sites to the understanding of the earliest settlement in the southwest of Scotland,
- the relevance of the sites to the understanding of the belief systems in the southwest of Scotland,
- the natural landscape around the sites and environmental and human-made changes that took place within them,
- how environmental factors have affected the location and viability of settlement across the area,
- the implications of the work in relation to our understanding of key local prehistoric locales where previous work has been undertaken, namely Dunragit, Luce Sands, with reference to the results of Scotland Northern Ireland Pipeline (SNIP) project excavations in the area, where available,
- the relevance of the sites to the understanding of the cropmark resource in the southwest of Scotland,
- the broader, regional context of the project area is important, and so we will consider potential affinities with Cumbria, Northern Ireland, and other parts of the 'Irish Sea zone'.

1.5 Post-excavation Methodologies

1.5.1 Specialist Reports

Specialist reports including, but not limited to, Environmental, Artefactual and Analytical were undertaken for the A75 Bypass excavation assemblage. Each specialist, where feasible, provided an overview of their findings for the scheme. The specialist report content is provided digitally as Appendices (1-22). Site-concordances for contexts and finds, and the DSR are available digitally (Appendices 23 and 24 respectively) and form part of the archive for the project. Each specialist has a relevant postgraduate qualification, and all nominations were approved by Transport Scotland's Archaeological Advisor.

1.5.2 Soil Samples

Processing and post-excavation assessment was undertaken in accordance with the requirements of the Chartered Institute for Archaeologists' Code of Conduct (2019), and *Standard and guidance for archaeological excavation* (CIfA, 2014a), *Standard and 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). Processed samples from Boreland Cottage Upper were analysed by Susan Ramsay (Appendix 4), with the samples from all other sites analysed by Diane Alldritt (Appendix 3).

1.5.3 Multi-element Analysis *(Appendix 6 and 7)*

Multi-element analysis was required for each site. The intention here was to determine chemical signatures for the samples to assist in the analysis of these sites and provide evidence of whether any structures, features or deposits were indicative of solely human occupation, or if there was evidence of animal presence. This technique was also aimed at providing guidance on what activities were being conducted within different areas of the sites and within specific structures, while also differentiating the nature and function of individual features and deposits by understanding fluctuations in pH levels and chemical composition. Two thousand, eight hundred and thirty-nine 2839 samples, 2472 of which are also for artefact recovery from Site 19, were taken for multi-element analysis with these concentrated-on floor/possible occupation deposits where apparent in Site 6A (Myrtle Cottage, 174 samples), on Site 7 Mesolithic Structure (West Challoch, 193 samples) and Site 19 Grid (West Challoch, 2472 samples).

1.5.4 Soil Micromorphology *(Appendix 5)*

The aim of this analysis was to gain a microscopic understanding of how the sampled layers developed through time and of what they comprised of. Soil micromorphological analysis was required for soil samples present within three kubiena tins taken of key stratigraphic interfaces on Site 6A (Myrtle Cottage).

1.5.5 Burnt/Cremated Remains *(Appendix 8)*

A large assemblage of unidentified burnt bone was recovered from 42 cremation contexts across two sites discovered during the investigations. The majority of the material was recovered as deliberately buried cremation deposits within a Bronze Age cemetery complex at Boreland Cottage Upper with other cremations found at Drumflower.

The aim of the burnt/ cremated bone analysis was to identify the minimum number of individuals (MNI), the age demographic of the cemetery, and any apparent pathological traits represented by the burnt bone assemblage. The analysis attempted to establish possible gender for the individuals represented. A report analysing this assemblage and placing it within its local, regional, and national context forms a core component of this study.

Assessment and analysis of human remains was undertaken in line with guidance given in *Excavation and post-excavation treatment of cremated and inhumed human remains* (McKinley and Roberts 1993) and *The Treatment of Human Remains in Archaeology* (Historic Scotland 2006).

1.5.6 Prehistoric Pottery and Daub *(Appendix 15 and 16)*

An assemblage of 715 individual prehistoric ceramic sherds was recovered during the excavations across six sites, including five complete vessels and an assemblage of sherds relating to a sixth vessel were conserved after recovery. The assemblage is indicative of use and deposition between the Neolithic and Bronze Age periods, the fourth and third millennia BC. The distribution of the sherds provided the potential for systematic relative dating of features to be undertaken. All vessels and individual sherds were in relatively good condition and represented a variety of vessel types with different functions.

Detailed further analysis was required to confirm the periods represented by the assemblage and to place the material in a chronological, regional, and functional framework. A detailed report with a catalogue analysing this assemblage to accepted national standards, and placing it within its local and regional context, forms a core component of this study. Special consideration was required of the identification of raw materials and possible sources, manufacturing details, and of stylistic and decorative elements during analysis.

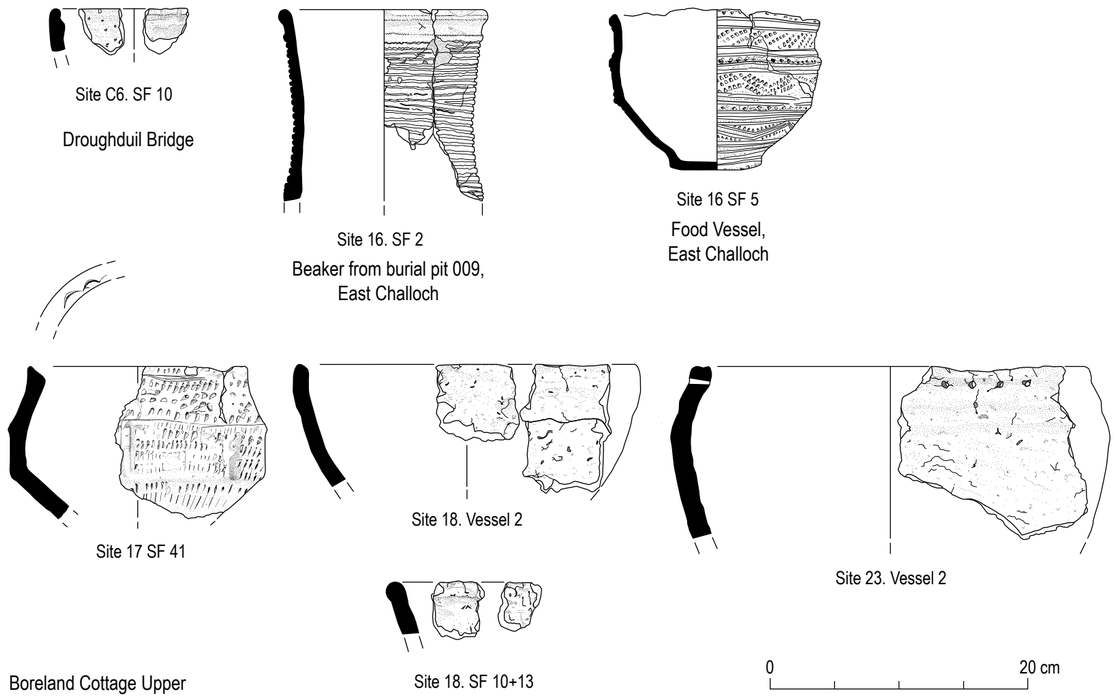


Illustration 1.7: Vessels from Broughduil Bridge, East Challoch and Boreland Cottage Upper

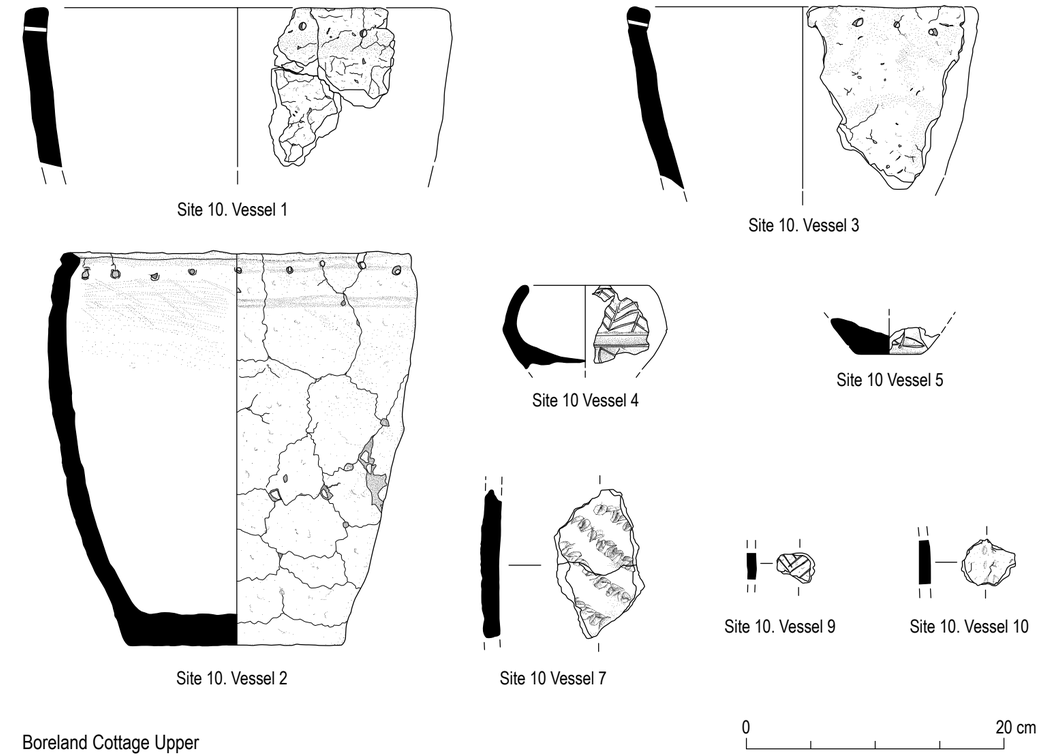


Illustration 1.8: Boreland Cottage Upper vessels

1.5.7 Lithic Artefacts *(Appendix 12)*

A large assemblage of 20,554 pieces of lithic material, 99.8% flint, was recovered during the excavations and subsequent post-excavation processing. The assemblage is dominated by knapping debris from Site 19 Grid (West Challoch), though discrete finished pieces were also evident. Materials present other than flint include quartz and pitchstone. The majority of the lithic assemblage was recovered from the West Challoch Mesolithic site, with other more modest, yet not insignificant quantities, recovered from numerous other sites during the investigations. Specific recommendations from ScARF (2012, 5.6) on Mesolithic lithic assemblages includes improving our 'understanding of the dynamics of the formation of occupation deposits, as well as identifying specific craft or processing activities within sites through the application of a range of methodologies to artefactual analyses, including use wear and contextual analysis.'

Detailed further analysis was required to assess the material spatially and temporally, and to place the material in a chronological and functional framework. A detailed report and catalogue analysing the assemblage on a site-by-site basis and placing it within its local and national context forms a core component of this study. In addition, the analysis of raw materials from across Scotland and their procurement was necessary (e.g. pitchstone from Arran), as well as an analysis of the technology used during the different time periods, and the operational schemas used across sites and the identified industries (*chaîne opératoire* analysis). An intra-site distribution analysis of the main sites was undertaken to identify likely dwellings and occupation activity. Given the size of the assemblage, analysis and studies of territories and exchange networks were undertaken.

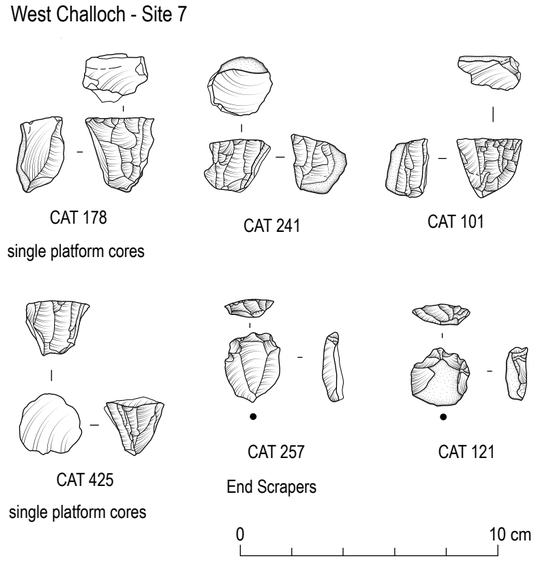


Illustration 1.9: Site 7 lithics

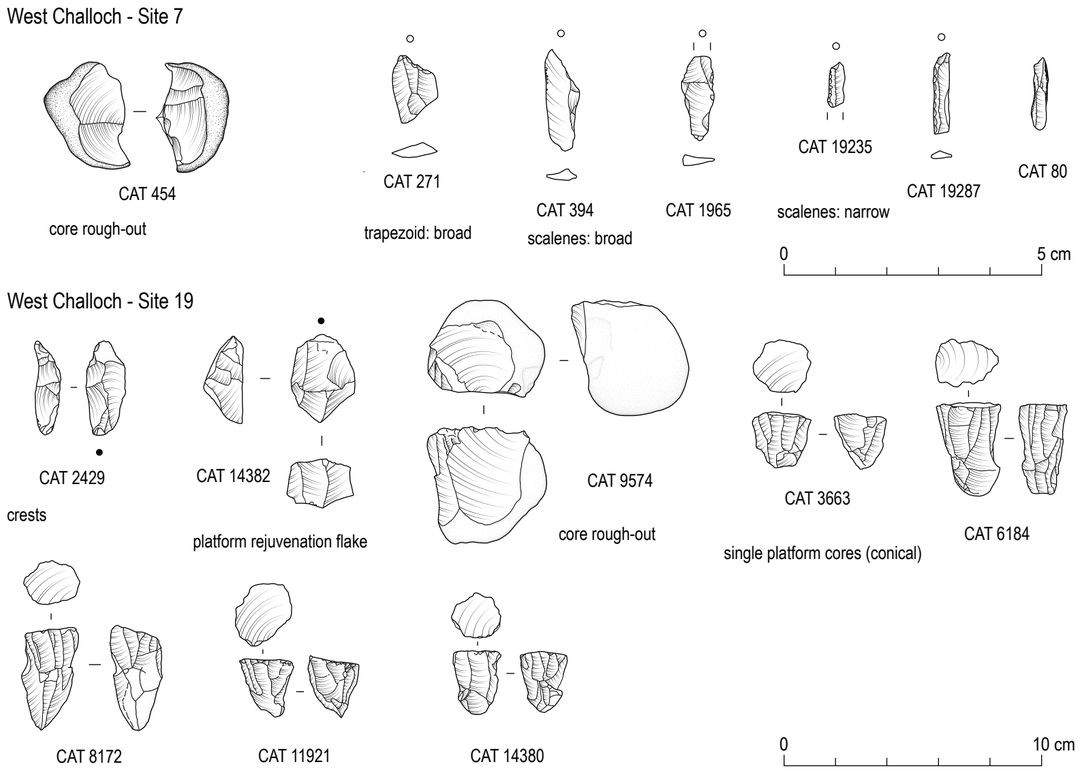


Illustration 1.10: Site 7 and 19 lithics

West Challoch - Site 19

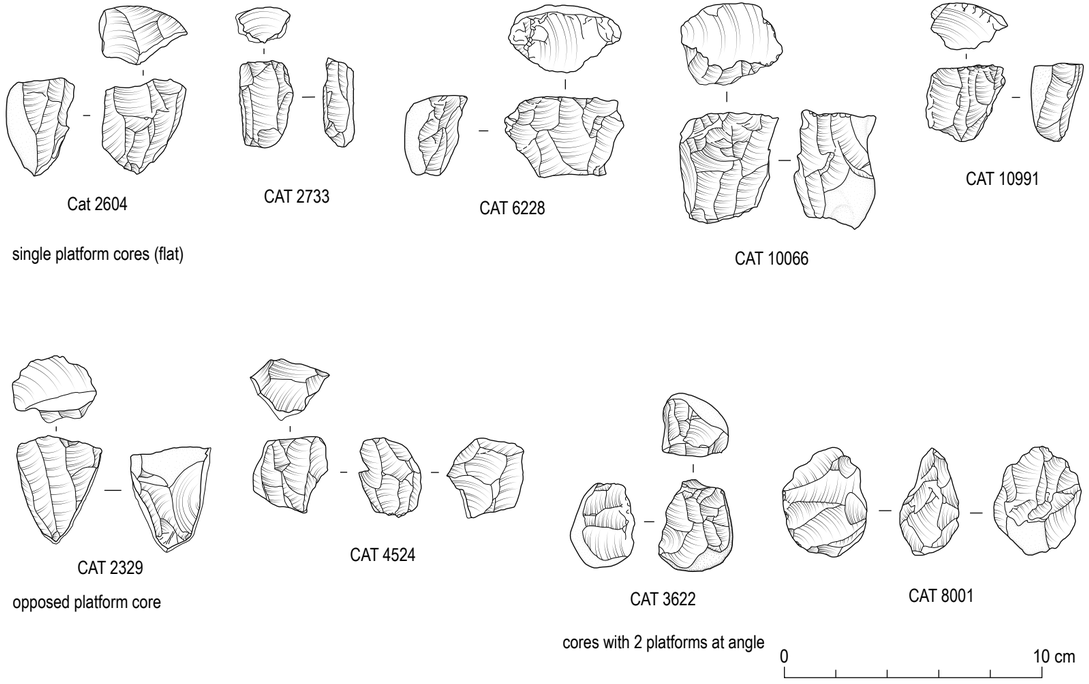


Illustration 1.11: Site 19 lithics

West Challoch - Site 19

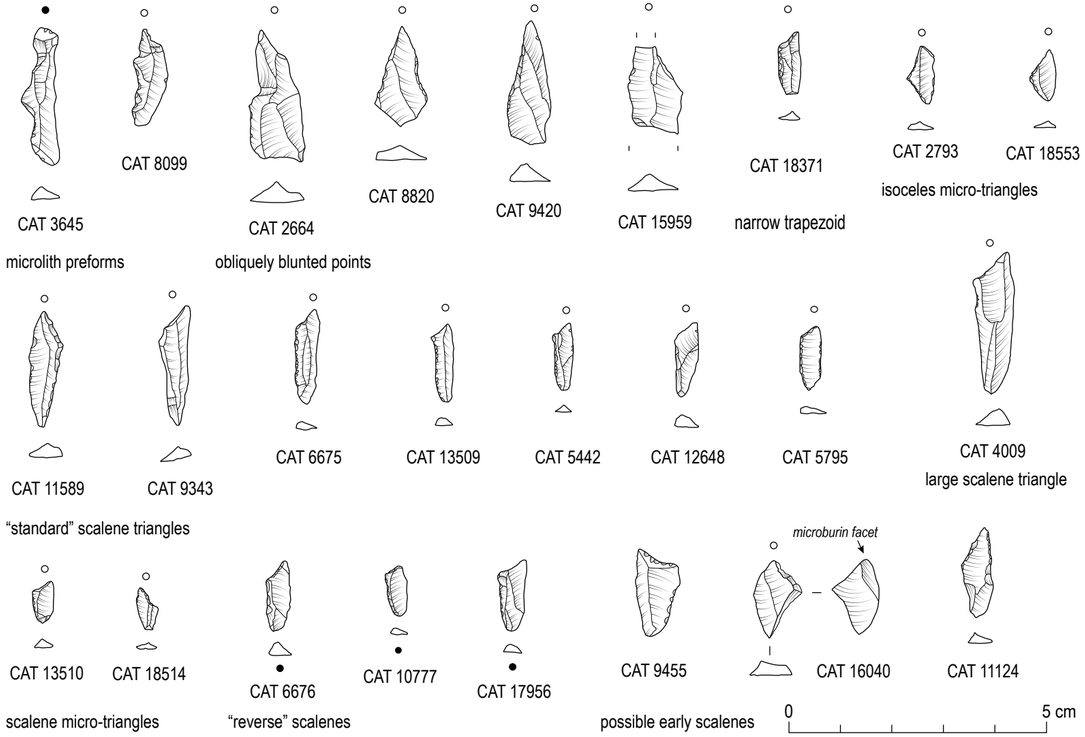


Illustration 1.12: Site 19 lithics

West Challoch - Site 19

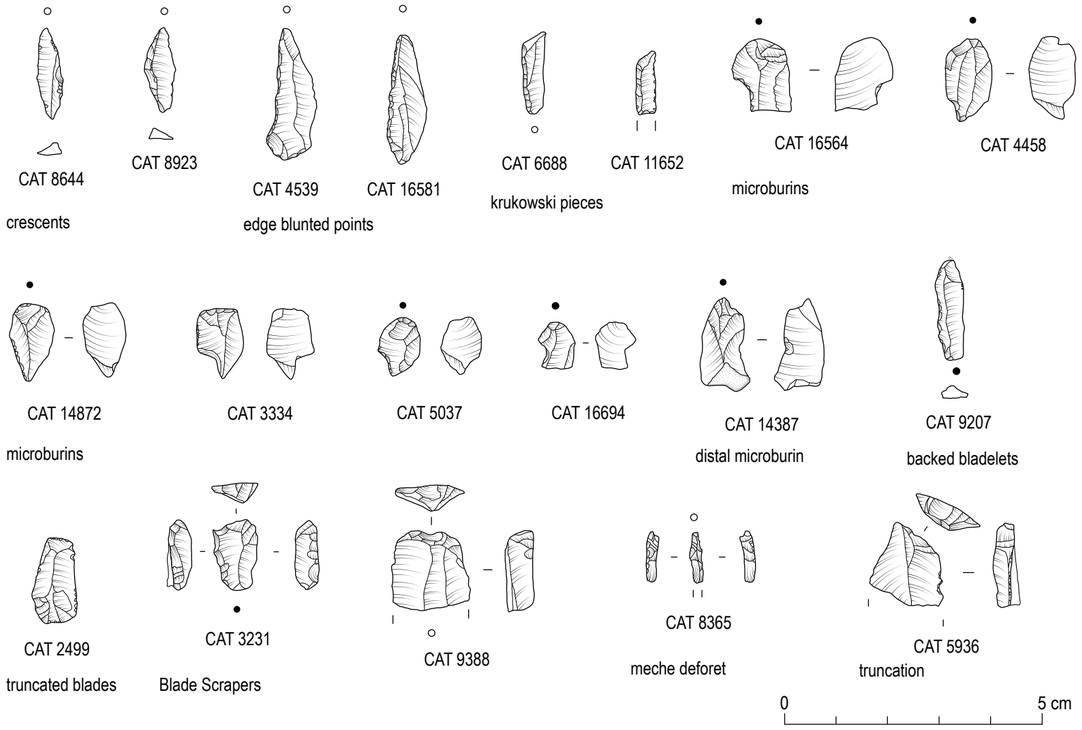


Illustration 1.13: Site 19 lithics

West Challoch - Site 19

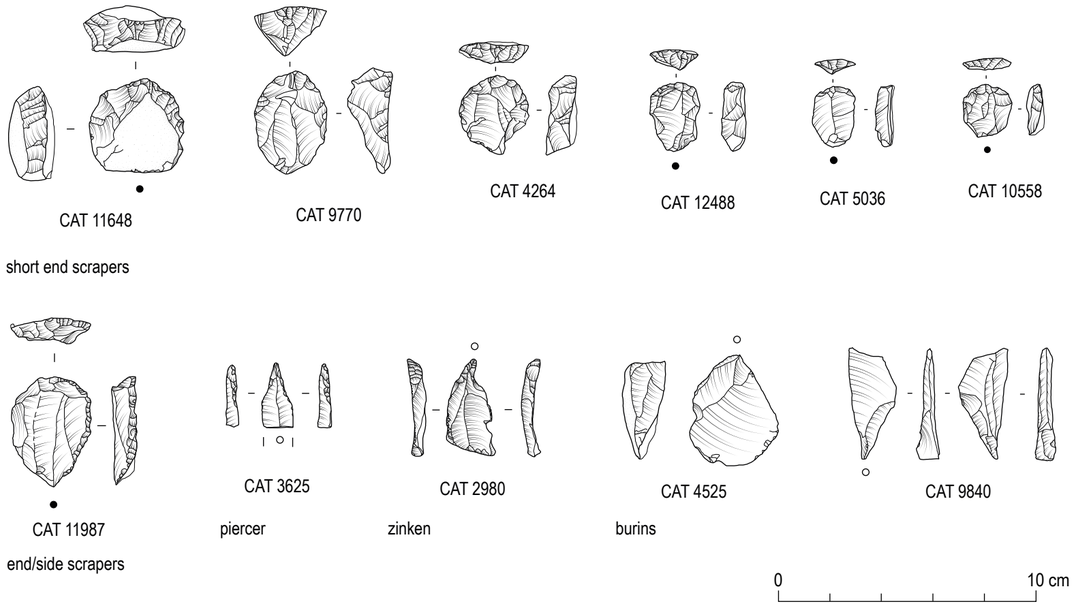


Illustration 1.14: Site 19 lithics

Droughduil Bridge - Site 8

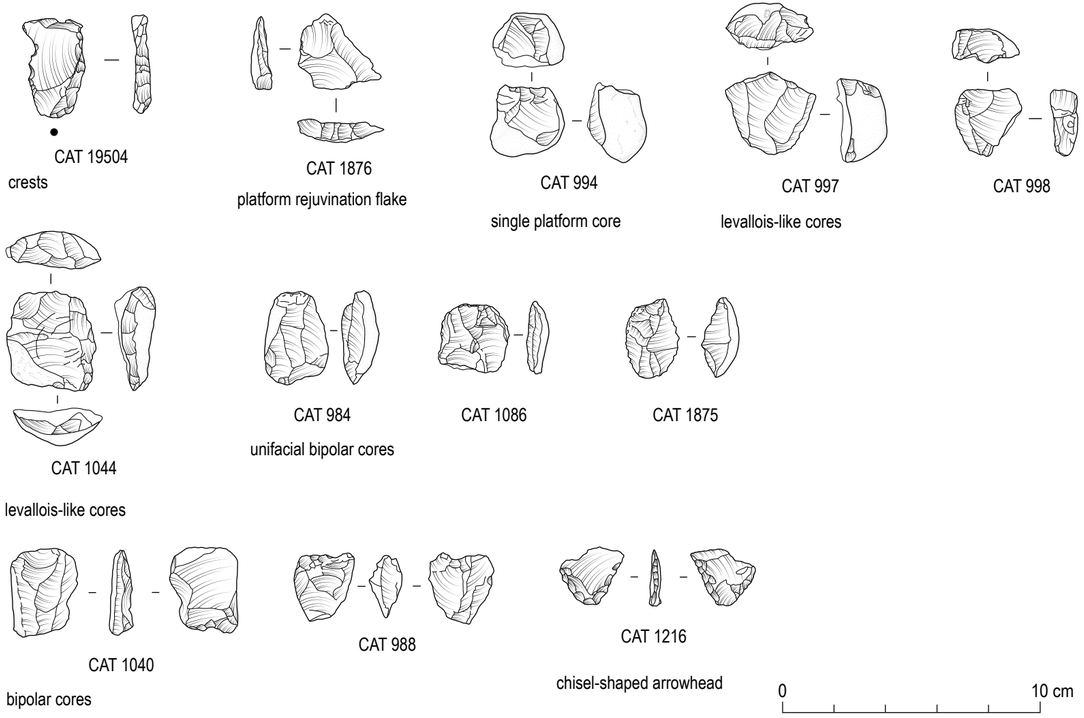
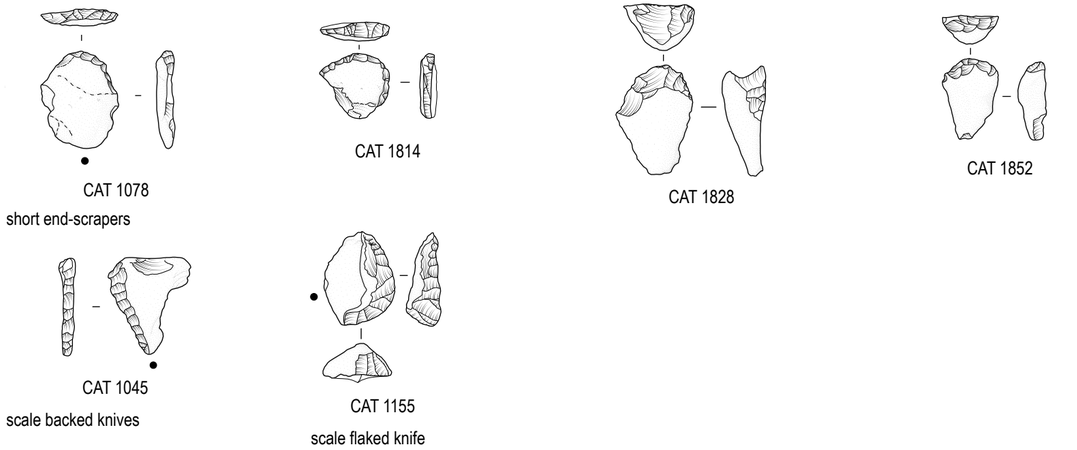


Illustration 1.15: Site 8 lithics

Droughduil Bridge - Site 8



Boreland Cottage Upper - Site 10

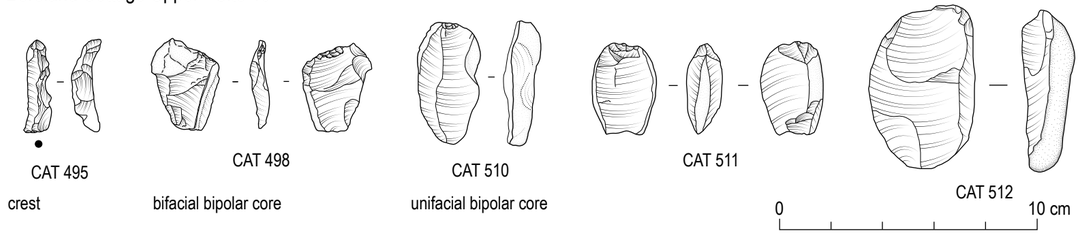


Illustration 1.16: Site 8 and Site 10 lithics

Boreland Cottage Upper - Site 10

CAT 589

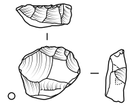
unifacial bipolar core

CAT 591

chisel-shaped arrowheads

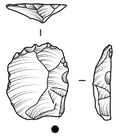
CAT 620

scale flaked knives

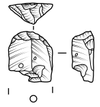


CAT 499

end scrapers



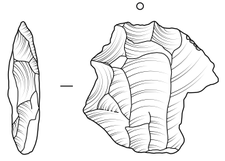
CAT 579



CAT 549

blade scrapers

CAT 650



CAT 504

denticulates

CAT 530

obliquely blunted point

CAT 2022

isoceles triangles

CAT 666

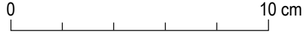
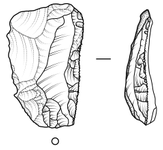


Illustration 1.17: Site 10 lithics

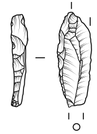
Boreland Cottage Upper - Site 2



CAT 9

scale flaked knife

Evaluation site C17, Boreland Cottage Lower



CAT 2013

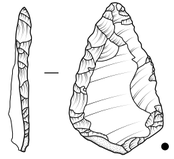
backed blade

Droughduil Holdings - Site SM A

CAT 2209

chisel-shaped arrowhead

East Challoch - Site 17



CAT 1631

scale flaked knife

CAT 1614

leaf-shaped arrowhead

Illustration 1.18: Site 2 and Site 17 lithics

1.5.8 Coarse Stone Tools *(Appendix 14)*

An assemblage of 184 stone artefacts were recovered during the excavations. The assemblage included stone tools of widely varying function, from a quern fragment to pounding, rubbing, sharpening and cutting tools.

Detailed further analysis was required to identify worked and unworked stone, and to place any worked material in its chronological, geological, and functional framework. A detailed report and catalogue analysing this assemblage, and placing it within its local context, forms a core component of this study. Special consideration was given to the identification of raw materials and their sources, as well as the types of use-wear and their distribution on the tools to aid functional analysis.

1.5.9 Jet jewellery *(Appendix 13)(see Illus 4.8 a-c)*

A large assemblage of 188 jet beads and spacers was recovered from two individual stone lined pits with overlying cairn material at Site 16 (East Challoch). In each case, the jet was recovered with a ceramic vessel, and a worked flint tool. The 188 pieces of jet represent two necklaces, and in the case of one of the burials, a matching bracelet. The jet was initially conserved as a precaution to consolidate the material; to reduce the risk of further deterioration; and to facilitate preliminary analysis.

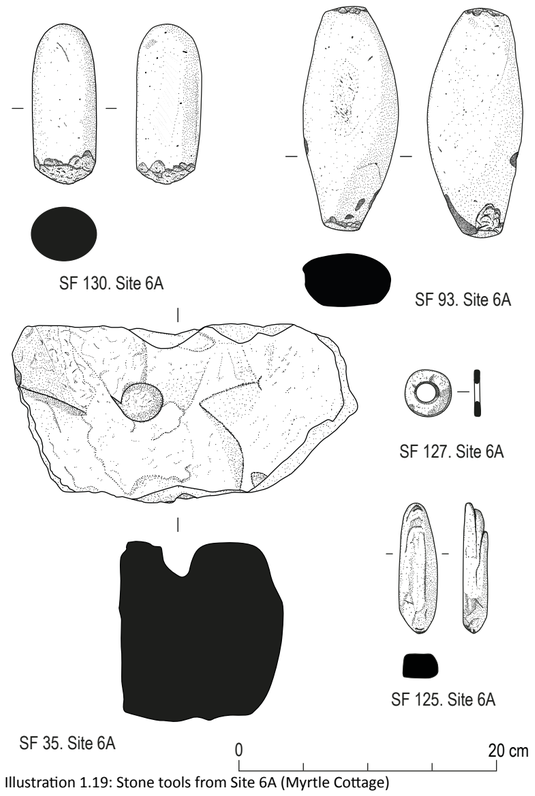


Illustration 1.19: Stone tools from Site 6A (Myrtle Cottage)

Samples from features in proximity to these finds were also processed for the recovery of further jet artefacts. A report and catalogue analysing this assemblage and placing it within its local, regional, and national context, as well as a consideration of how this relates to assemblages in northern England, forms a core component of this study.

1.5.10 Metalwork *(Appendices 19, 20 and 21)*

A total of 42 pieces of metalwork was recovered during the investigations mostly from Sites 6A and 6B (Myrtle Cottage). The assemblage was dominated by small unidentifiable corroded iron lumps although some objects were immediately discernible, for example, a set of iron shears recovered during the evaluation at C10 (later to become Site 6A/B (Myrtle Cottage); three coins; and one copper alloy Roman brooch also from 6A (Myrtle Cottage) provisionally dated to the first century AD.

All metal objects were examined to determine their potential significance. Metal objects of particular interest were X-rayed and XRF analysed to determine their form and chemical composition. Any artefacts that would benefit from conservation should be considered as part of this process. Finally, a report and catalogue analysing this assemblage and placing it within its periodic framework, as well as in its regional and local context, forms a core component of this study.

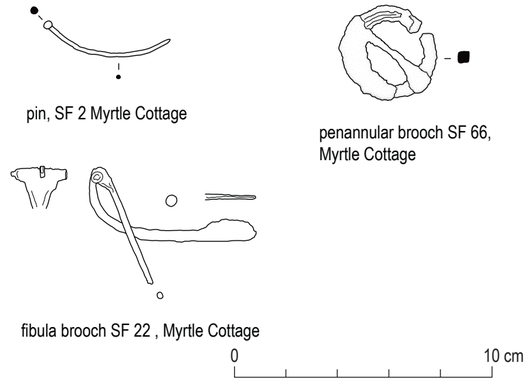


Illustration 1.20: Metal from Myrtle Cottage

1.5.11 Industrial Waste *(Appendix 22)*

A total of 97 pieces of slag, metal waste or other vitrified material were recovered during the excavations mostly from Sites 6A and C10 (Myrtle Cottage), with a significant proportion retained during the excavation of buildings within Site 6A (Myrtle Cottage). While most of the assemblage consists of lumps of varying size, there were differences in composition suggesting that a range of metals and/ or production methods are represented. At least two of the slag pieces were consistent with that expected from furnace lining.

Analysis of the industrial waste, particularly the material recovered from Site 6A, aimed to address the origin of the ore source and the type of slag materials being generated. The principal aim was to assess the function of buildings on Site 6A (Myrtle Cottage) and the processes being conducted within their walls. This was matched by analysis of the macrofossil material to provide a clear view on the industrial processes at work within this site.

1.5.12 Post-medieval/Modern Pottery *(Appendix 17)*

There were 36 sherds of post-medieval/Modern pottery recovered during the investigations, mainly from Site 16 ext. (East Challoch). From initial observations, the probable date range for the assemblage was noted as c. nineteenth century with perhaps some slightly earlier sherds.

The analysis and reporting on this pottery assemblage will allow direct comparison with sites of similar type and date in locally and across Scotland and beyond. This analysis aided in the interpretation of the later archaeological layers uncovered and gave an insight into the economy and culture in this locale during the post-medieval and Modern periods.

1.5.13 Glass *(Appendix 18)*

There were ten shards of glass found during the investigations, some of which was recovered during the evaluation from C10 (Myrtle Cottage), C1, C2 and SM A (Droughduil Holdings) and Site 10 (Boreland Cottage Upper). This glass dates from the post-medieval and Modern era with the possibility of some slightly earlier examples. The analysis of the glass may allow inferences about the types of commodities traded and their origins during the periods represented.

The analysis of the glass assemblage aided in the interpretation of the sites by Illustrating the nature of the economy in the region in the post-medieval period.

1.5.14 Animal Bone *(Appendix 10)*

A small quantity of animal bone was recovered during the investigations from Sites 6A and C10 (Myrtle Cottage), C18 (Boreland Cottage Lower) and C20 (Droughduil Holdings). A total of nine pieces, including teeth and enamel fragments, were found, as well as one skeleton.

This material required an initial inspection by an osteoarchaeologist to rule out the presence of disarticulated human remains among the animal bone assemblage. The assemblage was analysed for the presence of butchery or other special treatments of the remains as artefacts or special depositions. A report and catalogue analysing this assemblage and placing it within its local context forms a core component of this study.

1.5.15 Shell *(Appendix 11)*

An assemblage of individual shells and samples of shell deposits were recovered during the excavations, with further material recovered during sample processing. Shell was apparent from five sites (from west to east): Drumflower, Droughduil Holdings, Myrtle Cottage, East Challoch and Boreland Cottage Upper. The presence of the shell may be reflective of dietary patterns in the population, which is important given the proximity of the coastline in prehistory and today.

Further analysis was required to confirm the species represented and to place the material in a chronological and functional framework. A report and catalogue analysing this assemblage and placing it within its local context forms a core component of this study.

1.5.16 Scientific Dating

1.5.16.1 Radiocarbon Dating *(Appendix 1)*

A total of 220 samples were processed for radiocarbon dating by accelerator mass spectrometry (hereafter AMS). The samples consisted of single entities (Ashmore 1999) of charred grains, charcoal, and cremated human bone. The charred plant remains were submitted to the 14Chrono Laboratory at Queen's University Belfast, while the cremated bone was submitted to the Scottish Universities Environmental Research Centre (SUERC), East Kilbride.

The results are presented (Appendix 1, Table RC1) as conventional radiocarbon ages (Stuiver and Polach 1977). They have been calibrated using the internationally agreed terrestrial calibration curve (IntCal20) of Reimer *et al*. (2020) and the OxCal v. 4.4 computer program (Bronk Ramsey 2009). Simple calibrated results are presented throughout the volume at 95% confidence intervals (unless otherwise noted) throughout this volume in plain text and rounded outward to 10 years. The *italicised* dates presented in the text below are posterior density estimates derived from mathematical modelling of archaeological problems and have been rounded outward to five years. These dates can change with the addition of new data or when the modelling choices are varied.

An additional four radiocarbon dates were obtained from SUERC in 2013 to ascertain the date for possible Mesolithic activity at Site 7 (West Challoch) during the advance works, bringing the total number of radiocarbon dates for the project to 224. All 224 dates are presented by site in Appendix 1, Table RC1 and are analysed in figures RC1-8 (also Appendix 1).

1.5.16.2 Optically Stimulated Luminescence (OSL) Dating (Appendix 2)

This is a dating technique that has been used successfully in the context of Droughduil Mound by Thomas (2015) with assistance from David Sanderson of SUERC. Luminescence dating depends on the ability of minerals to store energy in the form of trapped charge carriers when exposed to ionising radiation. Stimulation of the system is by heat in the case of thermoluminescence (TL); by light in the case of photo-stimulated luminescence (PSL); or optically in the case of optically stimulated luminescence (OSL).

Optically-bleached materials of interest to quaternary science include aeolian, fluvial, alluvial, and marine sediments. As Myrtle Cottage was situated in an aeolian environment, and as some deposits showed a paucity of organic material, this method provided an opportunity for dating sand layers pre-dating, and contemporary with the archaeology, that would not otherwise have been possible.

Thirteen OSL samples were taken from the interface between Structures 1 and 2 on Site 6A (Myrtle Cottage). The samples were processed and analysed at SUERC. All of the 13 samples were used to establish the rate of accumulation of wind-blown and redeposited sand layers pre-dating and between the two structures. This dating aimed to determine whether the structures were contemporary, or if not, to indicate a sequence of construction for the two adjacent structures. The Bayesian Analyst has taken the OSL dates into consideration in their statistical analysis of the radiocarbon dates (Appendix 1).

1.5.17 Stable Isotope Analysis (Appendix 9)

Twenty-four Bronze Age cremations (out of 42) from Dunragit provided appropriate bone sample material for both dating and isotope analysis. Following sub-sampling for dating by SUERC, the remaining samples underwent strontium isotope (87Sr/86Sr) and stable carbon (d13C) and oxygen isotope (d18O) analyses. The former provides information on mobility and use of the landscape, while d13C and d18O in cremated bone can provide information on aspects of the cremation process. Stable carbon (d13C) and oxygen (d18O) isotopes in unburnt skeletal remains inform on diet and mobility, respectively. However, there is considerable exchange with carbon in the pyre fuel, and with atmospheric oxygen (Snoeck *et al*. 2014; 2016b). The

information provided by these isotopes, then, relate to the pyre fuel used and the conditions under which cremation took place, and not necessarily diet, and so diet is not explored in this case. A report and catalogue analysing this assemblage for stable isotopes alongside the radiocarbon date results, was produced placing it into broader models of, for instance, mobility in the middle of the third millennium BC. More generally Southwest Scotland has had limited stable isotope studies carried out, so this represents an opportunity to begin to address this.

Part 2. Advance Works and Excavation Results

2.1 Results

The results and discussion of the archaeological evaluation followed by that for the subsequent further investigations conducted during the advance and construction works phases are presented here (locations, Illus 0.2 and Illus 1.6). Following the completion of the investigations and during the process of preparing the Data Structure Report on the findings, the various sites were grouped primarily on a geographic basis, and where possible by period (Table 2.1). Initially, though the sites were named according to their evaluation trenches. The sites were excavated during the 19-month investigations and in some cases even neighbouring sites were investigated as much as 18 months apart. As a result, the sites are described separately under their site name, but are discussed collectively thereafter.

Site Name	Sites of investigation (advance works = adv)	Periods
West Challoch (see 2.5.3)	Site 7 (adv) Site 19 Site 19ext Site 19 Grid C12	Mesolithic
Droughduil Holdings (see 2.5.2)	Site C20 SM A (adv) SM B (adv)	Mesolithic to Iron Age
East Challoch (see 2.5.5)	Site 5 (adv) Site 17 Site 16 Site 16ext Site 21 Site 25	Mesolithic to Iron Age
Droughduil Bridge (see 2.5.7)	Site 8 (adv) Site 11 (adv)	Bronze Age/Iron Age
Whitecrook Bridge (see 2.5.7)	Site 20	Neolithic/Bronze Age
Mid-Challoch (see 2.5.7)	Site 24	Bronze Age
Boreland Cottage Lower (see 2.5.7)	Site 1 (adv) Site 1EXT Site 3 (adv) Site 4 (adv) Site 13 Site 15 Site C18	Neolithic/Bronze Age

Table: 2.1: Site grouping by site name and periods

Site Name	Sites of investigation (advance works = adv)	Periods
Boreland Cottage Upper (see 2.5.6)	Site 10 (adv) Site 23 Site 23ext Site 18 Site 2 A & B(adv) Site 2 ext	Mesolithic to Bronze Age
Drumflower (see 2.5.1)	Site Area A SM C Site 9 (adv) Borrow 1 Borrow 1ext Borrow 1b Borrow 1b ext Borrow 3	Mesolithic to Iron Age
Mains of Park (see 2.5.8)	Site 12 (adv)	Mesolithic/Neolithic
Myrtle Cottage (see 2.5.4)	Site 6A & B(adv) Site 22	Neolithic to Iron Age

Table: 2.1: Site grouping by site name and periods (continued)

2.1.1 Advance Works–Evaluation Trenches

Warren Bailie

The evaluation was divided into areas to facilitate the management of the fieldwork investigations and ultimately for ease of description. As the trench regime involved a central trench throughout, each area was allocated a central (C) number with the associated herringbone off-set trenches numbered from one to 216 across the whole evaluation (Illus 0.2). For example, C1 (Central Trench C1) incorporated offset trenches 1 to 7 and so on. The 25 evaluation areas will be described in numerical order and are shown in Illus 0.2 with each site location along the route, with an aerial overview of all sites in Illus 1.6. In all evaluation areas a sample of the topsoil and subsoil was taken as well as samples of features of archaeological and palaeoenvironmental potential. A brief summary of the findings from each Central Trench area is below. Negative results are not reported; breaks in the 'Cn' numerical sequence indicate trenches where nothing was found. Additional information and interpretation is provided for sites that went on to be included in larger excavated areas.

2.1.1.1 C1

This evaluation area was situated about 100m west of the Dunragit complex. No features of archaeological significance were found, but 16 pieces of flint (CAT 1789-1804) were recovered during the investigation, amongst which were artefacts or the product of manufacture (Ballin, Appendix 12). The solitary tool is an expedient flake piercer (CAT 1802). The debitage included two chips, five flakes, two blades, three indeterminate pieces, and one platform rejuvenation flake (CAT 1800). One of the cores recovered is a single-platform core (CAT 1799), and one is a bipolar core (CAT 1801).

2.1.1.2 C2

This curving trench lay west of the SM A area (Illus 2.1). Two pits of human origin were excavated (C2017 and C2019) two undiagnostic flint flakes (CAT 1805 and 1806) were recovered from the topsoil (Ballin, Appendix 12).

2.1.1.3 C3

Trench C3, which exposed a subsoil of wind-blown sand, evidence of the varied dynamic landscape represented along the route of the road, produced only two pieces of undiagnostic flint flakes (Ballin, Appendix 12) were recovered.

Illustration 2.1: C2 Evaluation trench in progress taken from southeast

2.1.1.4 C5 (Site 9, Drumflower–2.5.1)

Trench C5 lay in the most westerly section of the bypass route (Illus 2.2). Of 31 features investigated, 17 were likely of prehistoric origin with two pieces of worked flint, a blade (CAT 1810) from the topsoil, and a fragmented flake (CAT 1812) from a linear feature C5028 (fill 5018). A flint pebble (CAT 1809) and a bi-polar core (CAT 1811) were recovered during clean up. There was a notable concentration of features towards the east end of the central trench and the most easterly off-set trench T16. This site lay immediately south, across the then current A75, from Drumflower Bridge Scheduled Monument. Aerial photographs consulted at the time of investigations suggested the presence of cropmarks of possible Roman quarry pits (Canmore ID: 78931; Site No. NX15NE 70.01) leading along the north boundary of the C5 area. This area was later expanded during the advance works to enable further investigations to establish the nature, date, and extent of the archaeology here. This area was later expanded to form Site 9, and latterly part of the Drumflower site.

2.1.1.5 C6 (Site 8, Droughduil Bridge–2.5.7)

Trench C6 extended across three fields leading eastwards away from the main Dunragit complex. In this set of trenches the archaeological deposits were concentrated in the most westerly field. Here there were peat deposits observed

Illustration 2.2: C5 Evaluation trenches open taken from east, point where west end of bypass meets old A75

to a depth of approximately 0.75 m below surface. Aside from the peaty deposits there were negative cut features one of which produced three sherds of prehistoric pottery, 108 flint flakes/debitage and one piece of possible worked quartz; the preliminary investigations on this pit recovered more lithic material than was recovered across the entire 7.4 km evaluation. The assemblage of pottery and lithics recovered from the pit feature located in the central trench C6 suggested a provisional late Neolithic/early Bronze Age date for the activity. This site was in close proximity to the east side of the Dunragit complex and it was thought that this site may well have some association. This area would be later expanded to form Site 8, part of the Droughduil Bridge site.

2.1.1.6 C7

This trench revealed no archaeological features although a layer of waterlogged wood and charcoal flecks was found underneath what was at first interpreted as undisturbed subsoil. The various layers encountered were sampled for further analysis but were later not prioritised during the sample processing. One heavily patinated small flint flake (CAT 1951) of possible Mesolithic date (Ballin, Appendix 12) was recovered from the topsoil during the investigations here.

2.1.1.7 C9 (Site 7, West Challoch–2.5.3)

This central evaluation trench revealed three possible postholes or pits (Illus 2.3), all of which contained a charcoal-rich fill and flint debitage. The preliminary interpretation of the 20 flints recovered suggested a possible late Mesolithic date (Ballin, Appendix 12). The features being postholes also suggested a possible structure, a site type that is all too uncommon on Mesolithic sites. This coupled with the fact that there were no other known Mesolithic structures in this area meant that this site warranted further expansion and investigation. The features encountered here also lay on a slight gravel rise among prolific channels and hollows across the general area leading westwards, reflective of the relict estuarine environment here. There were similar such rises observable across the general locale which highlighted the potential for similar archaeological features within and outwith the proposed road corridor. This trench was later expanded to form Site 7, part of the West Challoch (2.5.3) site.

2.1.1.8 C10 (Sites 6A, 6B and 22, Myrtle Cottage–2.5.4)

This evaluation area for a side road lay to the south of the B7084/A75 junction and consisted of a continuous curving trench with one off-set trench leading north to meet the current line of the A75 road towards the east. Forty-one

Illustration 2.3: C9 three postholes containing Mesolithic lithics

Illustration 2.4: C10 curving stone feature of a possible structure

features of archaeological potential were uncovered during the evaluation, one of which was part of a stone-packed ring-groove of a circular structure (Illus 2.4 & 2.5). The finds recovered from the evaluation features included 11 burnt stones, two hammerstones, 12 pieces of flint, five pieces of slag, two fragments of animal bone, two fragments of burnt bone, a set of iron shears, a seventeenth century coin, a lead shot, and a small quantity of post-medieval pottery and glass. The archaeological deposits suggested the possible presence of structural elements with other peripheral activity suggested by organic, and in some cases charcoal-rich, pits. Finds recovered from the initial stages suggested a possible prehistoric date with some evidence of post-medieval activity from the seventeenth century onwards. The site lies across two low ridges of fine-grained sand, which overlooks both the lower lying flat expanse leading to the distant Luce Bay shoreline to the southeast and the former inland estuarine area to the northwest. One inference that was made at the time, from the landscape setting, was that this sand sheet formation may have been a suitable occupation area in an otherwise inhospitable inter-tidal estuarine area at some point in prehistory. This evaluation area was later expanded to form Site 6A, 6B and latterly Site 22 (Myrtle Cottage, 2.5.4).

Illustration 2.5: C10 southeast quarter of possible structure before excavation

2.1.1.9 C11 (Mains of Park- 2.5.8 and Boreland Cottage Lower–2.5.7 (Site 3 and 4)

Trench C11 extended from C8 in the east to meet the unnamed B-road leading north past Boreland Cottage (Illus 2.6). Sixty-one features of archaeological significance were found, including two possible burnt mound sites (Sites 3 and 4, Boreland Cottage Lower, 2.5.7). These predominantly Bronze Age site types have a tendency to be located close to water as their function appears to depend upon it (Ó Neill, 2005). The finds recovered included 26 pieces of flint and four sherds of prehistoric pottery. At the eastern extent of C11 there was a particular concentration of archaeological features mostly within an area measuring about 50 m by 20 m (Illus 2.154). The excavated area was enlarged and a further 14 pieces of flint, two pieces of possible worked pitchstone, one piece of burnt bone, and one rim sherd of prehistoric pottery were recovered. Some of the features were interpreted as postholes forming part of a greater structure outwith the evaluation trenches and the flint, pitchstone and pottery assemblage suggest a possible domestic function. No further work during the advance works was planned for this particular part of C11 but the site was later expanded during the construction phase becoming the Mains of Park site (2.5.8).

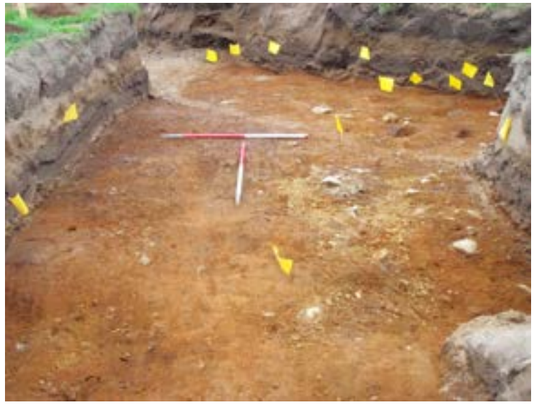


Illustration 2.6: C11 cluster of possible postholes

2.1.1.10 C12

There were 11 features of archaeological significance, comprising eight pits, two postholes and one linear feature all of probable prehistoric origin. Eight pieces of flint with and some flint debitage were recovered. Eight evaluation trenches (T80-T87) were also dug on the site of a pond southwest of C12. This pond area later formed the Mid-Challoch (2.5.7) site when a burnt mound was uncovered.

2.1.1.11 C15 (Site 5, East Challoch–2.5.5)

On the highest areas of this evaluation trench (Illus 0.2), which was on a slope, there was a concentration of 35 undated pits/postholes and linear features, some of which were associated with the remains of a possible cairn. The artefacts recovered included eight pieces of flint, five of which were recovered from topsoil (CAT 1983-1986 and CAT 1990) with a single flake from a linear feature C15038 (CAT 1987), from a natural clay layer C15031 (CAT 1988) and from the foundation of a nineteenth century building foundation C15017 (CAT 1989) (Ballin, Appendix 12). Two whetstones, one from topsoil SF1 and the other from a pit 111 (SF24) were also recovered. This site was later expanded as Site 5 which formed part of the East Challoch (2.5.5) site.

2.1.1.12 C16

This area extended along the southern edge of the east/west orientated railway embankment (Illus 2.7 and 2.8). There was a cluster of 11 features in the most westerly portion of this trench, comprising two pits, eight postholes, and a linear feature of unknown date. The artefacts included 22 pieces of flint, 13 of which were recovered from topsoil, with the remainder being recovered from the fills of features. One of the pieces from the topsoil was a short end scraper (CAT 2008) with a crested blade (CAT 2009) and single platform core (CAT 2010) also recovered from the topsoil (Ballin, Appendix 12). The postholes extended beyond the trench edges and were thought to form part of a structure or structures outwith the evaluation trench. Some preliminary interpretations of the flint suggested a wide date range of possibly early Mesolithic to late Neolithic (Ballin, Appendix 12). This area was later expanded forming part of the East Challoch (2.5.5) site.

Illustration 2.7: C16 evaluation trench in progress taken from east

Illustration 2.8: Example of negative features in C16

Illustration 2.9: Edge of possible burnt mound in C17

2.1.1.13 C17

Trench C17 crossed a lower lying area at the foot of the raised beach, which lay to the north. As well as six pit/posthole of archaeological significance there was the edge of a possible burnt spread (Illus 2.9). A flint macroblade tool (CAT 2013) of possible later Neolithic date (Ballin, Appendix 12) was recovered from the topsoil during clean-up of this deposit. No further work was undertaken in advance of construction, but this area was monitored during construction and formed part of the extensive Boreland Cottage Lower site (2.5.7).

2.1.1.14 C18

The central evaluation trench area revealed a number of features including one pit and one posthole of potential archaeological significance. Four pieces of flint debitage and one relatively modern small mammal skeleton, later confirmed as rabbit (Smith, Appendix 10), were uncovered. This area was later monitored during the construction phase and became part of the Boreland Cottage Lower site (2.5.7).

2.1.1.15 C19 (Site 10, Boreland Cottage Upper–2.5.6)

Forty-eight significant archaeological features were uncovered, including at first a single aceramic cremation feature. This was surrounded by a small ring-ditch and together they seemed to represent the remains of a barrow of probable Bronze Age date. As the trial area was expanded it became clear that there were multiple phases of activity present, including posthole alignments, two further ring-ditches (barrows), cremations inside and outside the ring ditches, and other features. The possibly Bronze Age cremations were both ceramic and aceramic with some associated with the ring-ditches and others in separate clusters. There were six pieces of flint recovered, three of which (CAT 2019-2021) were recovered from a stony feature C19046, one (CAT 2022) from a pit C19057 and two pieces from topsoil (CAT 2018 and 2023) (Ballin, Appendix 12). One relatively modern iron nail SF 2 was also recovered from feature C19046 (Cruickshanks, Appendix 21). This site was later expanded to form Site 10 which would form the main part of the Boreland Cottage Upper site (2.5.6).

2.1.1.16 C20

(Illus 2.10 and 2.11). Fifty possible features of archaeological potential were uncovered within this area consisting primarily of spreads and possible pits or postholes. One hundred and eleven fragments of flint and two quartz

Illustration 2.10: Opening C20 evaluation trenches, Dunragit complex to right (north) of image

Illustration 2.11: View east along C20 from SM A

while heat-affected stones were also noted during the brief recording. These archaeological remains appear to lie on the line of a water channel which led west to east across this area, the wooden stakes suggested this may be the remains of a composite structure associated with this water-course, be it a fish-trap, trackway or bridge. The site was noted as Site 11 during the advance works, forming part of Droughduil Bridge (2.5.7) and Site 8, but could not be further investigated.

2.1.1.19 C23 (Site 1, Boreland Cottage Lower–2.5.7)

Trench C23 revealed two burnt mounds with accompanying trough features. Inundation prevented more than an initial clean up and some very preliminary investigations. The burnt mounds lay on the edge of a paleochannel which accentuated the issue.

There was clear evidence of a palaeochannel enveloping the northern side of one of the burnt mounds, the burnt mound material of charcoal and burnt stone extending down the southern bank of the channel (Illus 2.13). This same channel could be observed during this and subsequent wet periods curving around the foot of a natural ridge leading east and then south towards the coastal shore. The ridge is probably a remnant of the edge of the raised beach that once marked the shoreline here in prehistory.

This area became Site 1, part of the Boreland Cottage Lower group (2.5.7) and further excavation was undertaken during road construction.

Illustration 2.12: C24 looking south along curving C23 to C11

2.1.1.20 C24 (Site 2, Boreland Cottage Upper- 2.5.6) (includes part of C23)

In this location a number of deposits were observed extending down and across slope to the southeast with potential features noted on the periphery of these deposits. The deposits were thought to have the potential to be prehistoric in date, and this site was located immediately east of a possible Bronze Age Cemetery complex at C19 separated only by the insertion of a modern underpass road for the railway which borders the north side of the investigation area. This area became Site 2 and although initial investigations were limited due in part to the presence of a live service bisecting the site, further investigations were conducted at this area latterly and it formed the eastern extent of the Boreland Cottage Upper (2.5.6) site.

2.1.1.21 C25

This central trench extended west from C23 and was evaluated as part of a proposed road junction for local access leading on and off the proposed A75 Bypass. No features of archaeological significance were uncovered here.

2.2 Evaluation Discussion

The preliminary findings from the central trenches and their subsequent initial expansions led to further more extensive investigations. The evaluation highlighted that there were features and artefacts ranging in date from the Mesolithic through to Iron Age along much of the route. The subsequent expansions and the results of the investigations on Areas of Archaeological Significance are set out below.

Illustration 2.13: Overview of palaeochannel in Site 1 (Boreland Cottage Lower) during wet period

2.3 Advance Works–Dunragit SM A and B (Droughduil Holdings)

Maureen Kilpatrick, Dave McNicol and Christine Rennie

2.3.1 SM A *(Illus 2.14)*

The natural subsoil here consisted of reddish-brown coarse sand and gravel. Plough marks, modern drainage and bioturbation were evident throughout the area (Illus 2.15). Twenty-three archaeological features were uncovered across the site, all cut into the subsoil.

The archaeological features comprised 12 postholes, five pits, two stakeholes, a possible gully, a possible ditch terminus, a hearth, and a charcoal-rich spread.

The possible ditch 076 measured 3 m wide and extended for 4.8 m east/west within the area excavated, extending westwards beyond the site. The 0.3 m deep ditch had two fills (061 and 075) both of which contained oak charcoal, with the upper fill 061 also containing hazel nutshell which was dated to 3980–3790 cal BC (UBA-41886: 5104 ± 37 BP), the early Neolithic. Two undiagnostic flint fragments (CAT 2220 and CAT 2222) were recovered from the lower fill 075. An early Neolithic date 3900–3650 cal BC (UBA-41887: 4957 ± 35 BP) was also obtained for a hearth 091 lying 6 m to the south of the ditch terminal. The hearth deposit 079 consisted of reddish-black silty gravel with frequent oak and birch charcoal inclusions.

All 12 postholes were sub-circular in form with steep or near vertical sides, and slightly concave bases. Their diameters ranged between 0.22 m and 0.58 m, and depths between 0.13 m and 0.25 m. Ten of the postholes formed a general northeast/southwest line, extending from the hearth 091, to just east of the ditch 076 terminal. The remaining two postholes 020 and 041 were located further east towards the centre of the site. No evidence of packing stones or post-pipes were uncovered within any of the postholes, with only their smaller size, when compared to the pits uncovered to the east, and their steep, near vertical sides, suggesting that these were postholes rather than pits. A north/south orientated shallow gully 077 was also uncovered between hearth 091 and ditch terminal 076.

Five pits (016, 035, 036, 038 and 044) were located to the east of the main line of ten postholes. The pits were all roughly oval shaped, ranging between 0.63 m and 2.2 m long and 0.43 m to 0.88 m wide, with depths of between 0.17 m and 0.36 m (Illus 2.16). A single hazel nutshell was recovered from the fill of pit 038 which was dated to 5330–5200 cal BC (UBA-41884: 6271 ± 39 BP), placing it in the late Mesolithic. Six fragments of flint were recovered from the fill 008 of pit 044 (CAT 2210-15). Pit 016 contained two fills, with the basal fill consisting of a charcoal-rich dark grey

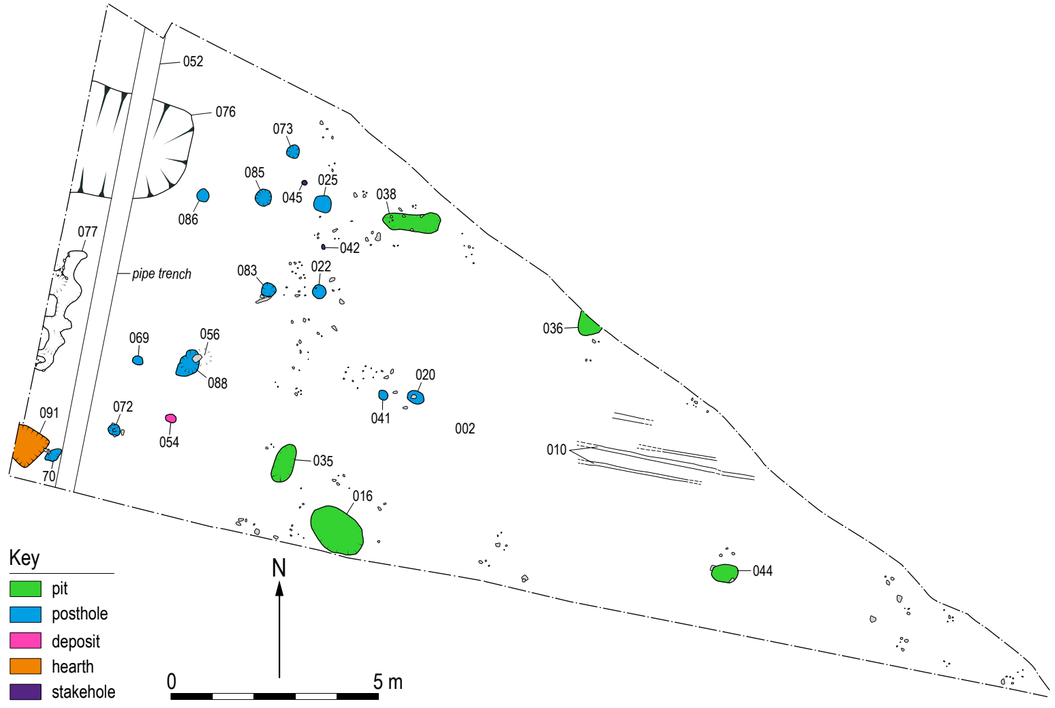


Illustration 2.14: Plan of SM A showing archaeological features

Illustration 2.15: SM A overhead shot from south

sand 040, which was sealed by a greyish-brown sandy silt 017, containing a chisel-shaped flint arrowhead (CAT 2209) (Ballin, Appendix 12). Hazel nutshell recovered from the upper fill of pit 016 produced an early medieval date of cal AD 540–660 (UBA-41885: 1442 ± 39 BP), suggesting the pit was disturbed by later activity.

Illustration 2.16: SM A pit 016 view from the northeast

Other features included two small stakeholes, with an average diameter of 0.11 m and depth of 0.07 m. Both were located to the northwest (042) and south (045) of posthole 025. A further 17 flint fragments (CAT 2199-2208, CAT 2216-9, CAT 2221, CAT 2223 and CAT 2225), and an undiagnostic bar fragment (SF 5), a short length of twisted wire (SF 7) (Cruickshanks, Appendix 21) and two post-medieval pottery sherds (SF 9 and SF 12) (Will, Appendix 17), were recovered from either unstratified or topsoil deposits across the site.

2.3.2 SM B *(Illus 2.17)*

The natural subsoil here consisted predominately of reddish-brown gravel 003 with patches of yellowish grey silt 039 and mottled grey sand 040 towards the centre and southeast side of the site respectively. Bioturbation was evident throughout this area, as well as modern services/field drains (022 and 029), furrows/drainage ditches (004 and 041) and plough scars (052, 060, and 063). Fragments of flint, including a late Neolithic/early Bronze Age thumbnail scraper (CAT 2228) (Ballin, Appendix 12) were recovered from furrows 004 (CAT 2228-9 and CAT 2233) and 041 (CAT 2226), with further fragments recovered from either the topsoil or unstratified deposits (CAT 2227 and CAT 2230-2). The archaeological features comprised 11 pits or postholes, one possible occupation deposit, and one area of possible *in situ* burning.

The pits/postholes were either sub-circular or sub-oval in shape and ranged in size from 0.23 m by 0.19 m up to 1.59 m by 0.62 m, with depths of between 0.07 m and 0.27 m.

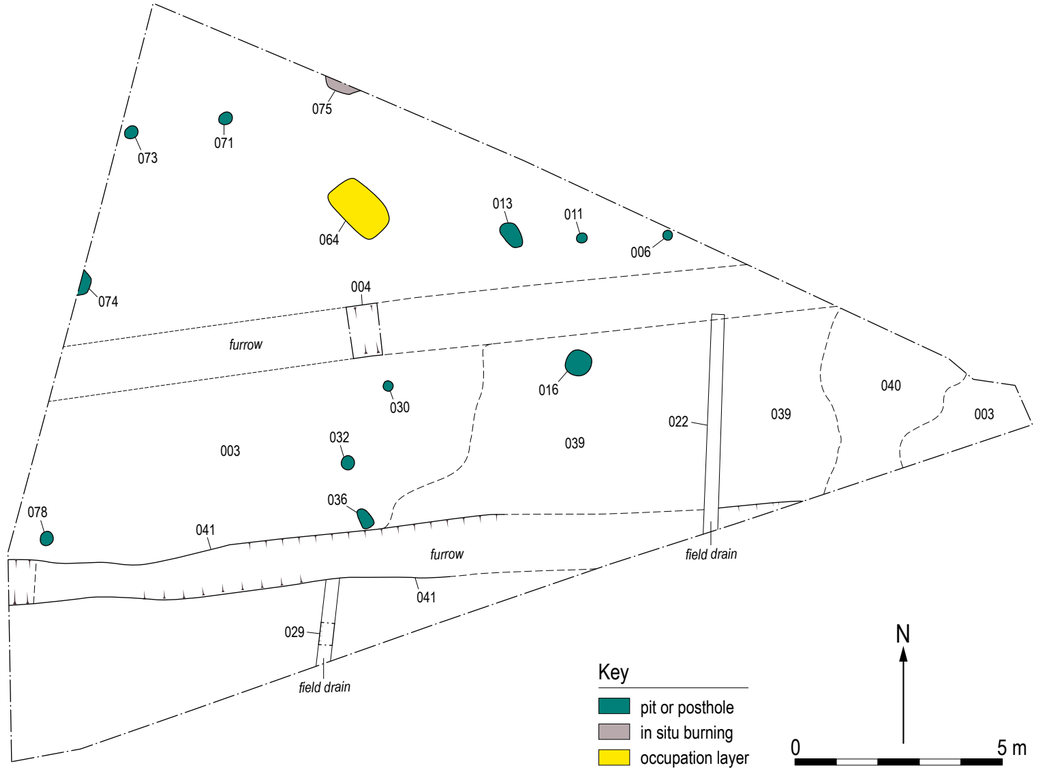


Illustration 2.17: Plan of SM B showing archaeological features

Eight of the these features (006, 010, 012, 030, 071, 073, 074 and 078) were filled with similar deposits consisting of a greyish-brown gravelly silt and sand. A single fragment of flint was recovered from each of the fills of pit/posthole 071 (CAT 2234) and 074 (CAT 2236). The remaining three pits/postholes (016, 032, and 036) were filled with similar dark greyish-brown or black silty gravel. Aside from posthole 074, which is probably modern, being in line with a modern fence, the features formed no discernible structure.

Towards the northern edge of the site, a 0.1 m thick layer of light greyish-brown sandy gravel 064 with charcoal flecking was uncovered. It was sub-rectangular in form, covering an area of 1.85 m². A single fragment of flint (CAT 2235) was recovered from this deposit. An area of *in situ* burning 075 was located 2 m to the north of this possible occupation layer. This 0.1 m thick burnt layer measured 0.47 m by >0.23 m in plan and continued beyond the excavation area to the north. This charcoal-deposit contained high concentrations of oak; hazel nutshell also from this deposit was dated to the late Mesolithic, 4240–3980 cal BC (UBA-41888: 5281 ± 35 BP).

2.4 Advance Works–Dunragit SM A and B Discussion (Droughduil Holdings) *(Illus 2.18 showing all sites together C20, SM A and B)*

2.4.1 SM A *(Illus 2.14 and 2.15)*

This site lies on the periphery of the central complex of Dunragit, located between it and the Droughduil Mound to the south. Although no structures could be positively identified as a result of the excavations, the northeast/southwest posthole alignment may represent a form of boundary, with similar posthole alignments visible in cropmarks directly to the north. The features uncovered on either side of this posthole alignment differ: pits on the eastern side, linear features and a hearth to the west, which may also suggest a division in activity between these areas. The radiocarbon dating would suggest that the activity within the eastern part of the site dates to the late Mesolithic, with the western activity dating to the early Neolithic.

The environmental record from the site shows that oak was the main wood and fuel source during the Mesolithic and Neolithic periods. The concentration of oak charcoal within the four pits may suggest that they were fire pits, although no signs of *in situ* burning were visible within any of them, and they may represent waste deposits from hearths instead.

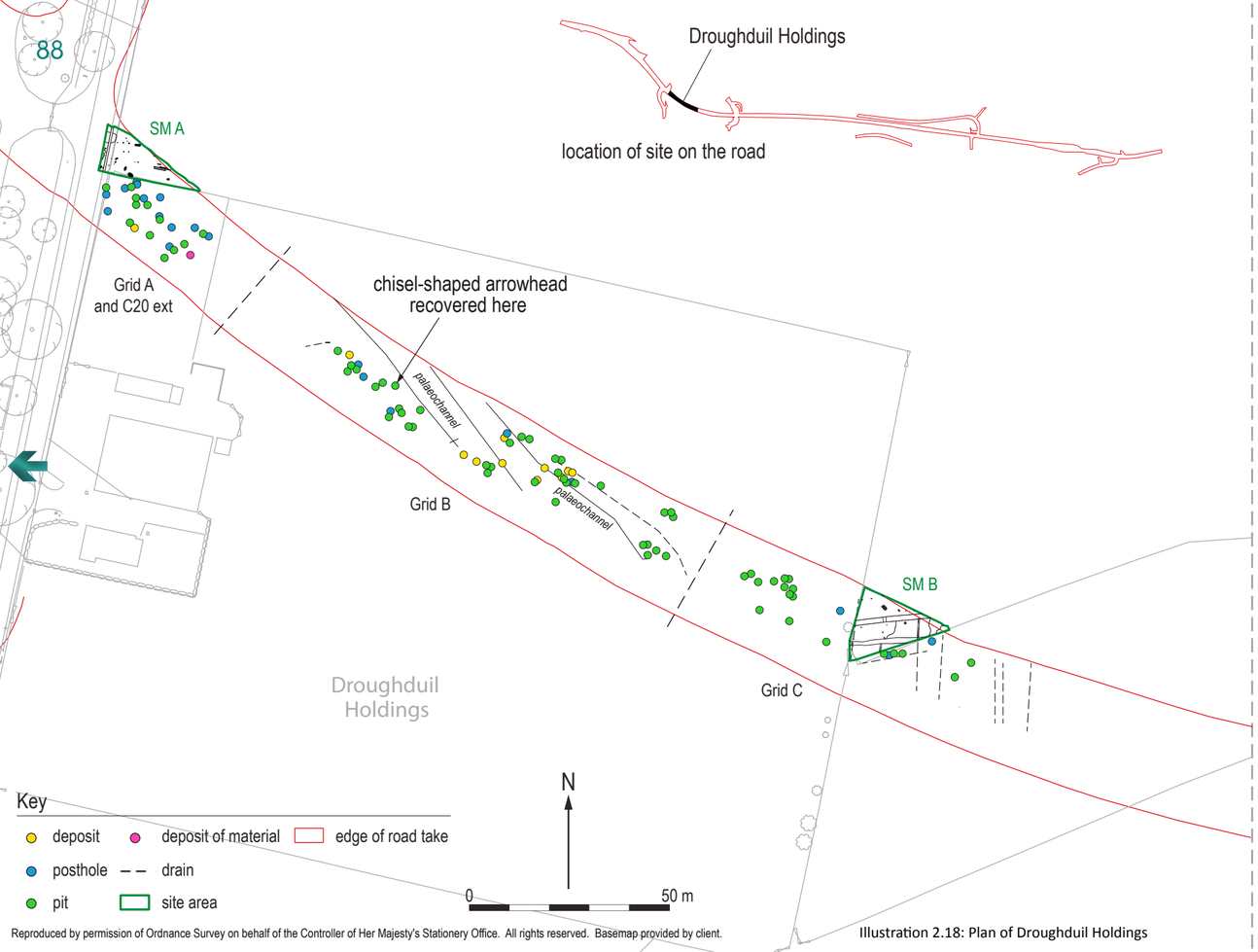


Illustration 2.18: Plan of Droughduil Holdings

The majority of the flint recovered from the site consisted of debitage in the form of chips, flakes, and indeterminate pieces, all of which were undiagnostic (Ballin, Appendix 12). A chisel-shaped arrowhead (CAT 2209) from the upper fill of pit 016 is most likely of a middle Neolithic date. A radiocarbon date for this provided an early medieval date, probably as a result of agricultural practices. A core and piercer (CAT 2222 and CAT 2225), both showing Levallois-like techniques, which are a feature of the middle and late Neolithic periods (Ballin 2011), were recovered from ditch 076 and the topsoil respectively. The dating of ditch 076 to the early Neolithic period may suggest that the core is of an earlier date. However, this style of core is not common on early Neolithic sites and it may be intrusive. A small amount (<2 g) of possible ironworking debris, consisting of four pieces of iron slag, and a single magnetic slag sphere (Cruickshanks, Appendix 22), were recovered from the environmental samples taken from the fills of posthole 025, ditch 076, and hearth 091, as well as from a modern buried topsoil layer (085). It is likely that they were redeposited within these earlier features due to modern disturbance. The remaining finds recovered from this site all came from the topsoil and consisted of post-medieval metal and pottery fragments.

The dating of these features suggests that there were at least two phases of activity within this area, Mesolithic to the west, Neolithic to the east. Similar late Mesolithic and early Neolithic dates were obtained from features in the wider Droughduil Holdings area, within the SM B and C20 sites, to the south and west respectively. The majority of this activity pre-dates the Dunragit complex to the north and the implications of this will be explored further in the context of the Droughduil Holdings discoveries (see 2.5.2), and the wider findings across the bypass.

2.4.2 SM B *(Illus 2.17)*

This site lies on the southeastern periphery of the central complex of Dunragit. Although no structures were positively identified during the excavations, it is possible that the furrows/drainage ditches 004 and 041 have truncated parts of the site.

The archaeobotanical analysis revealed that the majority of features were sterile, with possible occupation layer 064 and pit/posthole 074 containing only small amounts of oak and birch respectively. An area of *in situ* burning 075, contained a high proportion of oak charcoal, which could suggest it functioned as a fire pit. A Mesolithic date (UBA-41888: 5281 ± 35 BP) was obtained from a hazel nutshell from the fill of this feature.

The flint recovered from the site consisted of debitage in the form of chips, flakes, and a blade, as well as two cores and two scrapers, with most, if not all, likely to be

residual (Ballin, Appendix 12). The majority of the flint was undiagnostic, with only one, a small thumbnail scraper (CAT 2228) recovered from the fill of furrow/drainage ditch 004, was datable, in this case to the later Neolithic or early Bronze Age. Even though the flint is likely residual, it does indicate activity within the area during the late Neolithic or early Bronze Age period.

Only one feature, the area of *in situ* burning 075, has been securely dated to the late Mesolithic period, with the remaining, undated pits/ postholes possibly contemporary with this activity, based on proximity alone. If this were to be the case then this cluster of features would be broadly contemporary with the features uncovered in the wider Droughduil Holdings area (Illus 2.18), both within the SM A site and some of the features within the C20 site (see 2.5.2.1). Residual flint fragments recovered of a late Neolithic or early Bronze Age date, similar in date to some of the features from C20 and from the Dunragit complex to the northwest (Thomas 2015), suggests there was at least periodic activity between the late Mesolithic and early Bronze Age in this area.

2.5 Results from the Main Excavations–described from west to east

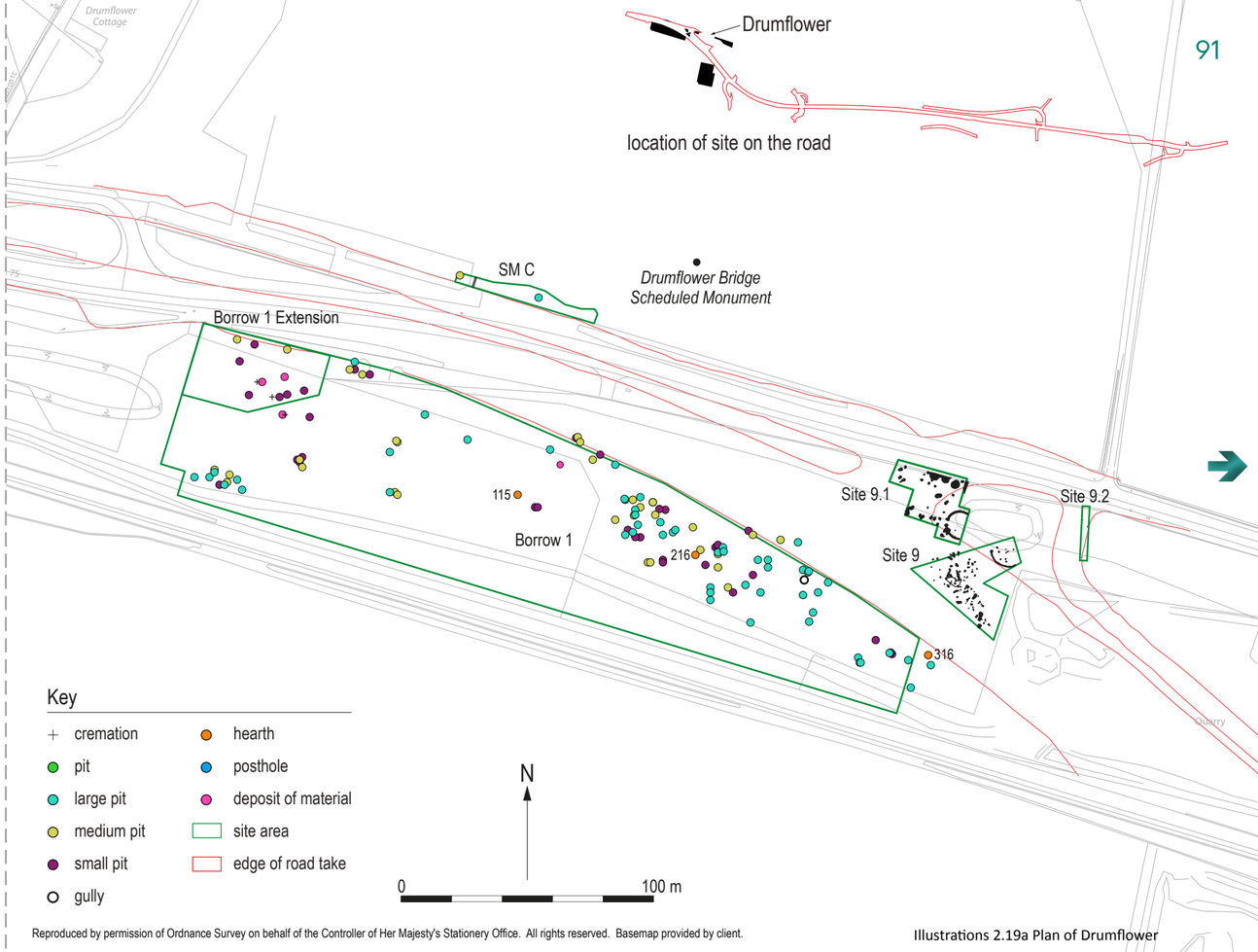
2.5.1 Drumflower

Warren Bailie and Dave McNicol

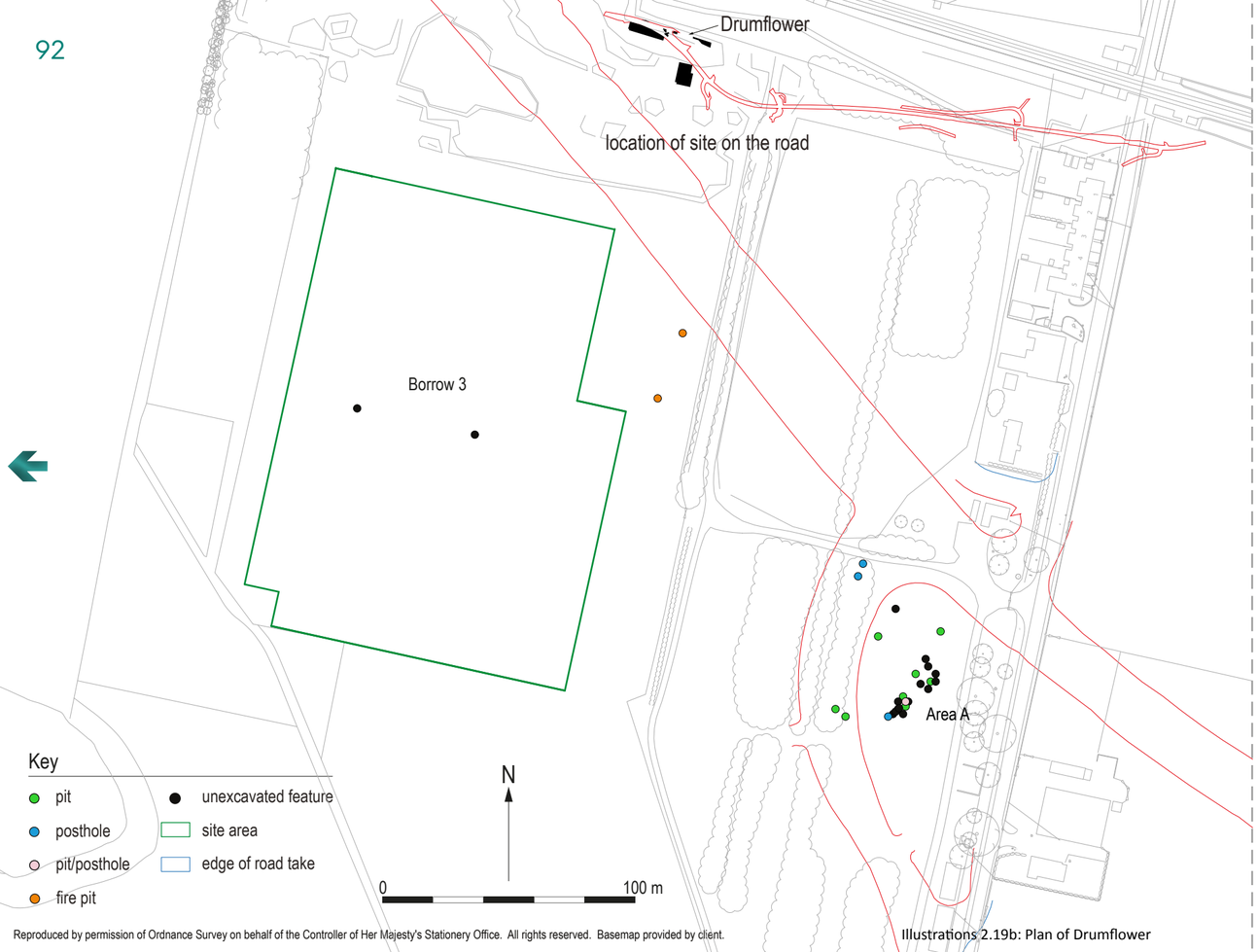
Following the findings from the C5 evaluation, Site 9 was expanded to characterise the archaeology here. The area around Site 9 was subsequently highlighted as having high archaeological potential and during the construction phase works six further areas (Area A, Scheduled Monument Area C (hereafter SM C), Borrow 1, Borrow 1B, Borrow 1B ext. and Borrow 3) were investigated around this location, together forming the collective Drumflower site described below (Illus 2.19a and 2.19b).

2.5.1.1 Sites 9, 9.1 and 9.2 *(Illus 2.2)*

The archaeology uncovered within this area was concentrated within three areas (Site 9, Site 9.1, and Site 9.2), located to the south of the existing A75. The western site (Site 9.1) contained a series of large pits running approximately east/west along the northern limit of the



Illustrations 2.19a Plan of Drumflower



Illustrations 2.19b: Plan of Drumflower

site, with the partial remains of a ring-groove structure (Illus 2.20), and a number of pits and postholes found across the area. Site 9, directly to the east and southeast, included the remains of a second ring-groove structure (Illus 2.24), and one possible post-built structure, and a number of pits, postholes, spreads, and ditches. To the northeast of this area, Site 9.2 contained a small number of pits or postholes and a linear ditch.

2.5.1.2 Site 9

2.5.1.2.1 Ring-groove structure

Approximately one third of a ring-groove structure survived towards the northeast of the site, with the remaining two thirds most likely truncated by quarrying or agricultural activity (Illus 2.19a, 2.19b, 2.20 and 2.22a). The ring-groove (context 100) measured on average 0.28 m in width, 0.38 m deep, and had an extrapolated diameter of around 13 m. This would have enclosed a 133 m2 area (Illus 2.21). The ring-groove had two fills; the basal fill was greyish-brown sandy silt 102, which was overlain by pale reddish-brown sandy silt 094. A late Iron Age radiocarbon date of 50 cal BC–cal AD 70 (UBA-41910: 2012 ± 23 BP) was obtained on a fragment of hazel charcoal recovered from the basal fill. A likely west entrance post 212 coincided with the terminus of the ring-groove. This post was filled with dark greyish-brown silty sand deposit 203, with likely burnt animal bone inclusions. Within the southern part of the ring-groove, a possible posthole 099 was uncovered; its stratigraphic relationship with the ring-groove remains uncertain.

Ten sub-circular postholes were uncovered within the interior of the ring-groove structure, and it is likely that at least four of these (090, 097, 112 and 246) formed part of a post-ring, with the function and chronology of the other six (092, 211, 245, 250, 252 and 262) uncertain. The postholes had an average diameter of 0.5 m, with depths of between 0.11 m and 0.31 m. They were filled by either a greyish-brown or reddish-brown silty loam with gravel inclusions. Possible packing stones were uncovered within postholes 090, 097 and 112, and a small amount of burnt bone was recovered from the fills of postholes 211, 245, 250 and 252. Although none of the fragments could be identified to species, the small quantity and the location within the structure, may suggest that they were from internal floor waste material. A single piece of undiagnostic flint was also recovered from posthole 211 (CAT 19324) (Ballin, Appendix 12).

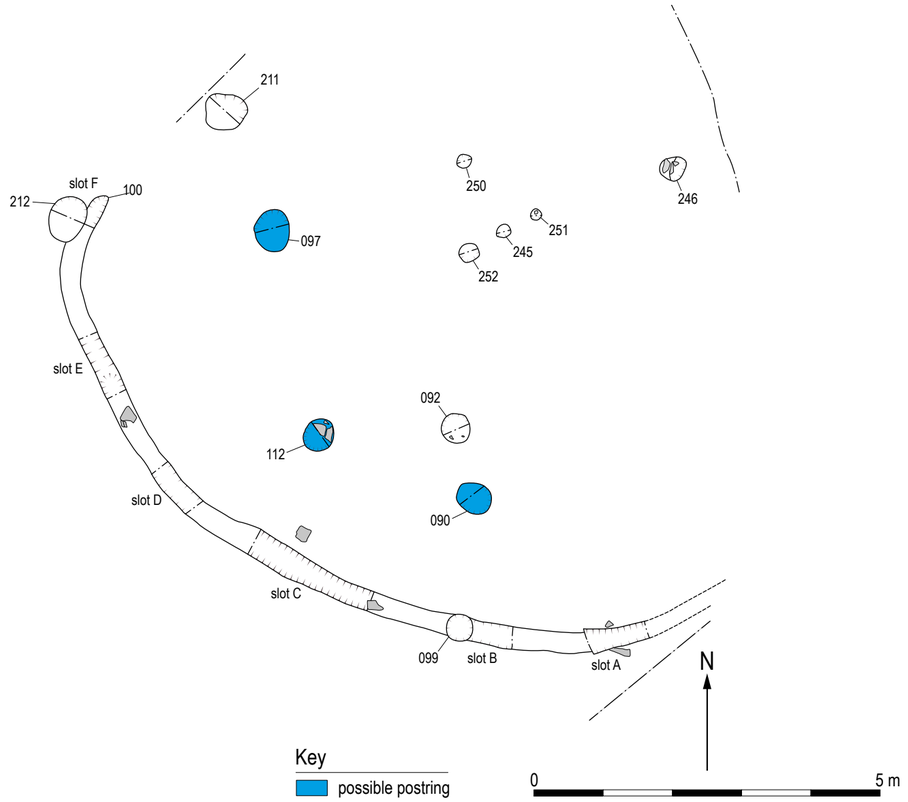


Illustration 2.20: Plan of ring-groove Structure in Site 9

Illustration 2.21: Ring-groove structure at east end of site

2.5.1.2.2 Possible structure (Illus 2.19a and Illus 2.22a)

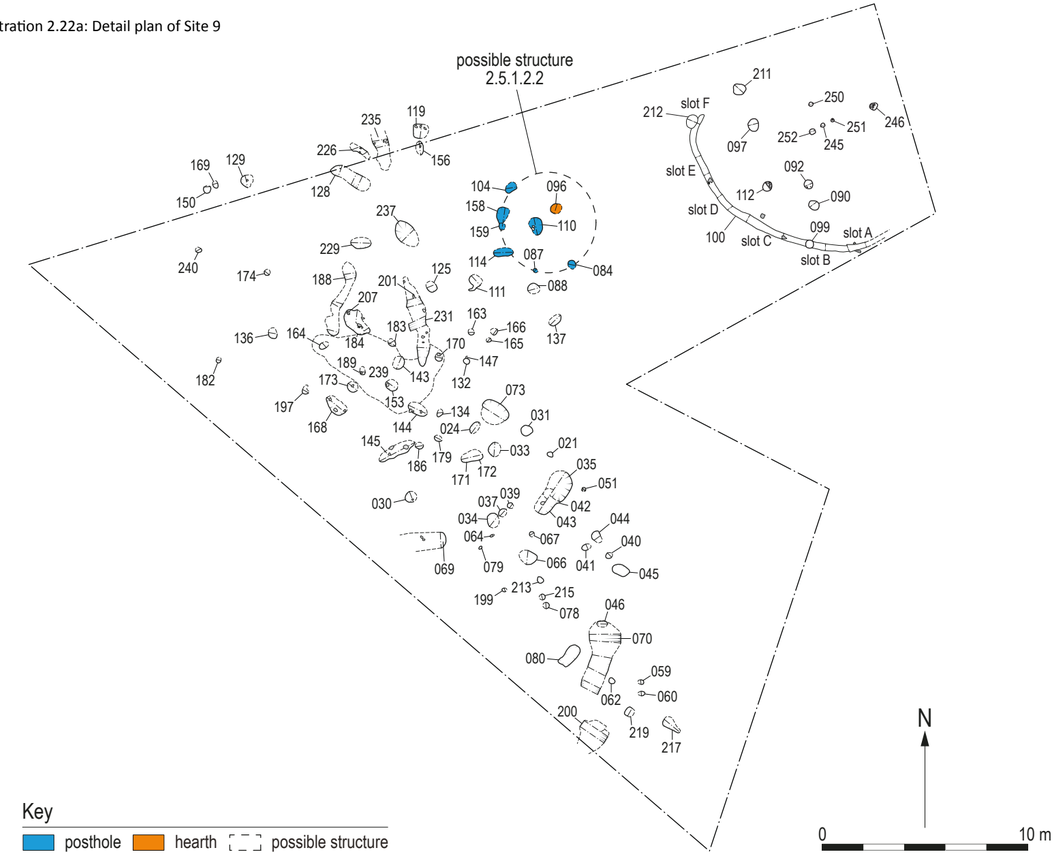
To the southwest of ring-groove structure 100, a possible 5 m diameter circular post-built structure, was uncovered. It comprised six postholes (084, 087, 104, 114, 158 and 159) positioned in a semi-circle around a central posthole 110 and possible hearth 096. The outer postholes were either sub-circular or sub-oval in shape, and measured between 0.3 m and 0.98 m across, with depths of between 0.06 m and 0.2 m. Posthole 158 truncated posthole 159 suggesting a possible repair or additional support for the structure. The central posthole 110 measured approximately 0.75 m in diameter, with depth of 0.23 m; packing stones 105 were visible with two other fills 098 and 109 also containing some pebbles and small stones. The possible hearth was located directly to the northeast of this posthole and measured 0.55 m in diameter and 0.15 m thick. A layer of three stones were found at the base of the hearth, with fragments of burnt bone, spelt wheat, barley, heather stems, and hazel nutshells (Alldritt, Appendix 3) recovered from charcoal-rich blackish-grey silt hearth material 085. Radiocarbon dating from a sample of hazel nutshell produced a date 180 cal BC–cal AD 30 (UBA-42814: 2068 ± 37 BP), the middle to late Iron Age.

2.5.1.2.3 Pits, postholes, spread, and ditches (Illus 2.22)

A further 44 pits, 22 postholes, eight spreads, and five linear features were uncovered within this area, with the majority of the pits and postholes located within the southern half of the site. The 44 pits (030, 033, 034, 035, 037, 039-46, 051, 059-60, 062, 064, 066-7, 073, 078, 080, 088, 111, 119, 128-9, 137, 143, 144, 150, 168, 172, 174, 179, 182, 184, 213, 215, 217, 219, 237 and 240) were either sub-circular or sub-oval in shape, and measured between 0.25 m by 0.23 m and 2.1 m by 0.9 m, with depths of between 0.05 m and 0.6 m. A single piece of flint was recovered from the fill of pit 066 (CAT 19323), with the fills of the remaining pits being generally sterile and comprising of either a greyish-brown or orangey brown silty sand and gravel deposit, with occasional charcoal inclusions.

The 22 postholes (021, 031, 079, 125, 132, 134, 136, 147, 153, 163, 164, 165, 166, 170, 171, 173, 183, 186, 189, 197, 199 and 207) were all sub-circular in shape and measured between 0.18 m and 0.5 m in diameter, with depths of between 0.03 m and 0.35 m. The fills of these postholes were similar to those of the pits. Small unidentifiable fragments of burnt bone were recovered from the fills (022 and 122) of postholes 031 and 163 respectively, with

Illustration 2.22a: Detail plan of Site 9



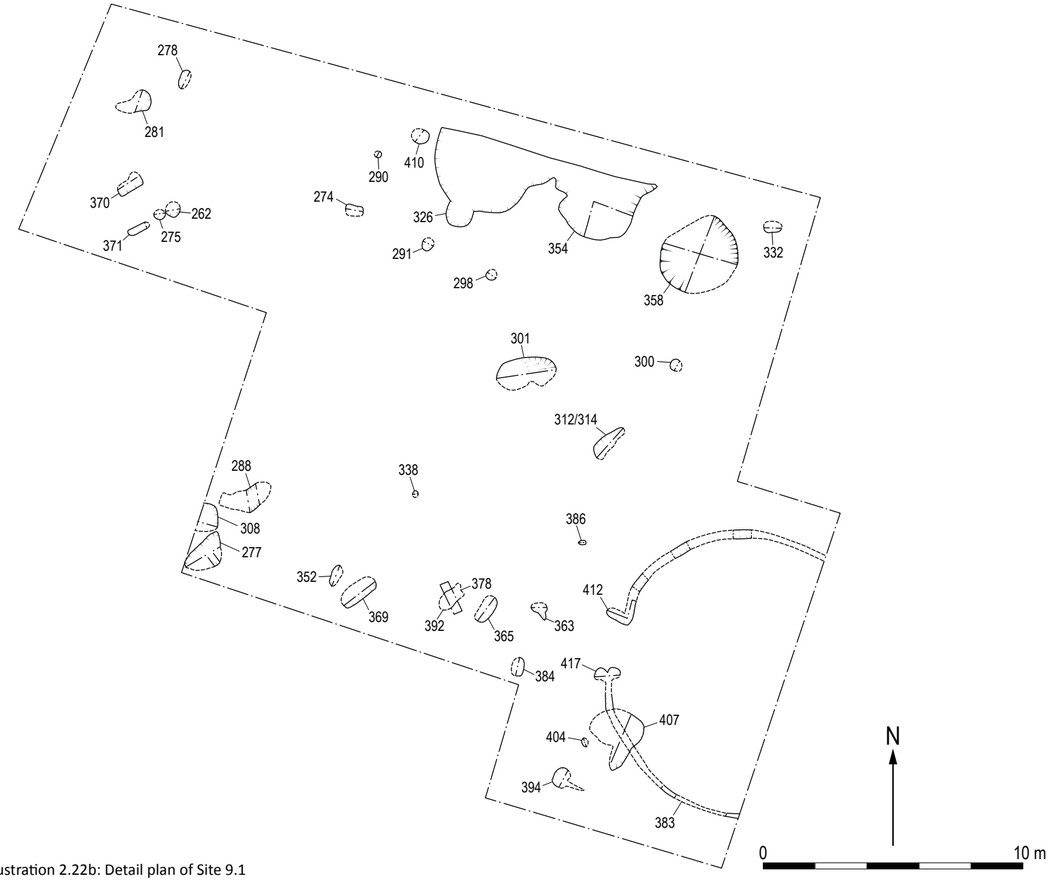


Illustration 2.22b: Detail plan of Site 9.1

possible packing stones noted within three of the postholes (031, 125 and 171) (Illus 2.23). A charcoal-rich deposit 190, possibly representing a burnt-out post, was noted within posthole 197. Hazel charcoal from the fill of posthole 031 returned a late Iron Age date of 150 cal BC–cal AD 30 (UBA-41909: 2048 ± 24 BP). Additional radiocarbon dating of wheat from posthole 170 produced a comparable middle Iron Age date between 200–40 cal BC (UBA-42815: 2100 ± 23 BP). However, there was no apparent pattern to these features. There was a row of three pits (034, 037 and 039) aligned northeast/southwest and a possible north/south orientated line of six pits and postholes (067, 066, 078, 080, 213 and 215).

Illustration 2.23: West facing section of posthole 031

Towards the northwestern end of the main concentration of pits and postholes, two roughly parallel, and slightly curvilinear ditches 188 and 231 were uncovered measuring 4.5 m and 4 m in length respectively. They had an average width of 0.76 m, with a maximum depth of 0.24 m and were aligned north/south. A small sub-circular posthole 201 was uncovered truncating upper fill 221 of ditch 231. The function of these ditches is uncertain, however given their similar form they may be the remains of a small double-ditch enclosure.

The remaining three ditches (069, 070 and 200) were all located towards the southwest, with both 069 and 200 continuing outwith the limits of excavation. Ditch 069 was aligned ENE/ WSW and measured 1.1 m in length, with a width of 0.67 m and depth of 0.25 m.

Ditches 070 and 200 were both aligned north/south and measured 3.9 m by 1.1 m and 1.68 m by 0.72 m in plan respectively. The ditches had an average depth of 0.35 m, with fairly steep sides and concave bases. Both were filled with greyish-brown sandy silt deposit 071 and 193 respectively, with a discrete deposit of orangey-brown silty gravel 072 also noted within ditch 070. Ditch 200 was uncovered during a second phase of stripping within the site and it is possible that it was a continuation of ditch 070, forming part of a possible boundary ditch.

A total of eight shallow spreads were uncovered across the site, with five located towards the northern edge (156, 169, 226, 229 and 235; not shown on Illus 2.22a) and three to the south (024, 145 and 239). The spreads consisted of either an orangey brown sandy silt deposit (156, 169, 226 and 229) or a greyish-brown clayey silt (024, 145, 235 and 239). They measured between 0.32 m by 0.24 m and 6 m by 2.5 m, with an average thickness of 0.08 m. The origin of these deposits is uncertain, although they may represent the remains of occupation layers.

2.5.1.3 Site 9.1

2.5.1.3.1 Ring-groove structure

The western half of a second ring-groove structure 383 was uncovered c. 10 m to the northwest of ring-groove structure 100 (Illus 2.19, 2.22b and 2.24). Not unlike ring-groove 100, the eastern half of this structure had been truncated, either by quarrying or agricultural activity. This ring-groove 383 measured on average 0.35 m in width, with a depth of between 0.08 m and 0.24 m, and with an extrapolated diameter of 10.6 m would have enclosed an internal area of approximately 88 m2. The western entrance was framed with a set of pits/posts, a double posthole or pit 417 to the south, with a sub-oval pit 412 to the north. A further three pits/postholes (363, 367, and 384) were located in line with these pits further west, with pits 363 and 367 containing a high concentration of oak charcoal (Alldritt, Appendix 3). A late Mesolithic date (5470–5210 cal BC; UBA-41911: 6344 ± 35 BP) was obtained from hazel nutshell from the fill of pit 363, suggesting that it is of an earlier date to the ring-groove structure, which is thought to be contemporary with the other ring-groove (i.e. middle-late Iron Age).

A large sub-oval pit 407 was truncated by the southern part of ring-groove 383, and in turn truncated a smaller sub-oval pit 419 to the south. Pit 419 measured 0.74 m by 0.5 m, with a depth of 0.27 m, and was filled with reddish-brown silty sand 416 with a high concentration of oak charcoal. Pit 407 measured 2.34 m by 1.23 m in plan, with a depth of 1.16 m. It had five fills, with the bottom four consisting of similar reddish-brown silty gravel deposits (421, 422, 423 and 424), and the uppermost of a dark greyish-brown silty gravel containing a large concentration of stones 420 (Illus 2.25). The concentration of stones within the upper deposit may suggest these were deliberately dumped within the pit. A single undiagnostic fragment of flint (CAT 19334) was recovered from fill 422 within pit 407.

2.5.1.3.2 Large pit alignment

Along the northern limit of the site, to the north of ring-groove 383 (Illus 2.19a, Illus 2.2b and Illus 2.26-2.29), a line of five large pits (297, 331, 353, 354 and 358) were uncovered extending east/west. The pit edges were at

Illustration 2.24: Plan of ring-groove Structure in Site 9.1

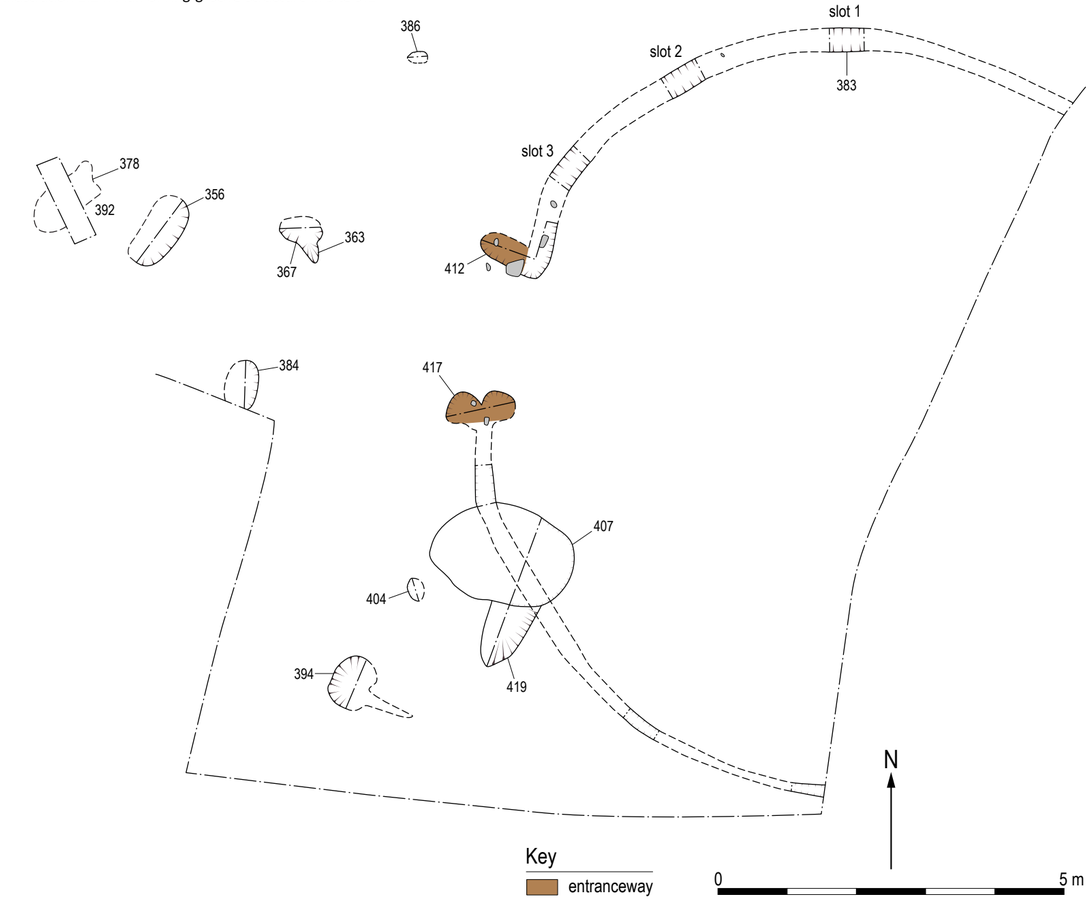


Illustration 2.25: Image of ring-groove 383 cutting pit 407

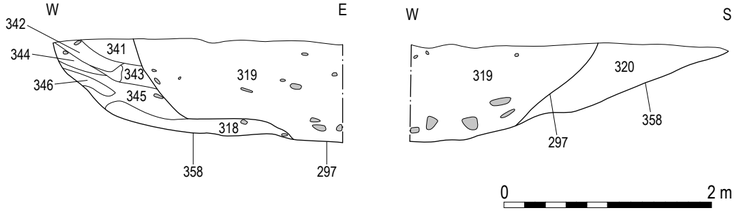


Illustration 2.26: Section showing large pits 297 and 358

first difficult to define, but with several days weathering out the differential oxidisation and drying of the gravels within and outwith the pits revealed them more clearly. Pits 297 and 358 were the best preserved, with the remaining three truncated by a modern pipe trench (Illus 2.26). These pits, and others beyond to the east, had previously been identified on aerial photographs of the area (SM 5790, Canmore ID: 78931, NX 15 NW 25). Pit 353 was partially uncovered in the northeastern corner of the site, and measured a minimum of 3.5 m by 1.23 m, with a depth of 0.4 m. It was filled with light orangey-brown silt 336.

Approximately 2 m to the west of pit 353, pits 297 and 358 were uncovered (Illus 2.27). Both pits would have been sub-circular in shape and measured approximately 2.35 m and 3.1 m in diameter, with depths of 0.52 m and 0.41 m respectively. Multiple relatively sterile fills

were visible within both pits 297 and 358. The next pit within this alignment, 354, was located 1.5 m to the west and measured 2.8 m in diameter with a depth of 0.54 m (Illus 2.28). It was filled with three similar greyish-brown silt deposits (399-401), with a high concentration of oak charcoal within fill 400, and a basal reddish-brown silty sand 355 which contained several sherds of early Bronze Age Beaker pottery (SF 15-20) (Ballin Smith, Appendix 15).

Pit 331 was located on the western side of pit 353, but the relationship between the two is uncertain. Pit 331 was sub-circular in shape and measured a minimum of 2.7 m in diameter, with a depth of 0.75 m. It was filled with multiple sterile brown 330 or greyish-brown (327 and 328) silty sand deposits, and a grey clayey silt deposit 329. A concentration of large sub-rounded stones was located within the basal fill 330. Pit 331 was truncated by a smaller sub-circular pit 326 on its southern side, which measured approximately 0.95 m in diameter, and had a depth of 0.5 m. The function of these pits is uncertain but they may form part of a pit alignment related to the pit-defined enclosure and avenue at Drumflower Bridge Scheduled Monument (see Illus 4.5), which may in turn link with the Dunragit complex Scheduled Monument further east.

Illustration 2.27: Pits 358 and 297 during excavation

Illustration 2.28: Pit 354 during excavation

2.5.1.3.3 Pits and postholes

Twenty-four pits and eight postholes were uncovered to the west and northwest of ring-groove structure 383 (Illus 2.19a, Illus 2.2b). The postholes (274, 275, 290, 291, 298, 338, 404 and 410) were all sub-circular in shape with an average diameter of 0.38 m, and depths of between 0.08 m and 0.54 m. They were all filled with a similar reddish-brown silty loam, with possible packing stones noted within posthole 274. The postholes were spread out across this area and no pattern or structure was apparent.

The 24 pits uncovered within this area were either sub-circular (300, 312, 314, 334, 350, 351, 371 and 387) or sub-oval (262, 272, 277, 278, 281, 288, 301, 308, 332, 352, 365, 369, 370, 386, 392 and 394) in shape, measuring between 0.2 m by 0.14 m, and 2.45 m by 1.15, with depths of between 0.03 m and 0.88 m. The fills of most of these pits were sterile consisting of probably naturally redeposited silting layers from the surrounding subsoil, with only the basal fill 348, from pit 301, containing high concentrations of oak charcoal. Pit 301, with the exception of the large pit alignment to the north (see 2.5.1.3.2 above), was the largest pit uncovered within this area, measuring 2.45 m by 1.15 m, and with a maximum depth of 0.88 m (Illus 2.29). A single hazel nutshell fragment recovered from the basal fill 349 of pit 301 produced a late Neolithic AMS date of 2890–2620 cal BC (UBA-41912: 4169 ± 27 BP). Pit 301 had been truncated or recut by pit 351, which in turn had been truncated by pit 350. The re-cutting or truncation of pits was visible in a number of pits within this area (297 and 358, 301, 350 and 351, 312 and 314, 326 and 331 and 407 and 419) suggesting re-use of the same features or area.

Illustration 2.29: Pits 301 and 350 during excavations

2.5.1.4 Site 9.2

Site 9.2 was located to the northeast of Site 9 and directly to the south of the A75 (Illus 2.19a). A large pit 261 was partially uncovered at the northeastern end of the area truncated by a modern linear ditch 264. The pit measured a minimum of 1.3 m by 0.75 m, with a depth of 0.39 m.

Given its location and fairly large size it may represent a continuation of the large pit alignment noted within Site 9.1 to the west.

Directly to the south of this, a linear boundary ditch 259, running approximately east/west was relatively modern and was likely associated with field boundaries here prior to the construction of the parallel existing A75.

A further three pits with no apparent pattern (257, 258 and 285) were uncovered in this area.

2.5.1.5 Area A

Area A was located towards the southeastern end of the Drumflower site, directly adjacent to the Borrow 1B site (Illus 2.19b). Thirty-four possible archaeological features were uncovered within this area, mostly concentrated within the southern part of the site. Nineteen of these features (029-38, 049-51 and 056-61) were not excavated. The unexcavated features were all of a sub-oval shape and measured from 0.7 m by 0.5 m, up to 3.2 m by 2.3 m, with flint fragments (CAT 20527-30) recovered from the surface of feature 030 (Ballin, Appendix 12).

The excavated archaeological features consisted of 12 pits (005, 008, 012-014, 016, 019, 026, 039, 044, 052 and 054), three postholes, and one curvilinear feature. With the exception of pit 012, all of the pits were located towards the southern end of the site, were sub-oval in shape and varied widely in scale, measuring between 0.31 m by 0.22 m, and 2.7 m by 1.97 m, with depths of between 0.07 m and 0.33 m. A large concentration of oak charcoal was recovered from the basal fill of pit 005, while fragments of flint (CAT 20512-5 and CAT 20518-9) were recovered from the upper fill, as well as from the fill of pit 008 (CAT 20520) (Ballin, Appendix 12).

The curvilinear feature 046 measured 3.1 m by 0.49 m, with a depth of 0.21 m. It was located within the concentration of features towards the southern end of the site. Fragments of flint (CAT 20534-40), including a late Mesolithic microlith/backed bladelet (CAT 20540) and an early Bronze Age end-scraper (CAT 20534) (Ballin, Appendix 12) were recovered from this feature.

Posthole 043 was located within a concentration of pits to the southeast of the area, with isolated postholes 023 and 025 towards the northern edge of the area. Posthole 043 measured 0.37 m in diameter, with a depth of 0.16 m and possible packing stones noted. Postholes 023 and 025 measured 0.16 m and 0.36 m in diameter, with depths of 0.09 m and 0.14 m respectively. A large concentration of oak charcoal, possibly representing the remains of a burnt-out post, and hazel nutshells were recovered from posthole 025. The hazel nutshell was dated to 4040–3810 cal BC (UBA-41913: 5139 ± 29 BP), giving an early Neolithic date for this feature.

2.5.1.6 Borrow 1 *(Illus 2.19a)*

The Borrow 1 area was located at the western end of the Drumflower site, with the Borrow 1 ext. area located within its northwestern corner. One hundred and eighteen features were uncovered within this area, with the majority (83) concentrated towards the eastern side of the area, and a few smaller concentrations towards the western edge.

The eastern group of features consisted of 79 pits, two hearths, one linear gully, and one spread. The pits could be divided into three approximate sizes, those larger than 1 m (42 pits), those measuring between 0. 5 m and 1 m (18 pits), and those smaller than 0.5 m (19 pits). The large pits were all either sub-oval or sub-rectangular in shape, with depths of between 0.09 m and 0.55 m. Their fills were all similar, consisting of silty sand and gravel with only occasional charcoal inclusions. Hazel charcoal from one of these pits (285) produced a date of 3880–3640 cal BC (UBA-41904: 4931 ± 26 BP), the early Neolithic period. The pits were aligned roughly northeast/southwest.

The medium and small pits were either sub-circular or sub-oval in shape, with depths of between 0.07 m and 0.29 m, and 0.04 m and 0.29 m respectively. They were all filled with similar silted up deposits consisting of silty sand and gravel. The majority of these pits were located centrally within this eastern concentration of features with no apparent pattern.

Different phases to the activity in this eastern concentration was noted with five sets of intercutting pits (103 and 105, 133 and 137, 243 and 249, 285 and 287, and 320-2, 321 being a recut of pit 322). These intercutting pits were spread out across this area, suggesting re-use of the area.

The two hearths 216 and 316 were located centrally and at the eastern edge of this concentration, respectively. Hearth 216 was sub-circular in shape and measured 0.6 m in diameter, with a depth of 0.12 m (Illus 2.30). It had three fills (215, 213 and 212), with the upper deposit, 212, consisting of a charcoal-rich greyish-black sandy silt with frequent fire cracked stone. Hearth 316 was larger, measuring 1.15 m by 0.95 m, with a depth of 0.2 m. It was sub-oval in form with two fills 315 and 313, with fire cracked stone and a high concentration of charcoal present within the upper deposit 313. A date of 3710–3630 cal BC (UBA-41905: 4896 ± 30 BP) was obtained from hazel charcoal from this upper fill, placing its use in the early Neolithic period.

Gully 302 was aligned approximately east/west and surrounded by six large pits (020, 268, 285, 287, 296, and 298). These pits were all oval except pit 268 which was sub-rectangular; they ranged in size from 0.7 m to 1.88 m wide, 1.1 m to 2.2 m in length, and measuring 0.15 m to 0.32 m deep; pit 285 cut pit 287. The gully measured 3.25 m by 0.54 m, with a maximum depth of 0.26 m, and was filled by sandy silt and gravel 300. Five other pits, 263 and 271 to the southwest, pit 293 to the west, and pits 019 and 023 to the southeast, were all fairly similar in form to one another and may be contemporary; no pattern to the layout of the 11 pits was apparent.

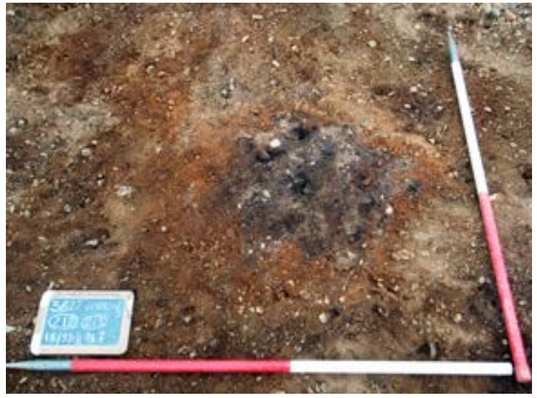


Illustration 2.30: Borrow 1 hearth 216 before excavation

A thin spread of greyish-brown sand 172 with frequent charcoal inclusions was recorded at the northeastern edge of this eastern concentration of features. It measured approximately 2.24 m by 1.48 m, with a depth of 0.07 m. No other similar features were encountered nearby, and it may represent a dumped waste deposit or the base of a heavily truncated pit.

At the southwestern corner of the Borrow 1 area was a small concentration of 10 sub-oval or sub-circular pits (006, 008, 016, 027, 037, 038, 012, 014, 030 and 032). The pits ranged in scale from 0.6 m to 4 m across with depths of between 0.13 m and 0.25 m. All of the pits were filled with a similar greyish-brown silty gravel deposit, with a total of 39 fragments of flint recovered from the fills of pits 006 (CAT 20428-40), 008 (CAT 20441-5), 014 (CAT 20450-1), 016 (CAT 20452-4), and 037 (CAT 20458-69) (Ballin, Appendix 12), with two of pits (027 and 030) containing concentrations of hazel nutshells (Alldritt, Appendix 3). A radiocarbon date of cal AD 260–430 (UBA-41899: 1671 ± 23 BP) was obtained from hazel charcoal recovered from the fill of pit 008 placing it within the late Iron Age or Roman period. An S-shaped link or hook (SF 4), dating from the medieval period at the earliest (Cruickshanks, Appendix 21), was also recovered from this same pit 008, suggesting later disturbance to this feature. No visible pattern was apparent beyond their general concentration.

To the northeast of these pits, a small group of five pits (052-5 and 065) was uncovered (Illus 2.31). These measured between 0.28 m and 0.55 m in diameter, with depths of between 0.03 m and 0.2 m. Pits 052-5 were filled with a similar greyish-brown silty gravel deposit, with pit 065 containing a dark greyish-black sand and gravel deposit with frequent charcoal inclusions. Large concentrations of hazel nutshells were recovered from the fills of pits 055 and

065. No signs of *in situ* burning were visible suggesting this represents a waste deposit rather than a possible hearth or fire pit. Hazel charcoal from pit 054 produced a date of 3350–3030 cal BC (UBA-41901: 4483 ± 25 BP), placing it in the middle Neolithic period.

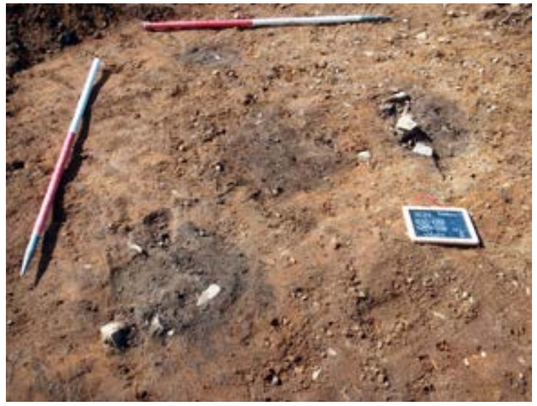


Illustration 2.31: Borrow 1 group of pits before excavation

Illustration 2.32: Borrow 1 pit 070 before excavation view from the west

Approximately 15 m to the north of these pits, a small circular pit 070 (Illus 2.32), measuring 0.36 m in diameter, with a depth of 0.18 m, was uncovered. It was filled with a dark grey silty sand 051 with a high concentration of heat-affected stone 071, and a small concentration of hazel nutshells. Several fragments of middle to late Neolithic Impressed Ware pottery (SF14-23 and SF27-33), from at least two vessels (Ballin Smith, Appendix 15), were recovered from its fill. Given its small size and the high concentration of fire-cracked stone, it is possible that this pit was used for the firing of pots.

The heavily disturbed remains of a cremation pit 075 was uncovered 10 m to the west of pit 070 (Illus 2.33). This was contained within a pit that measured 0.43 m by 0.22 m, with a depth of 0.22 m, filled with a dark greyish-black sandy gravel 046 with frequent charcoal and burnt bone inclusions. A thin spread 072 of similar material with fragments of burnt bone, was located in three separate patches around the main cremation deposit, most likely dragged from the main cremation by ploughing. The cremated remains were one possible adult individual (Kilpatrick, Appendix 8). Alder charcoal from this deposit was dated to 1190–980 cal BC (UBA-41900: 2883 ±23 BP), placing it within the late Bronze Age period. Two further cremation pits were uncovered directly to the northeast within the Borrow 1 ext. area (see 2.5.1.7 below).

Illustration 2.33: Borrow 1 close up of cremation 075 before excavation

At the northwestern corner of Borrow 1, a group of five pits (076, 082, 083, 085 and 097) was uncovered. These measured between 0.24 m and 1.1 m across, with depths of between 0.09 m and 0.24 m. They were all filled with similar silty sand and gravel deposits, with fragments of flint recovered from pits 076 (CAT 20476) and 097 (CAT 20475) (Ballin, Appendix 12), and a small amount of hazel nutshell from pit 082 (Alldritt, Appendix 3). A date of 2470–2290 cal BC (UBA-41902: 3907 ± 25 BP) was obtained from hazel charcoal from the fill of pit 097, dating it to the early Bronze Age.

The remaining features uncovered were spread out throughout the middle of the site. They consisted of 10 pits (056-8, 060, 067, 069, 087, 090, 101 and 110) and a hearth 115. The pits measured between 0.29 m and 1.66 m across, with depths of between 0.07 m and 0.24 m, with hazel nutshells recovered in small quantities from pits 060, 067 and 101. A fragment of hazel charcoal from the upper fill (098) of pit 101 was dated to 3790–3640 cal BC (UBA-41903: 4941 ± 33 BP), placing it within the early Neolithic period. The hearth was sub-oval in shape and measured 0.5 m by 0.4 m, with a depth of 0.09 m. It was filled with a dark greyish-brown silty sand 116 with frequent charcoal inclusions.

2.5.1.7 Borrow 1 Extension *(Illus 2.19a)*

The Borrow 1 ext. area was located at the northwestern corner of the Borrow 1 area. Twelve features were

uncovered within this area: eight pits, two spreads, and two cremation burials. The pits were either sub-circular (004, 012, 015, 019, 023 and 025) or sub-oval (008 and 021) in shape, measuring between 0.2 m and 0.75 m across. The majority had been heavily truncated by agricultural activity, with depths of between 0.04 m and 0.3 m, and they were all filled with a similar dark brown sandy silt deposit. Fragments of flint were recovered from the fill of pits 015 (CAT 1788 and CAT 20253-6) and 023 (CAT 20257-8) (Ballin, Appendix 12), with middle to late Neolithic Impressed Ware pottery (SF 8-12) also recovered from the fill of pit 023 (Ballin Smith, Appendix 15). Hazel nutshells were recovered from the fill of pit 015 and one was dated to 5210–4850 cal BC (UBA-41906: 6075 ± 29 BP), a late Mesolithic date.

The two thin spreads 005 and 010 measured approximately 1 m by 0.7 m, and 1.26 m by 0.28 m on plan, and 0.09 m and 0.03 m thick, respectively. Spread 010 consisted of a brown sandy silt, similar to the topsoil, and most likely represents a natural hollow, while spread 005 consisted of a dark greyish-brown sandy silt, similar to the fills of the nearby pits. It is possible that spread 005 represents the remains of a large pit, truncated by the agricultural activity in the area.

Two cremation pits 001 and 016 were also uncovered within this area, with a third cremation pit (075) 10 m to the southeast within the Borrow 1 site (see 2.5.1.6). Cremation pit 001 was the larger of the two, measuring 0.83 m by 0.61 m, and with a depth of 0.3 m (Illus 2.34).

Illustration 2.34: Borrow 1 ext. cremation pit 001 before excavation

The basal fill consisted of black charcoal-rich sandy silt 009, which was overlain by blackish brown sandy silt 002. Fragments of burnt bone, both human and animal, were recovered from both fills (Kilpatrick, Appendix 8), with the bone from the basal fill producing a date of 1430–1260 cal BC (SUERC-87542: 3083 ± 23 BP), with the upper fill being dated to 1270–1110 cal BC (SUERC-87541: 2969 ± 24 BP), suggesting different deposition episodes of two individuals centuries apart in the Bronze Age. Six pieces of flint (CAT 1782-7) (Ballin, Appendix 12) were also recovered from the upper fill 002. Cremation pit 016 was smaller, measuring only 0.35 m in diameter with a depth of 0.1 m. It was filled with a dark blackish brown sandy silt 017 with fragments of burnt bone throughout. The bone from this deposit was dated 1260–1050 cal BC (SUERC-87543: 2955 ± 24 BP), which placed all three cremation deposits in the middle to late Bronze Age periods. Like the cremation at Borrow 1, the two cremations within Borrow 1 ext. each consisted of one possible adult individual (Kilpatrick, Appendix 8).

2.5.1.8 SM C

The SM C area was located on the south edge of the Drumflower Bridge Scheduled Monument area, running alongside the northern edge of the existing A75 (Illus 2.19a). Only three features, consisting of two pits 008 and 009 and a gully 011, were uncovered in this area. Pit 008 was only partially uncovered within the northwestern corner of the site, and measured a minimum of 0.8 m by 0.6 m, with a depth of 0.2 m. The two fills consisted of a light grey silty gravel 006 overlain by a greyish-black gravelly silt 005. Both fills contained fragments of hazel nutshells, a fragment of which was used to date the basal fill to 3710–3630 cal BC (UBA-41914: 4890 ± 27 BP), the early Neolithic period. The second pit 009 was more central and was sub-oval in form (Illus 2.35). It measured 1.3 m by 0.9 m, with a depth of 0.19 m, and was filled with orangey-brown sandy silt 010.

Gully 011 was located directly east of pit 008 and was aligned approximately NNE/SSW. It had a width of 0.22 m,

Illustration 2.35: General shot of pit 009 just east of ranging rods

with a depth of 0.22 m, and was filled with a light grey and orangey gravelly sand 012. The sides and base of the gully were quite uneven, and it is possible that it represents a relict hedgerow.

2.5.1.9 Borrow 1B *(Illus 2.36)*

The Borrow 1B area was located directly east of Site 9.2, running alongside the southern edge of the existing A75. A series of seven large pits (003, 006, 010, 013, 020, 023 and 025) was uncovered extending on the same east/west alignment as the large pits uncovered within Site 9 to the west (see above) (Illus 2.37). Only three of these pits (003, 010 and 013) were fully exposed, and these measured between 2.29 m by 1.52 m, and 3 m by 2.62 m, with depths of between 0.18 m and 0.38 m. Two of the remaining pits were only visible in section as they had been fully truncated by the construction work on site. These pits had widths of 2.51 m and 1.34 m, with an average depth of 0.52 m. The final large pit within this alignment (025), was more amorphous in shape, measuring approximately 1.4 m by 0.82 m, with a depth of 0.15 m. All the pits were filled with similar dark brown silty sand deposits, with concentrations of stones throughout. A pitchstone chip (CAT 20376) and a flint flake (CAT 20377) (Ballin, Appendix 12) were recovered from the fills of pits 010 and 025 respectively. Modern plastic was also recovered from the fill of pit 010, and modern brick was recovered from the fill of pit 020. These finds may suggest that the pits are of a recent date, rather than contemporary with those uncovered within Site 9 to the east. However, given the proximity of the A75 and the visible truncation of the nearby pits, it is possible that they merely represent modern contamination. A wedge-shaped bar cobble, lightly used on one side as a whetstone SF 1 (Ballin Smith, Appendix 14), was also recovered from the topsoil within this area.

Illustration 2.37: Borrow 1B series of large pits

Two smaller pits (015 and 017) were located adjacent to each other to the south of the large pit alignment. They measured 0.44 m and 0.62 m in diameter with depths of

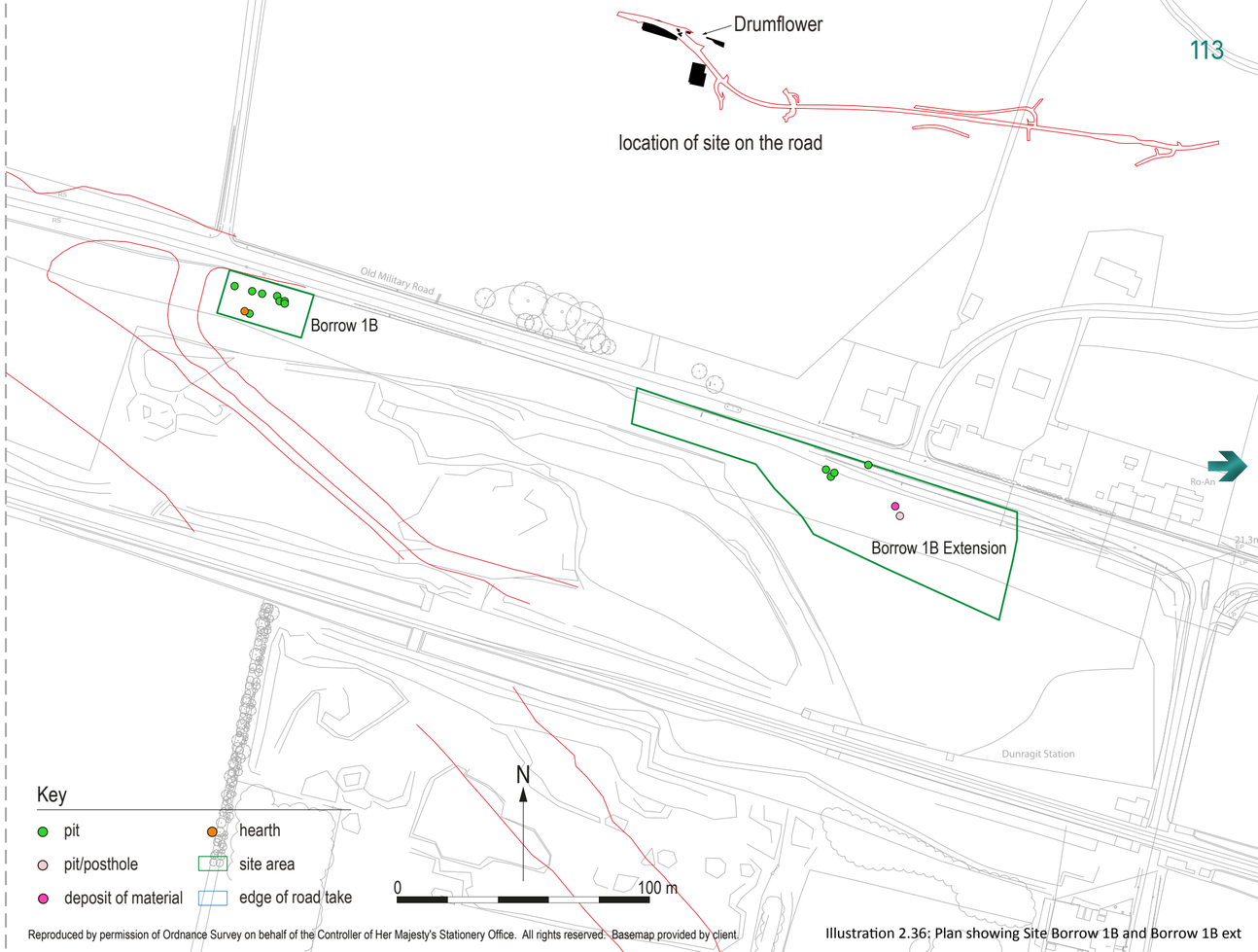


Illustration 2.36: Plan showing Site Borrow 1B and Borrow 1B ext

0.09 m and 0.23 m respectively. Pit 015 contained a single charcoal-rich greyish-brown silty gravel 014. Pit 017 was primarily filled with a greyish-brown silty sand and gravel 016 which sealed a reddish-orange clay 018, most likely representing heat-affected soils, suggesting that it was used as a hearth.

2.5.1.10 Borrow 1B Extension *(Illus 2.36)*

The Borrow 1B ext. area was located approximately 140 m ESE of the features uncovered within the Borrow 1B area, and here four pits (008, 013, 015 and 017), one possible posthole 007 and one spread 005 were uncovered. The pits varied greatly in size, with the smallest (015) measuring 0.39 m by 0.22 m, with a depth of 0.08 m, and the largest 017 measuring 3 m in diameter with a depth of 0.75 m. In Pit 015 six pieces of flint (CAT 2258-63) (Ballin, Appendix 12) were recovered from it is dark blackish-brown silty sand fill, cut and fill were numbered as 015. Directly adjacent to this was pit 013, which was sub-rectangular in shape, measuring 2.1 m by 0.7 m, and with a depth of 0.3 m. It had two fills (014 and 011) and five fragments of flint (CAT 2253-7) (Ballin, Appendix 12); hazel nutshells were recovered from upper fill 011. One of the hazel nutshell fragments produced a middle Neolithic date of 3340-2920 cal BC (UBA-41907: 4441 ± 33 BP). Approximately 1 m northeast of this lay a sub-circular pit 008, measuring 0.75 m in diameter and 0.33 m deep; nine pieces of flint (CAT 2237-43 and CAT 2251-2) were recovered from this pit.

The largest pit 017 lay at the northern edge of the site, and had three fills (in stratigraphic order, earliest to latest: 019, 018 and 016) Twelve fragments of flint (CAT 2290-2301) and a possible iron tack or hobnail SF 12 were recovered from the upper fill 016 of this pit. The possible posthole 007 and spread 005 lay southeast of this large pit. The possible posthole was sub-circular in form, measuring 1.2 m by 1.02 m, and with a depth of 0.94 m. Sub-rounded and sub-angular stones located around the edge and base of the pit may represent post-packing (Illus 2.38). The pit had two fills (basal 012 and upper 007). Fragments of flint were recovered from both the basal (CAT 2264-70) and upper (CAT 2290-5) fill (Ballin, Appendix 12). Hazel charcoal from the basal fill produced a middle Neolithic date of 3350-3010 cal BC (UBA-41908: 4464 ± 35 BP). The shallow spread 005 was located approximately 1 m to the northwest and consisted of a 0.11 m thick dark grey sandy silt covering an area measuring 1.54 m by 1.04 m.

2.5.1.11 Borrow 3 *(Illus 2.19b)*

The Borrow 3 area was located towards the southeastern end of the Drumflower site, to the northwest of Area A. Four pits (005, 007, 008 and 010) were uncovered spread out

across this area. Three of the pits (005, 007 and 010) were sub-circular in form and measured approximately 0.4 m in diameter, while the fourth (008) was sub-oval measuring 1.4 m by 1.04 m. All four were shallow with an average depth of 0.1 m, with pits 005 and 007 filled with similar charcoal-rich black silt, while pits 008 and 010 were filled with a dark greyish-brown silty sand with only occasional charcoal. A late Mesolithic date of 5710–5560 cal BC (UBA-41915: 6720 ± 29 BP) was obtained from *Maloideae* (apples/hawthorn/whitebeams) charcoal (Alldritt, Appendix 3) recovered from pit 005. The high concentration of charcoal within pits 005 and 007, and the lack of any burnt bone, would suggest that these represent fire pits. A single piece of flint (CAT 20507) was recovered from the fill of fire pit 007.

Illustration 2.38: Pit 007 with possible packing stones

2.5.1.12 Drumflower Discussion

2.5.1.12.1 Site 9, 9.1 and 9.2

The archaeology in this area was dominated by two large ring-groove structures which had been partially truncated by quarrying or agricultural activity, and a further two possible structures to the south and a series of large pits to the north. A large number of pits, postholes, spreads, and ditches were also uncovered; however, no patterns were apparent in their layout. It is likely that the agricultural and quarrying activity noted in the area would have truncated features uncovered, as well as other features now lost which may have otherwise aided our interpretation.

The ring-groove structures (100 and 383) were located c. 10 m apart and measured 10 m and 13 m in diameter respectively. Ring-groove 100 was dated to the late Iron Age period (50 cal BC–cal AD 70; UBA-41910) and given the proximity and similarity then it is likely that ring-groove 383 dates from the same period. Both structures had entranceways on their west sides, and the shallow, undulating nature of the ring-grooves, and the lack of any hearths surviving within, suggest a high level of truncation. A possible post-ring was recorded within ring-groove 100 which may have been used to support the roof, with the ring-gully providing the foundation for wattle wall panels. These wattle panels would have either been fixed onto

a sleeper beam or simply attached to other panels end to end (Toolis 2005). Although one posthole was found along the line of the ring-groove, it is uncertain if this was a contemporary structural component, given that no other postholes were found within the groove. No internal features were uncovered within ring-groove 383, although given the heavy truncation in this area, it is possible that an internal post-ring may once have existed within this structure. None of the burnt bone recovered from four of the internal features within ring-groove 100 were diagnostic, although given their location within what may have been domestic structures, it is likely they are animal bone. The single flint flake recovered from pit/posthole 211 was undiagnostic, most likely dating to between the middle Neolithic and Bronze Age periods, and likely to be residual (Ballin, Appendix 12).

A date of 5470–5210 cal BC (UBA-41911) was obtained from pit 363, located directly to the west of the entrance to ring-groove 383, dating it to the late Mesolithic. Although originally thought to form part of a possible elongated entranceway/porch to the ring-groove structure, the dating suggests this is from a much earlier phase of activity.

A possible circular post-built structure was located to the south of ring-groove 100. Its southern side appeared to have been fully truncated. However, it is possible this represents a semi-circular or crescent shaped windbreak/shelter, with the possible hearth located in front. The high concentration of spelt wheat, and lesser amounts of barley and hazel nutshells also present within the hearth (Alldritt, Appendix 3), may suggest that this structure was used for drying cereal grains. Spelt wheat was also recovered from the fill a posthole to the south of this structure, and its presence may suggest further Iron Age or Romano-British activity within this area (Alldritt, Appendix 3). The presence of heather stems within the possible hearth would suggest that peat was used to dry the cereal grains. A large posthole 031 located to the southeast of this structure was dated to the middle-late Iron Age period 150 cal BC–cal AD 30 (UBA-41909). With the above evidence and a similar date obtained from ring-groove 100, it suggests that some of the archaeology to the south and southeast of ring-groove 100 dates to the Iron Age, rather than representing multiple phases of activity, as seen to the west and north (see below).

The series of large pits located along the northern limit of the site was previously visible on aerial photographs of the area, and had been interpreted as Roman quarry pits associated with the Roman road that is reputed to extend under the then existing A75 directly to the north (SM 5790, Canmore ID: 78931, NX 15 NW 25). The fragments of early Bronze Age All-Over Corded (AOC) Beaker pottery (Ballin Smith, Appendix 15) recovered from pit 354 suggests that at least one, if not all, of these pits are of an early Bronze Age date. A late Neolithic AMS date of 2890–2630 cal BC (UBA-41912) was also obtained from the basal fill of a large pit directly to the south of this line of pits. The function of these pits is uncertain, although they are broadly comparable in size to the large pits/postholes uncovered within the Neolithic Dunragit complex area to the east. The pits may well relate to the Dunragit complex, or more likely to the pit circle and alignment immediately north at the Drumflower Bridge Scheduled Monument (Illus 2.39).

The ecofactual assemblage from Site 9 (inc. 9.1 and 9.2) was predominantly oak fuel waste (Alldritt, Appendix 3), with concentrations present within pits 301, 354, 363, 367 and 419. The absence of any *in situ* burning within these features would suggest that the deposits represent waste from a hearth, rather than them being fire pits or hearths. Evidence of periodic resource gathering in the area was seen by the presence of hazel nutshells dating to the late Neolithic/early Bronze Age in pit 301, and the Iron Age in hearth 096.

A small amount of vitrified material was recovered from six of the features within this area with the majority coming from the two ring-groove structures. It comprised a mixture of fuel ash slag, a slag sphere, and undiagnostic iron slag (Cruickshanks, Appendix 22). The small amount recovered suggests that the material is residual, with its concentration at the northern end of Site 9 and eastern end of Site 9.1 pointing to small scale ironworking in this area, although no surviving features showed signs of such activity.

Sixteen flint artefacts were recovered from the site, however the majority of these were from modern or disturbed deposits, and they were all of a probable middle/late Neolithic to Bronze Age date (Ballin, Appendix 12). The assemblage is therefore broadly contemporary with the large pits uncovered at the northern end of the site.

The features within the western area of the site likely date from the late Mesolithic to the late Iron Age, suggesting at least periodic re-use of this area during these periods. In contrast, those from the eastern and southern area date only to the Iron Age, suggesting this area was mainly used during this period.

2.5.1.12.2 Area A

This area contained a small concentration of features, with some outlying postholes, and pits, although as discussed above only 25% of these were excavated. No pattern to the features was apparent.

A large concentration of oak charcoal was recovered from the lower fill of pit 005, which suggests that this may have been a hearth/fire pit. The oak charcoal within posthole 025 may represent the burnt-out remains of an oak post, or is perhaps evidence of pre-erection charring, as noted by Thomas at Dunragit (2015, 157), which was dated to the early Neolithic period (3990-3810 cal BC). Given that oak posts are typical for post-built structures

Illustration 2.39: Aerial photograph of Dunragit showing location of Droughduil Mound, Dunragit Complex and Drumflower Bridge

of this date (Millican 2007), it may represent part of such a structure, although no structural pattern was apparent. The presence of smaller amounts of oak charcoal within four other features suggests that oak was the main fuel and construction material in this area (Alldritt, Appendix 3). Hazel nutshell within posthole 025 is evidence of resource gathering.

Fifty-five flint artefacts were recovered from the site, with over half (29) of these recovered from a curvilinear feature 047. This large concentration mainly consisted of undiagnostic debitage in the form of chips and flakes. However, a late Mesolithic microlith/backed bladelet (CAT 20540) and an early Bronze Age end-scraper (CAT 20534) were also recovered (Ballin, Appendix 12). Given these two dates, it is likely that the flint artefacts are residual, and entered the feature with the backfill. The relatively large quantity of flint recovered suggest working was taking place in the vicinity at some point. The remaining flint pieces recovered within this area consisted of a mixture of debitage, tools and cores. However, none of these were diagnostically datable, and it is possible that all of them are residual.

The early Neolithic date from posthole 025 and the presence of both late Mesolithic and early Bronze Age flint artefacts within curvilinear feature 047, suggest periodic re-using of this area between these periods. A late Mesolithic date was obtained from a hearth within the Borrow 3 site to the northeast, and middle Neolithic dates from two pits within the Borrow 1B ext. site to the east, suggesting broad date ranges for activity in the wider area during these periods.

2.5.1.12.3 Borrow 1

The majority of the archaeology uncovered in this area consisted of pits, the smaller of which may represent truncated postholes, concentrated towards the eastern edge of the area, and some smaller concentrations to the west. A number of pits showed evidence of truncation by later features, suggesting multiple phases of activity, which may obscure any pattern to their layout.

A total of 239 flint artefacts from 34 features, as well as from the topsoil and unstratified deposits, were recovered from the site. The majority of these consisted of debitage in the form of chips and flakes, with diagnostic pieces dating to the Mesolithic period (Ballin, Appendix 12). Only five features contained more than ten pieces of flint each, with four pits 006, 008, 037 and 038, containing a total of 66 pieces between them. These four pits were located in a small concentration within the southwestern corner of the site. A late Iron Age date cal AD 260–430 (UBA-41899) was obtained from pit 008, with the flints therefore likely residual, entering with the backfill. The large number of flints located in this area may suggest that the pits cut through a Mesolithic knapping-floor, or that one was

located in close proximity (Ballin, Appendix 12). The fifth pit (067) was located towards the middle of the site, truncated by pit 069 and in close proximity to pit 060, both of which also contained pieces of flint debitage. It is likely that these flint artefacts are also residual within these features, and that the concentration may indicate another Mesolithic knapping floor in the area. The concentration of flint artefacts recovered here, and the Mesolithic dates obtained from features within the overall Drumflower site to the north (Borrow 1 ext.) and east (Borrow 3), point towards Mesolithic activity spread throughout this area. Mesolithic activity was also recorded at five other sites (Droughduil Holdings, West Challoch, East Challoch, Boreland Cottage Upper, and Mains of Park) along the A75 route to the east, suggesting fairly widespread activity along this coastal area during this period.

Pottery was only recovered from one of the features uncovered on the site, with fragments of two middle to late Neolithic Impressed Ware bowls recovered from pit 070, towards the northwest corner of the site (Ballin Smith, Appendix 15). This is most likely a waste pit from a hearth, with sooting noted on one of the vessels during excavation. A middle Neolithic date of 3350–3030 cal BC (UBA-41901) was obtained for pit 054, located directly south of pit 070, within a small cluster of pits, suggesting that this group of features may be contemporary with waste pit 070. Late Neolithic pottery from a similar vessel was recovered from a pit in close proximity to the cremations uncovered within the Borrow 1 ext. area, approximately 25 m to the west. This may be a result of agricultural activity displacing the vessels within pit 070, or it may suggest further activity in this area during the Neolithic period.

An early Neolithic date of 3790–3640 cal BC (UBA-41903) was obtained from pit 101, located to the west of the main concentration of features, and adjacent to hearth 115. Given the lack of any other features nearby, hearth 115 may be contemporary. A further two features, pit 285 and hearth 316, also date to the early Neolithic period, with dates of 3780–3640 cal BC (UBA-41904) and 3710–3630 cal BC (UBA-41905). Both of these features were located towards the eastern end of the site which suggests a concentrated area of activity in this area during this period.

The small amount of vitrified material recovered from nine dispersed pits suggests that the material is residual, and indicates that small scale ironworking was taking place in this area (Cruickshanks, Appendix 22), although the date and location of this activity is unknown.

The environmental record from the site revealed that the main fuel waste was oak and hazel, with lesser amounts of alder and birch present (Alldritt, Appendix 3). The highest concentration of hazel nutshells was noted from two pits (055 and 065) which lay within a cluster of pits adjacent to the middle Neolithic pit 054. A further 11 features (027, 030, 053, 054, 056, 058, 060, 067, 070, 082 and 101) also contained hazel nutshells, the presence of which shows that local resource gathering was taking place in the area, with the high concentrations indicative of processing the nutshells for storage and/or consumption.

Cremation pit 075 was dated to 1190–980 cal BC (UBA-41900), the late Bronze Age period, with similar middle to late Bronze Age dates obtained from a further two cremation pits directly to the northwest within the Borrow 1 ext. site (see below).

A much earlier Bronze Age date of 2470–2290 cal BC (UBA-41902) was obtained from the fill of pit 097, located to the northeast of these cremation deposits. The presence of hazel nutshells within adjacent pit 082 may suggest that this concentration of features represents the edge of settlement/ domestic activity in the area during this period.

The main concentration of features within this site is approximately in-line with the Drumflower Bridge pit Scheduled Monument alignments shown on aerial photographs extending north/south, towards the Drumflower site. These may be contemporary, and the lack of any hazel nutshells within any of these features may suggest that they do not relate to domestic activity, but rather form part of a larger ritualistic alignment of features in this area.

2.5.1.12.4 Borrow 1 Extension

The archaeology uncovered in this area consisted of a small number of pits and spreads and two cremation pits. Each of the cremation deposits contain the partial remains of a single adult; sex could not be determined (Kilpatrick, Appendix 8). The small amount of bone recovered from them suggests that these represent secondary burials, no more than a symbolic deposition or token burial. It is therefore possible that the cremated bone from the upper fill 002 of cremation 001 and that from the fill of cremation 016 are roughly contemporary, with similar dates of 1270–1110 cal BC (SUERC-87541) and 1260–1050 cal BC (SUERC-87543) respectively. The cremated bone from the lower fill 009 of cremation 001 produced a slightly earlier date of 1430–1260 cal BC (SUERC-87542). This may suggest re-use of this area as a cemetery, or symbolic deposition area, during the middle to late Bronze Age periods. It also suggests that the two different fills within cremation 001 may represent the remains of at least two individuals who died at different times (Kilpatrick, Appendix 8). Oak was the fuel source for these cremations, based on charcoal identified among the burnt bone (Alldritt, Appendix 3); no pyre site was identified, but such surface features are rarely found.

A small amount of vitrified material was recovered from nine of the features within this area, with the majority

coming from the features within the southwest corner of the site. It comprised a mixture of cinder, fuel ash slag, slag spheres, modern melted glass, and undiagnostic iron slag (Cruickshanks, Appendix 22). The small amount of these types of materials recovered suggests that the material is residual, while its concentration at the southwest corner of the site would point to the ironworking taking place in this area. The modern melted glass may suggest that the ironworking is of a relatively recent date.

A total of 213 flint artefacts were recovered from four features, and unstratified deposits. The majority of these consisted of debitage in the form of chips and flakes, with those pieces diagnostically datable belonging to the Mesolithic period (Ballin, Appendix 12). Cremation 001 contained the majority of the pieces of flint, with 60 pieces recovered from its basal fill 009, and a further 99 from its upper fill 002. Only one piece of flint was recovered from cremation 016, with the remaining six pieces recovered from pits 015 and 023 (Ballin, Appendix 12). Both cremation deposits in this area dated to the Bronze Age period, and it is therefore likely that the high concentration of debitage within cremation 001 is residual and indicates that there was a knapping floor in the area which was cut through by this burial. A late Mesolithic date of 5210–4850 cal BC (UBA-41906) was obtained using hazel nutshell from pit 015, suggesting that this may be contemporary with the knapping activity evident within cremation pit 001. The presence of hazel nutshells within the pit would also suggest that at least limited, local resource gathering was taking place around the time of the flint knapping.

Fragments of a middle to late Neolithic Impressed Ware bowl was recovered from one feature 023 (Ballin Smith, Appendix 15). This pit most likely represents a waste pit from a hearth and is of a much earlier date than the nearby cremation deposits. Pottery from a similar late Neolithic vessel was recovered from a pit within the Borrow 1 area, approximately 25 m to the east. This may be a result of agricultural activity displacing the vessels within this larger pit, or it may point towards further activity in this area during the Neolithic period.

2.5.1.12.5 SM C

Only three possible features were uncovered within this area, with no finds recovered from the fills of any them. Small amounts of hazel nutshells were recovered from an early Neolithic pit 008 dated 3710–3630 cal BC (UBA-41914). The presence of the hazel nutshells again suggests localised resource gathering during this period, as also evidenced to the south within the Borrow 1 area. Late Mesolithic and late Neolithic activity have been identified within the Borrow 1 and Borrow 1 ext. sites to the south, suggesting this area may have been utilised at least periodically, and probably sporadically, over several millennia.

2.5.1.12.6 Borrow 1B

The series of large pits located along the northern limit of the site (and Site 9.1, Illus 2.19 and 2.22b), previously interpreted as Roman quarry pits from aerial photographs, have been dated to the late Neolithic or early Bronze Age period. The heavy truncation noted to at least two of the pits may suggest that further pits were originally located in this area, and that they have been removed by quarrying to the east. Only two lithic artefacts, a pitchstone chip and an undiagnostic flint flake were recovered from these pits (from pit 010 and 025 respectively), with both most likely residual. The presence of the pitchstone chip (CAT 20376) is possible evidence of a link to Arran through trade of raw materials, whether direct or indirect, in the Mesolithic or early Neolithic period; pitchstone was also recovered from a secure Mesolithic context at West Challoch (see 2.5.3). The nature of any interaction in relation to this site is uncertain, as such small assemblages are not necessarily an indication of a direct connection.

An undiognostic wedge-shaped bar cobble (SF 1) from the topsoil of Borrow 1B is possibly of diorite. One side of the piece is slightly polished where it has been used lightly as a whetstone (Ballin Smith, Appendix 14). There is however evidence of activity dating from the late Mesolithic through to the late Iron Age obtained from features within Sites 9 and 9.1 further east. The possible small hearth and waste pit uncovered to the south of the pit alignment suggests peripheral small-scale activity, but the date of this activity remains uncertain.

2.5.1.12.7 Borrow 1B Extension

From five of the six features, as well as from unstratified deposits, 153 flint artefacts were recovered. The majority consisted of debitage in the form of chips and flakes, as well as three cores and tools, including four scrapers, and two blades. All diagnostically datable pieces are typical of the Mesolithic period (Ballin, Appendix 12). Middle Neolithic dates of 3340–3010 cal BC (UBA-41908) and 3340–2920 cal BC (UBA-41907) were obtained from possible posthole 007 and pit 013 respectively, suggesting that the flints were residual. The large number of flint pieces may indicate that there was a Mesolithic knapping floor in the area, most likely in the vicinity of truncated pit 015 where over two thirds of the flint was recovered.

Pit 017 was similar in size, and on the same alignment, to the large pits uncovered within the Borrow 1B and 9.1 sites to the east, suggesting it may represent a continuation of this late Neolithic or early Bronze Age pit alignment. However, the small tack or hobnail recovered from its fill, although not diagnostically datable (Cruickshanks, Appendix 21), may suggest a later date in this case.

2.5.1.12.8 Borrow 3

Only four features were uncovered within this area, with two of them representing possible fire pits (005 and 007). A late Mesolithic date of 5710–5560 cal BC (UBA-41915) was obtained using *maloideae* charcoal from pit 005. The environmental record shows that only limited burning activity was undertaken within these features, which suggests they either represent waste from a more concentrated area of burning, or that they were single-use fires (Alldritt, Appendix 3). The small number of features within this area would suggest that any prehistoric activity was sporadic and/ or concentrated elsewhere.

2.5.2 Droughduil Holdings

Dave McNicol

2.5.2.1 Site C20

Site C20 included four separate areas (from west to east, Grid A & C20 ext., Grid B, and Grid C, see Illus 2.18). The features in Grid A/C20 ext. were an extension of the feature scatter already described in SM A above. The four separate areas extended from Grid A (100E to 160E) at the western edge, with Grid B (90E to 170E) forming the central area, and Grid C (200E to 300E), at the eastern end. The C20 ext. area was located directly to the south of the Grid A area.

The ground was predominantly flat across the four areas, although it sloped gently downwards towards the southeast. The natural subsoil generally consisted of reddish-brown sand and gravel, with greyish white silt and gravel, and patches of peat within the lower-lying southeastern area, close to Droughduil Bridge (see 2.5.7).

2.5.2.2 Grid A

Twelve pits, 12 postholes, and two spreads of greyish brown silty clay (050 and 051) were excavated in this area. The pits (030, 034, 036, 043, 045, 049, 059, 073, 076, 083, 087 and 089) were generally sub-oval in shape, measuring 0.25 m to 1.25 m wide, 0.37 m to 2.08 m long and with depths of 0.07 m to 0.29 m. The fills of these pits were a similar light brown silty sand with very occasional charcoal fragments. The exception to this was pit 034 which contained a high concentration of oak charcoal, which may represent waste from a hearth (Illus 2.40). Lithic fragments were recovered from the fills of pits 034 (CAT 702-4), 049 (CAT 712-3), and 083 (CAT 714) (Ballin, Appendix 12). Hazel charcoal recovered from the fill of pit 073 produced an early Neolithic date of 3960–3710 cal BC (UBA-41889: 5047 ± 37 BP).

The postholes (032, 040, 052, 061, 062, 063, 065, 066, 071, 080, 085 and 090) were generally sub-circular in form, ranging between 0.17 m and 0.73 m across, and 0.05 m and 0.24 m deep. Lithic fragments were recovered from posthole 071 (CAT 707) and a burnt flint fragment (CAT 705) was recovered from the surface of feature 038 (Ballin, Appendix 12). This feature also contained a high concentration of oak charcoal (Alldritt, Appendix 3). No evidence for packing stones or post-pipes was observed within any of these features, and no structural pattern was apparent. It is therefore possible that they represent the remains of small pits rather than postholes.

Illustration 2.40: C20 southwest facing section through pit 034

2.5.2.3 C20 Extension

A small group of eight pits/ postholes was located within this area, directly south of Grid A. The majority of these (025, 032, 034, 035 and 040) were sub-circular in form, measuring between 0.2 m and 0.57 m across, and 0.07 m to 0.24 m deep. The remaining three (019, 038 and 039) were sub-oval in shape and measured 0.35 m to 0.7 m wide, 0.63 m to 1.3 m long, with depths of 0.06 m to 0.35 m. The fills of these features were of a similar dark brown and orange silty clay, with high concentrations of charcoal recovered from five pits (019, 034, 038, 039 and 040). Two fragments of flint were recovered from pit 038 (CAT 19382-3), with a late Mesolithic microlith or backed bladelet (CAT 2069) from pit 032, and a further 49 flint fragments from topsoil and unstratified deposits (Ballin, Appendix 12).

2.5.2.4 Grid B

Throughout this area, agricultural drainage ditches (003, 007, 009, 125, 146, 149 and 189) were investigated, with several of these ditches containing redeposited flint flakes (CAT 706 and CAT 726-7), and more modern corroded iron finds (SF 8 and SF 27) (Cruickshanks, Appendix 21). Two large palaeochannels, extending approximately northwest/ southeast, were also recorded.

Thirty-six pits, 10 spreads, and five postholes were uncovered within this area. The pits were located to the west, central and east part of the site. The western concentration consisted of 13 pits (011, 013, 017, 019, 023, 028, 119, 123, 137, 141, 154, 155 and 168), all of which were sub-oval in shape and measured 0.26 m to 1.61 m wide, 0.34 m to 1.7 m long, and 0.05 m to 0.33 m deep. These pits were filled by silty sand with very occasional charcoal fragments; four of the pits (119, 123, 137 and 168) contained high concentrations of charcoal, with pit 119 also containing fire-cracked stone and a particularly high concentration of oak charcoal (Illus 2.41). Alder charcoal, also from the fill of pit 119, returned a late Neolithic date of 2890–2620 cal BC (UBA-41891: 4170 ± 32 BP). A fragment of possible quartzite rock, that may have been used as a knife SF 9b (Ballin Smith, Appendix 14), was recovered from pit 013.

The central concentration consisted of 15 pits (094, 096, 100, 106, 113, 118, 122, 129, 132, 160, 163, 166, 187, 202 and 240), all of which were sub-oval in shape and measured 0.25 m to 0.8 m wide, 0.28 m to 2.63 m long, and 0.09 m to 0.43 m deep. These pits all had a silty sand fill with occasional charcoal fragments. Five of the pits (100, 122, 132, 187 and 202) contained higher concentrations of charcoal, with pit 187 containing an *in situ* burning layer at its base suggesting it may be a fire pit or hearth. Hazel nutshells were also recovered from pit 100. One fragment of early Neolithic pottery SF 34 (Ballin Smith, Appendix 15) was found during the initial cleaning of pit 187.

Illustration 2.41: C20 southeast facing section through pit 119

Eight pits (169, 171, 173, 175, 178, 184, 198 and 250) were concentrated towards the east part of the area. These pits were all sub-oval in shape and measured 0.27 m to 0.8 m wide, 0.4 m to 1.4 m long, and 0.1 m to 0.26 m deep. They were all filled with a similar light brown sandy silt. One of the pits 178 contained birch charcoal, and 26 fragments of hazel nutshell Alldritt, Appendix 3). Fragments of flint (CAT 735-40), including a late Neolithic Levallois-like core (CAT 20413) (Ballin, Appendix 12) and a possible fragment of burnt clay SF 36 (Ballin Smith, Appendix 16) were recovered from the fills of pits 175 and 178 respectively. Pit 175 was dated to the late Neolithic, with a date of 2870–2490 cal BC (UBA-41892: 4104 ± 33 BP) using alder charcoal. Birch charcoal from pit 178 returned a date of 1380–1050 cal BC placing it in in the late Bronze Age period (UBA-41893: 2975 ± 34 BP).

The majority of the spreads uncovered were located centrally (092, 093, 101, 105, 111, 114, 131 140 and 145), with spread 130 located to towards the western edge of the area. The spreads were amorphous in shape, ranging in size from 0.13 m to 2.04 m across, and with an average thickness of 0.09 m. Two of the spreads (111 and 140) contained high concentrations of oak charcoal with some birch also present in spread 111 (Alldritt, Appendix 3). A total of four fragments of flint were recovered from spreads 140 (CAT 723-5) and 114 (CAT 722) (Ballin, Appendix 12).

The five postholes (015, 021, 116, 135 and 161) were spread across the site, with no apparent structure. They were all sub-circular in form and measured 0.2 m to 0.5 m in diameter, and 0.09 m to 0.23 m deep.

2.5.2.5 Grid C

Within this area, agricultural activity in the form of drainage ditches 216 and 219 was noted, and a modern field drainage system towards the eastern edge. Outwith these features, a total of 18 pits and three postholes were uncovered.

The pits were generally concentrated towards the western edge of the area (143, 182, 190, 196, 199, 201, 209, 211, 214, 222, 238 and 241), with six others (213, 224, 229, 230, 251 and 252) found across the site. They were sub-circular or sub-oval in form, measuring 0.2 m to 1.3 m wide, 0.22 m to 2 m long, and 0.05 m to 0.42 m deep. Their fills generally consisted of a greyish or reddish-brown sandy silt, with two (213 and 229) consisting of a peaty deposit. Pits 201 and 251, which appeared to have been heavily truncated by agricultural activity, contained high concentrations of charcoal, with 251 also containing burnt stone with evidence of *in situ* burning, suggesting a possible fire pit. Birch and alder charcoal from pits 201 and 222, produced dates of 7840–7590 cal BC (UBA-41894: 8703 ± 38 BP) and 2570–2450 cal BC (UBA-41896: 3969 ± 26 BP) respectively, placing their use in the early Mesolithic and late Neolithic periods. Six sherds of early Neolithic Carinated Bowls (SF 51-6) (Ballin Smith, Appendix 15) were also recovered from the fill of pit 222. A later medieval date of cal AD 410–550 (UBA-41895: 1590 ± 21 BP) was also obtained using birch charcoal from pit 211, suggesting later disturbance. Flint fragments were recovered from the fills of pits 211 (CAT 791-2), 222 (CAT 793-5), and 229 (CAT 798) (Ballin, Appendix 12).

The three postholes 247, 248, and 255, measured approximately 0.18 m in diameter with depths of between 0.06 m and 0.3 m. Due to their isolated positions their function or connection to the other activity uncovered on site remains uncertain.

2.5.2.6 Droughduil Holdings Discussion

2.5.2.6.1 Site C20 (Illus 2.18)

This site was located along the southern edge of the Dunragit complex. Although many features were uncovered within this area, no patterns, except for general concentrations, were apparent.

The environmental record from the site revealed a mixture of fuel waste with oak, alder, hazel, and birch recorded in varied proportions from the fills of pits. High concentrations of oak were also recorded from spread 111, as well as pits 019 and 034. Evidence of resource gathering in the area was seen by the presence of hazel nutshells within pits 100, 178 and 211.

A date of 3960–3710 cal BC (UBA-41889) was obtained from pit 073 within Grid A, placing this activity within the early Neolithic. This is comparable to the early Neolithic dates obtained from two hearths within the SM A area, directly to the northwest of pit 073, suggesting that these features were roughly contemporary. An early Neolithic date of 3990–3800 cal BC (UBA-41890) was also obtained from pit 100 within Grid B. However, both possible hearth 119 and pit 175 were dated to the late Neolithic, with dates of 2890–2620 cal BC (UBA-41891) and 2870–2490 cal BC (UBA-41892) respectively. A late Bronze Age date of 1380–1050 cal BC (UBA-41893) for pit 178 is evidence of later activity here. Evidence of further middle to late Bronze Age activity within the wider area comes from the roughly contemporary cremation deposits uncovered within the Drumflower site approximately 750 m to the northwest. Dates from the late Bronze Age, and Iron Age, were obtained for a burnt mound at Droughduil Bridge 150 m to the east, with the burnt mound at Mid-Challoch, a little further east, being dated to the early Bronze Age and the burnt mound at Whitecrook Bridge dating to the late Neolithic/early Bronze Age (see 2.5.7). This shows that a range of activities were taking place in this locale before, during and after the Bronze Age with burnt mounds on the lower ground to the east, possible domestic and ritual activity south of the Dunragit complex, and funerary practices further west at Drumflower (2.5.1 above).

Within Grid C, an early Mesolithic pit 201 dated 7940–7590 cal BC (UBA-41894) and a late Neolithic pit 222 dated 2570–2450 cal BC (UBA-41896), coupled with the late Mesolithic/early Neolithic hearth at SM B, shows periodic use of this same area over some five millennia.

The majority of the pottery recovered from the site came from pit 222 within Grid C, with the rest coming from unstratified deposits. In total, 12 heavily abraded body sherds from an early Neolithic Carinated Bowl were uncovered, with an unstratified sherd, possibly from the same bowl. Analysis of the pottery by Ballin Smith (Appendix 15) has suggested that it is of local manufacture, with the clay most likely coming from the Piltanton Burn to the south of the site. The composition of the pottery, with a high concentration or organic material and low mineral temper, is markedly different to the rest of the pottery recovered from the bypass sites (Ballin Smith, Appendix 15). The late Neolithic radiocarbon date for pit 222, and the heavily degraded nature of the sherds, suggests that the pottery was redeposited within this feature, most likely as part of the backfill. However, the concentration of sherds from a single bowl would suggest that it was originally buried nearby, and may be associated with activity concentrated around the hearth uncovered within the SM B area directly to the east, which was dated to the late Mesolithic/early Neolithic period.

A total of 330 flint artefacts were recovered from the site, however over half of these were from unstratified deposits, with only two of the datable pieces coming from archaeological features (Ballin, Appendix 12). These consisted of a late Mesolithic microlith or backed bladelet (CAT 2069) from pit 032 in Grid A, and a late Neolithic Levallois-like core (CAT 20413) from pit 175 in Grid B. The remaining datable pieces date from between the early Mesolithic and late Neolithic periods. Most of the flint artefacts comprise of production debitage in the form of chips (45), irregular flakes (164), and indeterminate pieces (23), suggesting that they entered the features with the backfill and are residual.

2.5.3 West Challoch *(Illus 2.42)*

Warren Bailie and Dave McNicol

This area was opened as a result of preliminary findings from the evaluation and advance works suggesting that significant sub-surface archaeological deposits relating to Mesolithic activity survived. Site 7 was initially investigated between November 2012 and January 2013, revealing evidence of negative cut features in the form of an arc of deep postholes within the centre of the site. These postholes, and subsequent other postholes forming a structure were flanked by a number of deep pits, with the majority of archaeological features enclosed by a number of shallow ditches/gullies. Between July and August 2013 this area was revisited and expanded as Site 19. Site 19 was excavated in two phases due to construction restraints, with the southern half (Site 19) excavated first, with the excavation of the northern area (Site 19 ext.) following on. All three areas will be discussed as one here, with those

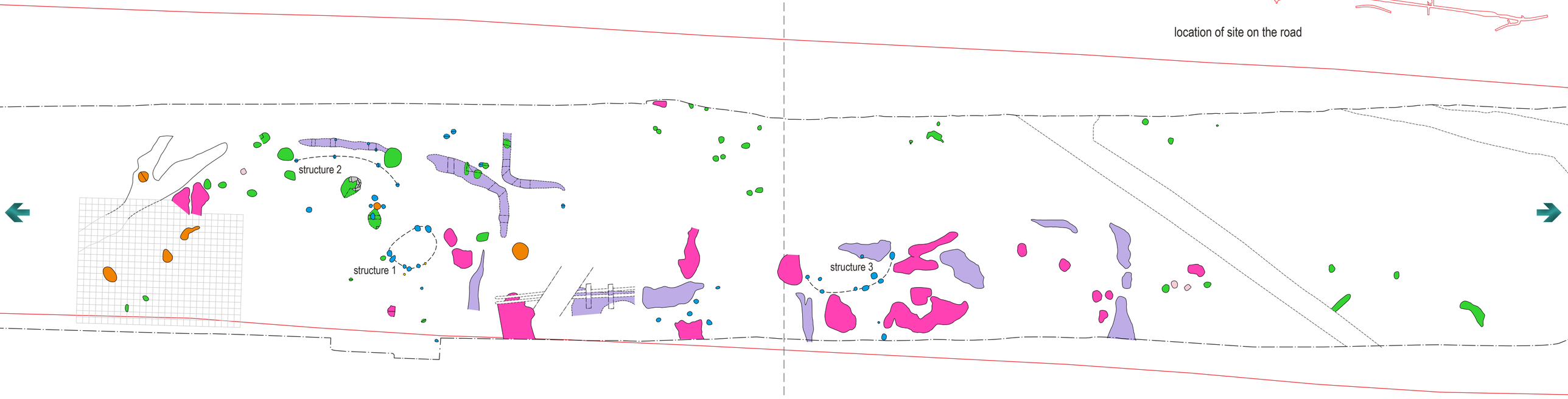


Illustration 2.42: Plan of West Challoch

features within the Site 19 and Site 19 ext. area given the pre-fix 'S19_' and 'S19E_' respectively to avoid confusion. A third area, Site C12, was excavated to the east of this main area and will be described separately.

The topsoil deposits within the area varied in thickness from between 0.2 m and 0.4 m and during the initial cleaning lithic fragments were recovered from unstratified deposits across the site, with some displaying evidence of working (SF 1, Illus 2.43). A high concentration of lithics and fragments (16,783) was uncovered towards the western edge of the site, and this area was excavated in a grid system, following consultation with HS and Dr. Ballin, so as to maximise the lithic retrieval and potential for more detailed interpretation. A total of 762 lithics was recovered from the initial investigations at Site 7, it being adjacent to the Site 19 gridded area and essentially enveloped by Site 19, them both then being the same site. The subsoil consisted of a slightly raised gravel bank or ridge of glacifluvial gravel, >9 m thick in borehole NX15NE53 at NX 16043 57040, shaped into ridges by shallow palaeochannels. This ridge is on the northern edge of a spread of gently undulating estuarine sediments, with <1 m of silt over sand in trial pit NX15NE166 at NX 16054 56984 (BGS Geoindex). The archaeological activity was concentrated on this raised ridge, at around 8.5 m OD. The groundwater level here was close to the surface during much of the excavation (a 2010 Google Earth image shows ponding) despite the free-draining subsoil. It was noted by the excavators that the ground water rose with tidal times, possibly accounting for this ponding in the free-draining soil.

Illustration 2.43: Detail of SF 01 showing worked face

2.5.3.1 Possible Structures

A possible circular Structure S1 at the western end of the site comprised a southern arc of seven postholes and stakeholes (Illus 2.44) with a further two postholes forming a part of a possible northern arc. The area within the possible

Illustration 2.44: South arc of posthole structure

structure was approximately 10.5 m², measuring around 3 m NW/SE and 3.5 m NE/SW. The postholes were initially quite subtle and washed out on the surface, possible due to periodic inundation, however, on excavation they were found to be fairly substantial.

The southern arc was formed of five postholes (020, 021, 023, 025/C9016 and C9017) and two stakeholes (026 and 027) (Illus 2.45). The postholes were sub-circular in form, measuring on average 0.35 m in diameter, with depths of 0.19 m to 0.28 m. The exception to this was posthole 025 which was sub-oval in shape, measured 0.6 m by 0.32 m in plan, with a depth of 0.27 m. All postholes had fairly steep sides, with concave bases and were filled with a naturally silted up deposit consisting of either dark greyish-brown, or blackish-brown, silt with charcoal inclusions (011, 008, 010, 024 and C9017 respectively). Fragments of flint were recovered from postholes 020 (CAT 76-7, CAT 85, CAT, 88-9, CAT 182-95), 021 (CAT 78, CAT 86-7, CAT 90-2, and CAT 97-8), 023 (CAT 274-80) and 025 (CAT 93-4) (Ballin, Appendix 12), with a high concentration of hazel nutshells (Alldritt, Appendix 3) also recovered from posthole 020. No evidence for packing stones or post-pipes was apparent, however their form and arrangement suggest that they represent postholes rather than pits. A date of 7060–6770 cal BC (SUERC-44557: 8007 ± 29 BP) was obtained from hazel nutshell recovered from the fill of posthole 020, dating this structure to the late Mesolithic period.

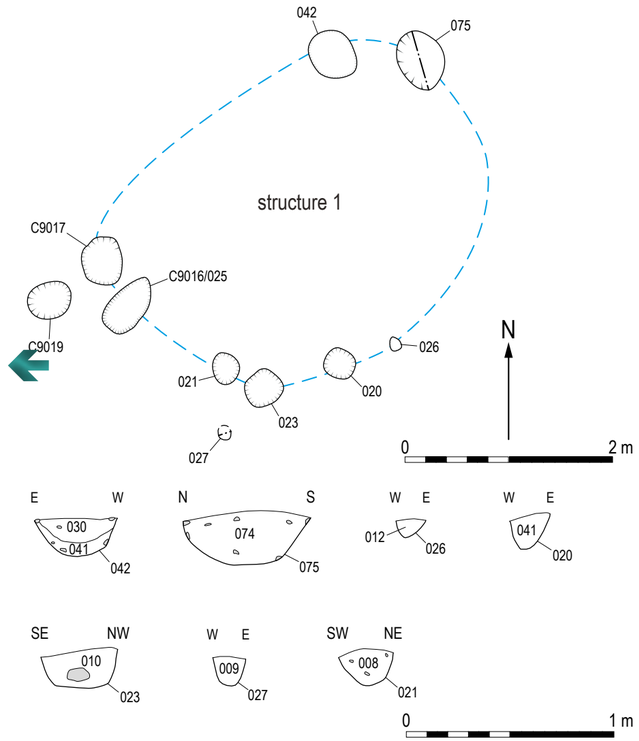


Illustration 2.45: Plan and sections of Structure 1 in West Challoch

The stakeholes 026 and 027 within the southern arc were sub-circular in form and measured approximately 0.13 m in dimeter, with an average depth of 0.11 m. They were filled with a blackish brown and dark grey silt respectively, with a single fragment of worked lithic core (CAT 99) recovered from stakehole 026. Both stakeholes 026 and 027 were located 0.4 m from postholes 020 and 023 respectively suggesting they were used as support for, or repair to, the structure.

The possible northern arc of the structure consisted of two sub-circular postholes 042 and 075 (Illus 2.46). They appeared to follow the same curvature as the previous postholes and stakeholes and were located 0.4 m apart. They had an average diameter of 0.42 m, with a depth of 0.21, with posthole 042 containing two distinct fills 041 and 030. The basal fill 041 consisted of a thin layer of silty brown loam containing one fragment of flint (CAT 112). This was sealed by a silty greyish-brown ash-like material 030 which contained 12 fragments of flint (CAT 107-11 and CAT 160-4). Radiocarbon dating of hazel nutshell from this upper fill 030 revealed a late Mesolithic date (6640–6460 cal BC, UBA-42818: 7708 ± 33 BP). Posthole 075 was filled with charcoal-rich dark brownish-black silt 074.

A sub-circular pit C9019, uncovered during the evaluation phase directly southwest of the southern arc of the possible structure, measured 0.55 m in diameter with a maximum depth of 0.1 m and was filled with a dark greyish-brown silt

Illustration 2.46: Full extent of structure during excavation

C9019. Given its location it is possible that it is associated with the structure and may therefore represent a posthole and external support for the structure, rather than a pit.

Approximately 7 m to the southeast, an arc of four small postholes 056, 083, 086 and 093 formed the partial remains of a second, heavily truncated Structure S2. This structure if complete would have had a diameter of approximately 10 m, with an internal area of 78.5 m². The arc of postholes curved within the area defined by a gully to the north and could have been part of an ancillary structure related to S1. The postholes measured between 0.16 m and 0.3 m in diameter, with depths of between 0.08 and 0.15 m and all were filled with similar light grey or greyish-brown silt deposits (Illus 2.47).

A third possible Structure S3 was located towards the eastern end of the site. It consisted of an arc of ten postholes, possibly forming the southern side of a possible sub-circular structure which, if complete, would have had a diameter of approximately 8.5 m, enclosing an internal area of 57 m². The postholes were all sub-circular in form, with diameters of 0.2 m to 0.5 m, and an average depth of 0.21 m. Seven of these (All S19: 120, 121, 138, 147, 150, 177 and 180) were filled by brownish-grey silt deposits (Illus 2.48). Fragments of flint were recovered from the fills of postholes S19_138 (CAT 2707) and S19_147 (CAT 2709-10). One of the postholes S19_121 truncated the southern edge of gully S19_122 (see 2.5.3.2).

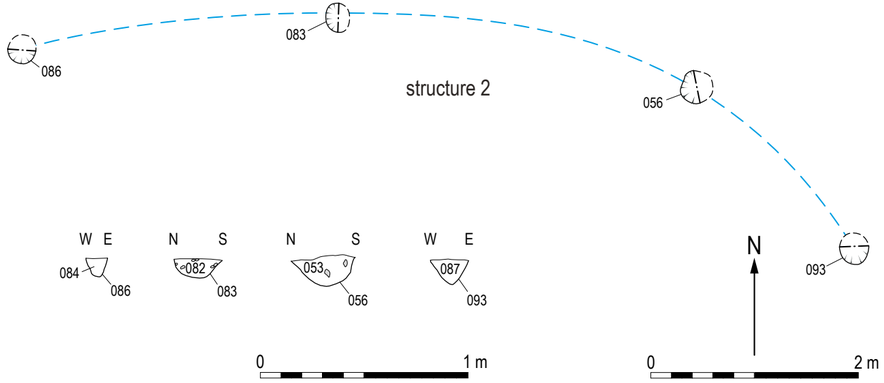


Illustration 2.47: Plan and sections of Structure 2 in West Challoch

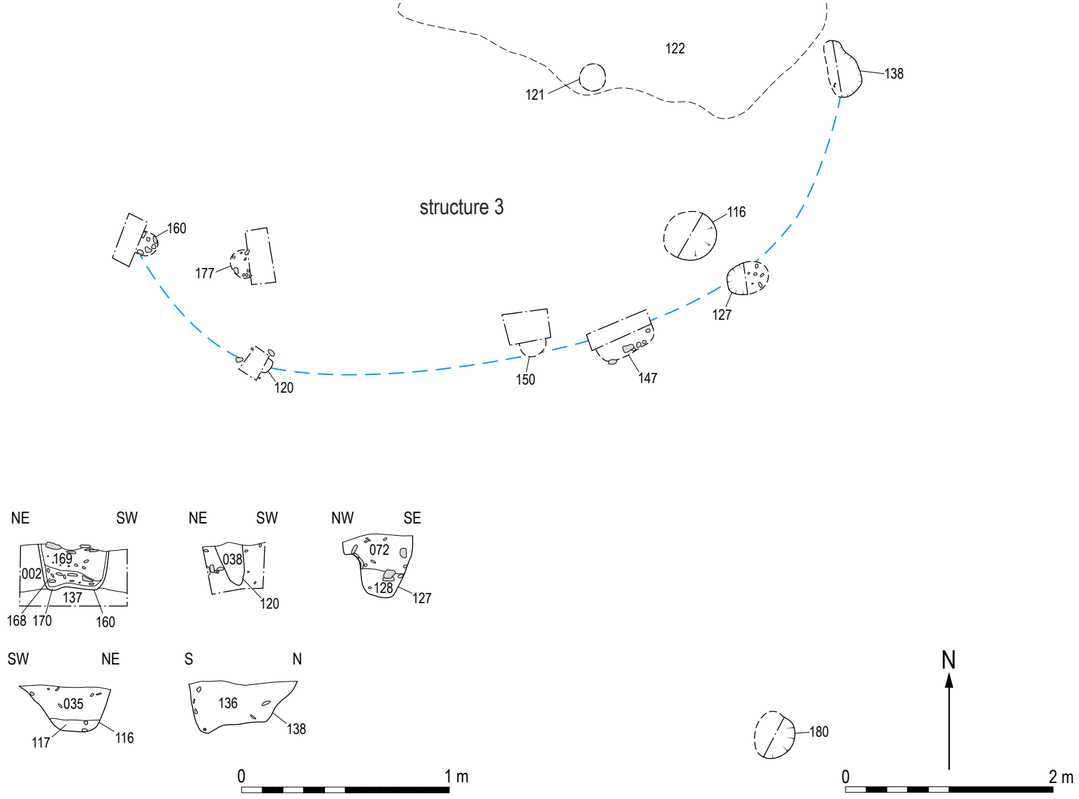


Illustration 2.48: Plan and sections of Structure 3 in West Challoch

The remaining three possible postholes (All S19: 116, 127, and 160) each had two silty fills. Worthy of note was the basal fill of posthole S19_116 – charcoal-rich dark grey sand S19_117 with fragments of burnt bone (SFS19_56) throughout. This was sealed by a grey silt deposit S19_035, with fragments of flint recovered from both fills (CAT 2700 and CAT 2699 respectively). No evidence for packing stones or post-pipes was found within any of these features. However, their form and arrangement suggest they represent postholes rather than small pits.

A concentration of four large amorphous spreads (All S19: 027, 030, 040 and 123) were located surrounding these postholes. They measured 1.6 m to 2 m wide, 1.7 m to 6.5 m long and had an average thickness of 0.13 m. Three of the spreads (All S19: 027, 030, and 040) were of a similar yellowish grey or brownish grey silty sand with occasional charcoal fragments throughout, and fragments of flint were recovered from spreads S19_027 (CAT 2697) and S19_030 (CAT 2694 and CAT 2698). The fourth spread S19_123 consisted of grey sandy silt, with layers of white and dark brown silty clay at the surface. Fragments of flint (CAT 2701-3) were recovered from each of these layers. Together, these spreads may represent part of an occupation layer/floor surface, although it is possible that some of them represent the continuation of the surrounding gullies (see 2.5.3.2), which have been heavily truncated.

2.5.3.2 Enclosing gullies

A series of shallow gullies was located across the site, enclosing the main concentrations of archaeological features. Although some features were cut by and cut into these gullies, the main structures were contained within the areas defined by them. At the western end of the site five gullies (069, 111, 116, S19_198 and S19_220) were uncovered, which may form part of the boundary of a single enclosure (Illus 2.49). Gullies S19_198 and S19_220 were aligned northeast/southwest and NNE/SSW respectively, with gully S19_220 appearing to terminate at the point where they meet, and gully S19_198 continuing outwith the site to the southwest. The gullies were of a similar size, measuring between 1.39 m and 1.64 m in width, with an average depth of 0.22 m, and were filled with a similar light grey silt S19_185 and S19_215. One lithic piercing tool, a *zinken* (Illus 1.8) (of Hamburgian date c. 14,000 years BP) was recovered from fill S19_185 (Ballin, Appendix 12). A total of 10 lithic fragments (CAT 2850-5, CAT 2968-70, CAT 2971, and CAT 2985-8) were recovered from the fill of gully S19_198, with a further eight (CAT 2972-9) from the fill of gully S19_220 (Illus 2.50).

Gully 069 was located to the east of gully S19_198 and may be a continuation of it. It was orientated east/west and measured approximately 7.5 m in length, truncating

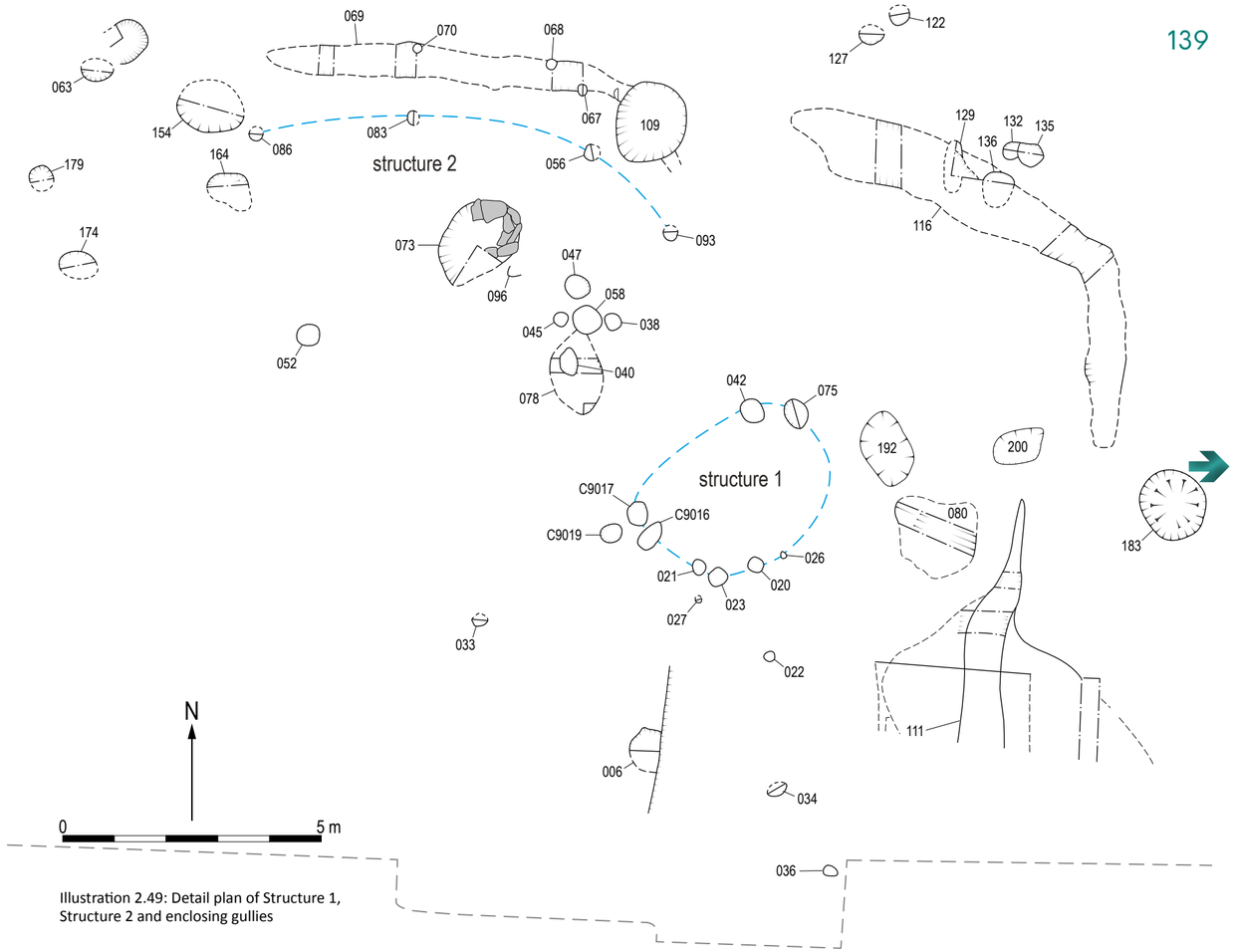


Illustration 2.49: Detail plan of Structure 1, Structure 2 and enclosing gullies

pit 109 to the east. It measured between 0.5 m and 0.65 m in width, with a maximum depth of 0.15 m, and was filled with a yellowish-brown silty clay 054. Three circular postholes or stakeholes 067, 068, and 070 truncated the gully. They measured on average 0.16 m in diameter with depths of between 40 mm and 90 mm and were all filled with a similar light grey sandy silt deposit.

To the east of gully 069, a fourth gully 116 extended approximately 6.5 m east/west before turning 90 degrees to extend north/south. It had an approximate total length of 11.5 m, with a width of 0.8 m to 1.2 m, and a depth of 0.16 m to 0.28 m. The gully was filled with a yellowish-brown silty clay 113. Given its orientation and location, this gully may represent a continuation of gully 069. Two pits

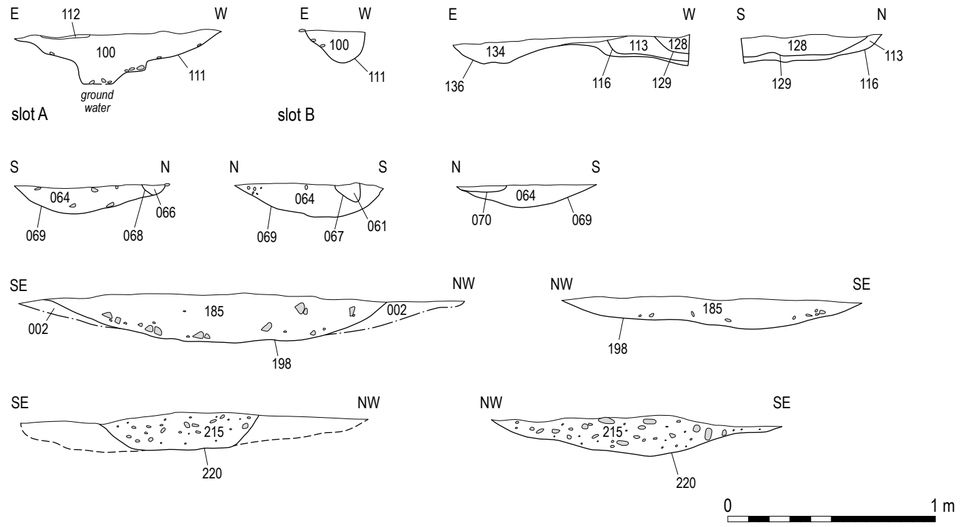


Illustration 2.50: Section of enclosing gullies in West Challoch

(129 and 136) were visible truncating the northern side of this gully. Sub-oval pit 129 measured 1.05 m by 0.3 m, with a maximum depth of 0.11 m and was filled with a charcoal-rich dark grey silt 128, with one piece of worked flint (CAT 384) recovered. Directly east lay sub-circular pit 136 which measured 0.84 m by 0.63 m, and 0.11 m deep, and was filled with a dark greyish-brown silt 134 with charcoal inclusions throughout. Three fragments of flint (CAT 439-41) were recovered from this fill.

A fifth gully 111, orientated north/south, was located to the south of gully 116, extending for approximately 4.7 m before continuing into the baulk (Illus 2.51). It measured 0.25 m to 0.6 m wide, 0.25 m deep, and had two fills. The 0.1 m thick basal fill consisted of a brown silty sand 133, which was overlain by a 0.12 m thick light yellowish-brown silt 100. A single fragment of flint (CAT 373) was recovered from the upper fill. This gully may represent a continuation of gully 116, with the difference in fills due to it being located further downslope where water ingress was more prevalent.

Collectively these gullies enclosed two of the possible structures uncovered on site, and the main lithic scatter and the majority of the hearths (see below). It seems plausible that the gullies are contemporary with the structures, with one function being to maintain a dryer occupation area.

Illustration 2.51: Detail of enclosing gully 111

Gully 106 was located mirroring gully 116 to the northeast, suggesting they were also contemporary. It was orientated north/south, extending for approximately 4 m, before turning 90 degrees to extend east/west for a further 4 m. The gully had a width of 0.6 m, measured 0.23 m deep, and was filled with a light brownish-yellow sandy silt 098 with frequent stone inclusions. A single pit 117 truncated this gully towards the edge of the site. It was sub-circular in form, measuring 0.46 m in diameter and with a depth of 0.11 m. It was filled with charcoal-rich dark greyish-black silt 114, which contained two fragments of flint (CAT 380-1).

At the southern edge of the site, a possible gully 154, truncated by modern field drains, was partially uncovered; its full extent remains unknown as it extended south outwith the excavation area. Within the excavation area it measured 0.75 m wide and dep 0.16 m deep and was filled with a grey silty clay 099. It was orientated east/west but at its western end, turned 90 degrees and extended south. A perforated greywacke adze SF 115 of late Neolithic date (Ballin Smith, Appendix 14) was recovered from this deposit (Illus 2.52), a later intrusion. A small sub-circular posthole or stakehole 147 was cut into the southern side of the gully. It had a diameter of 0.15 m with a depth of 0.09 m and was filled with a charcoal-rich dark greyish-black silt 146. Directly to the east, gully S19_181, also aligned east/west, was uncovered during the later construction phase of stripping, and is likely to be a continuation of gully 154. It measured

Illustration 2.52: Shot of Stone adze SF 115

approximately 4.2 m by 2 m, with a maximum depth of 0.17 m, and was filled with a light grey silty clay S19_041. A total of 337 pieces of flint (CAT 2653-65, CAT 2667-71, CAT 2779-806, and CAT 3740-4030) (Ballin, Appendix 12) were recovered from the fill during the excavation. A large spread S19_195 was located directly to the west of gully 154 and may represent either a continuation of this gully or overspill from gully 111, located to the west.

Two spreads S19_161 and S19_212 were located directly to the north and south of gully S19_181. The northern spread of light grey silty clay S19_161 was roughly linear in form, measuring approximately 3.14 m by 1.18 m in plan, and 0.13 m thick. It is possible that this represents the heavily truncated remains of another gully, associated with adjacent gully S19_181. Only part of the southern spread S19_212 of light brown silt was uncovered, with it continuing into the baulk at the southern end of the site. Within the excavation area it measured approximately 2.45 m by 1.3 m and 0.08 m thick. A total of 81 fragments of flint (CAT 2856-931) were recovered from this spread. Given the high concentration of flint fragments within this spread, it may represent the remains of a knapping floor or occupation layer (Ballin, Appendix 12) and given the similarly high concentration of flint fragments within gully S19_181 to the north, it is possible that these features are contemporary.

Towards the eastern end of the site, a possible segmented or heavily truncated gully S19_090 was revealed extending north from the southern edge of the site before turning to extend west. It measured between 0.6 m and 1.2 m wide with a maximum depth of 0.2 m (Illus 2.53). The gully had an undulating base and was filled with a light grey sandy silt S19_069. A small group of five shallow spreads (All S19:065, 066, 067, 068 and 070) were enclosed by this gully and may represent the remains of an occupation layer. The spreads measured 0.6 m to 0.95 m wide, 0.69 m to 1.1 m long, with an average thickness of 0.09 m, and consisted of similar deposits of light grey silt.

Illustration 2.53: Detail through enclosing gully S19_090

Directly to the west of gully S19_090, a series of three heavily truncated or segmented ditches/gullies (All S19:119, 122, and 149) were uncovered measuring on average 3.9 m in length, with widths of 0.6 m to 1.68 m. All three were filled with similar deposits of greyish-brown or greyish-yellow silt. A single piece of flint (CAT 2704) was recovered from gully S19_122.

Illustration 2.54: Detail of east end of site 19 under excavation

2.5.3.3 Hearths

A large sub-circular fire pit or hearth 058 (Illus 2.55) was located between the two possible structures towards the western end of the site (Illus 2.42). It was partly truncated by a large pit 078 on its southern side (see below), and measured 0.5 m in diameter with a maximum depth of 0.18 m. The basal fill 057 of the hearth consisted of a charcoal-rich brownish-black silt and contained burnt and heat-affected stones. This was sealed by a 0.06 m thick charcoal-rich blackish brown silt 049, which also contained burnt and heat-affected stones, although these were less concentrated than within the basal fill. Hazel charcoal from the basal fill and hazel nutshell from the upper fill produced dates of 7050–6650 cal BC (SUERC-44559: 7946 ± 33 BP) and 7040–6640 cal BC (SUERC-44558: 7918 ± 34 BP) respectively, dating the hearth to the later Mesolithic period.

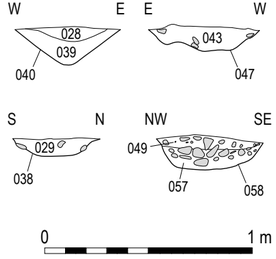


Illustration 2.55: Sections through postholes and hearth 058

A ring of four sub-circular postholes (038, 040, 045 and 047) were uncovered surrounding the hearth (Illus 2.55). The postholes measured 0.35 m to 0.45 m in diameter with depths of between 0.2 m and 0.32 m. Postholes 038 and 047 were filled similar pale grey silt, while a brown silty sand filled posthole 045, which had been truncated by animal burrowing. Posthole 040 was cut into the fill of pit 078 (see below) and was filled with a charcoal-rich blackish-brown silt containing fragments of oak charcoal and hazel nutshell (Alldritt, Appendix 3) and 33 pieces of flint (CAT 126-59 and CAT 447-52) (Ballin, Appendix 12).

Sub-circular hearth S19_183 was located to the east of gully 116, lying on the edge of a natural dip, and measuring 1.2 m in diameter with a depth of 0.45 m (Illus 2.56). The basal fill consisted of a charcoal-rich brownish-black sandy silt S19_047, containing two pieces of worked lithic (CAT 2840-1) (Ballin, Appendix 12) and fragments of burnt bone. This was overlain by grey silty sand S19_186, 0.12 m thick, representing the natural silting of the hearth after it had gone out of use.

Illustration 2.56: Pit 183 during excavation

At the western edge of the site, sub-circular hearth S19_217 cuts into the fills of gullies S19_198 and S19_220 at the point where they intersected, obscuring their relationship (Illus 2.57). The hearth was sub-circular in form, measuring 0.82 m in diameter and 0.25 m deep. It was filled with a greyish-brown silty sand S19_216, with a concentration of

Illustration 2.57: Detail of hearth S19_217 from southwest

heat-affected stones and oak charcoal (Alldritt, Appendix 3) towards the base and sides.

2.5.3.4 Large pits

Three large pits 073, 078, and 109 were uncovered in close proximity to hearth 058 (Illus 2.58). Pit 109 was located to the north, and appeared to be partly truncated by gully 069 (see above) to the east. It was sub-circular in form, with a diameter of 1.7 m and a depth of 0.55 m (Illus 2.59). The pit had three fills; the oak charcoal-rich dark black silt basal fill 110 measured 0.4 m thick with angular stones located throughout and fragments of hazel nutshells (Alldritt, Appendix 3). Large fragments of charred oak which appeared to line the base of the pit were visible within this fill. The upper fills 103 and 137 consisted of similar highly compacted pale-yellow clay, set into and around a concentration of angular stones. A total of 25 fragments of flint (CAT 368-72, CAT 385-93, and CAT 442-6) (Ballin, Appendix 12) were recovered from fill 103. Hazel charcoal from this fill 103 returned a late Mesolithic date of 6230–5990 cal BC (UBA-42820: 7239 ± 55 BP).

Pit 073 (Illus 2.60) was located to the southwest of hearth 058. This pit was sub-circular in form, measuring 1.9 m in diameter and 0.5 m deep. It contained four fills, with the basal fill consisting of a 0.4 m thick charcoal and organic rich dark black silt 072 with hazel charcoal from this deposit producing a date of 7020–6640 cal BC (SUERC-44560: 7886 ± 31 BP) placing it within the late Mesolithic period. Thirteen fragments of flint (CAT 226-31, CAT 245-6, CAT 249-50, and CAT 305-6) and three fragments of worked pitchstone (CAT 248, and CAT 19308 (two pieces refitting)) were recovered from the base of this fill (Ballin, Appendix 12). The second fill was a 0.15 m thick brown silt 071, which in turn was overlain by 0.15 m thick brownish grey sandy silt 062. A further 10 fragments of flint (CAT 232-41) were recovered from the upper fill 062. Several large flat stones were visible lining the northeastern side and base of this pit.

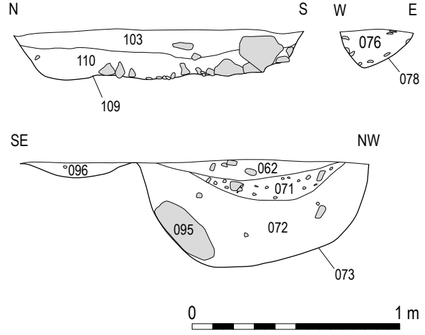


Illustration 2.58: Sections through large pits 073, 078 and 109

The third pit 078 was located to the southwest of pit 073 and was partially truncated by hearth 058, with posthole 040 cut into its upper fill. The pit was sub-oval in shape, measuring 2 m by 1.7 m, and 0.55 m deep, and had stone lining and three fills (Illus 2.61). Stone lining 160 consisted of angular rubble stones placed across the base of the pit. Overlying this was 0.14 m thick yellowish-brown silt 076, which was overlain by 0.2 m thick reddish-brown silty gravel 157, with sub-angular stone inclusions. The upper fill consisted of greyish-brown silt 159, measuring 0.15 m thick, into which posthole 040 was cut.

Illustration 2.59: Pit 109 during excavation

Illustration 2.60: Pit 073 with stone lining in situ

Illustration 2.61: Pit 078 during excavation

Two large pits S19_092, and S19_094 were located at the eastern edge of the site. They measured 1.5 m by 0.54 m and 3 m by 1.5 m in plan, with depths of 0.18 m and 0.41 m respectively. Both were filled with similar deposits of greyish-brown silt and gravel (S19_057 and S19_052 respectively).

2.5.3.5 Pits, postholes, and spreads

Throughout the site a series of pits, postholes, and spreads was uncovered (Illus 2.42), with the majority appearing relatively sterile in nature. Beyond general concentrations, no pattern was apparent. Six pits (All S19: 007, 010, 088, 100, 102 and 104), and spread S19_060 were located at the eastern edge of the site, east of gully S19_090. The pits were all sub-circular in form, measuring 0.4 m to 0.57 m wide, 0.58 m to 1 m long, and 0.05 m to 0.24 m deep. They were all filled with similar deposits consisting of a greyish-brown silt. The spread S19_060 measured 1.4 m by 1.15 m, and 0.12 m thick, and consisted of a similar greyish-brown silt.

A small group of five possible postholes was uncovered in close proximity to spread S19_212 and gully S19_181, towards the centre of the site. The postholes were all sub-circular in form, measuring 0.25 m to 0.45 m in diameter, with depths of 0.11 m to 0.4 m. Three of the postholes (All S19: 171, 194, and 207) were filled with similar greyish-brown silt deposits, with 18 fragments of flint (CAT 2645-2 and CAT 2737-46) (Ballin, Appendix 12) recovered from posthole S19_207. A concentration of stones, possibly representing packing stones, were uncovered within posthole S19_171 (Illus 2.62). Posthole S19_199 was filled with a dark brown silt S19_148, while posthole S19_211 was filled with a charcoal-rich dark brown silt S19_209. A fragment of flint was recovered from each of these (CAT 2666 and CAT 2846). No pattern to the postholes was apparent, and with the exception of posthole S19_171, no evidence of post-pipes or packing stones were uncovered, and therefore it is possible that they represent the truncated remains of small pits rather than postholes.

Illustration 2.62: Section through posthole 171

To the north of these possible features a small group of 10 sub-circular or sub-oval pits and a spread were uncovered within the northern half of the site. The pits measured 0.19 m to 0.54 m wide, 0.6 m to 0.9 m long, and 0.07 m to 0.3 m deep. Four of the pits (All S19E: 014, 015, 043, and 046) were filled with similar grey/greyish-brown silty sand deposits, with four (All S19E: 022, 027, 028, and 036) filled with a similar dark brown/black clayey silt, and a further two (S19E_006 and S19E_026) filled with a similar greyish-white clay deposit. Fragments of flint were recovered from pits S19E_006, S19E_027, and S19E_036 (CAT 2314, CAT 2313, and CAT 2315-6 respectively) (Ballin, Appendix 12). Spread S19E_007 was located at the northwestern edge of this group of pits and consisted of a 008 m thick greyish-black silty clay covering an area of approximately 0.48 m by 0.42 m. A further six possible pits (All S19E: 046, 051, 052, 054, 056, and 059) were uncovered to the east along the northern edge of the site.

Towards the western side of the site a concentration of features was uncovered surrounding Structure S1 and hearth 058 (Illus 2.49), with the majority also within the area enclosed by the gullies. To the south two pits (033 and 034), possible posthole 036, and spread 006 were uncovered. Pits 033 and 034 were sub-circular in form, with pit 034 measuring 0.35 m in diameter and 0.16 m deep, with a coarse dark brown gravelly silt fill 014. Pit 033 had a diameter of 0.22 m and a depth of 0.18 m. This pit was filled by a grey silty sandy gravel 019. A possible posthole 036 was located to the southeast of pit 034. This posthole was sub-circular in form, measuring 0.17 m in diameter and 0.17 m deep. It was filled by charcoal-rich dark brown gravelly silt 014. Spread 006 was located between pits 033 and 034 and consisted of 0.11 m thick grey silty clay, covering an area of approximately 0.89 m by 0.59 m.

To the east of the Structure S1, two spreads S19_080 and S19_192, and a pit S19_200, were excavated. The spreads consisted of a similar grey silt deposit measuring 0.1 m to 0.14 m thick and covered areas of approximately 1.2 m by 1 m and 1.5 m by 0.7 m respectively. Ten lithic fragments (CAT 2760-9) were recovered from spread S19_192. Sub-circular pit S19_200 was located to the east of these spreads and measured approximately 0.75 m in diameter, with a depth of 0.35 m. It contained four fills, with the basal fill S19_203 consisting of grey silt with charcoal flecks, then overlaid by a greyish-brown silt S19_202 containing eight lithic fragments (CAT 2832-9). Above this was a thin charcoal-rich dark greyish-black silt S19_201, with the upper fill consisting of light greyish-brown silt S19_082 containing two fragments of flint (CAT 2688-9).

To the northwest of Structure S1 and hearth, a group of eight pits, two spreads, and a posthole was uncovered. The pits measured 0.28 m to 0.92 m wide, 0.38 m to 0.98 m long, and 0.18 m to 0.28 m deep. Four of the pits (063, S19_172, S19_179 and S19_197) were filled with similar grey/ greyish-

brown silty sand deposits. A single flint flake was recovered from each of the pits S19_172 (CAT 2712), and S19_197 (CAT 2771) (Ballin, Appendix 12). The remaining four pits (All S19:141, 154, 164, and 174) all contained multiple fills. Two fragments of flint (CAT 2568-72 and CAT 2708) were recovered from pit S19_141, and one fragment of flint (CAT 2573) was recovered from pit S19_164. The function of these pits is uncertain, and it is possible that some of them represent the truncated remains of postholes. However, no evidence of packing stones or post-pipes were uncovered within any of these features, and no structural pattern was apparent.

Posthole 052 was uncovered on the southeastern edge of this group of features, to the west of hearth 058. It was sub-circular in form, with a diameter of 0.45 m and a depth of 0.22 m. It had two fills, the basal fill consisting of a 0.08 m thick dark brown silt 050 with some charcoal inclusions. Overlying this was a 0.14 m thick light grey silty clay 046, containing a high concentration of hazel nutshells. A single fragment of flint (CAT 203) was recovered from the basal fill, with a further 15 fragments (CAT 168-80 and CAT 200-2) (Ballin, Appendix 12) recovered from the upper fill. A late Mesolithic date of 6701-6564 cal BC (UBA-42819: 7813 ± 38 BP) was obtained from a hazel nutshell from upper fill 046.

The spreads (All S19:014, 016, and 227) measured 1 m to 1.3 m wide, 1.7 m to 2.8 m long, and on average 0.14 m thick. They consisted of similar greyish-brown silt deposits with occasional charcoal flecks. A small number of lithic fragments were recovered from spreads S19_016 and S19_227 (CAT 2981-4 and CAT 2989 respectively) (Ballin, Appendix 12).

Pit 135 was uncovered between gullies 106 and 116, truncating posthole 132. The pit was sub-circular in form, measuring 0.4 m in diameter and 0.2 m deep. It was filled with charcoal-rich dark greyish-black silt 130 from which a lithic fragment (CAT 437) was recovered. Postholes 122, 127 and 132 measured 0.3 m to 0.45 m in diameter with depths of 0.13 m to 015 m, all were filled with grey or light brown silt, with slight traces of charcoal in postholes 122 and 127.

To the south of gully 106, a single, isolated posthole 108 was uncovered. It was sub-circular in form, measuring 0.3 m in diameter and 0.09 m deep; the fill consisted of light grey silty clay 104.

2.5.3.6 Grid–lithic retrieval *(Illus 2.63)*

During stripping, a large surface concentration of lithic material was observed on the western periphery of the excavation area, continuing beyond the site to the south. After discussions with lithic specialist Torben Ballin, and in consultation with HS and the client, a decision was taken to map the distribution of the lithic material within this area three dimensionally. Recovering the lithics in this manner provided opportunities for accurate distribution maps and

Illustration 2.63: Lithic retrieval grid – west end of site

for more detailed interpretation (Ballin, Appendix 12). The grid was divided into 0.5 m by 0.5 m squares across an overall area measuring 13 m by 10 m. Within each square, a series of 30 mm spits was excavated with lithic material sieved and recovered from 50% of each spit with the remaining 50% retained as samples for further lab sieving and analysis during post-excavation. A total of 16,783 lithic fragments was recovered during the excavation, on-site sieving and lab sieving from across Site 19. General patterns in the distribution were visible during recovery, with broad concentrations to the centre and south of the grid area. An elongated cobble pounder SF 473 (Ballin Smith, Appendix 14) was also recovered from the southern edge of the grid area.

Within this gridded area a further three hearths (see above), two pits, and a continuation of ditch S19_198 were uncovered. These features were excavated in spits as part of the lithic retrieval process and therefore their relationship with the lithic scatters is uncertain.

A series of three possible hearths (All S19:232, 239 and 248) lay in a rough northeast/ southwest line, with the largest S19_239 located at the southwestern end, and hearths S19_248 and S19_232 located approximately 4 m and 5.5 m to the northeast respectively. Sub-oval hearth S19_239 measured 1.35 m by 0.97 m in plan, and 0.34 m deep. The fills from bottom to top consisted of charcoal-rich dark greyish-black silt S19_238 with frequent burnt stone inclusions, greyish-brown clayey silt S19_225 with charcoal flecking, and dark greyish-black silt S19_224 with occasional charcoal inclusions. A hazel nutshell from S19_224 revealed an early Mesolithic date of 7810–7590 cal BC (UBA-42821: 8694 ± 36 BP). The two remaining hearths (S19_232 and S19_248) were more amorphous in shape, measuring 1.8 m by 0.6 m and 1 m by 0.35 m respectively, with an average depth of 0.07 m. Both were filled with similar charcoal-rich dark grey/greyish-brown silt with heat-affected stone throughout. Fifteen lithic fragments (CAT 3352-66) were recovered from hearth S19_248, with a single fragment (CAT 3234) also recovered from hearth S19_232. Two radiocarbons dates from hazel nutshell samples from hearth S19_248 produced comparable early Mesolithic dates between 7750–7580 cal BC and 7600–7530 cal BC (UBA-42822: 8655 ± 36 BP and UBA-42823: 8554 ± 37 BP respectively).

Two sub-oval pits (S19_237 and S19_244) were located towards the southern edge of the grid area. They measured 0.25 m to 0.4 m wide, 0.51 m to 0.6 m long with depths of 0.11 m to 0.15 m. A total of 74 lithic fragments (CAT 3261-334) were recovered from Pit S19_237 and 13 lithic fragments were recovered from Pit S19_244 (CAT 3336-48) (Ballin, Appendix 12).

2.5.3.7 C12

C12 was located approximately 400 m to the east of the features within the main West Challoch area. A total of four pits and one hearth were uncovered in this area. The pits (004, 006, 008, and 010) were sub-oval or sub-circular in form, measuring 0.48 m to 1.08 m wide, 0.54 m to 1.39 m long, and 0.14 m to 0.33 m deep. They were filled with similar greyish-brown sandy silt with occasional charcoal flecks. Hearth 014 was sub-circular in form, measuring 0.53 m in diameter and 0.06 m deep. It was filled with a charcoal-rich greyish-black silt 013 with a high concentration of heat-affected stone. The natural geology at the base of the hearth was also heat-affected suggesting *in situ* burning. A total of 48 lithic fragments (CAT 2141-88) were recovered from unstratified deposits across this area, including 39 pieces of debitage, four cores and five tools, the cores could date to the late Mesolithic or early Neolithic (Ballin, Appendix 12).

2.5.3.8 West Challoch Discussion

The presence of Mesolithic activity in the area was already known from the initial evaluation and advance works during which a possible circular Structure S1 and associated large pits and gully features were noted and excavated. The removal of topsoil to the east and west of this original area during the construction phase revealed more widespread evidence for Mesolithic occupation.

Structure S1 consisted of a sub-circular arc of seven postholes and stakeholes on the southwest, with the possible return on the northeast comprising of two postholes, encircling an area of c. 3 m to 3.5 m in diameter. The size of Mesolithic structures in Scotland ranges from c. 0.5 m to c. 6 m in diameter, placing Structure S1 firmly in the medium sized category (Wickham-Jones 2004). However, only a few of these Mesolithic structures are associated with substantial postholes, such as the larger structures uncovered at East Barns, East Lothian (Gooder 2007) and Echline Fields, City of Edinburgh (Robertson *et al*. 2013), making Structure S1 one of the smallest substantial structures uncovered in Scotland to date. The postholes were substantial in depth and unlike the majority of postholes uncovered in Scotland which have been dated to the Mesolithic period, displayed no sign of inclination in section. Pollard (2017, 1) explores the premise that structures such as these can be considered, 'as monumental in *quality*.' The inclination of postholes/stakeholes indicate tepee style structures were common in the Mesolithic period, such as the reconstructed structure at Howick, Northumberland (Illus 4.4a and 4.4b) (Waddington 2007), and therefore the lack of inclination here may suggest a different structural style was used, or it may be simply that only the posts themselves were inclined. A radiocarbon date of 7060–6770 cal BC (SUERC-44557) was obtained using charred hazel nutshell from one of the postholes 020 while a date of 6640–6460 cal BC (UBA-42818), also using charred

hazel nutshell, was revealed from posthole 042 within the northern arc, dating this structure to the late Mesolithic period, and more significantly making it the earliest such structure discovered in Southwest Scotland to date.

There is good reason to believe that, unlike larger round buildings such as the aforementioned Howick, Echline Fields, and East Barns, the West Challoch site may represent a more temporarily used, or seasonal structure. The substantial posts suggest that the structure could well have been reused over a number of seasons, and the effort in enclosing this and the other structures with gullies suggests some considerable effort in the preparation, water management, and construction on the site. No internal features or occupation layer were identified, which could suggest that the upright substantial posts supported a platform. A series of sampling grids was laid across the footprint, and two layers of multi-element samples taken at 0.2 m intervals, in the attempt to establish evidence of occupation and differential uses within the structure. Results of the analysis did not show any clear evidence of use or occupation but did show relatively high levels of manganese (Mn) and iron (Fe) which may relate to wetting and drying of the soil, with Mn particularly identified in soils that undergo prolonged waterlogging (Wilson, Appendices 6 and 7). This is further evidence that this occupation area was prone to water ingress.

A total of 226 pieces of flint was recovered from a single posthole 020 within this structure, with a further two postholes (021 and 045) containing over 20 pieces each. Although most of the flint pieces were undiagnostic, consisting of debitage in the form of chips and flakes, those that were diagnostic were of a late Mesolithic date (Ballin, Appendix 12). This concentration is likely to represent the waste from flint knapping in the area, and the presence of a high concentration of hazel nutshells also within posthole 020 may suggest that food processing was taking place concurrently. These concentrations within a single feature may suggest that it represents a waste pit for these activities, or that knapping continued within this area after the building went out of use. The small area size of this structure, coupled with the lack of occupation evidence and/or internal hearth, may suggest that this represents a structure used for the processing or storage of food.

Features around Structure S1 may give clues to its function. The hearth 4 m to the northwest may well have related to the structure, located outside perhaps due to restricted internal space available, or for communal use. The postholes around and nearby the hearth may represent the remains of structures associated with cooking or potential wind-breaks/shelters peripheral to the main structure. A concentration of 65 pieces of flint were recovered from one of these postholes 040. These, where possible, were dated to the late Mesolithic period, suggesting either a

second knapping floor, or part of the same one evidenced within the nearby structure (Ballin, Appendix 12). The presence of hazel nutshells and concentrations of oak, and lithic fragments within the nearby large pits 073 and 109, as well as within posthole 052, suggest that food preparation was taking place in this area alongside the knapping. A date of 7020–6640 cal BC (SUERC-44560) for the basal fill of pit 073 confirms it is broadly contemporary with the nearby structure within the late Mesolithic, as well as with the hearth, from which two further late Mesolithic dates of 7040–6640 cal BC (SUERC-44558) and 7050–6650 cal BC (SUERC-44559) were obtained in 2013. Within pit 073, further evidence of food processing/storage was present with 16 pieces of hazel nutshell recovered. From the basal fill of this pit three fragments of pitchstone were also recovered. These fragments are currently the oldest securely dated in mainland Scotland. The presence of the pitchstone clearly shows there was trade with, or travel to, Arran during the late Mesolithic. However, the nature of that interaction in relation to this site is uncertain, as such a small collection is not necessarily an indication of a direct connection.

A large collection of 16,783 lithics was recovered from Site 19, with the majority from the concentration at the western edge of the site, and analysis of these has shown that rather than representing a single large scatter, they in fact represent at least 13 separate scatters, with the area re-visited on numerous occasions, albeit possibly over a relatively short period of time (Ballin, Appendix 12, Figures 33-40). The majority of the raw flint processed on the site is likely to have come from river pebbles collected from the shoreline directly to the south. Different activities were noted within the scatters, with some showing signs of task specialisations, and possibly evidence of a single knapper producing a specific style of scalene triangle within scatter 3 (Ballin, Appendix 12). This may suggest that a number of the scatters were contemporary with each other, with them representing different stages/styles in the production of various tools. The two pits S19_237 and S19_244 uncovered within this area were located within scatters 13 and 4 respectively, with scatter 10 located within the southwestern end of gully S19_198. However, it is uncertain whether these features are contemporary or pre-/post-date the lithic scatters.

Evidence for small temporary hearths associated with the majority of scatters was present in the form of burnt lithics. Hearth S19_248 was the only hearth uncovered within this area located directly within one of the main lithic concentrations (Scatter 11), with hearths S19_232 and S19_239 located to the northeast and west of the scatters respectively. A fourth hearth was located within one of the enclosing gullies directly to the north. Hearth S19_224 revealed an early Mesolithic date of 7810–7590 cal BC (UBA-42821) and hearth S19_248 produced comparable early

Mesolithic dates between 7750–7580 cal BC (UBA-42822) and 7600–7530 cal BC (UBA-42823) which indicates the earliest visits to the site in the early Mesolithic period. The fuel for these fires was primarily oak with a small amount of hazel, indicating the use of local resources from nearby woodland (Alldritt, Appendix 3). No evidence of structures associated with any of these scatters was discovered; however, the small concentration of pits/postholes located to the north/northwest of these scatters may represent the partial remains of temporary structures.

Only a small number of hazel nutshells was recovered from any of the features within or directly adjacent to the main concentration of flint scatters. This, coupled with the large concentrations recovered to the east, would suggest that food preparation was kept separate from the lithic working areas, with the area around the possible Structure S1 primarily used for this purpose. The varying dates from possible Structure S1 and nearby hearth 058, would suggest that this area, in conjunction with the knapping area, was also re-visited a number of times, with the high concentrations of hazel nutshells within single features, possibly a result of clearing the area after use.

The two other possible structures S2 and S3 uncovered on the site were more ephemeral and sterile in nature. The small arc of four postholes S2, located to the northwest of possible Structure S1, would have created a structure with an internal space of c. 78.5 m² with S3 having c. a smaller internal space of approximately 56.7 m². It was not possible to date any of the features associated with these two possible structures. However, the size of them suggests that they do not represent Mesolithic domestic structures, as these were generally smaller, with internal spaces of between 12.5 m² and 28 m², such as those at Echline Fields (Robertson *et al*. 2013), and Staosnaig, Colonsay (Mithen 2000) with internal spaces of 20.91 m² and 15.9 m² respectively. The lack of any further postholes continuing either arc, as well as the presence of similar sized postholes to the north of the larger arc, may suggest that these represent part of smaller, more temporary structures such as windbreaks or shelters, or indeed divisions within the occupation area.

Throughout the area each concentration of archaeological features appeared to be situated on a slightly raised gravel subsoil band at, on average 8.5 m OD. Each ridge had been shaped by a network of palaeochannels. In the eighth and first half of the seventh millennium BC, when this site was utilised and inhabited, it would not have been possible to see the sea in the Whitecrook Basin from this gravel ridge: relative sea level lay then close to the present OD, south of the basin, in Luce Bay itself (Tipping, Part 1). We know nothing about the shape of the Whitecrook Basin before the sea part-filled it between c. 6200 and c. 4500 BC, but assuming little erosion was done by the succession of salt marshes accompanying sea level rise, then the basin was already a valley, the eastern side cut by small streams originating on Challoch Hill above East Challoch Farm, flowing west and exiting through what is now Whitecrook Bridge (Illus 1.3). The raised ridge of the archaeological site would have been relatively dry but there is no reason to assume the valley floor immediately around to have been marshy until c. 6000 BC (Tipping, Part 1). Within a few minutes' walk of the Mesolithic site, resources would have been land-based. Only from the late Mesolithic onwards did relative sea level increase rapidly, forming sediments outwith the Whitecrook Basin to around 10 m OD. The sea does not appear to have deposited estuarine sediment at the archaeological site, however, unless it has been lost to ploughing.

Gullies or channels appeared to encircle each of the possible structures and associated deposits, as well as the general concentration of features uncovered across the site. However, several pits and postholes were visible truncating, and being truncated by, these gullies. Radiocarbon dating of pit 109 which was truncated by one of the gullies revealed a late Mesolithic date of 6230–5990 cal BC (UBA-42820) indicating that the site was used throughout this period in different occasions. Profiles excavated through the gullies appeared to suggest evidence of a deliberate attempt to redirect or drain water around and away from the location of the possible structures. These gullies or channels may have been a combination of the enhancement of natural drainage channels and the creation of new gullies to create small linked plots or enclosed areas. These measures would seem not to have been necessary to maintain a dry living and working area in the seventh and eighth millennium BC, however, and if they functioned to encourage drainage, they may pre-date the main Mesolithic structures as they were truncated by a number of postholes and pits. This enhancement of natural features or areas is not uncommon in the Mesolithic period, with natural islands consolidated with stone, such as at Derragh, Lough Kinale (Fredengren 2009) or timber at Clowanstown, County Meath (Mossop 2009), and small stone and mud mounds constructed at Moynagh Lough, County Meath (Bradley 1991) used to divert the water away.

There was evidence of the gullies continuing to the south, suggesting that there may be further structures or associated activity in this locale. One of the most striking features recovered from the gullies was a late Neolithic shaft-hole adze (Illus 2.52). It was made from greywacke, sourced from the Southern Uplands of Scotland, including Dumfriesshire, and may therefore be of local manufacture (Ballin Smith, Appendix 14). Although this did not appear to be a deliberately deposited artefact, it clearly shows activity in this area during the late Neolithic period.

2.5.4 Myrtle Cottage *(Illus 2.64)*

Warren Bailie

There were three sites excavated across the Myrtle Cottage area with two of these being investigated during the advance works, Sites 6A and 6B, and an additional site investigated during the construction phase, Site 22. The works here were undertaken to create a new road section associated with the main bypass route. Each of the sites will be described separately with phases of activity common between each site being discussed collectively. Sites 6A and 6B were discovered during the evaluation phase (C10) and were expanded due to the presence of structural remains of, at the time, unknown date. The archaeology was set on a sand sheet of deep sand deposits which may represent the remnants of an earlier shoreline than the present-day Luce Bay, which lies approximately 400 m to the south of Myrtle Cottage. The sand sheet must have stabilised for periods in its formation to permit the building of a settlement here. Though such sand deposits are inherently unstable and dynamic environments (Barber 2011, 45), the draw of slightly higher and well-drained coastal land away from the estuarine muds and loose gravels on the periphery of the former estuary may have encouraged settlement here.

The main feature of Site A was an Iron Age settlement with roundhouses adopting various construction techniques. Some structures presented a combination of a substantial wall-slot and postholes, while others had a slighter ring-groove of less than 0.2 m depth, and others where only postholes or the remains of stone elements of the structures survived. Site 6B was situated on an adjacent rise and provided fewer diagnostic features, mainly consisting of very shallow pits, linear features, and spreads. Dividing 6A and 6B was a hollow which crossed the site, probably the line of a former water course leading downslope from the higher ground to the north at East Challoch. Adjacent to 6B the remains of a much later stone platform and a keyhole-shaped kiln were uncovered, and part of an enclosure of Neolithic date, were uncovered as part of the Site 22 works which lay to the west and east of the main investigations at 6A and 6B.

2.5.4.1 Site 6A

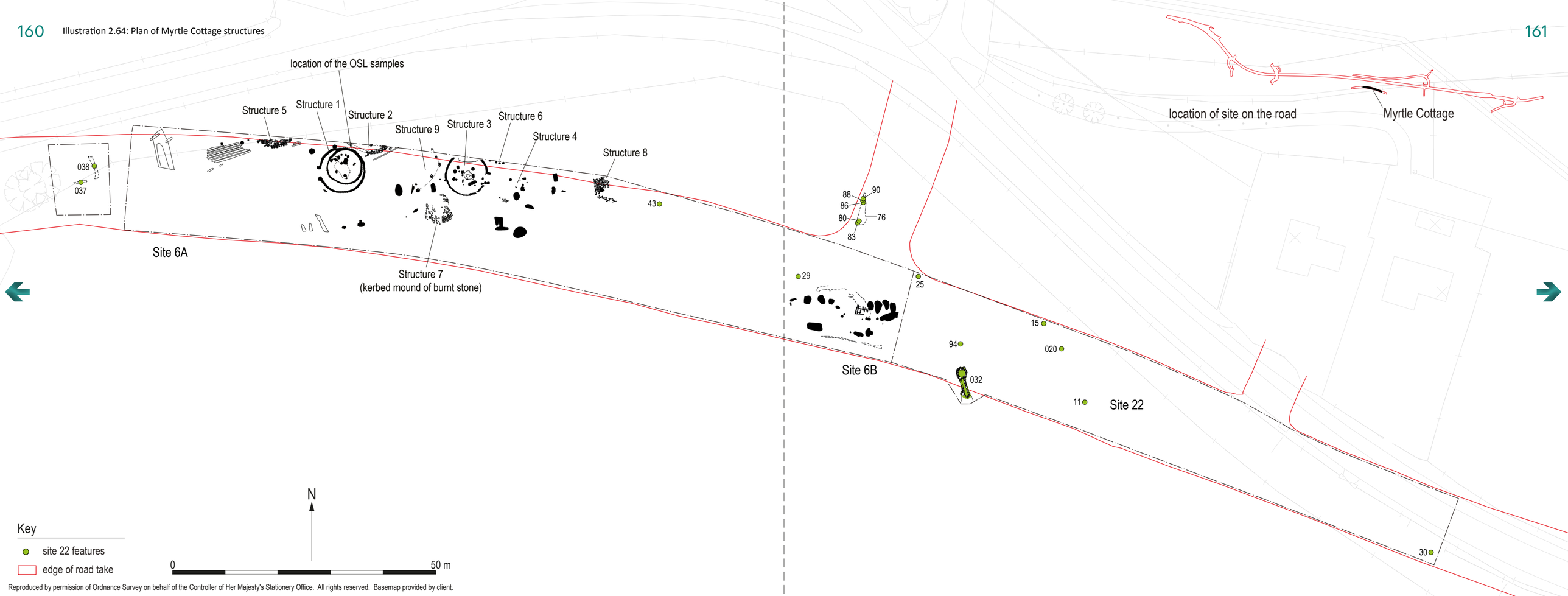
During the evaluation phase of work in this area a number of features were uncovered along the centre line trench. One of these features comprised a substantial curved line of stones leading beyond the trench edge with other less obvious structural elements observed elsewhere along the central trench. From the outset this suggested the possibility of structures of unknown date on the site and for this reason a substantial area was opened around the possible structures. This expansion revealed nine potential structures (1-9) (Illus 2.64 and 2.64a) in close proximity, all of which were subsequently investigated with the aim of determining construction methods, date and function. Seven were later confirmed as prehistoric structures with the remaining two proven to be a roughly-defined mound of burnt stone (Structure 7), although probably still related to the early settlement, and a post-medieval hard-standing for livestock (Structure 8). The results of the investigations of each structure will be described in numerical order with the addition of peripheral features possibly related to the structures. Particular attention will be given to the three best surviving structures (1, 2 and 3) with measured assumptions being made in relation to the other partially exposed and/or more degraded structures such as Structures 4, 5 and 9. Beginning with the layers and features underlying the horizons on which the structures were constructed the archaeological features will be described in stratigraphic order. Non-archaeological, voided, and insignificant archaeological features are not described here and details of all contexts can be found in the archive.

The archaeological features set into the sand layers contained limited organic material and so were difficult to see during excavation. In some cases, structural features such as postholes were composed of the outline of a former posthole defined by *in situ* packing stones and the cavity where the post once stood was filled by wind-blown sand. Had it not been for the packing stones such features would have remained invisible to the archaeologists. Any stones present on site within the wind-blown sand layers must have been imported and hence their presence highlighted potential features and structures, some more readily apparent than others. The limited organic material from the samples meant that date choices were restricted to, in some cases, less favourable contexts. However, it was important to make use of what suitable material there was available in an attempt to establish the chronology of the structures and other features across Myrtle Cottage. Due to the inorganic nature of many of the feature fills and deposits, it was decided at an early stage in the investigations that Optically Stimulated Luminescence (OSL) sampling would be explored. This technique was selected because OSL dating had been used successfully at Droughduil Mound by Julian Thomas (*et al*. 2015) in collaboration with David Sanderson (SUERC) and was used for the interface between two adjacent structures (1 and 2) at Myrtle Cottage (Illus 2.64, 2.65 and 2.67).

2.5.4.1.1 Structure 1 (Illus 2.65)

The natural aeolian system here comprised a series of wind-blown sand layers, forming a sand sheet with its origin sometime in prehistory. The sequence of naturally accumulated sand layers in the environs of, and before the construction of Structure 1 in stratigraphic order were 143, 147, 489, 136=570, 135=559, 693, 085, and 093. One copper alloy brooch, SF 22 (Illus 2.66), was recovered from layer 093

Illustration 2.64: Plan of Myrtle Cottage structures



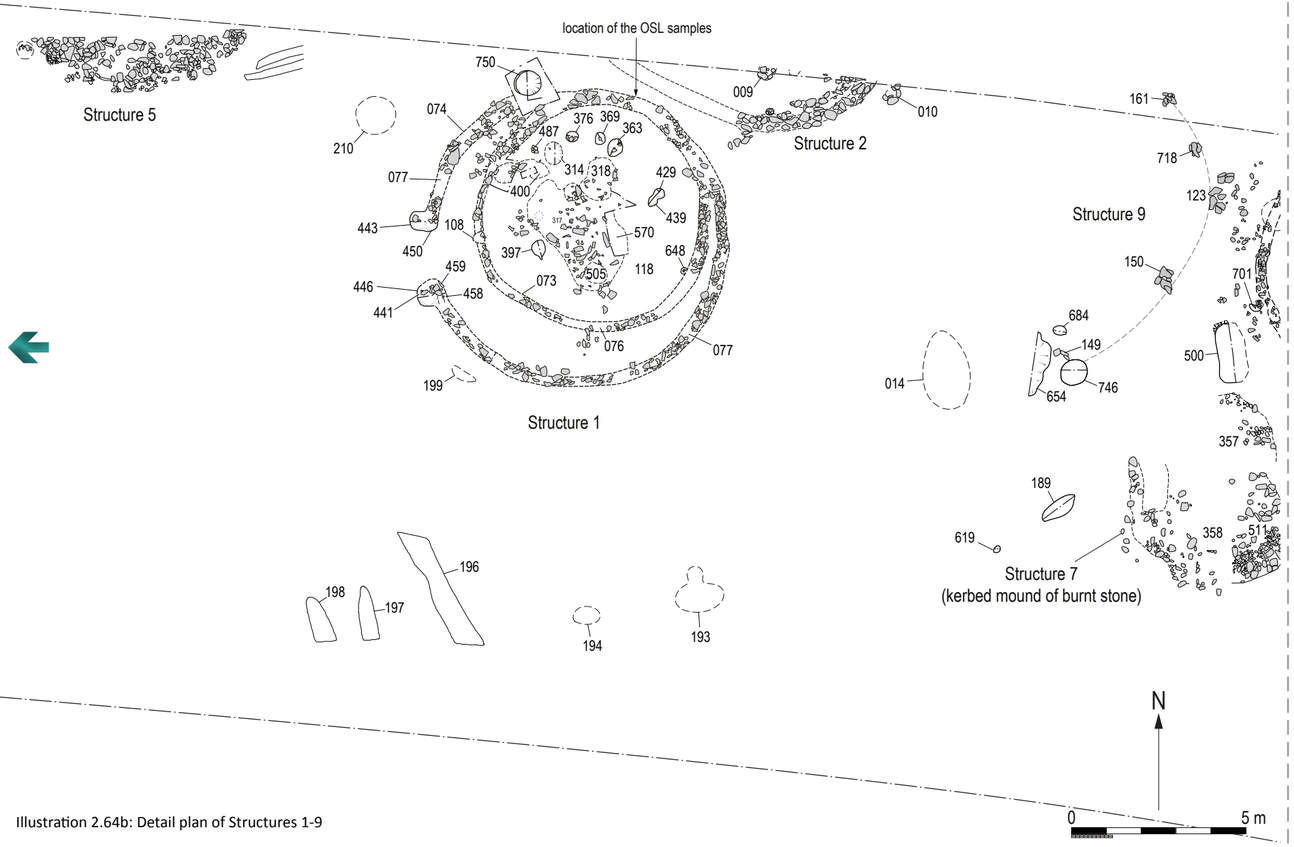


Illustration 2.64b: Detail plan of Structures 1-9

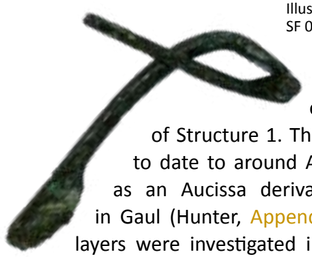


Illustration 2.66: Detail image of SF 022 brooch

just inside the southeast edge of the internal wall 073 of Structure 1. This Roman brooch is thought to date to around AD 40-60 and is interpreted as an Aucissa derivative, this style originating in Gaul (Hunter, Appendix 19). A number of these layers were investigated in detail, particularly in the context of Structure 1 and 2. Here the stratigraphy was clearly defined and a pair of opposing sections between the Structure 1 and 2 walls was overcut to provide an opportunity to better understand the deposition of the various layers (Illus 2.67). These sections also provided an ideal opportunity to sample for OSL dating. A series of 13 samples were taken using opaque cylindrical tubing of c. 15 mm diameter with the samples taken under cover to minimise any light reaching the material in the samples. The samples were then carefully wrapped in foil and sample bags and boxed separately from the other samples to ensure their long-term viability for OSL dating.

The OSL dates provided a chronology for the natural and archaeological layers in the area of Structure 1 and 2 (Cresswell *et al.*, Appendix 2), and for simplicity the dates are noted here without the error range but each date will be described in greater detail below. The lower and more stable natural sand layers 143, 147, 115 and 138 provided dates around 3100 ± 650 BC (143, SUTL 3015), 1540 ± 290 BC (147, SUTL 3009), 380 ± 200 BC and 330 ± 230 BC (115,

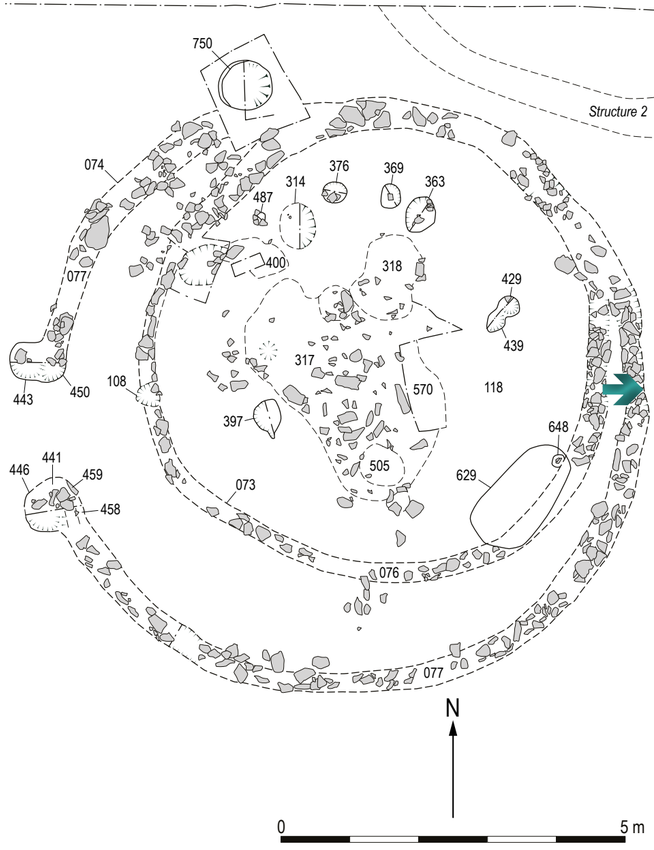


Illustration 2.65: Detail plan of Structure 1 in Site 6A

SUTL 3011 and 3008) and 200 ± 170 BC (138, SUTL 3006). Subsequent layers 135 and 136 overlying 147 provided dates of 330 ± 230 BC and 310 ± 200 AD (135, SUTL 3008 and 3012), with dates of 140 ± 240BC and 310 ± 170 AD (136, SUTL 3016 and 3010). A radiocarbon date on hazel charcoal from layer 138 was earlier in range (750–400 cal BC, UBA-41964: 2414 ± 30 BP) than that suggested by the OSL suggestion. The earlier dates for the underlying sand layers provide an indication as to how long the sand sheet may have been stable prior to settlement here in the Iron Age, but how stable the environment was at this stage is uncertain. The micromorphological analysis of layers 115 and 138 which overlay 147 showed the presence of burnt bone and charcoal indicating not only localised burning but an increase in anthropogenic activity in this locale at this stage in the profile with evidence of wetting and drying out

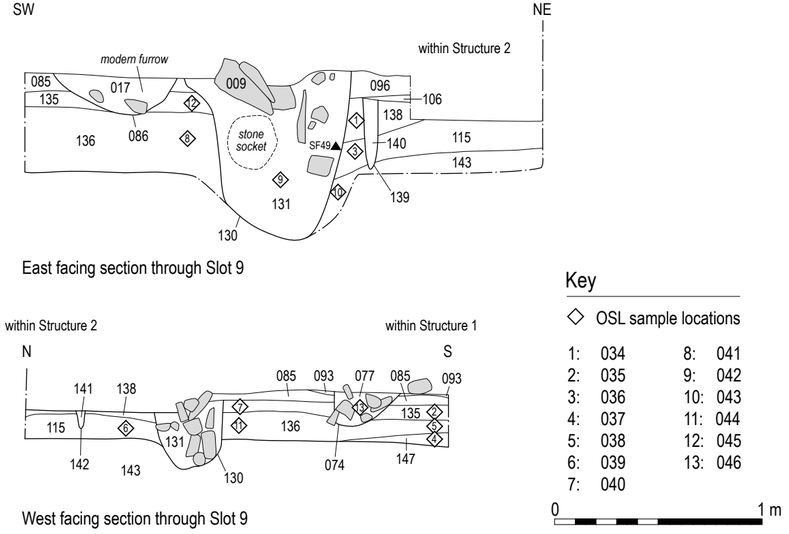


Illustration 2.67: Drawings of sections between Structure 1 and Structure 2 in Site 6A showing OSL locations

of the environment (Lang, Appendix 5). This suggests that although there is evidence for increased anthropogenic activity, the stability of the sand sheet was not yet at the stage where more sustained settlement could be established. The upper stratigraphy (Illus 2.68) tentatively suggested Structure 2 pre-dated Structure 1 based on one sand layer 093, which had accumulated over sand layer 085 prior to Structure 1 wall-slot 074 being constructed. Structure 2 was cut into layer 085. The wall for structure 2 cut through these occupation layers and the natural and is dated to AD 350 ± 240 (SUTL 3014) with approximately contemporary layers deposited outside this structure potentially from the material excavated from the wall cut. The wall for structure 1 is dated to AD 400 ± 190 (SUTL 3018) being stratigraphically later than the wall cut for structure 2.

Although most of the layers dating using OSL were sealed by subsequent layers, being therefore more secure, the sandy infill of the two wall slots of Structures 1 and 2 may have filled naturally over time long after the structures were abandoned. The OSL dates will be considered in detail alongside the radiocarbon dates by Hamilton (Appendix 1).

The slight accumulation of sand layer 093 before the construction of Structure 1 was apparent enough to record during the investigations but provides only a tentative temporal separation of the two structures, and the margins for error in the OSL dates leave some uncertainty also (Cresswell *et al.*, Appendix 2). Had there been additional suitable organic dating material from more features there would have been opportunities to explore the relationship between these structures in more detail. As it stands, we must acknowledge any potential inaccuracies and provide interpretation based on the stratigraphy, analyses, and dates available.

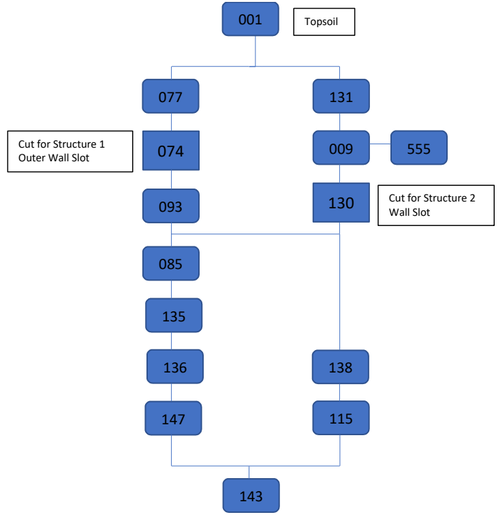


Illustration 2.68: Stratigraphic matrix for interface between Structures 1 and 2

The earliest feature in the area of Structure 1, stratigraphically, was a sub-rectangular pit 628 cut into the underlying natural layer 135=559 and was located below the inner wall-slot 073. This pit measured 1.5 m in length, 0.77 m wide, and 0.38 m deep. The basal fill consisted of mid-grey brown silty sand with charcoal flecking, the upper fill of loose mid-brown sand 626 with pockets of grey-blue clay 627 and 646 and occasional charcoal flecks. Unfortunately, no suitable material for dating was recovered from this feature. Overlying this and several other internal deposits within Structure 1 was a discontinuous loose mid to dark brown sand 118 which was similar to the wind-blown layer of sand 085 outwith the structure, and so probably had similar deposition conditions. Layer 093 (described above) was only present around the northern periphery of Structure 1. Three artefacts were recovered from sand deposit 118; an elongated dolerite pebble SF 93 which had evidence of use as a pestle at both ends, a stone pounder SF 100 and an irregular flint core SF 124 (CAT 70) (Ballin, Appendix 12). SF 100 was a small cobble of rhyolite, sub-triangular in form with the point of the piece having been shaped by grinding and possibly by pecking, and the wider end slightly faceted by its use as a pestle (Ballin Smith, Appendix 14). The internal wall-slot 073 and a posthole 648 were found to post-date the natural filling of the pit 628 confirming that this pit was stratigraphically earlier than the structure. No suitable dating material was identified from the samples processed from this pit.

Illustration 2.69: View of structure 1 from south

2.5.4.1.2 Wall-slots and postholes

Structure 1 was the first to be discovered during the evaluation phase and was fully investigated when the area was expanded to expose the archaeology within the road corridor at Site 6A. The structure consisted of two eccentric sub-circular stone-packed wall-slots (Illus 2.69), the outer wall 074 being penannular with a post-defined entrance facing west. The southern entrance post consisted of one cut 446 and the northern entrance setting of a pair of posts 443 and 450. This arrangement of an outer wall with an eccentric inner wall has been observed elsewhere, at Cults Loch, Dumfries and Galloway, for example, where it

was interpreted as a partition defining different internal spaces/functions (Cavers and Crone 2018, 179). The fill 441 of entrance posthole 446 contained some alder charcoal material which was dated to 40 cal BC–cal AD 130 (UBA-41944: 1971 ± 25 BP), the late Iron Age. The outer wall-slot 074 measured approximately 0.4 m wide and between 0.23 m and 0.27 m deep. The basal fill consisted of mid to dark brownish-grey sand 077 with frequent medium and large irregularly shaped packing stones, occasional organic pockets, and charcoal flecking, although no suitable material was available to date from this fill. The upper fill of the outer wall-slot 075 did have some hazel charcoal material that was surprisingly dated to 1200–1000 cal BC (UBA-41933: 2891 ± 25 BP). This much earlier late Bronze Age date must be down to the movement of material in the wind-blown layers of the sand sheet. A large worked possible pivot stone SF 35 with evidence of drilling on opposing sides was recovered from 077. The upper fill consisted of light orange-grey sand 075 with brown mottling and rounded stones including an elongated cobble SF 12 of possibly dolerite with one surface slightly polished and exhibiting fine surface scratches (Ballin Smith, Appendix 14).

The inner wall-slot 073 measured approximately 0.4 m wide and between 0.3 m and 0.43 m deep. The fill consisted of mid to dark brown sand 076 with very frequent medium irregular packing stones with occasional pockets of organic material and charcoal flecks. Hazel charcoal from this fill was dated to 50 cal BC–cal AD 130 (UBA-41949: 1975 ± 27 BP). One part of this wall-slot, around the eastern circumference, contained the remains of blue grey clay lining or bonding 102, possibly bedding for the packing stones; hazel charcoal from this deposit was dated to 200-40 cal BC (UBA 41934: 2099 ± 25 BP). This date is earlier than the fill 076 overlying this, in line with expectations. In both wall-slots it was observed that there were cavities defined by the upright packing stones which would have accommodated upright posts and/or planks (Illus 2.70). The external measurements for the outer wall 074 were 9 m east/west by 8.6 m north/south. The west entrance protruded by approximately 0.4 m beyond this measurement possibly creating a porch. A porch is a feature seen elsewhere in Scotland in Iron Age roundhouses for example, Dryburn Bridge House 8, East Lothian; West Plean, Stirling; and Lower Greenyards, Bannockburn, also Stirling, to name but a few (Harding 2017). The internal measurements for the outer wall were 8.3 m east/west and 8.2 m north/south, defining an area of approximately 54 m². The internal diameter for the inner wall 073, which was sub-circular in form, measured 6.3 m. There was one break of approximately 1.2 m in the circumference of the internal wall-slot to the south. Here there was a shallow hollow 534 measuring 0.58 m by 0.89 m in plan and 0.16 m deep. The break in this internal wall and the hollow, probably worn from repeated use, suggest a staggered entrance into the

Illustration 2.70: Structure 1 during excavation

internal area, entering the building from the west and then the internal area from the south. The basal fill of the hollow consisted of mid-brownish yellow sand 585 with occasional small rounded stones and flecks of charcoal. The upper fill consisted of yellowish white sand 533 with occasional charcoal flecks. No suitable dating material was recovered from this hollow.

There were also fourteen internal stone-packed postholes consisting of 11 individual (487, 376, 369, 363, 722, 733, 648, 564, 397, 740 and 749) and one double posthole (429, 439) arranged in a discontinuous arc mainly around the inner south and west area of the structure. Suitable dating material was recovered from hazel charcoal from three internal postholes 363 (fill 312), 376 (375), and 397 (398l) with dates of 540–390 cal BC (UBA-41939: 2375 ± 25 BP) for posthole 363, 400–200 cal BC (UBA-41940: 2246 ± 26 BP) for posthole 376, and one date for posthole 398 (60 cal BC–cal AD 70, UBA-41942: 2013 ± 26 BP).

In the general central area of the structure the floor was sunken and there was a sequence of organic and charcoal rich sandy deposits covering an area measuring up to 3 m wide and 4.2 m in length. The central area of the structure was approximately 0.3 m lower than the level around the perimeter. The deposits in this sequence were, in stratigraphic order, 489=143, 630, 629, 666, 318, 570, 507, (505 = 567= 568), 506, 576 and 317. A small flint microblade SF 369 (CAT 19475) (Ballin, Appendix 12) was recovered from deposit 629, one of the lower hearth layers, a pocket of burnt organic material 573 was used to date this lower layer to 50 cal BC–cal AD 120 (UBA-41955: 1991 ± 25 BP) using hazel charcoal. Another burnt deposits 572 within this same hearth layer (629) was dated to 350–40 cal BC (UBA-41956: 2125 ± 36 BP) also using hazel charcoal. Suitable hazel charcoal from a layer further up the profile 568 (equal to 505 and 567) was dated to cal AD 10–210 (UBA-41957: 1939 ± 27 BP) while hazel nutshell from 505 was dated to 50 cal BC–cal AD 120 (UBA-43334; 1990 ± 30 BP). The uppermost hearth layer 317 was dated to 100 cal BC–cal AD 70 (UBA-41954: 2032 ± 28 BP) using hazel charcoal. This sequence of deposits is likely to represent the successive use of a hearth area within the structure but may also contain material, in the upper layers, from the collapse and subsequent decay of any roofing material the structure may have had. From deposits 317, 318 and 506, mixed fuel waste consisting of oak and hazel charcoal was recovered and some heather stems suggesting peat was being burnt for domestic heating and cooking purposes. Peat and heather may also have been used as packing material for the external structure, or indeed for roofing material.

Overlying many of the internal features and the hearth were a series of wind-blown sand layers (117, 093 and 004). These layers of sand probably represent separate episodes of sand deposition here with the stone packed wall-slots

of the structure and sunken floor containing these sandy layers. A transitional layer 003 covered the archaeology and was subsequently overlain by topsoil 001. A thin cylindrical iron object SF 1 was recovered from 003; this was identified as slightly bent wrought iron rod (circular section) or thick wire (Cruickshanks, Appendix 21). One piece of burnt clay daub SF 45 was recovered from layer 117 although the fragment was too small to provide any further information beyond identification (Ballin Smith, Appendix 16). Hazel charcoal from layer possible occupation layer 117 was dated to 180 cal BC–cal AD 10 (UBA-41936: 2088 ± 27 BP).

2.5.4.1.3 Structure 2 (Illus 2.64 and 2.64a)

Sand layers accumulated naturally outwith, and before the construction of, Structure 2 are the same as those accumulated in the environs of Structure 1; 143, 147, 136, 135 and 085 in that stratigraphic order. Only a small arc of the structure was present within the stripped area, this arc of the external wall-slot if extended to complete a circular structure would measure approximately 8 m to 9 m, similar to Structure 1. Within the structure there was a difference in stratigraphy above context 147 suggesting that this is the point at which the wall-slot 130 for Structure 2 cut through layers 115 and 136 internally with floor deposits 106 and 096 then accumulating, in that order, up to meet the internal walls of the structure. A quantity of daub was recovered from layers 115 and 106, possibly from wall construction or oven lining (Ballin Smith, Appendix 14). A fragmentary possible iron leather working knife SF 113 (Cruickshanks, Appendix 21) was recovered from floor deposit 106. Layer 115 did contain charcoal and burnt bone as indicated by the micromorphology report and may well be an earlier occupation layer underlying Structure 2, although not necessarily related to this structure. A similar layer 136, in terms of colour and composition, extended between Structure 1 and 2 (Illus 2.67), and beyond below Structure 1. This layer 136 was OSL dated to 330–230 BC (SUTL 3008) and likely predating the inner wall-slot of Structure 1, which was radiocarbon dated to 200–40 cal BC (UBA-41934: 2099 ± 25 BP). The internal space of the structure would have been lower than the exterior; this is similar to the 0.3 m lower central sunken floor area observed within Structure 1.

Whereas Structure 1 was fully exposed within the limits of the excavation only around a fifth of Structure 2 was exposed along the northern limits of excavation. The outer southern perimeter of this structure lay within 0.4 m of the northwest edge of Structure 1. From the outset it was apparent that the construction methods used in Structure 2 were different from Structure 1, displaying large outer postholes and a much more substantial wall-slot with very large packing stones (Illus 2.71).

Illustration 2.71: Structure 2 showing outer wall of structure 1 on the top left corner

2.5.4.1.4 Wall-slot and postholes

Wall-slot 130 of Structure 2 was cut into sand layer 085 (outside structure), 096 (inside structure) and through underlying layers 135 and 136 (outside structure), 138, 115 and 143 (inside structure) to a depth of between 0.3 m and 0.8 m, with a width varying between 0.6 m and 0.65 m at the surface, narrowing to between 0.25 m and 0.3 m at the base. The depth of wall-slot 130 was greatest where it curved closely to the northwest edge of Structure 1 suggesting at the time of excavation a possible structural link between the two. The OSL dates suggest that Structure 2 was constructed earlier although they are likely to have co-existed for a time during their use despite Structure 1 lying within 0.4 m, a gap that would likely have been occupied by their opposing roof lines as they extended towards at ground level.

The curved wall-slot of Structure 2 extended beyond the north limit of excavation, most likely completing a penannular structure of 8 m to 9 m diameter, similar to Structures 1 and 3. The fill material of the wall-slot consisted of mid-brown sand 131 and packing stones 009; the sandy fill probably accumulated naturally over time when any wall material had been removed. The packing stones consisted of sub-angular and sub-rounded stones with occasional sub-rounded quartz pebbles and the component parts measured typically up to 0.4 m in length, varying in width and breadth from approximately 0.1 m to 0.25 m. Very occasional pockets of soft fine grained blue-grey clay bonding material (SF 49 and SF 116) were found between the interior-facing packing stones, possibly used to strengthen and maintain the integrity of low internal walls. Similar material was observed lining the base of the inner wall-slot of Structure 1. Two sherds of what were thought to be prehistoric pottery SF 111 were recovered from 131 although these fragments were later confirmed to be daub (Ballin Smith, Appendix 14). Also recovered were two pieces of worked flint SF 122 (a blade) and SF 123 (a piercer) (Ballin, Appendix 12), and one fragmentary piece of corroded iron SF 112 which was a tapering rectangular-sectioned bar fragment surrounded by mineralised organic material, most likely a tool handle with remains of an organic component. No indication of a date for this iron tool handle was evident, but it is likely to be much later in date than the structure.

There was a total of seven internal postholes and four larger exterior postholes noted in Structure 2, within the area exposed during these investigations. The Internal posts were mainly in the eastern portion of the exposed structure where three postholes (562, 650 and 715) lay in close proximity (Illus 2.72). These three postholes ranged from 0.31 m to 0.55 m across, and between 0.24 m and 0.59 m in depth, and each had stone packing (555, 653 and 714 respectively). The fourth posthole 139, better

described as a stakehole given its scale of 70 mm diameter, this 0.3 m deep stakehole was located close to the inner edge of wall-slot 130, as were small postholes 663 and 142. These internal posts were cut at different levels suggesting they were later additions to the internal structure, possibly evidence of repair or consolidation. The packing material of wall-slot 130 had slumped over posthole 663, perhaps when posts were removed from the slot. The final inner posthole 685 lay along the inner edge of the wall-slot 130; this was set into the wall-slot 130 and measured 0.33 m by 0.22 m in plan and was 0.18 m deep. This posthole was filled by stone packing material 686 and dark brown sand 635 with occasional charcoal flecks.

The four outer posts 702, 724, 725 and 743 were situated around the exposed outer wall-slot 130 of the structure. The most easterly of these, 724, measured 0.75 m by 0.55 m in plan, and was up to 0.3 m deep. This posthole was filled by packing material 010 and mid brown silty-sand 709; hazel charcoal from this fill was dated to cal AD 20–220 (UBA-41965: 1913 ± 29 BP). Posthole 725 was also set into wall-slot 130 at the western extent of the exposed structure, and this circular posthole measured 0.5 m in diameter and up to 0.27 m deep, lying immediately adjacent to internal posthole 663. Posthole 725 was filled by loosely compacted dark brown sand 726, although no packing material was noted in specific association with this post it was set within the wall-slot 130 which had large packing stones 009 around its circumference. The next post 743 lay on the southern central edge of the structure and measured 0.35 m by 0.45 m on plan and 0.3 m deep, filled by large sub-rounded packing stones 744 and dark brown-orange sand 745. The most westerly outer post 702 was 0.45 m in diameter, 0.8 m deep, and filled by large sub-rounded packing stones 735 and dark orange-brown sand 703; this posthole lay just west of posthole 725 (Illus 2.72).

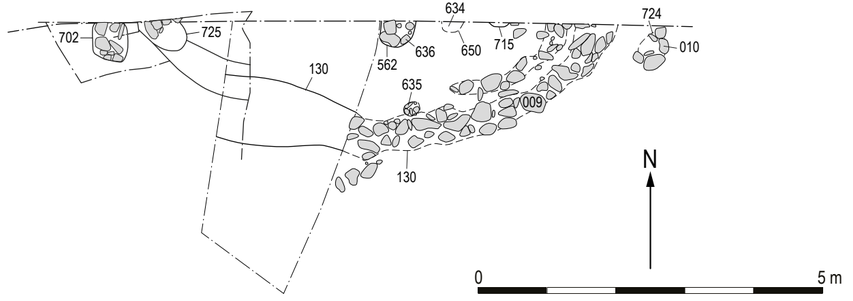


Illustration 2.72: Plan of wall-slot 130 of Structure 2

2.5.4.1.5 *Possible occupation deposits and abandonment*

The first layer to accumulate over natural sand layer 147 consisted of moderately compacted light brown-grey sand 115 with inclusions of possible organic remains and charcoal. Finds recovered from this layer include several fragments of daub, originally thought to be pottery SFs 32 (302.87g) and 36 (114.6g) (Ballin Smith, Appendix 16). This deposit sloped down towards and against the inner face of the outer wall-slot 130 suggesting that these layers accumulated against a low wall and posts. Subsequent dating of the layers has suggested otherwise and that wall-slot for Structure 2 cut in at a higher level into layer 138 (see below). It should not be discounted that wall-slot 130 could have been recut at some point in the structure's use, and the substantial wall-slot observed during excavation could have removed any evidence of any such earlier cut. Layer 115 measured between 0.15 m and 0.2 m thick and was present throughout the interior area of Structure 2, rising slightly towards what would be the centre of the Structure to the north. OSL dates from two samples from this layer provided dates of 330 ± 230 BC (SUTL 3008) and 380 ± 200 BC (SUTL 3011) (Cresswell *et al.*, Appendix 2). Postholes 715, 562 and 685 were cut into this level. Sealing 115 and the three postholes was a layer of loosely compacted light brown-grey sand 138 measuring approximately 0.12 m thick. This layer which was dated using OSL to 200 ± 170 BC (SUTL 3006) was cut by three small postholes or stakeholes 663, 139 and 142, close to the inner edge the wall-slot 130. Sealing this deposit and the stakeholes was friable dark brown-orange sand 106 which measured 40 mm thick. Cutting this layer was the last exposed of the internal posts, 650. A total of four pieces of daub (SF 31 and SF 33) were recovered from deposit 106 (Ballin Smith, Appendix 16) as were corroded remains of an iron leather working knife SF 113 (Cruickshanks, Appendix 21). The final floor deposit consisted of mid olive-brown sand 096 with occasional charcoal flecks and very occasional gravel inclusions. This layer also contained a deposit of mixed stones 151 and probably represents the last episode of occupation and therefore abandonment of the structure.

2.5.4.1.6 *Structure 3 (Illus 2.73)*

There were a series of four sand layers which were observed in the baulk section and in the edges of cut features associated with Structure 3. Deposit 643 was encountered at 0.7 m below the current ground surface at 10 m OD and consisted of light grey sterile sand. The thickness of this layer is uncertain as the excavation in this area did not go below this level to limit the deterioration of the overlying archaeology layers which were prone to collapse. Above 643 was a layer of reddish-brown sand 642 which measured 100 mm to 120 mm thick. Overlying this was a possible occupation horizon, which consisted of 120 mm thick dark grey sand 492 with occasional charcoal flecks and small

stone inclusions with a thin lens of iron pan on the upper surface. A similar discontinuous deposit 395 was observed to the west of Structure 3. The layer above this 169 consisted of fine-grained greyish-yellow sand with occasional flecks of iron pan; this layer measured between 60 mm and 90 mm thick and Structure 3 was constructed at this level. This was followed by the accumulation of a very firm, dark grey silty sand 309 with occasional charcoal flecks and a lens of iron

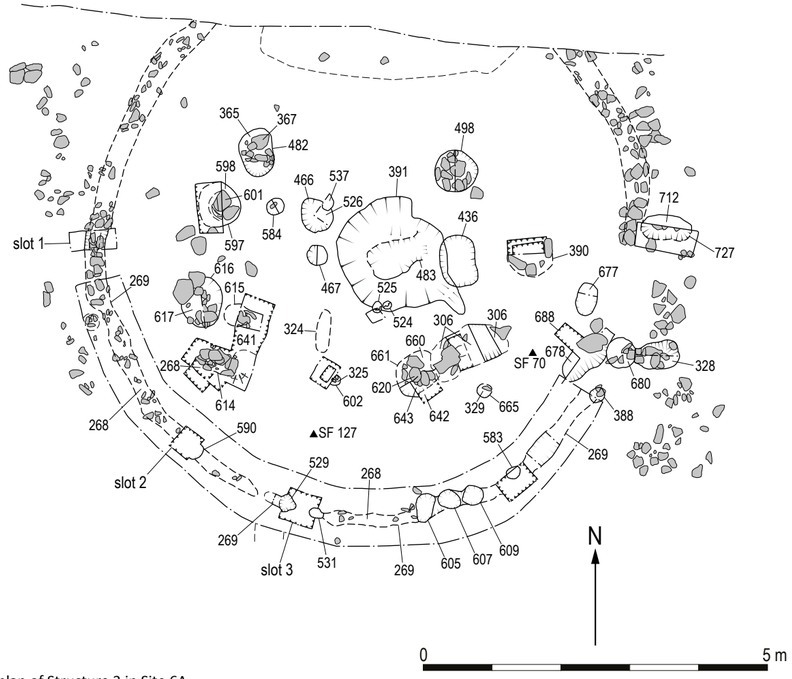


Illustration 2.73: Detail plan of Structure 3 in Site 6A

pan at the lower and upper interfaces. This layer measured 35 mm to 50 mm thick and up to 4 m east to west within Structure 3. Above this was a 70 mm to 80 mm thick layer of loose light-yellow brown extremely fine-grained, dust-like sand 365 with very occasional flecks of organic matter and charcoal. This layer was present across the entire area of Structure 3 and appeared to extend further west. Overlying this was mid-yellow brown fine-grained sand 364 with occasional iron pan flecks; this layer measured 40 mm to 60 mm thick and was also present across the Structure 3 area. A small perforated stone disc SF 127 was recovered from within Structure 3 at this upper level and has been interpreted as a possible pendant (Ballin Smith, Appendix 14). On initial discovery of this item there was a faint dark line visible across the most worn section of the object where an organic tether may have left an impression on the surface of the stone.

Structure 3 lay approximately 10 m east of Structures 1 and 2, a space that is likely to have accommodated Structure 9 (see below), and measured 8 m in external diameter and 7.7 m internally, although the northern edge of the structure lay just beyond the limit of the investigation area. Overlying the west foundation slot of Structure 3, aside from topsoil, was a layer of grey-brown sand 252 with charcoal flecking, this same layer extending westwards towards and over Structure 4. In an attempt to date when both structures may have been abandoned hazel charcoal from this layer was dated to 60 cal BC–cal AD 110 (UBA-41937: 2008 ± 28 BP). An underlying layer of dark brown-black silty-sand 395 also extended west of structure 3 and also across the wall of Structure 3 into the internal area with its eastern edge being close to the furnace within Structure 3. This layer contained small fragments of slag suggesting that it was debris associated with metal working. This layer measured 2.6 m by 2.28 m in plan and was 40 mm to 80 mm thick. Alder charcoal from this layer was dated to 180 cal BC–cal AD 10 (UBA-41941: 2082 ± 30 BP). Structure 3 consisted of a penannular ring-groove or wall-slot 269 filled by yellow-grey-brown to dark grey brown silty sand 268 with an eastern entrance flanked by large posts forming a small porch area. Although the wall-slot at first appeared continuous, in some areas of the structure, particularly the southern wall, there were in fact individual postholes set closely, in some cases less than 50 mm apart (605, 607, and 609) but in others up to 0.2 m apart (529 and 531). One of these small postholes 529 forming the outer wall of the structure and had hazel charcoal in its fill 528 which provided a date of cal AD 60–220 (UBA-41959: 1899 ± 26 BP). The outer wall was not fully excavated. Internally there were six large posts (482, 597, 616, 614, 498 and 616), five smaller posts (584, 466, 467, 602 and 665), three spreads (306, 390 and 677) near the eastern entrance, and an almost centrally placed complex furnace or oven 391 (see below) with two associated stakeholes (524 and 525) and the remains of a flue 483.

2.5.4.1.7 Large internal structural posts

Internally there were six large stone-packed postholes. Posts 482, 597, 616 and 614 formed an arc around the west interior and posts 498 and 616 flanked the entrance. All these larger postholes contained substantial packing stones and measured between 0.4 m and 0.65 m across, and between 0.2 m and 0.64 m deep. The fills consisted of sandy deposits with varying degrees of charcoal content.

2.5.4.1.8 Smaller postholes, pits, and spreads

These smaller posts may have added structural support to the main large posts which formed an arc around the west interior. Posthole 584 lay close to the two most northerly large posts 482 and 597, and posthole 615 lay in close proximity to posts 616 and 614. In both cases the sets of three posts could have conceivably taken a tripod form. One of these postholes 482 was dated using two separate hazel charcoal fragments from the fill 367, the hazel charcoal fragments providing dates of 30 cal BC–cal AD 130 (UBA-41948: 1951 ± 25 BP) and 340–1 cal BC (UBA-41953: 2100 ± 29 BP). Two of the smaller posts 466 and 467 may be associated with the central feature 391. The fifth of the smaller posts 665 lay in proximity to the large post 661 towards the eastern entrance and the remaining post 602 lay in the south-central area of the structure.

2.5.4.1.9 Central furnace/oven (Illus 2.73)

This feature was uncovered as an amorphous charcoal rich deposit and was subsequently investigated to determine its construction and function. One piece of furnace lining SF 107 and seven pieces of slag (SFs 98 and 102) were found in proximity to the feature. Two vitrified ceramic tuyère fragments were retrieved from sand layers around Structure 3 with hammerscale and slag spheres diagnostic of blacksmithing, and small fragments of undiagnostic iron slag also present (Cruickshanks, Appendix 22). The main cut 391 for the possible furnace was irregular in plan measuring approximately 2 m by 2.2 m and between 0.15 m and 0.2 m deep. Hazel charcoal from its fill 431 was dated to 350–50 cal BC (UBA-43336: 2132 ± 25 BP). This construction cut for the furnace truncated a pit 436. One of the lower fills of this pit provided suitable hazel charcoal for dating providing a date of 110 cal BC–cal AD 60 (UBA-41951: 2039 ± 27 BP). Two small posthole or stakeholes 524 and 525 lay within the south edge of the furnace cut and appeared to be cut by it; both measured approximately 0.2 m in diameter with a surviving depth of up to 0.1 m. Suitable material was recovered from feature 524 and this birch charcoal was dated to 340–40 cal BC (UBA-41961: 2102 ± 35 BP). A deeper secondary irregular cut 483 lay centrally to the main furnace cut and measured between 0.3 m and 0.4 m in width, up to 0.5 m in length and 0.12 m deep. The cut for

what remained of the flue 483 was oval in form measuring 0.58 m by 0.65 m and 0.23 m deep. The basal fill of the flue 435 consisted of loosely compacted dark orange-brown sandy-silt and birch charcoal from this layer was dated to 170 cal BC–cal AD 10 (UBA-41943: 2065 ± 26 BP). This date was very close to that of the pit 436 underlying the furnace suggesting that this pit may have been created as a result of the original furnace construction. A large heat-shattered stone 512 was set into the central area of the furnace. There were a number of heat-affected layers of clay around the large stone and a series of charcoal-rich layers towards the surface representing the repeated use of the furnace. One of the lower fills of the furnace 461, a loosely compacted dark black-brown silty-sand, contained suitable material for dating: hazel charcoal was dated to 100 cal BC–cal AD 60 (UBA-41945: 2027 ± 25 BP). Layer 252 which overlay the upper layers of Structure 3 features was also dated using hazel charcoal to 60 cal BC–cal AD 110 (UBA-41937: 2008 ± 28 BP).

2.5.4.1.10 Structure 4 (Illus 2.64a)

The remains of this structure consisted of one arc of a wall-slot 270 packed with large sub-rounded stones with one end of a burnt plank 253 surviving *in situ* within the wall-slot on its edge. The wooden plank fragments were retained for further analysis and were identified as oak (Alldritt, Appendix 3). This piece of wood suggests that construction, at least partially, involved wooden planks. The stones had been robbed out from most of the remaining circumference of the wall with only some remaining *in situ* giving the impression of a circular structure of a similar diameter to Structures 1 to 3. There were also the remains of three postholes (599, 656 and 303) which appear to be the remains of the eastern extent of the Structure 4 exterior wall. This structure lay immediately east of Structure 3 and within what would have been the interior floor area there was an accumulation of thin dark brown deposits (355, 179, 270, 639 and 640). Material recovered from these floor deposits included small slag fragments, and very fine possible hammerscale was also identified using magnets across the surface. A metal detector also gave quite high readings across the possible floor area, although some of the signals could be attributed to burning as well as metal waste.

A possible occupation layer 353 was present across this locale was cut by several features associated with Structure 4, as well as features outwith Structure 4, such as a large pit 336. Layer 353 was dated using hazel charcoal to 50 cal BC–cal AD 110 (UBA-41963: 2003 ± 26 BP). Hazel charcoal from a layer of rubble collapse 305 from Structure 4 was dated to 40 cal BC–cal AD 130 (UBA-41958; 1964 ± 27 BP). Pit 336 was rectangular in plan and had almost vertical sides. On the surface the feature was discovered due to differential drying of the deposit with a distinct rectangular halo. The

dimensions of this pit were 1.48 m by 0.66 m, by 0.3 m-0.35 m deep. An upper, localised deposit 174, consisted of very dark grey-black silt; this overlay the main upper fill 310 of mid to dark grey-brown silty-sand with inclusions of gravel and what was interpreted as iron oxide residue. One circular iron object found within this 50 mm thick upper layer during the excavation was identified through X-ray as a penannular brooch SF 66 (Illus 4.11, 4.12a and 4.12b), a type of brooch usually associated with burial contexts (Cruickshanks, Appendix 21 and Murray, Appendix 20). Deposits 310 overlay and sealed the main fill of the pit which consisted of mid to dark grey-brown silty-sand 333, with very infrequent inclusions of gravel and metal/iron oxide residue. A possible basal fill was noted in 319, although this was interpreted as natural during the excavation, being stained by the overlying layers. A disc-headed nail (SF 68) with shank slightly bent and tip missing (Cruickshanks, Appendix 21) was recovered from this deposit, although this may have made its way down through the soft sand layers. The possible iron residue noted in the main upper fill may be from any waste borne of activity within Structure 3 and 4, and/or from the corrosion of the iron object found in the upper fill 310, with some of this leaching into lower levels. No suitable material for dating was recovered from any of the fills (Illus 2.74).

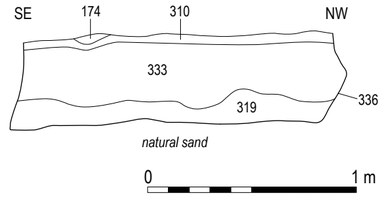


Illustration 2.74: Section through large pit 336

2.5.4.1.11 Structure 5 (Illus 2.64, 2.64a and 2.75)

This structure was located on the northern limits of the stripped area to the northwest of Structure 1. Only the edge of an arc of stones was visible in the investigation area although from this the structure was extrapolated to a similar diameter of approximately 9 m (if complete) observed in the other structures across the site. The stones were densely packed in the arc itself and became less frequent towards the internal area of the structure (Illus 2.75). In an attempt to date the abandonment of this structure, and due to the limited suitable material from other contexts, a layer of dark grey-black sandy-loam 350 with inclusions of charcoal overlying the wall 272 of Structure 5 was dated to 160 cal BC–cal AD 30 (UBA-41938: 2050 ± 28 BP) using alder charcoal. A further two samples

of spelt wheat and barley from this fill 350 provided dates of 110 cal BC–cal AD 60 (UBA-43331: 2040 ± 27 BP) and 340–10 cal BC (UBA-43332: 2090 ± 36 BP). Several possible floor accumulations were observed in section and sampled but no suitable dating material was recovered. There was one feature 278, confirmed as a posthole, on the southwest edge of the structure. There were also two deposits or bands of clay (335 and 307) which lay around the outer circumference of what would have been the outer face of the wall-slot 272 for Structure 5. A layer of small natural pebbles and sand 478 lay below the floor levels of this structure. The builders of Structure 5 appear to have opportunistically used this natural accumulation as a firm base or foundation for the structure. The same bed of pebbles was observed outwith the structure at a similar level in two locations where no archaeological activity was present confirming that it was borne of natural processes. The same pebble layer was also sterile in the sense that it did not contain any organic material or accumulations that might suggest it was manipulated or redeposited to form a surface.

2.5.4.1.12 Structure 6 (Illus 2.64 and 2.64)

This possible structure was located immediately northeast of Structure 3 and immediately north of Structure 4. Structure 6 consisted of four postholes (529, 264, 234 and 231) forming a WNW/ENE arc which may continue to the

Illustration 2.75: Structure 5 during excavation

north to form a circular structure. Radiocarbon dating of alder charcoal from posthole 234 was dated to 390–110 cal BC (UBA-43335: 2191 ± 39 BP). Some packing stones were noted in the postholes and although no wall-slot was observed for this structure, this may exist to the north beyond the edge of excavation. The dark brown occupation deposits observed in the case of Structure 4 appear to continue through to Structure 6. One saddle quern fragment SF 126 was recovered from the stone-packing material of Structure 6. The quern was of degraded diorite and both surfaces have been worn through use (Ballin Smith, Appendix 14).

2.5.4.1.13 Structure 7 (Illus 2.64 and 2.64a)

This structure was shown to be a deliberate deposition of burnt stones and charcoal within a roughly oval intermittent loose kerb arrangement of larger stones 511. No wall-slot, postholes or pits were observed within or below the main deposit of material 026. Hazel charcoal from 026 produced a date of 50 cal BC–cal AD 130 (UBA-42828: 1972 ± 29 BP). Two layers of material were recorded within the remains of this deliberate deposition of stones, a moderately compact brown-black sand 484 and moderately compacted mottled dark brown-black sand 488, both with occasional charcoal inclusions. Hazel charcoal from layer 488 provided a date of 160 cal BC–cal AD 20 (UBA-41952: 2059 ± 25 BP), but no suitable charcoal was recovered from 484, and other charcoal present in 488 included oak. This mound of material was truncated by a relatively recent, probably post-medieval, hedge-boundary 357. A number of pieces of worked flint were recovered from the mound, as well as samples of the burnt stone deposit. A large rectangular pit 500 lying 1 m north of Structure 7 measured 1.73 m by 0.84 m on plan and 0.64 m deep and was filled by mid red-brown silty-sand 502 with inclusions of charcoal. Birch charcoal from this pit was dated to 90 cal BC–cal AD 110 (UBA-41950: 2010 ± 30 BP). This pit was very similar in form and scale to pit 336 found beside Structure 4, although the organic content of the fill was stark in comparison to the relatively sterile fills of that feature.

2.5.4.1.14 Structure 8 (Illus 2.64 and 2.64a)

This structure was the remains of a possible hard-stand for livestock measuring up to 2.6 m by 3.5 m in plan and up to 0.35 m high. The structure consisted of a series of levelling layers 368 and 343 which were then overlain by a rough layer of sub-rounded stones of varying size. A deposit of clay with small stone inclusions 340 formed a spread downslope and to the south of the remains of this structure. This measured 1.6 m across and up to 0.11 m thick and may have accumulated through run-off from Structure 8.

2.5.4.1.15 Structure 9 (Illus 2.64 and 2.64a)

Although tentative, there was adequate space for an additional structure between Structures 2 and 3. In this gap there were at least five postholes with packing intact (161, 718, 123, 150 and 684) forming an arc, and one other feature 746 of similar scale and form lying within the projected arc. Pit 746 contained no stone packing but had fairly steep sides and a flat base, and more importantly suitable dating material was recovered from the sample. In the other features forming the possible structure there was a distinct lack of organic material (charcoal) as was the case for the majority of features at Myrtle Cottage. However, birch charcoal from posthole 150 was dated between 202–42 cal BC (UBA-43330: 2109 ± 35 BP). The fill 028 of pit 746 was also dated to 360–110 cal BC (UBA-41935: 2163 ± 24 BP). As the context numbering of this feature suggest, the fill was one of the earlier numbers (i.e. 028) allocated when the investigations began at Myrtle Cottage. As the investigations progressed and the team became more in tune with the nature of the archaeology on this site, this and numerous other features were investigated further. The features forming the remaining eastern half of Structure 9 measured between 0.26 m and 0.75 m across and between 0.18 m and 0.55 m deep, all but one having stone packing present. The arc of features here, if extrapolated would form a structure of a similar scale (8 m to 9 m diameter) to its neighbours. No ring-groove or wall-slot survived to delineate Structure 9, but the postholes were substantial, and in some cases more substantial than most of those observed in other structures across the site.

2.5.4.1.16 Circular cropmark (Illus 2.76)

Illustration 2.76: Circular cropmark to the west of Site 6A

A circular crop mark of approximately 10 m in diameter was observed to the west of the excavation area of 6A and just south of the road-take. This cropmark became visible to the author after a sustained period of frost in the winter of 2013 (Illus 2.76). The centre point of this crop mark is located at NGR: NX 16436 56875 and it may represent an additional structure associated with the Iron Age settlement discovered to the east. The scale of this possible structure is similar to those encountered in the excavation area (c. 8 m – 9 m in diameter); vegetation levels and colouration were richer in the central area of the possible structure suggesting differential organic concentrations within the structure, or perhaps a hearth.

2.5.4.2 Site 6B *(Illus 2.77)*

This area was opened as a result of preliminary findings from the evaluation suggesting that there may be significant sub-surface archaeological deposits relating to possible later prehistoric activity. The location of the deposits appeared upslope to the east of a concentration the Iron Age structures and features at Site 6A. The dip between the two areas saw a rise and fall in water levels each day commensurate with the tides.

The most notable feature 042 was located in the centre-north of the stripped area. Due to constraints in the excavation area this feature was only partly exposed. The substantial curvilinear feature 042 arced across slope from the southeast to the southwest. The exposed extent of this feature measured 12.3 m in length and ranged from 0.75 m to 1.3 m in width. This shallow deposit was a homogenous loose black charcoal rich sand 042 with a maximum thickness of 30 mm. Charcoal from this deposit consisted of birch and hazel but the very shallow nature of the spread rendered it unusable for radiocarbon dating due to likely modern intrusion. A series of slots were excavated across the feature. It is likely that the charcoal-rich deposit found is the basal fill of a small curving ditch or gully, the upper edges of which have been truncated by ploughing. The curvilinear feature leads to/from an area of white-grey silty sand (Illus 2.78- left of image). This colouration of the deposit may be as a result of podzolisation, or of ash being dispersed in this area.

Directly adjacent to the southeast of the curvilinear feature, a series of pits and postholes was visible. These sub-oval features varied in size from 1.6 m to 1.2 m in size (Illus 2.79). Due to the ephemeral and shallow nature of the deposits, and no doubt due to the taphonomic conditions dictated by the immediate sand stratigraphy, it proved difficult to define their edges. Four of the features (061, 062, 058 and 045) appeared sub-oval in shape varying in diameter from 1.3 m to 2.8 m, and between 0.17 m and 0.6 m in depth. Each deposit consisted of a shallow mid brown charcoal rich fill, with ephemeral interface layers where the deposits met with the underlying sterile wind-blown sandy subsoil.

Another elongated pit 553 lay adjacent to the southern extent of feature 042 and was filled by very loosely compacted pale grey sand 044. Although the fill of this feature was also prone to modern intrusion it was viewed as the preferable option to the shallower features in this locale to provide dates for comparison with the settlement activity on the adjacent rise at Site 6A. Birch charcoal from fill 044 provided a date of 400–200 cal BC (UBA-41960:

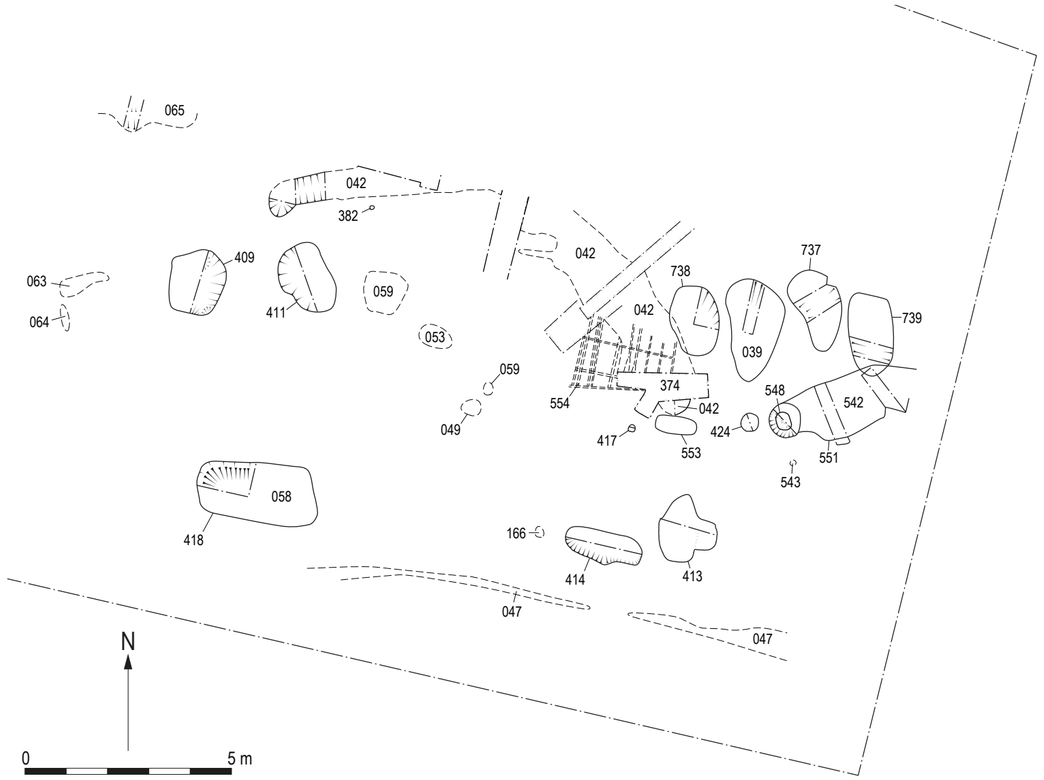


Illustration 2.77: Detail plan of Site 6B

Illustration 2.78: View looking west across site down to site 6A

2259 ± 31 BP). A group of criss-crossed linear features 554, possibly ard marks, which extended downslope from the main concentration of archaeology was dated using hazel charcoal to 360–120 cal BC (UBA-41962: 2171 ± 25 BP). An additional pit 413 was dated using alder charcoal from the basal fill 412; this was similar to the other dates for this area, 370–160 cal BC (UBA-41947: 2185 ± 27 BP).

Illustration 2.79: Site 6b, large pits from north

2.5.4.3 Site 22

This site was uncovered during the topsoil strip for the construction phase of the project around Site 6A and 6B (See Illus 2.64). The archaeology incorporated within Site 22 consisted of a granite stone-lined keyhole shaped grain-drying kiln, a group of pits, and an isolated series of post-medieval deposits, all on the periphery of Site 6B, with a small partial enclosure of unknown date to the west of 6A.

2.5.4.3.1 Partial enclosure

This partial enclosure was situated to the west of Site 6A and consisted of two curvilinear features 037 and 038 framing a sub-rectangular area of approximately 4 m by 4 m within the limits of excavation. The shorter of the two features 037 was orientated east/west and measured 0.3 m by 2.4 m on plan with a maximum depth of 0.14 m. The fill consisted of light-yellow brown sand 039 with occasional charcoal and burnt clay; hazel charcoal from this fill was dated to 3310–2910 cal BC (UBA-41966: 4407 ± 31 BP), similar dating of 3370–3030 cal BC (UBA-43329: 4503 ± 33 BP) was also obtained from oak charcoal, placing this activity in the middle Neolithic period. The other curvilinear feature 038 was orientated north/south, perpendicular to 037, and measured between 0.5 m and 0.6 m wide, 4.2 m long within the limits of excavation, and 0.4 m deep. The fill consisted of mid to dark brown sand 045 with occasional charcoal and medium sized stones. No internal features were apparent.

2.5.4.3.2 Grain-drying kiln

The stone-lined keyhole shaped kiln 032 was situated on the same rise that accommodated Site 6B F66 towards the eastern extent of the Myrtle Cottage site. This possible grain-drying kiln was orientated north/south and measured 6.75 m in length within the limits of excavation, with the flue extending downslope to the southern baulk edge. The bowl measured 0.5 m deep with the flue up to 0.3 m deep. The outer edge of the bowl measured 2.05 m in diameter, narrowing to 1.25 m in diameter within the dry-stone construction. The flue measured between 1.2 m and 1.8 m wide, narrowing to between 0.2 m and 0.6 m within the dry-stone construction. The flue gap was widest towards the southern baulk edge near the opening or stoke-hole area. There were a series of deposits within both the bowl and flue area signifying multiple episodes of use.

The cut for the kiln 032 was lined with dry-stone construction 034 around the perimeter of the bowl and flue area. In addition, a stone 092 was found upright in the flue near the point where the flue met the bowl (Illus 2.80). There may have been a corbelled covering for the south end of the flue, evidenced by the presence of predominantly flat stones which appeared to be collapsed around the mouth of the flue (Illus 2.81). The primary fill of the flue consisted of slightly compacted mid brown sandy silt 074 (=102) with pink mottling and occasional charcoal flecks. This layer was

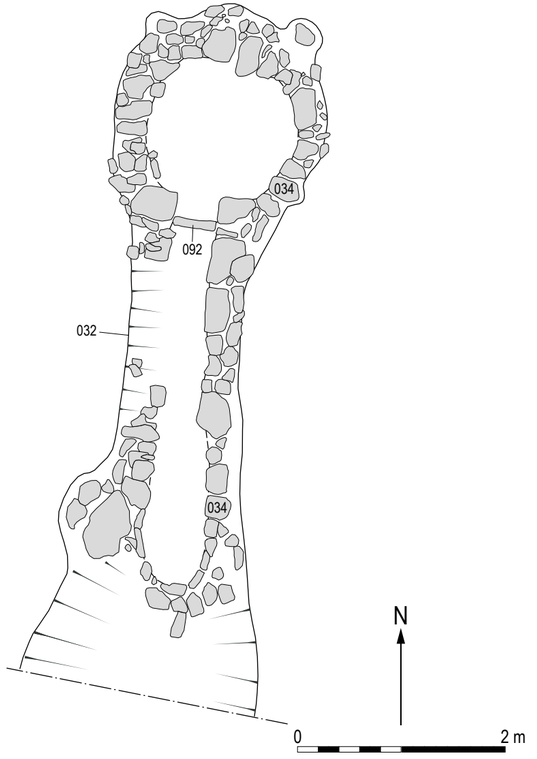


Illustration 2.80: Plan of grain-drying kiln 032, Site 22

dated using charred oats (Alldritt, Appendix 3) and a date of cal AD 1660–1950 (UBA-41968: 138 ± 24 BP) suggested. This layer gradually changed to rich orange colour towards the south end of the flue, most likely reflecting the greater oxidation levels and proximity of the heat source towards the open end of the kiln. The initial fill of the kiln bowl consisted of dark brown sandy silt 052 with frequent mixed red and light brown pockets and charcoal flecks. Above this was a layer of compact light grey- blue clay lining 051 containing very occasional charcoal flecks. Then came a loose dark reddish-brown silty sand 050 mixed with compact clumps of grey clay and some ash, with occasional charcoal flecks. Over this was a second layer of clay lining 047 consisting of very compact light yellow and brown clay with very occasional charcoal flecks. This was followed by dark brownish-black silt 048 and a slight clay content and occasional flecks of charcoal. A layer of medium red brown sandy silt 046 with ash and compact blue grey clay inclusions and frequent small to medium stone inclusions overlay this. This layer, only separated by the upright stone 092 is most likely the same as the mid to dark brown sandy

Illustration 2.81: Kiln 032 after excavation

silt 066 with very occasional flecks of charcoal and small to medium rounded and sub-angular stones found in the flue. Suitable archaeobotanical material was very limited with charred oats being the only viable option. Dates for this layer suggest a date of cal AD 1670–1950 (UBA-41967: 109 ± 32 BP) which is consistent with the relatively late date for the primary fill (074).

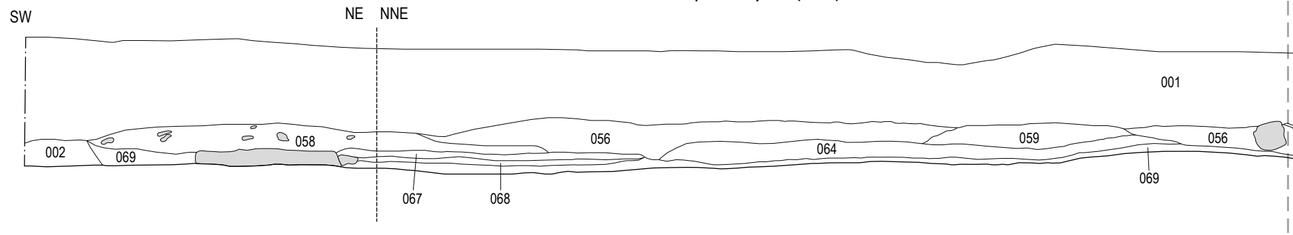


Illustration 2.82: Section through southern baulk associated with kiln 032

Concentrating on the deposits contained within the flue, the next layer consisted of compact, mixed light brown, blue grey, yellow brown sandy clayey silt 042 with very occasional charcoal flecks, large clay lumps, and stone collapse. This was subsequently overlain by two separate layers; dark brown sandy silt with flecks of yellowish-brown and blue-grey clay 041 and dark brown sandy silt 057 with occasional sub-angular stones, and very occasional charcoal flecks. Completing the sequence in the bowl area was a layer of slightly compacted dark brown silty sand and loam 033 with occasional small stones and very occasional charcoal, possibly the remains of an organic (perhaps turf) covering from the kiln's last use and collapse. The flue had a different stratigraphic sequence above layer 066. The first layer in this sequence consisted of mid to dark brown sandy silt 073 with small to medium stones. This layer extended to the southern baulk and was overlain by several deposits, all of which accumulated after the kiln had gone out of use. Around 2 m south of the bowl there were three deposits observed, 093, 096 and 097, all of which had an element of wind-blown sand and may represent the eroded remains of part of the flue covering. At or near the mouth of the flu there were four small separate deposits; 098, 099, 100 and 101, all of which were a mix of clay and sand with charcoal flecks and like the previous deposits may represent the eroded remains of the flue covering. These deposits were all covered by 033, probably the remains of an organic (possible turf) covering from the kiln's last use and collapse.

The southern baulk section was cleaned and recorded, and this revealed a series of layers most likely representing burning and rake-out associated with the kiln (Illus 2.82). The first of these layers overlying subsoil 002 was mixed dark and light orange-brown sandy silt 031 with abundant slag and very occasional charcoal flecks; within this deposit was a pocket of loose light brown sand 035. Above this lay a layer of dark brown and grey-black sandy silt 079 with abundant charcoal and small fragments of slag. This was then overlain by dark red brown sandy silt 072 with peat lumps and occasional charcoal. Next came a mixed layer of dark and light orange-brown silty sand 071 with abundant slag and very occasional charcoal flecks. Above this was a dark brownish-black sandy silt 070 with abundant charcoal and small slag fragments and peat lumps. The possible kiln covering 033 completed the sequence.

2.5.4.3.3 Post-medieval deposits

There were a series of post-medieval deposits forming a possible level platform for a structure 076 uncovered to the north of Site 6B. This platform appeared sub-angular in plan and extended west beyond the western baulk edge. The platform consisted of deposits 056, 058, 059, 060, 064, 067, 068 and 069. One post-medieval glass shard SF 8 was recovered from 059 (Murdoch, Appendix 18). One post-medieval pot sherd SF 5 was recovered from layer 060 (Will, Appendix 17). An Iron D-shaped buckle SF 1 and three iron fragments SF 7 were recovered from 069; the style of buckle is common from the early medieval period onwards (Cruickshanks, Appendix 21). A copper alloy pin SF 2 of likely pre-1500 AD date was recovered from 075 and two copper alloy milled coins SF 3 were recovered from 077, both sand layers beneath structure 078. There were two postholes cut into this platform, 088 and 090. These postholes both lay towards the northern extent of the structure and were located 0.55 m apart. The larger of the two 088 measured 0.4 m in diameter and up to 0.3 m deep. The fill consisted of mid-brown fine sand 089 with sub-rounded and sub-angular stones. The smaller posthole to the north, 090, measured 0.2 m in diameter and up to 0.2 m deep. The fill consisted of mid-brown fine sand 091 with sub-angular cobbles used as packing stones.

2.5.4.3.4 Group of pits

Isolated groups of pits were uncovered during the topsoil strip for Site 22, and details for each individual pit can be found in Appendix 23. Two of these pits, 080 and 084, lay east of structure 078. One iron fragment SF 8 was recovered from fill 081 in pit 080 (Cruickshanks, Appendix 21). To the north of Structure 078 lay an additional two postholes/pits, 094 and 086. Two post-medieval pot sherds SF 4 were recovered from fill 087 in 086. The remaining pits 025, 030, 015 and 043 and two linear features 020 and 011 showed no apparent structural pattern.

2.5.4.4 Myrtle Cottage Discussion

2.5.4.4.1 Site 6 (A and B) Discussion

The site at 6A provides a glimpse of a wider Iron age unenclosed settlement on the coastal fringe of Galloway. Unenclosed Iron Age settlements in Galloway tend to be small in scale, a point highlighted by Toolis (2015, 20) when considering the small size of settlements in Galloway alongside those from elsewhere in Southwest Scotland (see 4.6). At Myrtle Cottage there are a series of seven, at least partially exposed, roundhouses in various states of preservation, and each of varying construction but similar scale, with the indication of further such structures

indicated by a cropmark to the west of the investigation area. The different construction methods observed and the presence of possible metal working activity within Structure 3 suggests a settlement not just of domestic dwellings but with small-scale industrial practices feeding into the economy. The archaeobotanical analysis for Myrtle Cottage revealed small quantities of oat, barley, spelt, and emmer wheat showing a diverse agricultural economy being practiced at the site. This settlement also lies close to a reputed Roman Road leading west/east; this infrastructure, if indeed present, could have had an influence even after the Romans had departed leaving the trade routes and links behind. The Romano-British fibula brooch may be a testament to this influence (Hunter, Appendix 19). The brooch is from the uppermost and intermittent natural wind-blown sand layer 093, which pre-dates the insertion of the external wall-slot of Structure 1. However, the nature of the environment here raises questions about whether the brooch was always at this level, or whether it dropped down through the sand profile as lighter layers were eroded. This is a common phenomenon highlighted by Barber (2011, 45) in the context of machair landscapes in Scotland. Spatially the brooch is within Structure 1 but temporally it is more difficult to be certain of its original position stratigraphically. Interestingly another clothing accessory was found in the upper sand layers over Structure 3, a perforated stone disc/pendant SF 127 (Ballin Smith, Appendix 14). Whether these finds are deliberately deposited over abandoned structures will be explored further in the Iron Age discussion (see 4.5 and 4.6) in comparison to other similar structures and settlements regionally and nationally.

2.5.4.4.2 Continuous or periodic settlement?

It has already been acknowledged that there were severe limitations on the material suitable for dating features and structures on this site, and where that material was available the dates varied. The variation in dates is down to at least two factors, one being that structures were constructed over features long pre-dating the Iron Age occupation, and secondly the dynamic environment on which the Iron Age settlement was located which was, and still is, prone to rapid erosional and depositional changes. However, it was possible to draw out some broad interpretations from the dates and from the spatial distribution of the various structures. One obvious observation to be made is that all the roundhouse structures respected each other, in that none of the structures overlapped one another. This is a point highlighted elsewhere at Rispain Camp near Whithorn for two adjacent structures where '…no superimposition on either structure…suggests these two buildings were contemporary' (Toolis 2015, 20). Although the structures were tightly grouped, there was space between each structure and this does suggest that they were probably contemporary for parts of their occupation or if being abandoned/built in quick succession, the previous structure

would have been extant enough to enable the builders to place the new structure outwith the older structure(s). There is also evidence for repair or possible phases of construction. For example, in Structure 1 (Appendix 1, RC5 and RC6), aside from one earlier Late Bronze Age date, there is an indication that initial construction could have happened as early as 500 BC with some activity after this suggesting occupation towards the end of the first millennium BC, and into the first two centuries AD. Further analysis and modelling of the later Iron Age activity is discussed by Hamilton (Appendix 1) where earlier dates from contexts that may not be homogenous, for both radiocarbon and OSL dates, are excluded from the statistical modelling to produce possible sequences and spans for the Iron Age occupation at Myrtle Cottage.

However, in looking at each structure, and the dates for each, there are some possible sequences of activity that are apparent without the selective modelling. Although dateable material from Structure 2 was very limited with only one posthole dated to around 100 AD, the stratigraphy of the structure and the area within the line of the wall slot does suggest at last three phases of occupation and/or repair in this area of the site. The wall slot forming what was defined as Structure 2's outer wall appears to be one of the later elements of the structure, stratigraphically, and occurring in Phase 2. For Phase 1 there were a series of three postholes cut in at a lower ground level: cutting 115 – dated using OSL to 330 ± 230 BC (SUTL 3008) and 380 ± 200 BC (SUTL 3011), which were then sealed by another sandy deposit 138–dated using OSL to 200 ± 170 BC. This was cut by three stakeholes and the digging of the outer wall slot (Phase 2). The latest posthole, stratigraphically, within the structure was 650 which cut into a possible occupation deposit 106, this posthole being the last phase of activity within the structure (Phase 3). From the OSL dates this structure therefore has its beginnings sometime between 580 BC and 180 BC according to the OSL dates, with the second phase of activity occurring sometime between 370 BC and 30 BC. This structure was only partially uncovered within the excavation area and these interpretations are based primarily on the stratigraphic evidence and dates available. The outer posthole 709 which appeared to have held a post that was positioned as an outer support of the structure was dated cal AD 20–220 (UBA 41965: 1913 ± 29 BP) suggesting this structure could have been in use alongside Structure 1.

In Structure 3 again there is dating evidence for construction from at the earliest the beginning of the second century BC, with occupation potentially extending, or evidence of repair, into the first and second centuries AD. This suggests the possibility that some activity at Structure 3 may be contemporary with that at Structure 1 and 2. When selected dates are plotted by Hamilton (Appendix 1, RC5) for all dated structures it is clear that many of them could well

have been contemporary for at least part of their lifespan. The stratigraphy of Structure 2, supported by the OSL dating, suggests that it could have been in use in its earliest phase around the time when Structure 9 was still in use. Structure 9 was one of the less well-preserved structures with only an arc of posts surviving, and perhaps any other structural components were recycled into the structures (1, 2, 3, 4, 5 and 7) that followed. The area where Structure 9 would have occupied remained open with no later structures overlying the arc of its posts or the extrapolated line of the rest of the structure. This is further evidence that the structures respected each other despite being some time apart in their occupation (Illus 2.83). Structure 3 may have been constructed soon after 9 was abandoned. The earliest phase of Structure 1 probably overlapped with the occupation of 9, 3, 4 and 5, and although stratigraphically Structure 2 appeared to be slightly earlier than Structure 1, the earlier phases of activity could well have overlapped with Structure 1. Although some attempt is made here to interpret the available dates alongside the stratigraphy, more detailed interpretation, and more selective modelling of the dates for this site is explored further in the Bayesian analysis (Hamilton, Appendix 1). No suitable material was available to date Structure 6.

The dating does suggest that, aside from evidence of the much earlier Late Neolithic activity, that Iron Age activity may have been present here for a period from around 500 BC through to sometime in the second century AD with some of those structures potentially being contemporary, or at least overlapping in their occupation. Structures 1, 2 and 9 are likely to have been the earliest structures among those investigated, with Structures 3, 5 and 4 following in the centuries that followed, with perhaps Structures 2 and 3 being the last to be abandoned. In Hamilton's modelling of the later Iron Age dates for the various structure (Appendix 1, RC5) there is clearly an overlap in the dates for the structures, all falling within the last two centuries BC and the first two AD. In terms of the timespan of the settlement activity, he suggests that this later settlement activity could have spanned 130-300 years (Appendix 1, RC6) at 95% probability, and 170-255 years at 65% probability.

A series of Iron Age dates ranging from 40 cal BC–cal AD 220 (UBA-41917–20) from possible roundhouse remains at East Challoch, around 250 m to the northeast, suggest that the Iron Age settlement, or indeed other nearby Iron Age settlements, could well have existed further inland during this period, beyond what was revealed at Myrtle Cottage. At Drumflower at the extreme west of the A75 works there was further dating evidence for Iron Age ring-groove structures with a date of 50 cal BC–cal AD 70 (UBA-41910). These ring-groove structures were, like those at East Challoch, set on gravel subsoils. The activity at East Challoch, when modelled, (Hamilton, Appendix 1, RC7) shows a range from the early part of the second century

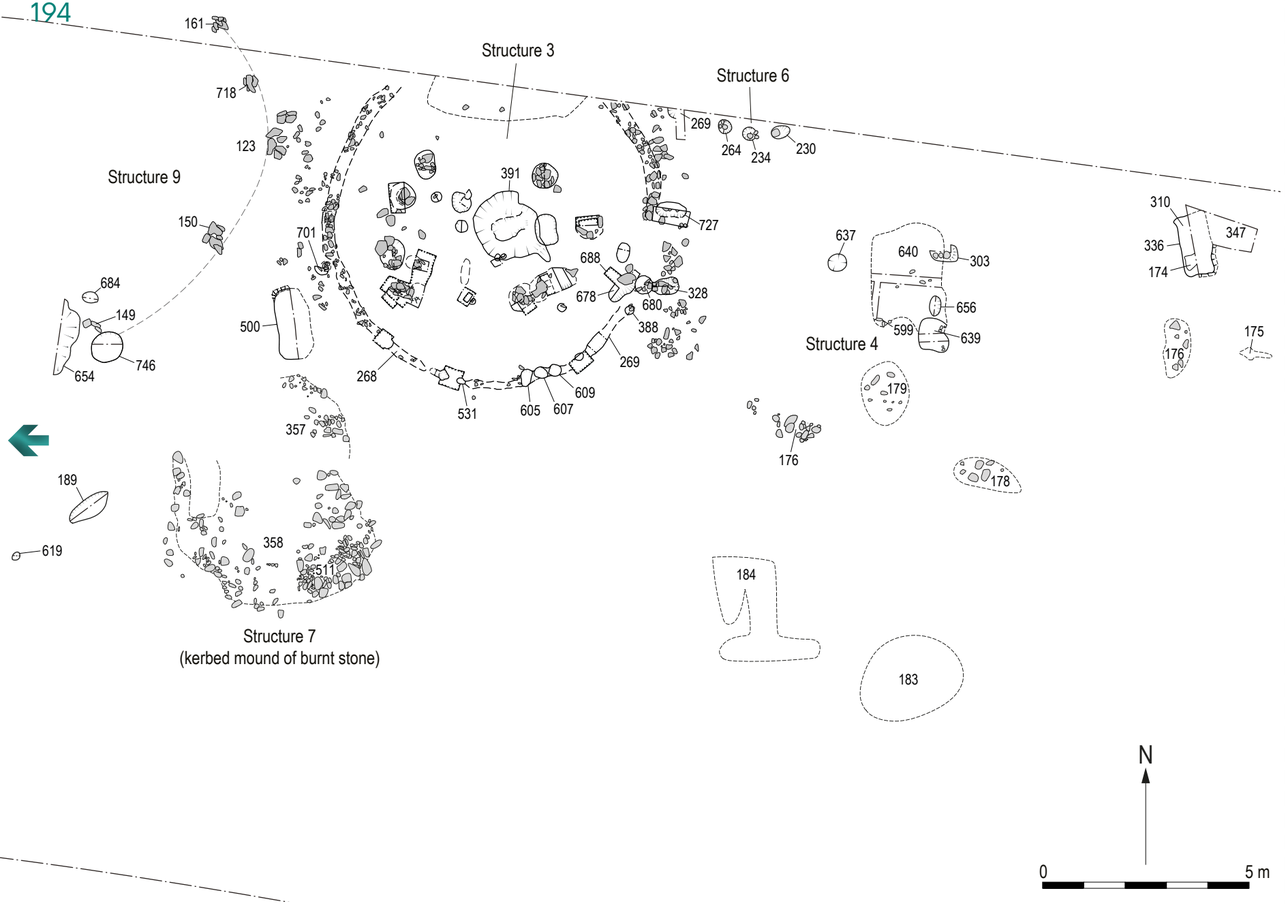


Illustration 2.83: Detail plan showing Structures 3, 4, 6, 7 & 9

BC to the third AD, with the span of activity being 145-540 years (Appendix 1, RC8) at 95% probability and 215-400 years at 65% probability. Some activity at East Challoch is therefore very likely to have been contemporary with the settlement at Myrtle Cottage.

Also close by to Myrtle Cottage, there is evidence of further Iron Age activity in the form of an enclosed structure at Whitecrook sand quarry (MDG 9430) only 400 m east of the Site 6A location. This structure occupied the same sand sheet and raises the possibility whether large parts of this coastal fringe were populated in the Iron Age. The same sandy environment on which the settlement existed at Myrtle Cottage appears to be replicated along the coast to the east so it not inconceivable that a linear settlement once existed along this coastal highway framed by the shoreline to the south and to the north by the route sandwiched by the estuary to the south and the raised beach to the north along the coastal fringe. So, although there is no evidence within the area investigated of an enclosure, the settlement at Myrtle Cottage may in fact have been delimited, or at least influenced, by the topography. Although there is reputed to be a Roman road along this same fringe, and this could well have influenced settlement pattern, no evidence of this road was discovered throughout the works, the only area not investigated was below the existing A75 itself.

There are similarities within this settlement and structures that relate to other sites of the period across Scotland. The Myrtle Cottage Iron Age settlement, and other Iron Age settlement activity discovered elsewhere along the bypass route, and how this relates to other settlements and structures of a similar period across the region and further afield, will be explored in more depth in the wider Iron Age discussion. So too will the structural traits be compared with other similar sites across the region and Scotland (see 4.5 and 4.6).

Site 6B was located to the northeast of the concentration of Iron age structures at site 6A; this site was situated on the top of a small rise or ridge. The site revealed some evidence of post-medieval activity (iron shears and a seventeenth century coin) (Cruickshanks, Appendix 21), however much of the archaeology revealed no material culture and may relate to the Iron Age activity in 6A. The dates for activity at 6B suggest that some of the archaeological features that we excavated may be contemporary with the earlier structural activity at 6A (Structures 1, 2 and 9) in the third and fourth centuries BC.

The charcoal-rich curvilinear feature 042 arcing across Site 6B leads to one possible area of ash deposition or podzolisation. One possible function suggested by both the burning and the form of the curvilinear feature is a flue for a kiln. Unfortunately, despite this feature being apparently very rich in charcoal at the time of excavation, no identifiable charcoal was recovered during processing and analysis. The charcoal material must therefore have been very fine, possibly soot.

2.5.4.4.3 Site 22

This partial enclosure situated to the west of Site 6A was dated using two separate samples to 3310–2910 cal BC (UBA-41966: 4407 ± 31 BP), and 3370–3030 cal BC (UBA-43329: 4503 ± 33 BP), placing this activity in the middle Neolithic period. No other similar activity was observed across the Myrtle Cottage site, but it does show that the sand sheet was potentially stable enough to accommodate human occupation of some description at this time. Given the limited survival of the double enclosure it is difficult to elaborate on this.

Much later in date, the kiln on Site 22 displayed evidence for repeated use in the post-medieval period. The evidence suggests at least three uses in total, with clay repair or lining being administered after each of the first two uses. From the initial uncovering of the kiln structure it was observed that there was a particular concentration of stones and in particular flat stones around the mouth of the flue suggesting this area may have had stone corbelling. This same area showed the greatest concentration of heat colouration on the sides of the flue, the underlying sands, and some of the loose stones. The corbelling may have assisted in maintaining the required intensity of heat within the kiln. It is not certain if there were stone lintels along the flue as there were no loose stones found during excavation but there was an organic rich layer 033 present across the structure which suggests that there may have been turf or a similar covering over the kiln and flu. Seven pieces of slag SF 009 (Cruickshanks, Appendix 22) were recovered from one of the rake-out layers 071 and one possible worked stone SF 10, an elongated dolerite cobble with evidence of hammering on one end and sooting from its context was recovered from context 041 (Ballin Smith, Appendix 14), a deposit within the bowl of the kiln. Both sides of the stone have been worn smooth, but one side shows particularly extensive wear. Samples of the key layers encountered within and outwith the kiln structure were analysed to reveal large quantities of oat and rye grains (Alldritt, Appendix 3).

2.5.4.4.4 Other post-medieval deposits

The metal, ceramic and glass artefacts all confirm the post-medieval dates for these deposits. They may be associated with a temporary agricultural out-building or animal shelter situated here sometime during the eighteenth to twentieth centuries.

The investigations carried out on Site 22 during the construction phase of the A75 Dunragit Bypass revealed elements that may be related to the archaeology discovered during the evaluation and advance works. The Neolithic enclosure may be contemporary with activity further west at Droughduil Holdings, and to the north-east at East Challoch and further NNE at Boreland Cottage Upper. The kiln, although originally thought to be related to the Iron Age activity observed in 6A, was in fact dated to the post-medieval to early modern period. Another possible flue was observed during the investigations on Site 6B and this may suggest that there was more than one kiln in this location, or perhaps that a kiln was relocated over time.

2.5.5 East Challoch

Iraia Arabaolaza

The archaeology uncovered here varied widely in date with Mesolithic, Neolithic, Bronze Age, and Iron Age activity. As a result, each part of the East Challoch site will be described by period where there is artefactual or dating evidence to support this interpretation (Illus 2.84).

2.5.5.1 Site 5 *(Illus 2.85)*

This area was opened as a result of preliminary findings from the evaluation suggesting that significant sub-surface archaeological deposits relating to prehistory remained undisturbed in this location (Illus 2.86).

Illustration 2.86: View of Site 5

2.5.5.1.1 Earliest activity–Mesolithic

In the northwest corner of the site a possible sub-rectangular structure of pits and postholes was orientatednorthwest/ southeast. The northwest corner was marked with three circular postholes measuring around 0.3 m in diameter, and 0.09 m to 0.19 m deep. The rest of the features were pits or postholes. Two of the largest pits (157 and 175) showed evidence of *in situ* burning and were each recut at least once (Illus 2.87). Pit 157 was truncated by recut 158 and hazel charcoal from its fill 118 provided a Mesolithic date

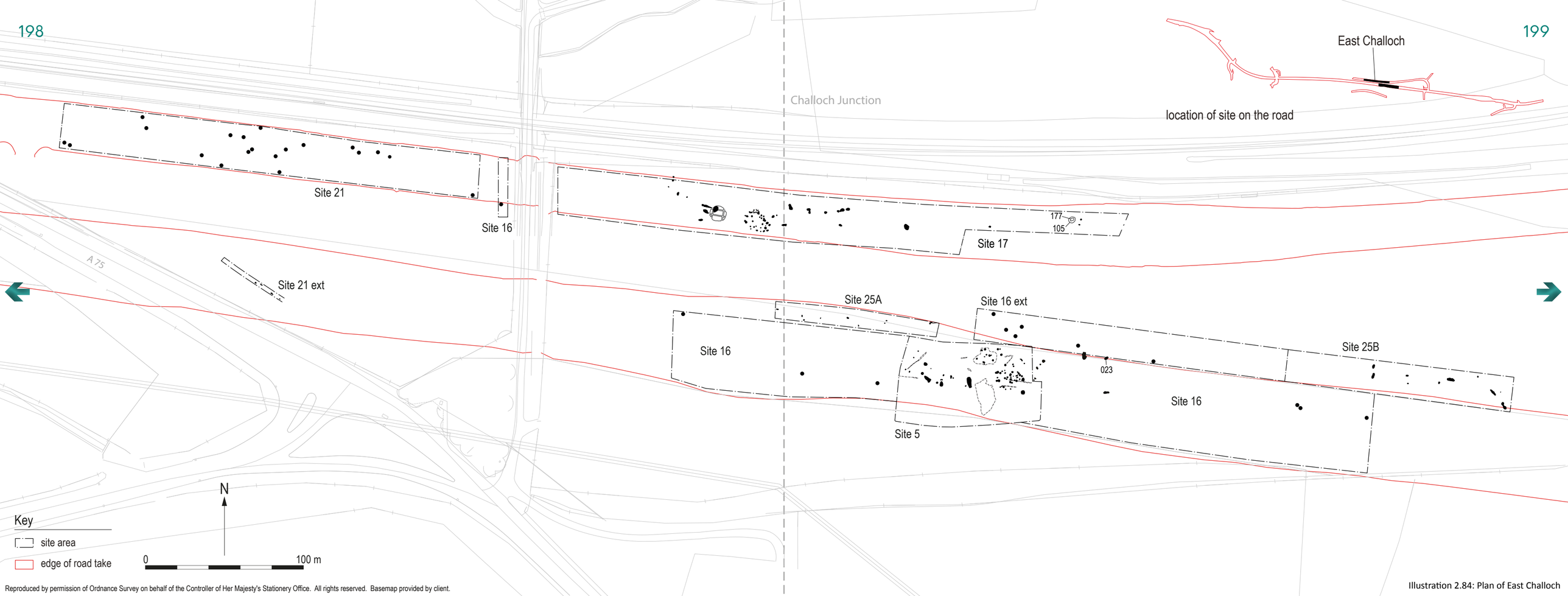


Illustration 2.84: Plan of East Challoch

Illustration 2.85: Plan of Site 5 in East Challoch

(7030–6640 cal BC, UBA-41916: 7893 ± 37 BP). A sample of hazel nutshell from pit 175 produced a comparable date of 6750–6590 cal BC (UBA-43328: 7822 ± 37 BP).

Only one of these northwestern features had potentially datable artefacts. Two fragments of tapered smooth stones SF 1 with evidence of pecking on their ends were retrieved from the upper fill of large pit 119. It was identified as a fine-grained elongated quartzite pebble whetstone during specialist analysis (Ballin Smith, Appendix 14).

Illustration 2.87: East facing section of pit 175, showing evidence of in-situ burning

2.5.5.1.2 Iron Age structures

At the northeast corner of the site, a group of ten postholes was identified. They formed an oval pattern measuring 8 m west/east by 4.5 m north/south and all were cut into a compacted cobble surface 187 (Illus 2.88). Oval to circular in form, their size ranged from 0.12 m to 0.5 m wide, 0.23 m to 0.92 m long, and 0.09 m to 0.38 m deep. Some of these postholes were stone-lined (133, 146, and 162) indicating a possible structural function. No datable artefacts were recovered from any of these features. However, a sample of hazel from posthole 146 produced a date of 40 cal BC–cal AD 130 (UBA-41917: 1968 ± 24 BP). A sample of hazel nutshell from posthole 132 produced a radiocarbon date of 180 cal BC–cal AD 10 (UBA-42829: 2085 ± 23 BP), however a later date of cal AD 10–220 (UBA-43326: 1925 ± 33 BP) was obtained from barley from this same fill.

Further southeast, a cluster of more than 40 features, a large number of them postholes forming a possible circular structure, were uncovered (Illus 2.89). Several sub-circular postholes were located internally, while others formed the exterior of the structure, some set-in pairs: 165/166, 155/156, 141/147 and 150/152. A gap in the southeastern corner of this circle suggested a possible entrance. Charcoal-rich material was encountered in a number of the posthole fills which may have been burnt *in situ*. Iron Age dates

spanning the final century cal BC to third century cal AD (Appendix 1, Table 1) (UBA-41919, UBA-41918, and UBA-41920) were obtained from two of the paired postholes, 165 and 152. Furthermore, a shallow irregular gully 005 excavated to the north of this group of postholes, could indicate the truncated remains of a ring-groove associated with the structure.

Overlaying this structure was a layer of loose light brownish-orange sand silt 169, possible further remains from when the structure was burned *in situ*. Covering this deposit and situated in the western half of the structure was a charcoal-rich dark brownish-black silty sand 024 with stone inclusions (Illus 2.90). Remains of oak, hazel and hazel nutshell charcoal were identified from this deposit, and an unidentified burnt bone SF 3, quartz pebbles SF 5, and a polisher/hammerstone SF 6 (Ballin Smith, Appendix 14). A hazel fragment from this deposit provided a radiocarbon date of cal AD 120–320 (UBA-43327: 1829 ± 27 BP) while a hazel nutshell produced a date of cal AD 80–230 (UBA-42830: 1888 ± 23 BP). A pitted stone (SF 18) considered natural, was retrieved from deposit 229 (Ballin Smith, Appendix 14) and two further deposits (168 and 205) were identified overlaying it. Lying immediately beneath the topsoil, 168, consisted of grey silty sand with occasional pebbles and it may be the remains of a possible old ground surface. Deposit 205 on the other hand, consisted of a cobbled surface composed of pebbles set within dark grey sandy silt matrix. A thin layer of dark blackish-brown silty sand 207, with charcoal inclusions, overlay this. A deposit of sub-angular flat stones 206 were identified just beneath the topsoil, suggesting possible remains of field clearance or a collapsed structure.

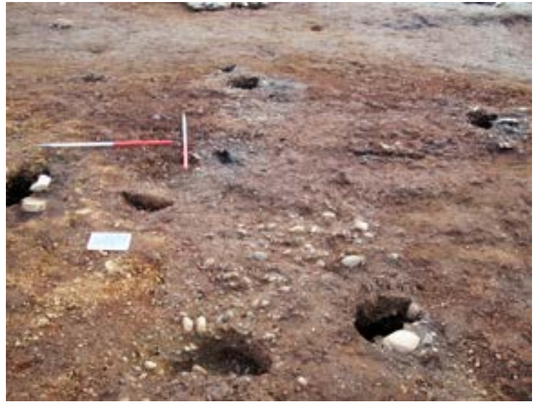


Illustration 2.88: View of group of postholes cutting through spread 187

Illustration 2.89: View of post-defined ring structure

Illustration 2.90: View of 024 overlaying circular structure

2.5.5.2 Site 16

Excavated during the construction phase, this site covers areas to the west and east of Site 5. Located on the crest of a slope, the site contained a series of small pits and postholes and a stone-lined pit overlain by a cairn.

Illustration 2.91: View of large pit 015 from southeast

2.5.5.2.1 Earliest activity–Mesolithic to Neolithic

On the western periphery of the site a large circular pit 015 2.4 m in diameter (Illus 2.91) was uncovered. This pit contained a series of dark brown charcoal-rich fills (017, 018, 019 and 027) with the lower fills 016 and 028 being more grey and orangey-grey in colour consisting of

relatively sterile sand. The uppermost fill 019 contained mid-greyish-brown silty sand with frequent accumulation of angular burnt stones. A single pitchstone microblade fragment was recovered from this pit (CAT 20551, fill 019) and a single-platform core (CAT 20553, fill 028). Although in small quantities, hazel nutshells were also recorded from some of the fills suggesting the pit may have been used for processing or storing hazelnuts. A sample of hazel from lower fill 028 provided a late Mesolithic date of 6430-6230 cal BC (UBA-41921: 7465 ± 36 BP).

Between Site 21 and Site 17, spread 026, the possible remains of a Mesolithic or early Neolithic scatter were excavated. Although none of the lithic artefacts were diagnostic, a microblade-core (CAT 1574) together with narrow blades and a small conical core retrieved from this area were considered most likely either Mesolithic or early Neolithic in date by Ballin (Appendix 12).

2.5.5.2.2 Bronze Age burial practice

An intact, although distorted, and highly decorated Food Vessel SF 5 (Ballin Smith, Appendix 15) was discovered at the eastern extent of the site. Initially it appeared to be a spot find as no cut was visible; this is due to the difficulty in identifying features in the free-draining sandy gravel subsoil, as noted elsewhere on the bypass route (e.g. Drumflower, Dunragit (Thomas 2015) and Boreland Cottage Upper further east). The pot was consequently block lifted and recovered in its entirety revealing a number of jet beads below and to the side of the vessel, and at around 130 mm below the level at which the vessel was found (Illus 2.92). Further excavation revealed a total of 31 pieces of jet comprising two terminals, six spacers, and 23 beads. The location of the beads appeared to be *in situ* having been deliberately laid on the stone lining of the burial pit (Illus 2.93). No human remains were encountered during the excavation of this pit but the context with the jet jewellery and Food Vessel are indicative of a burial context and the pit could have conceivably accommodated a crouched individual (Sheridan, Appendix 13).

Illustration 2.92: Burial pit 023 detail of Food Vessel and beads *in situ*

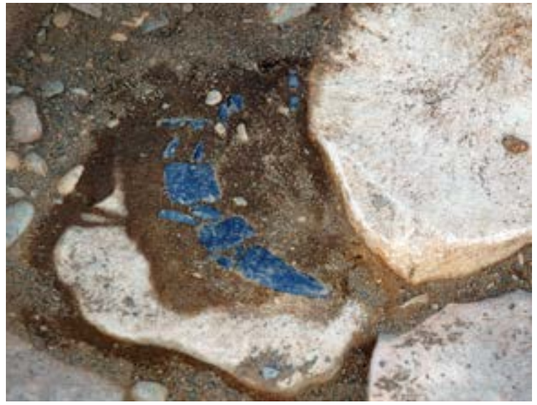


Illustration 2.93: Detail of jet beads *in situ*

The pit 023, where the Food Vessel and jet beads were contained within, became evident during excavation and it was sub-oval in shape aligned NW/SE. It measured 1.28 m in length, 0.65 m in width and was 0.22 m deep. At the base of the pit, lining the cut, a series of flat stones 014 were recorded. The pit itself contained three separate fills (013, 021, and 022) each of which appeared to be variations in redeposited natural subsoil. Basal fill 013 consisted of dark brown silty sand with occasional charcoal inclusions visible throughout. It extended the full length of the cut 1.13 m with a maximum thickness of 0.15 m. Partially overlying 013, a secondary fill 022 was visible on the northeast side of the pit. It consisted of orangey-brown sandy gravel which was relatively sterile with a maximum thickness of 0.15 m. A sample of oak from this fill produced a date between 2410–2140 cal BC (UBA-43337: 3816 ± 29 BP). The opposite side of the pit contained a blueish-grey coarse sandy fill 021. This appeared very similar in colour and composition to the surrounding subsoil and appeared relatively sterile (Illus 2.94).

Directly adjacent to the west of the stone-lined pit lay a single feature 038. This was sub-circular in form with dimensions of 2.23 m by 1.17 m, and a maximum depth of 0.15 m. It contained multiple fills 031, 036 and 037, all appearing to be relatively sterile orangey-brown sandy gravel deposits. Only the upper fill 031 appeared to have charcoal present. No material culture was recovered from the feature.

2.5.5.2.3 Iron Age activity

A series of pits and a posthole was excavated around the centre of Site 16. The sub-circular or oval pits 010, 012, 034 and 005, did not appear to form any pattern, but they may be associated with the structural features found during the advance works in Site 5 (see above). A singular sub-circular posthole 035 lay within the concentration of pits and measured 0.49 m by 0.36 m in plan, and 0.25 m deep. The

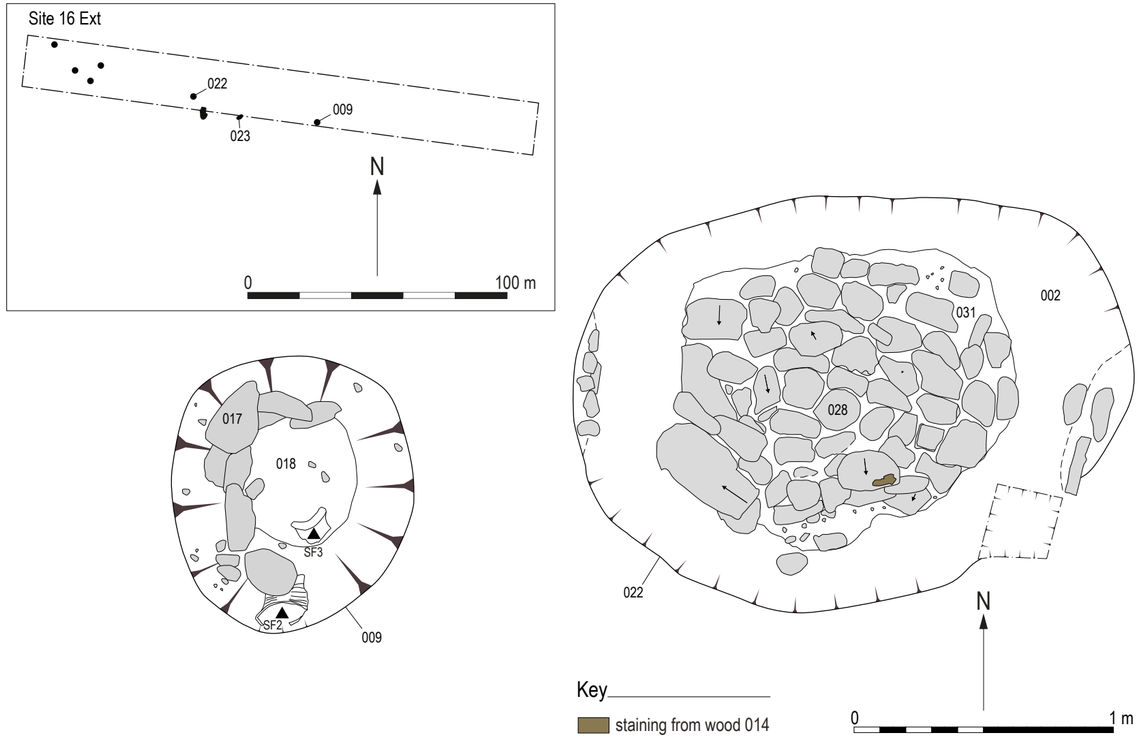
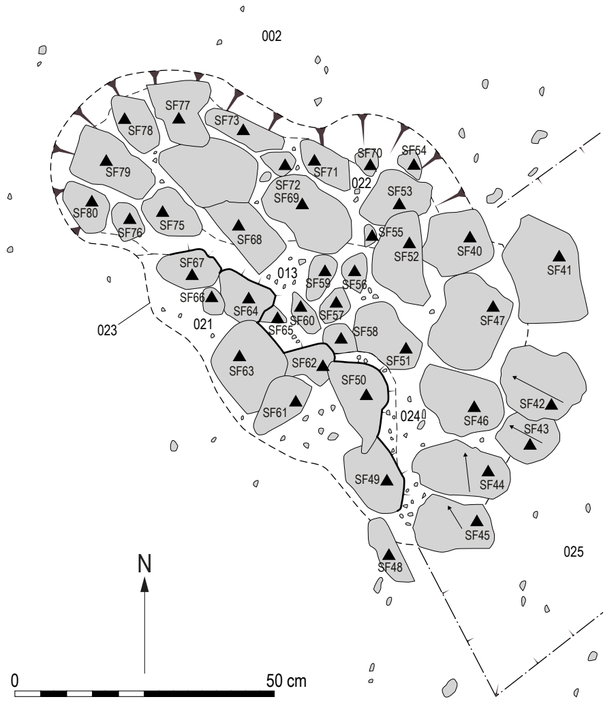


Illustration 2.94: Plan of stone-lined pit 023 in Site 16 and stone:lined pits 009 and 022 in Site 16 ext



fill 029, consisted of brown sandy silt with charcoal inclusions and large angular packing stones, and hazel charcoal from this posthole was dated to 180–1 cal BC (UBA-41922: 2095 ± 24 BP). The pits around posthole 035 measured 0.27 m to 0.82 m across, with depths of 0.05 m to 0.2 m, each was filled with varying silt and sand deposits, with some charcoal flecking evident.

2.5.5.2.4 Medieval activity

Located to the east and downslope, a small burnt spread 046 (Illus 2.95) was recorded. It consisted of dark greyish-black silt with high levels of inclusions of charcoal and burnt stone throughout. The extent of this spread was 1.13 m by 1.07 m, with a maximum depth of 0.02 m. A medieval date was obtained from a hazel recovered from this spread of cal AD 890–1030 (UBA-42831: 1076 ± 25 BP).

2.5.5.3 Site 16 Extension

This area of excavation was an extension to the initial Site 16. It measured 10 m by 100 m and extended along the north edge of Site 16 adjacent to the stone-lined burial pit (023, see 2.5.5.2.2) previously excavated.

Illustration 2.95: Burnt spread 046 before excavation

2.5.5.3.1 Early Bronze Age burial activity (Illus 2.94)

To the far east of the strip a large pit 009 was excavated. This sub-circular pit measured 1.08 m by 1.01 m, and up to 0.7 m deep. The basal fill 018 consisted of reddish-brown clayey silt with gravel with a maximum thickness of 0.2 m. Within this fill a grey organic residue SF3 of an unknown substance was block lifted for further analysis. The base of the pit was partially stone-lined with a relatively intact early Bronze Age Beaker (Ballin Smith, Appendix 15) and short end-scraper (CAT 19703) (Ballin, Appendix 12) deposited at its base (Illus 2.96). Hazel charcoal from this fill provided an early Bronze Age date of 2570–2300 cal BC (UBA-41923: 3946 ± 37 BP) in keeping with the diagnostic material culture. The stone lining 017, present only on the northern and western edges of the cut, consisted of sub-rounded stones measuring on average 0.35 m by 0.34 m in size, built up to two courses in height. Overlaying the stones, loose orangey-brown sandy gravel 016 measuring 0.12 m thick was noted; the short end-scraper was recovered from this deposit. Finally, sealing the pit and the Beaker vessel was a 0.4 m thick orangey-brown sandy silt deposit 010 with small cobbles.

Illustration 2.96: Stone-lined pit 009 with EBA Beaker and organic SF 3

Directly to the east of this pit, another potential burial pit 022 was encountered. It was sub-rectangular in form with dimensions of 2.25 m by 1.55 m, and a maximum depth of 0.3 m. It was orientated northeast/southwest, perpendicular to the orientation of burial pit 023 at Site 16, and contained a number of fills. As in the previous pits, its base was also lined with stones. The stones 028 consisted of cobbles measuring 0.1 m to 0.25 m across. Directly above this stone lining, a series of small pockets of grey and red coloured gravelly sand to sand fills (025, 026 and 030) with a maximum thickness of 0.30 m, were recorded. No material culture was recovered from any of these fills. Directly overlying these was a layer of a charred oak 014 which was present against the northern and western edge, and northern base of the cut (Illus 2.97). The wood appeared to take the form of several sections of plank measuring between 0.3 m and 1.2 m in length with a possible bracer. The wood could be from a plank burial, although no human remains were present, and no grave goods recovered. A date between 2140–1940 cal BC (UBA-43319: 3666 ± 28 BP) was obtained from a sample of the wood. Sealing the charred wood deposit was fine red-brown gravel 011 up to 0.1 m thick. This layer appeared relatively sterile in nature.

Directly to the east of this pit a concentration of three small pits (003, 007 and 012) was investigated. The furthest east (007) was a sub-circular shallow pit measuring 0.75 m by 0.35 m in plan, and 0.15 m deep. It contained dark orangey brown compact silty sand 005, which appeared relatively sterile. Directly south of this feature lay circular pit 003 measuring 0.7 m in diameter, with a depth of 0.19 m. It again contained orangey-brown sandy gravel fill 004. The final pit 012 approximately 3 m to the west, was sub-circular in form measuring 0.55 m by 1.1 m, with an overall depth of 0.2 m. It was filled with red silty sand 013. No material culture was retrieved from any of these features that could aid dating.

Illustration 2.97: Stone-lined pit 022 with wood remains from south-east

2.5.5.4 Site 17

This area was opened as a result of preliminary findings from the evaluation suggesting that significant sub-surface archaeological deposits relating to possible prehistoric activity were present in the area. Its location downslope from a known Bronze Age cremation cemetery further underlined the potential significance. Site 17 was characterised by two Bronze Age features, a small cairn overlying a stone-lined pit containing a 137-piece jet necklace (Sheridan, Appendix 13) to the eastern extent, and a structure to the western extent. A large number of shallow pits and single postholes were also excavated across the investigation area.

2.5.5.4.1 Early Neolithic occupation

To the east of the site two large occupation layer/spreads consisting of two charcoal and organic-rich deposits (085 and 156) were uncovered. The larger spread 085 measured 4.82 m by 4.65 m in plan, was 0.06 m thick, and consisted of dark greyish-brown silty, sandy clay with moderate gravel inclusions. A total of 12 fragments of flint were recovered, with a diagnostic example of an early Neolithic leaf-shaped point (CAT 1614) (Illus 2.98) and a retouched Mesolithic microblade (CAT 1615) (Ballin, Appendix 12). The other large spread 156 measured 4.51 m by 1.96 m in plan by 0.05 m in thickness, and consisted of greyish-brown silty loam with frequent charcoal and stone inclusions.

Illustration 2.98: Detail of early Neolithic leaf-shaped point (CAT 1614)

A number of small pits were also excavated in this area of the site. These lay 1 m west of the charcoal-rich spread/occupation layers 085 and 156. One sub-oval pit 162 with dimensions 1.98 m by 1.42 m and a depth of 0.24 m, truncated spread 085. A single fragment of flint (CAT 1627) was recovered from this pit. Directly southeast a second, shallower pit 073 was recorded. This pit measured 2.04 m by 0.98 m in plan with an undulating depth of 0.01 m to 0.03 m. This dark brown silty sand fill contained charcoal inclusions and five fragments of abraded pottery SF 21 of early Neolithic date (Ballin Smith, Appendix 15).

2.5.5.4.2 Early Bronze Age stone-lined pit and associated features

Located on the eastern side of Site 17 was stone-lined oval pit 177, measured 1.31 m by 0.88 m with a maximum depth of 0.1 m (Illus 2.99). Its basal fill consisted of firm dark brownish-black sandy silt 199 with occasional gravel and small stones. Above this was a series of flat stones 178 arranged within the bowl of the cut. The stones themselves ranged in size from 0.12 m by 0.09 m, to 0.15 m by 0.13 m. Overlaying the stone lining and sealing the pit dark brown-black sandy silt 062 with occasional gravel and small stones was recorded. Radiocarbon dating obtained from hazel charcoal from this context revealed an early Neolithic date between 3960–3710 cal BC (UBA-41925: 5044 ± 29 BP) indicating contamination from earlier activity on site, given the dateable artefacts recovered which are more typically 2500 to 2200 BC in date (Sheridan, Appendix 13). A total of 137 jet beads and spacers resting on the stone lining were recovered from one area from this deposit (Illus 2.100). This included four terminals, four spacers, one fastener, 128 beads, and a single quartz bead which formed a spacer-plate necklace and a spacer-plate bracelet of jet (Sheridan, Appendix 13). On analysing the assemblage Sheridan concluded that the necklace and bracelet adorned the body of the individual buried likely in a crouched position, with the beads then accumulating in one location as the body and thread decomposed. A scale-flaked flint knife (CAT 1631) (Ballin, Appendix 12) was also recovered adjacent to the necklace and bracelet remains (Illus 2.101). A roughly circular cairn, 105, measuring 2.3 m by 2.38 m, was constructed over the pit. It comprised a series of mid to dark brown sandy silt fills (053, 063, 074, and 080) with small quantities of oak and hazel charcoal. Several pieces of flint were recovered from fill 053: a blade CAT 1605, and two flakes (CAT 1620 and 1622) (Ballin, Appendix 12). The cairn material consisted of two loose courses of sub-circular accumulation of angular and sub-angular stones 009 with an average size of 0.13 m by 0.11 m by 0.1 m (Illus 2.102).

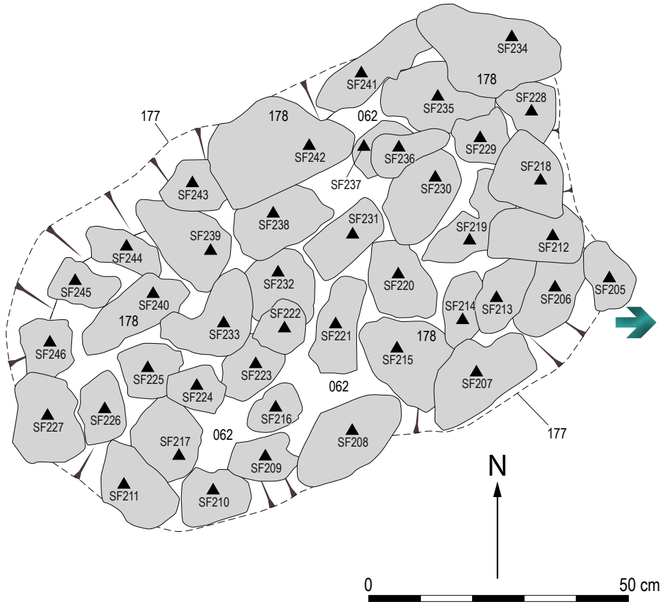


Illustration 2.99: Plan of stone-lined pit 177 in Site 17

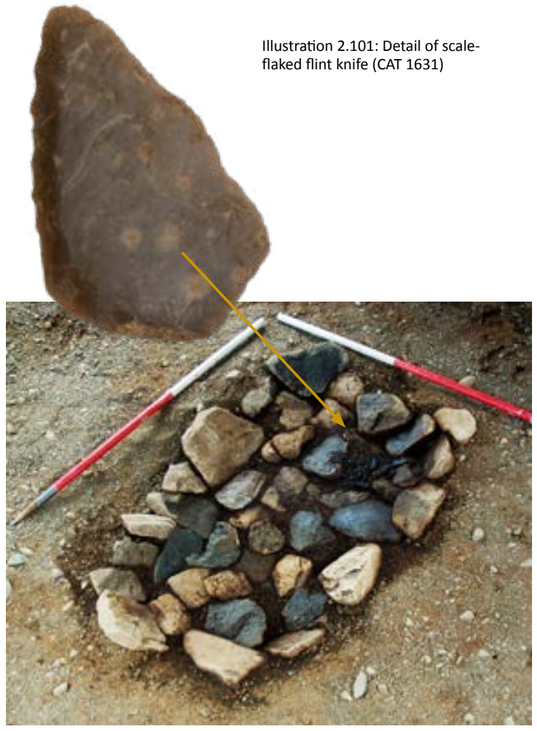


Illustration 2.101: Detail of scale-flaked flint knife (CAT 1631)

Illustration 2.100: Detail of stone-lined pit 177 with jet necklace in situ

Illustration 2.102: Detail of cairn 105 overlaying stone-lined burial pit 177

Directly to the southwest of this pit, a smaller sub-circular deposit 050 lay close to the cairn and pit 177. The deposit consisted of greyish-brown sandy silt with dimensions of 0.6 m by 0.5 m, with a maximum thickness of 0.05 m. A large fragment of decorated Food Vessel SF 41 was recovered relatively intact and a single large lithic blade (CAT 1589) probably of middle to late Neolithic date (Ballin, Appendix 12). A group of stones 052 similar to the cairn deposit 053 was visible in close proximity to its east, and also to the east two shallow pits 006 and 011 were identified, which measured c. 0.4 m by 0.3 m in plan and 0.1 m to 0.12 m deep. This too may be the remains of a burial pit, now truncated and with any cairn material displaced. Approximately 18 m to the west, a small dark brownish-black spread 012 was identified. Its dimensions were 0.8 m by 0.57 m with a depth of 0.07 m. It appeared to have a high concentration of charcoal within its fill on excavation but only a small quantity of indeterminate charcoal was identified after post-excavation analysis.

A series of rubble field drains extended north/south through the excavation area, one cutting relatively close to the stonelined pit 177 and possibly associated feature 050. Directly to the west of this rubble drain, a series of isolated features were identified. One sub-circular pit 025 measured 0.7 m by 0.8 m in plan, and 0.28 m deep. This pit contained two fills; basal fill 030 and upper fill 021 were brown to orangey-brown sandy silt with charcoal inclusions. A small fragment of flint (CAT 1591) was recovered from its upper fill 021. Adjacent to this pit was posthole 047 that measured 0.8 m by 0.72 m and 0.5 m deep. This posthole contained two fills 046 and 049. Large packing stones were visible within its basal dark grey silt clay fill 049, while its upper fill 046 consisted of a lighter grey silt clay deposit.

2.5.5.4.3 Group of postholes

In the western half of Site 17 a group of postholes was uncovered. Although during excavation it was thought that the postholes were part of a sub-rectangular structure, radiocarbon dating revealed dates ranging from the early Neolithic to the late Bronze Age (Illus 2.103). At the north and east, the postholes appeared to vary in size from larger posts (058, 068, 091, 096, 065, 114 and 163) with an average dimension of 0.8 m by 0.6 m to smaller postholes (076, 092, 094, 098, 099, 109, 116, 121, 123, 190, 193 and 198) with an average diameter of 0.3 m. The depths of the postholes averaged between 0.15 m and 0.36 m. They were all filled by dark brownish-black deposits with relatively high levels of charcoal inclusions. Botanical analysis suggested that the charcoal was either remains of posts burnt *in situ*, evidence of post charring before erection (identified by Thomas at Dunragit (2015)), or swept remains from nearby burning. No material culture was recovered from any of the postholes. A middle Bronze Age date of 1500–1390 cal BC (UBA-41924: 3161 ± 26 BP) was obtained from remains of barley (Alldritt, Appendix 3) from the fill 197 of one of the smaller postholes, 198. Hazel charcoal from similar posthole 116 revealed a comparable middle to late Bronze Age date (1390–1120 cal BC; UBA-43324: 3006 ± 30 BP). Larger posthole 091 provided an early Bronze Age range of 2460–2200 cal BC (UBA-42832: 3843 ± 29 BP).

To the southeast and northwest a series of relatively unevenly spaced postholes were excavated. They were similar in size to those of the northeast, ranging from 0.3 m to 0.6 m in diameter with average depths of 0.2 m. They

were steep-sided with no apparent inclination and were filled by charcoal-rich brownish-black silty sands. Hazel charcoal from 154 was dated to the early Neolithic between 3660–3530 cal BC (UBA-43325: 4852 ± 28 BP). A similar early Neolithic date (3770–3630 cal BC, UBA-42833: 4901 ± 37 BP) was obtained from adjacent posthole 175. No material culture was recovered from any of these features. Further postholes comparable in size (106, 145, 164, 166, 171 and 179), all containing dark grey charcoal-rich fills with thickness ranging from 0.12 m to 0.25 m were located in the interior of the groups. The date and function of these remains is unknown.

Illustration 2.103: Group of postholes in the western half of Site 17 (image courtesy of inplaneview.co.uk)

2.5.5.5 Site 21

Twenty-one pits, one posthole, one stakehole and six spreads were located at the eastern end of East Challoch Site 21. Pits were either circular or oval in form and they measured 0.34 m to 0.9 m in diameter and 0.07 m to 0.25 m deep. Seven pits were larger in size measuring 0.96 m to 1.92 m wide, 1.26 m to 3.08 m long, with depths of 0.2 m to 1.08 m. Most of the pits were filled by a single dark brown to dark brown-black silty sand with occasional small stones or gravel inclusions. However, multiple fills were recorded in pits 033 and 049, each of which were thought by the excavator to be used as refuse pits due to the organic and charcoal-rich fills, although these samples were not prioritised for processing and analysis.

Both posthole 010 and stakehole 008 were sub-circular or circular in form. The posthole measured 0.4 m by 0.34 m and 0.25 m deep and was filled by dark greyish-brown silty sand 009. The stakehole measured 0.1 m in diameter and 0.07 m deep, its fill 003 consisting of loose dark brown-black sand with gravel inclusions. Only six pieces of flint were recovered from Site 21, and apart from one discoidal core (CAT 1719) recovered from pit 026, all were unstratified and undiagnostic (Ballin, Appendix 12).

2.5.5.6 Site 25 (A and B)

This site was again separate from the original excavations due to the nature of the construction program. It was an extension to the road width, with 25A located west of Site 16 ext. and along the north edge of Site 16, and 25B located beyond Site 16 ext. to the east.

2.5.5.6.1 Site 25A

The archaeology present downslope at Site 25A consisted of a large occupation layer/spread of burnt detritus 008 and a series of small postholes and pits. Spread 008 measured 24.1 m in length with a maximum depth of 0.1 m. It extended outwith the excavation area in the direction of Site 17, and may have been truncated by construction works between Sites 25A and 17. It consisted of brown oak charcoal-rich silt with frequent stone inclusions. A number of slots excavated across the width of this spread showed that it had an irregular undulating base. A total of 60 pieces of worked flint were recovered along its length. Lithic analysis indicated that most of the finds were either late Mesolithic or early Neolithic (Ballin, Appendix 12). A more charcoal-rich concentration was located near the middle of the exposed spread, 022. This had a higher concentration of charcoal present throughout although no lithic material was recovered from this area of the deposit.

Located east of this deposit were a series of small postholes and pits. The most westerly of these features (007, 009 and 010), consisted of two shallow postholes and a shallow pit. The first of the postholes 010 was circular in form measuring 0.35 m in diameter with a maximum depth of 0.05 m. The fill consisted of charcoal-rich sandy silt 004. Directly adjacent to this lay a circular posthole 009 measuring 0.36 m diameter, and 0.05 m deep. It contained charcoal-rich brown sandy silt 006 from which a small lithic blade (CAT 4031) was recovered. Hazel charcoal from this fill was dated to towards the end of early Bronze Age period (1750–1610 cal BC (UBA-41926: 3396 ± 27 BP). Shallow pit 007 was excavated 3 m north of postholes 010 and 009. This sub-oval pit measured 1.09 m by 0.47 m, and up to 0.23 m deep, and was filled by greyish-brown silty clay 005. A concentration of oak charcoal within 007 suggested that it was used as fire pit (Alldritt, Appendix 3). An indeterminate fragment of flint (CAT 4032) was recovered from this feature.

Located approximately 8 m to the east upslope, two shallow pits (011 and 012) were uncovered. The first of these pits 011 was circular in form with a diameter of 0.4 m and a depth of 0.04 m. The fill consisted of mid greyish-brown fine gravel silt with occasional charcoal and small pebbles inclusions 055. The second pit 012 was oval in plan, measuring 0.72 m by 0.56 m and it was similarly shallow to pit 011 at 0.05 m deep. It was filled with mid brown charcoal-rich sandy silt fill 056.

A further 15 m to the east an isolated charcoal and organic-rich spread 013 was uncovered; this spread measured 0.63 m by 0.45 m in plan and 0.04 m thick. Located a further 10 m to the east, again upslope, lay two postholes (015 and 018). They were both circular in form with dimensions of 0.24 m and 0.28 m in diameter respectively and depths of 0.09 m. Both features were quite shallow and may have been the remains of truncated postholes or pits filled with singular dark brown charcoal-rich silt fills 014 and 017. No material culture was recovered from these features; however, a small number of unstratified lithics was recovered from this general location.

The eastern periphery of the site contained a small concentration of three features: two postholes, 019 and 020, and a small charcoal-rich spread 021. Sub-circular posthole 019 measured 0.44 m by 0.42 m while 020 was slightly larger measuring 0.53 m by 0.49 m, with maximum depths of 0.2 m and 0.1 m respectively. Both were filled with orange or midorange-brown sands and gravels. Both were cut into charcoal-rich spread 021 which extended outwith the excavation area to the east.

2.5.5.6.2 Site 25B

Located to the east of Site 16 ext. this area revealed a series of large pits. At the west end of the site lay two pits 042 and 044. Pit 044, the most northerly of these, was sub-circular in form, measuring 0.96 m by 0.66 m, and 0.12 m deep. The basal fill 041 consisted of dark greyish-brown silt with charcoal inclusions, while the upper fill 043 was a dark greyish-black charcoal-rich silty fill. A mixture of oak and hazel charcoal (Alldritt, Appendix 3) was identified in this fill which suggested that it was either a fire pit or waste pit. A sample of hazel from fill 043 provided a Mesolithic date of 7060–6690 cal BC (UBA-41927: 7976 ± 40 BP). Directly south of this lay a similar pit 042 with dimensions of 1.15 m by 0.56 m and a depth of 0.15 m. The fill consisted of charcoal-rich silty clay 040 from which a flint flake and an indeterminate lithic (CAT 4101-2) were recovered.

Located 20 m to the east a further three features were uncovered, two large pits, 048 and 052, and a small posthole 039. The larger of the pits 048 was sub-oval in form with dimensions of 2.5 m by 0.89 m and a depth of 0.33 m. This was filled by dark orange silty gravel 047 with charcoal flecking. The 21 fragments of flint (CAT 4103-23) recovered from this fill included a scalene triangle (CAT 4115) datable to the late Mesolithic as well as two short end scrapers (CAT 4123 and 4124) and a crested blade (CAT 4115) (Ballin, Appendix 12). The assemblage is clearly mixed, and at least some of the finds must be residual pieces which entered the feature through the backfill. The second pit 052 was located to the southeast and had dimensions of 2.5 m by 0.74 m, with a depth of 0.26 m. This sub-oval pit contained orangey-brown silty clay fill 051 which yielded four fragments of flint (CAT 4125-8) and a single fragment of cockle shell SF 22 (Smith, Appendix 11).

Located 8 m to the east of pit 048 was a small sub-circular posthole 039 measuring 0.38 m by 0.34 m 0.08 m deep. The fill consisted of light brown silty clay 038 from which a single flint chip (CAT 4100) was recovered. Finally, at the east end of Site 25B a small group of two similar linear features 050 and 052 and a posthole 054 were recorded. Shallow posthole 054 was filled by dark brown grey silt sand gravel with frequent inclusions of small stones and charcoal 053. The charcoal mostly identified as oak charcoal (Alldritt, Appendix 3) was possibly remains of a post burnt *in situ*, a sample of birch charcoal from its fill provided a late Mesolithic date between 5470–5220 cal BC (UBA-42834: 6358 ± 32 BP) (Illus 2.104).

Illustration 2.104: Posthole 054 in Site 25B before excavation

2.5.5.7 East Challoch Discussion

At East Challoch the various excavations were undertaken at different stages in the construction programme and this led to areas being investigated in isolation, in some cases with many months between despite only being metres apart. This meant that at each stage the excavators did not have the benefit of observing the full contextual relationship of features across what was essentially one undulating hilltop and ridge. The archaeology investigated here spanned a wide date range with dates and artefacts from the Mesolithic, Neolithic, Bronze Age, and Iron Age. This discussion will draw together the various strands of archaeological evidence by type and period.

2.5.5.7.1 Mesolithic to Neolithic

Isolated Mesolithic pits were encountered dispersed across East Challoch. None of them presented any evident alignment which could indicate relationships or contemporaneity by association. Some of them, identified at the west end of Site 5, had been recut and reused on at least two different occasions. It is not clear what their function would have been, however the presence of hazel nutshells in one of the pits suggests that it could have been used for food processing or storage. Although in small quantities, hazel nutshells were also recorded in other pits across Site 16 suggesting their use for processing hazel nuts for food, or as general waste pits. Two further pits, filled by charcoal-rich fills and located at the eastern end of the site, were also considered to have been used as either fire pits or waste pits. Although only one of them was dated, their similarities in fill composition and proximity to each other could evidence a shared date and function.

Mesolithic to early Neolithic lithic scatters were also identified in a few spreads along the site. Some of these spreads consisted of oak charcoal-rich silt deposits suggesting a large occupation layer. A diagnostic leaf-shaped point dated to the early Neolithic was recovered from this layer. Similar mixed assemblages of late Mesolithic to middle to late Neolithic lithics were also recovered from other features. They included diagnostic artefacts such as a scalene triangle as well as a scraper and Levallois-like flakes (Ballin, Appendix 12).

The discovery of food processing and/or general waste pits, together with lithic assemblages demonstrates that this area was exploited throughout the Mesolithic to the late Neolithic periods. It is evident that the site presented favourable conditions for the collection and processing of natural resources such as hazel nuts and other activities. However, the disperse nature of the features and lack of structures or patterns, indicates that the remains represented a seasonal and intermittent occupation. The late Mesolithic dates are slightly later than those obtained for the Mesolithic structures on lower ground at West Challoch, around 1 km to the west. Further dating evidence of early to late Mesolithic activity (7739-4534 cal BC) was apparent along the ridge at Boreland Cottage Upper around 300 m to the east of East Challoch, showing that this area has been repeatedly utilised for millennia, albeit for different purposes.

2.5.5.7.2 Early Bronze Age

The early Bronze Age is characterised by the use of parts of the site as a burial place. The construction of stone-lined pits and associated features, some of them with rich grave goods, demonstrate the variety of funerary practices that occurred on this site.

Mostly oval or sub-circular in shape, the four cists were constructed in a similar manner with stones lining their base. The largest in size, sub-rectangular in plan, was devoid of grave goods but it contained a possible plank coffin which survived as charred oak planks, with possible bracing visible during excavation. Although it did not present grave goods or human remains, its construction and close proximity to other burial pits suggests that it was also a burial pit. A similar example of a possible plank coffin has been found at Upper Largie Quarry, Argyll and Bute (Cook 2010).

Another stone-lined pit was accompanied by a Food Vessel and spacer-plate jet necklace, while a third had a Beaker, short end-scraper, and possible fragments of degraded leather within. The fourth and final cist had a spacer-plate jet necklace, a spacer-plate bracelet of jet of likely early Bronze Age date, as well as scale-flaked flint knife. A cairn covered this latter burial. Furthermore, a satellite feature associated with this burial and located to the southeast contained a fragment of a decorated Food Vessel and a large lithic blade. The construction of the cairn may have provided a focal point in the landscape leading towards the later cremation cemetery present at Boreland Cottage Upper (see 2.5.6), 300 m east of the site.

All the burials were located on raised ground, overlooking the coast and the surrounding low-lying land. Although no human remains were recovered from any of the stone-lined burials, the rich grave goods retrieved from some of them evidenced the importance of the people buried in these cists, their connection to other communities and their traditions and beliefs. As no remains were encountered in any of the pits and both inhumation and cremation were practiced during this period, it is not possible to ascertain which type of burial was practiced in relation to these cists, if any. However, as cremated bone was known to survive in similar subsoil further west (Drumflower) and further east at Boreland Cottage Upper (2.5.6), inhumation is more likely. Furthermore, the distribution of the jet necklace and bracelet encountered in one of the burials suggests that it contained a crouched inhumation. When the biological sex of the buried remains with associated jet jewellery has

been determined in other sites it has consistently been found to be female (Sheridan, Appendix 13). Therefore, it is possible to assume that both burials where jet jewellery was encountered were graves of high-status women.

2.5.5.7.3 Group of multiperiod postholes

Towards the centre of Site 17, a group of postholes was recorded. None of the postholes contained datable artefacts that could aid on determining their date or function. Radiocarbon dating of some of them provided a wide range of dates from early Neolithic to late Bronze Age. However, as no apparent differences between them nor any possible pattern was discernible their function remains unknown.

2.5.5.7.4 Iron Age

Two Iron Age structures were identified in Site 5, both post-ring structures constructed in a similar manner although differing in scale. The smaller structure was represented by a rough circle of postholes, while the second larger timber structure was also constructed by a circle of postholes, but with a small gully/ditch limiting its northern side (Illus 2.105).

The presence of a hearth at the centre of the larger structure, as well as a possible entrance at the southeast, suggests this may have been a domestic dwelling. The size of the structures is comparable to known Iron Age houses in Scotland which varies from less than 7 m to approaching 20 m in diameter, with the largest structure's proportions comparable to the most common range (c. 8 m across) (ScARF National Framework, Iron Age). The larger of the two structures burned down as evidenced by the charcoal remains of posts being burnt *in situ* and the charcoal-rich layer that sealed the structure. The presence of a stone deposit sealing the burnt remains could possibly indicate the remains of a collapsed stone structure, although as none of the stones presented signs of being scorched, they could be evidence of later field clearance.

The proximity to Myrtle Cottage's Iron Age settlement located south of East Challoch suggests that these structures were part of a wider settlement now separated by the former and newly constructed A75. Analysis and modelling of the dates from both structures by Hamilton (Appendix 1) indicated a period of activity most likely contemporary with the activity at Myrtle Cottage.

As in other sites, the archaeology at East Challoch is a mixture of periods and features, from seasonal use of the site during the Mesolithic to burial practice in the early Bronze Age, and later, Iron Age settlement. The association with other sites along the bypass route, particularly Boreland Cottage Upper and Myrtle Cottage, demonstrate that the site is not a separate entity but part of a wider human use of this landscape over several millennia.

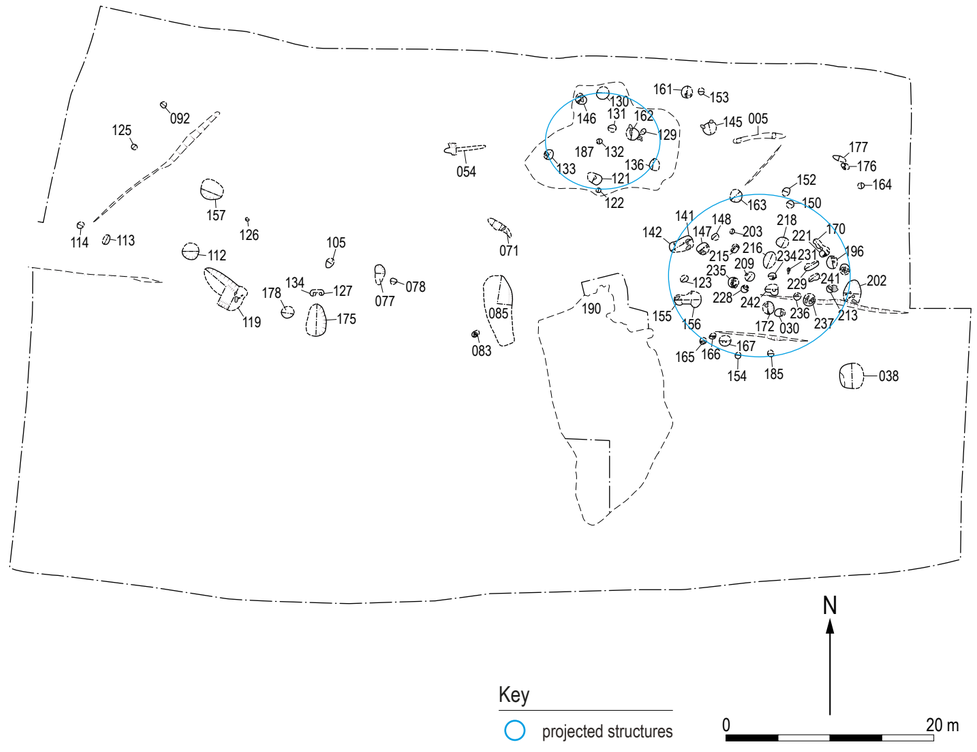


Illustration 2.105: Projected structures in East Challoch

2.5.6 Boreland Cottage Upper

Iraia Arabaolaza

The C19 evaluation highlighted a series of significant archaeological features including aceramic cremations associated with a ring-ditch. Further extension, recorded as Site 10, was carried out to establish the extent and character of the archaeology on this area. Due to the archaeological significance on this area, which included Sites 2A and 2B located to the east of Site 10, four further areas were investigated during the construction phase works comprising Site 2 ext., Site 18, Site 23 and 23 ext., which together form the collective Boreland Cottage Upper site described here (Illus 2.106).

2.5.6.1 Site 10

From the evaluation phase of works it was established that there was funerary activity in this area with multiple pit and postholes also suggesting that there were other phases of archaeological activity of a general prehistoric nature across this whole ridge (Illus 2.107).

2.5.6.1.1 Mesolithic–Earliest phase of activity

Pits of Mesolithic origin were distributed across the entire site and usually filled by loose brownish-orange silty sand, similar to the hill wash 241 material found extending in a band west/east (perpendicular to the adjacent slope to the north) across much of the site. Radiocarbon dates obtained from a number of features across the site revealed early Mesolithic to late Mesolithic occupation (between the eighth and mid-fifth millennia cal BC: UBA-41485, -41489, -41652, -41654, -41661), which corresponds to the examples of blade/microblade industries found on site (Ballin, Appendix 12). Mesolithic lithics include an obliquely blunted point (CAT 530) retrieved from deposit 762 and the isosceles triangle (CAT 2022) found during the evaluation (Ballin, Appendix 12). Both these lithics suggested an early Mesolithic date, while two other lithics (CAT 517) recovered from pit 850 and pit 1026 (CAT 2022) indicating a late Mesolithic date. The comparable dates between pit 991 and the finds retrieved in pit 1026, as well as their proximity to each other, suggests a possible association. A split pebble (CAT 531) was recovered from the largest pit 991, measuring 2.2 m by 1.8 m in plan and 0.51 m deep. Numerous debitage flint fragments as well as worked flint fragments (CAT 621 to 691) were recovered from pit 1026,

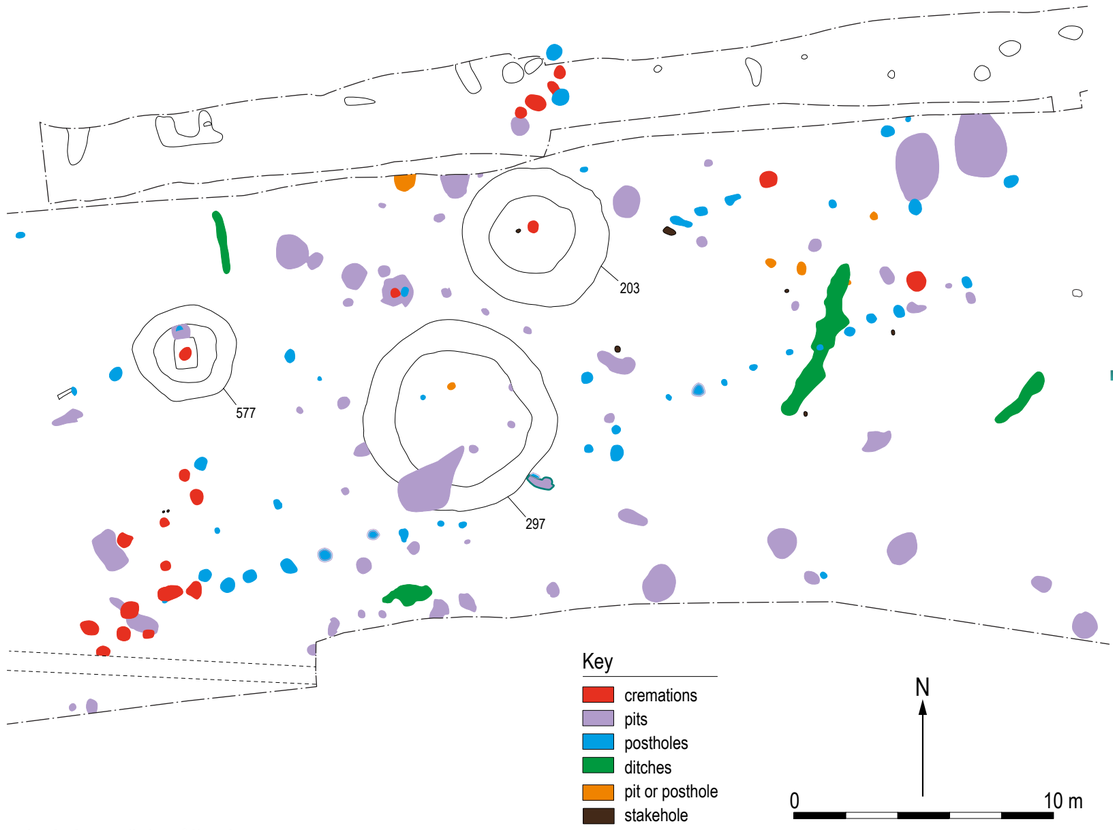


Illustration 2.107: Detail plan of Site 10

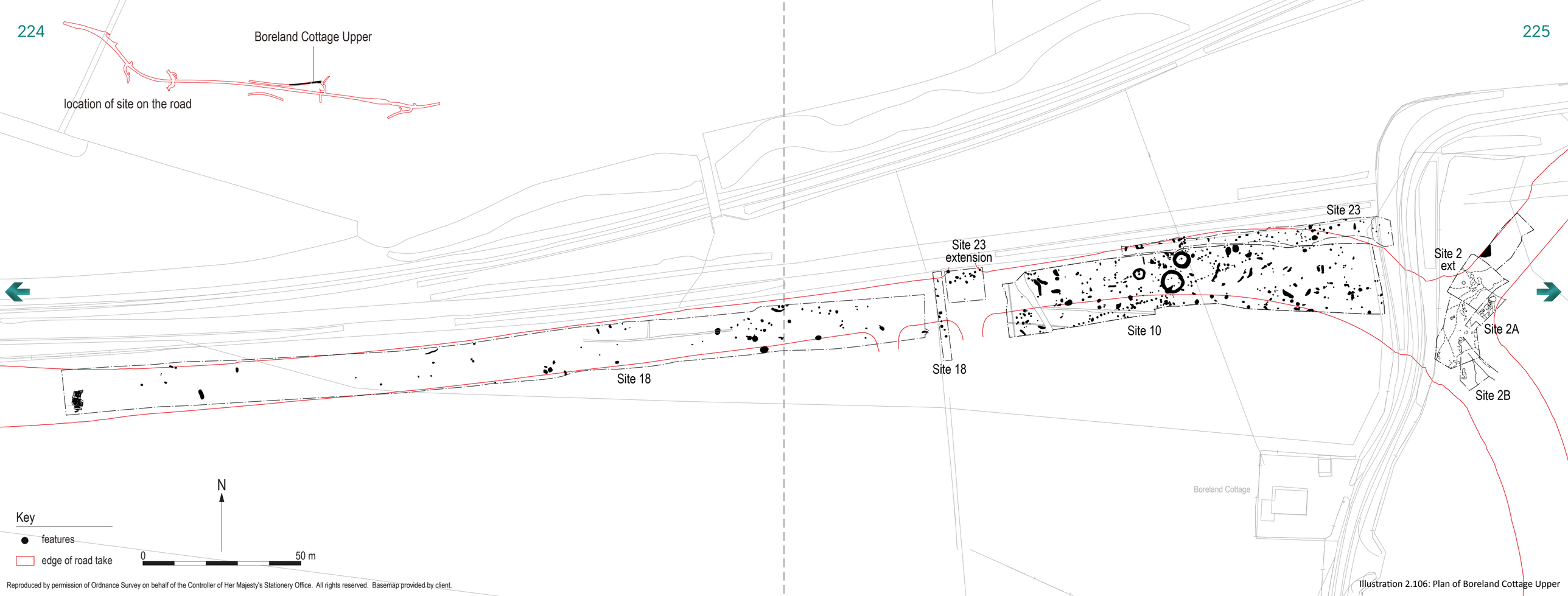


Illustration 2.106: Plan of Boreland Cottage Upper

including blade-scrapers (CAT 650), scalene triangle (CAT 666), single-platform core (CAT 667), and two short end-scrapers (CAT 675 and CAT 691) one of which was burnt (Ballin, Appendix 12). This oval-shaped pit measured 2.35 m by 1.2 m in plan, and was 0.54 m deep. Both pits were filled by numerous similar fills. They included loose pale brown to dark brown silt with ash and charcoal (782, 1023, 1024 and 1025) in pit 1026, and loose dark brown to greyish-brown silt with frequent charcoal and ash (763, 983, 990 and 1001) in pit 991. While pit 1026 only produced oak charcoal, suggesting probable structural remains, most of the fills from pit 991 produced some oak charcoal together with alder, birch, hazel and hazel nutshell, possibly hearth/midden waste (Ramsay, Appendix 4).

Further features, showing no particular pattern and representing later phases of activity based on their stratigraphic relationships, were truncated by later postholes and/or ring-ditches. Five of the pits (057, 293, 852, 896 and 908), were located around the central area of the site and were truncated by the largest ring-ditch 297, while two of the pits (057 and 852) were also cut by later features. One of these pits 057 that produced suitable material for radiocarbon dating provided a late Mesolithic date of 6430–6230 cal BC (UBA-41485: 7472 ± 40 BP) using alder charcoal. The pits were generally sub-circular or oval in form and their measurements ranged from 0.26 to 1.1 m wide, 0.3 m to 1.8 m long, and 0.09 m to 0.44 m deep.

2.5.6.1.2 Early Neolithic–Line of postholes

Crossing the site 45 postholes were observed extending in ENE/WSW alignment. Even though they were predominantly arranged in one line, others lay in short rows parallel to this main alignment that measured approximately 90 m in length within the investigation area. The postholes varied in form and composition (Illus 2.108). They measured between 0.33 m and 0.65 m in diameter and 0.08 m and 0.37 m in depth and they were oval or circular in plan (Illus 2.109). Their fills varied in colour ranging from reddish-brown to brownish-grey and dark grey and also in composition from sandy silt, to silt or coarse sand. Some of them presented inclusions of occasional to frequent charcoal flecks, however the small amount present suggest that the charcoal was residual remains of scattered hearth/midden waste. There was only one posthole 175 that produced enough oak charcoal (Ramsay, Appendix 4) remains to suggests a burnt post. Possible packing stones were visible in some of them, including 175; 184; 270; 164; 165; 171 and 715. None of these postholes presented any datable finds, but some of them showed stratigraphic relationships with other features. Radiocarbon samples obtained from short-lived species from six postholes (056, 171, 184, 270, 736 and 923) provided early Neolithic dates spanning the first third of the fourth millennium cal BC (UBA-41484, -41475, -41477, -41476, -41478 and -41665, respectively). A slightly later fourth millennium date (3520–3350 cal BC, UBA-41660: 4624 ± 34 BP) was obtained using hazel charcoal from the easternmost posthole of the alignment 720. However, an additional date from this same posthole produced an early Neolithic date between 3950–3650 cal BC (UBA-42825: 4997 ± 40 BP) which is similar to the date range obtained from the other postholes.

A possible shorter secondary line of postholes, approximately 3.5 m north of the main line of 45 postholes and extending approximately 15 m ENE/WSW (parallel) to the main line was identified. It was composed of a total of seven postholes (728, 738, 809, 812, 828, 830 and 156). They were oval or circular in form and measured between 0.4 and 0.5 m in diameter and between 0.05 m and 0.29 m deep. An additional four smaller postholes or pits (834, 817, 729 and 726) were also found between this line of postholes and the main posthole alignment. None of the fills presented any finds or datable samples to help determine their date or function, although one of them, 809, cut large pit 906 (see 2.5.1.6.3).

Further north, another possible shorter parallel line of postholes, 3 m away from the secondary line of seven postholes (above) and 7 m away from the main line of 45 postholes was identified extending approximately 10 m in an ENE/WSW alignment. It was composed of six postholes (715, 774, 836, 194, 855 and 850) of varying size and form. The smallest of these measured 0.26 m by 0.15 m in plan while the largest was 0.7 m by 0.35 m, depths varied

Illustration 2.108: Line of excavated postholes

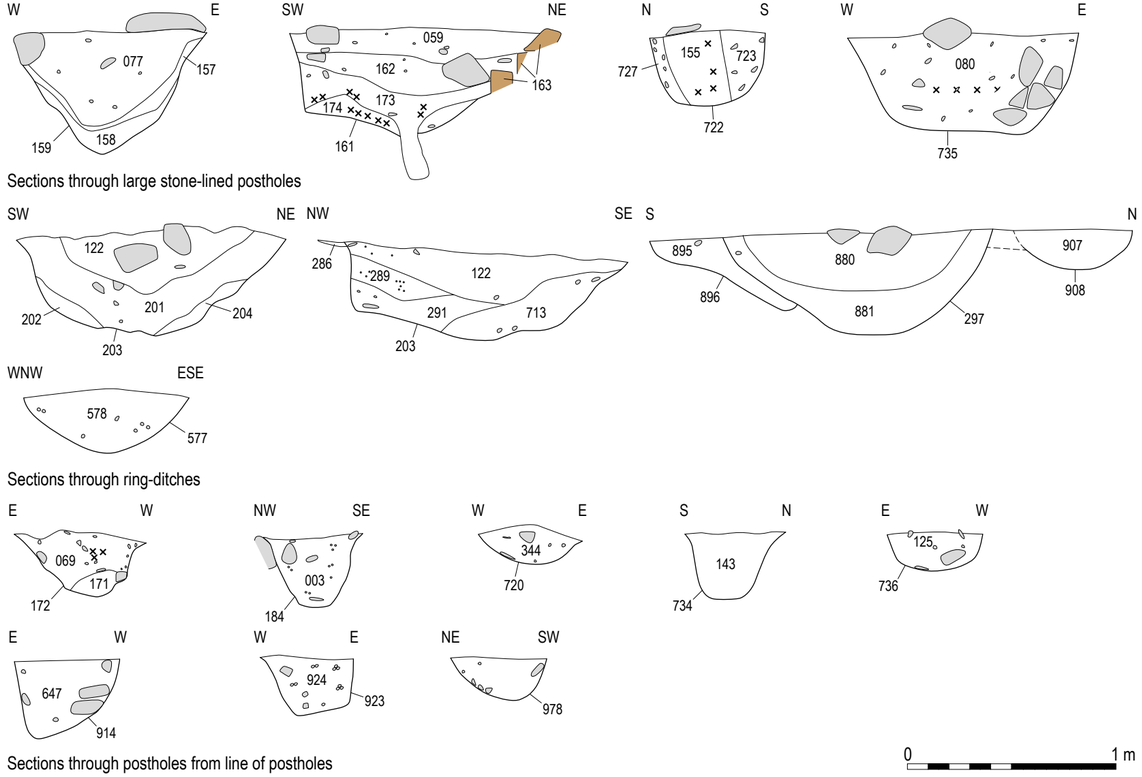


Illustration 2.109: Sections of large stone-lined postholes, ring ditches and line of postholes

between 0.1 m and 0.27 m. None of them showed evidence of a post-pipe, and packing stones were only identified in postholes 715 and 855. None of the fills presented any carbonised remains that could be used for dating.

Two isolated features located further west (958 a post- or stakehole, and pit 980) provided comparable dating to the main line of postholes on site. Radiocarbon dates obtained using alder charcoal from posthole 958 (UBA-41666: 4967 ± 34 BP and UBA-41667: 4920 ± 32 BP), and hazel charcoal from posthole 980 (UBA-41668: 4984 ± 32 BP) provided early Neolithic dates of range 3940–3640 cal BC. They both had similar fills of greyish-brown silt with charcoal fragments and flecks and were sub-circular or roughly oval in plan.

2.5.6.1.3 Early Neolithic–Isolated large pits

Pit 906 was oval in plan and measured 1.7 m by 2.5 m with a depth of 0.6 m. There were five fills present (134, 909, 910, 911 and 912). One large stone was recorded within basal fill 909 with other fills including re-deposited hill wash 912 and re-deposited natural 910 and 911. This feature was truncated by a posthole 809 (part of the shorter secondary line of 7 postholes) on its southern side.

Pit 187 was located 1 m west of pit 906 and was slightly larger than the previous pit, measuring 1.95 m by 2.6 m in plan and 0.68 m in depth with three fills (188, 890 and 189). Two flint flakes (CAT 476 and 477) were recovered indicating a likely prehistoric date. There were large boulders within the southeast quadrant of the feature, which may suggest packing material for a large post as opposed to a pit. Radiocarbon dating obtained from sample of alder charcoal (UBA-41480: 4985 ± 32 BP) provided a date of 3940–3650 cal BC indicating that this possible posthole is roughly contemporary with the main 45 posthole alignment.

Situated west of these features and east of ring-ditch 577 was a sub-circular stone-lined pit 255 measuring 1.2 m and 1.5 m in diameter and 0.7 m to 0.8 m deep. Packing stones, two courses deep, lined almost the entirety of the circumference. The cavity defined by the large stones was filled with brownish-grey gravelly sand 109, overlain by yellowish-orange sandy silt 292, and two subsequent sandy silt layers 263 and 193, all similar to the surrounding natural subsoil (Illus 2.110). Alder charcoal from deposit 292 was dated to 3910–3640 cal BC (UBA-41483: 4969 ± 35 BP). A nearby brown silty sand possible occupation layer 110 revealed a similar radiocarbon date of 3990–3800 cal BC (UBA-41664: 5118 ± 30 BP) on a fragment of alder charcoal. A shallow pit 844 adjacent to feature 255 was also dated to 3940–3650 cal BC (UBA-41487: 4976 ± 34 BP).

Further east, another sub-circular pit 624 filled by loose brownish grey silt 628 and brown silt with frequent stones 367 was identified. Hazel charcoal from 367 was dated to 1410–1210 cal BC (UBA-41658: 3041 ± 27 BP). Compared

to the above-mentioned large pits in the same site it was much smaller in size. A lithic flake CAT 497 was recovered from its fill 367.

Illustration 2.110: Stone-lined pit 255

2.5.6.1.4 Early Neolithic–Arc of large stone-lined postholes

Located in the central area of the site, just south of the line of postholes, four large postholes forming a WSW/ESE arc were recorded (159, 161, 722 and 735) (Illus 2.109). Situated furthest west, posthole 161 contained four fills and packing stones. Oval in plan it measured 1.36 m by 1.2 m and 0.74 m deep. Packing stones 163 were identified concentrated on the northern edge of the cut, consisting of mostly large rounded/sub-angular cobble-size stones with gaps filled by smaller angular stones. The fills consisted of varying sands and gravels (174, 173, 162 and 059).

The second posthole 159, was sub-circular in form with steep sides and was 'V' shaped in section; it measured 1 m in diameter and 0.65 m deep (Illus 2.111). Several courses of large packing stones were identified on its north side. The basal fill consisted of oak charcoal-rich dark blackish grey silty clay 158 measuring between 0.15 m and 0.2 m thick. Overlaying this deposit was moderately compacted orangey-brown silty clay 157 measuring 0.1 m thick with frequent stone and charcoal inclusions. This intermediate fill seemed to be scorched/ burnt *in situ*, or it may be material redeposited from a hearth. The large quantities of oak charcoal found within all deposits are further evidence that a large oak post may have been burnt *in situ*, or the charcoal may be the result of pre-erection post charring. The uppermost fill consisted of moderately compacted dark orangey-brown silty sand 077 of 0.45 m thickness with many stone and charcoal intrusions. Southeast of this posthole lay two further possibly associated features, a pit 818 and possible stakehole/posthole 826.

An additional third stone-lined posthole 735 was identified east of 159. It was similar in plan but slightly larger in scale measuring 1.2 m by 1.26 m in plan and 0.54 m deep with a wide 'U' shaped profile. The fill consisted of loose dark

brown coarse sandy silt with frequent gravel, oak charcoal and medium to large sub-rounded stones 080. During excavation it was noted that several large to medium-sized stones within this fill showed signs of cracking that could be attributed to *in situ* burning of a post; the fill 080 was heat-affected below these cracked stones, with a bright orange colouration.

Illustration 2.111: Southeast facing section of pit 159

The final large posthole 722, was sub-circular in form and measuring 0.8 m by 0.55 m in plan, and 0.36 m deep. In contrast to the other three, this posthole presented the remains of a post-pipe in the form of moderately compact dark greyish-black silty sand 155 with frequent charcoal framed by several large stones in plan, and flint flake CAT 502 was also recovered from this fill (Ballin, Appendix 12). A hazel charcoal (*Corylus cf avellana*) sample from the post-pipe produced a date of 3900–3640 cal BC (UBA-41479: 4968 ±32 BP). Abutting both sides of the post-pipe were packing material 723 to the east and 727 to the west. These deposits consisted of compact dark orangey brown sandy silt with occasional gravel inclusions and measured up to 0.26 m thick around the circumference of the post-pipe.

2.5.6.1.5 Early Neolithic–Isolated features

Further two isolated features (451 and 498) located at the east end of the site, were dated using hazel and alder charcoal to the early Neolithic 3790–3630 cal BC (UBA-41653 and 41655, respectively). Although the function of this feature is uncertain it does demonstrate the widespread nature of early Neolithic activity across this area.

2.5.6.1.6 Late Neolithic (Illus 2.112)

Based on the results obtained from radiocarbon dating, there was a clear concentration of late Neolithic features at the west side of Site 10. Pit 899 was situated at the northwestern corner. This oval pit measured 1.5 m by 1.3 m in plan and 0.2 m deep with two fills. The lower fill of blackish brown silt sand 884, slightly coarse in texture and

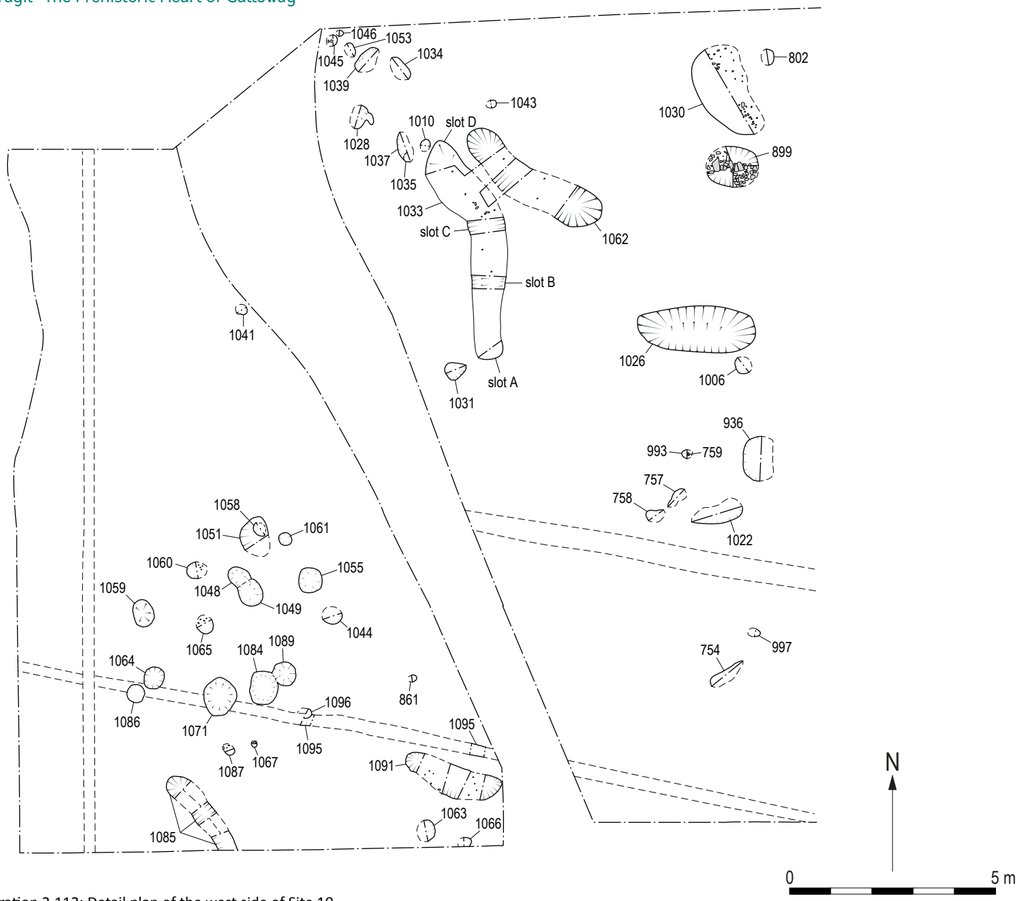


Illustration 2.112: Detail plan of the west side of Site 10

charcoal-rich, was sealed by a loose light greyish-brown silty sand 788, containing burnt and fire-cracked sub-angular cobble-sized stones. Both deposits were interpreted as possible hearth waste. A sample of hazel charcoal from 884 provided a date of 2880–2580 cal BC (UBA-41488: 4141 ± 29 BP), a late Neolithic date on the north edge of this pit, and two spreads of burnt material (789 and 803) were identified. Both consisted of black mottled with dark brown and dark orange soft sandy silt with frequent small angular fire-cracked stones and frequent charcoal (Illus2.113). Botanical analysis revealed similarities between the charcoal assemblage of 884 and 803 (Ramsay, Appendix 4). Underneath each spread a posthole was found: posthole 1004 was discovered beneath 803, while posthole 1011 was under 789.

To the west of this group two large curvilinear features 1033 and 1062 were discovered. They were filled with similar light grey brown clay silt deposits and 1062 truncated the outer edge of 1033. Both of them present datable finds, with several flint flakes (CAT 545, CAT 550-5, CAT 564-5 and CAT 606), one of them CAT 565 an opposed platform core (Ballin, Appendix 12). Four prehistoric pottery sherds SF74 were found in fill 445 of feature 1033 (Ballin Smith, Appendix 15), and flint fragments including a short end-scraper (CAT 608) were present in both the basal fill 1068 (CAT 607-10) and upper fill 1052 (CAT 604-5) (Ballin, Appendix 12). A relatively high quantity of flint fragments

Illustration 2.113: Stone and charcoal spreads 789 and 803

was discovered in the deposits and spreads around these features (CAT 566-9, CAT 561-3 and CAT 19640-7). The high concentration of finds, compared to other areas across the site, may indicate an occupation area or an area where flint knapping had occurred (Ballin, Appendix 12). A small group of pits and two postholes were identified to the northwest, but no clear arrangement was visible. Radiocarbon dating from a fragment of alder charcoal (*Alnus cf glutinosa*) from context 445 provided a result of 2630–2470 cal BC (UBA-41670: 4031 ± 26 BP).

Further southwest on the edge a total of eighteen postholes and pits, arranged in an oval pattern, were discovered (Illus 2.114). Most of them presented datable finds, from flint fragments of middle Neolithic date to early Bronze Age pottery sherds, including possible Beaker fragments (Ballin Smith, Appendix 15), and fragments of cremated bone SF 197 found in pit 1089. Two fragments of decorated Impressed Ware pottery SF 156, dated to the middle Neolithic, were retrieved from posthole 1049 which cuts through pit 1048; both were located north of the centre of the oval pattern of features and both features contained datable finds. A chisel-shaped arrowhead (CAT 591) typically of middle Neolithic date was recovered from pit 1059 (Ballin, Appendix 12), while a pounder/hammerstone (SF 188) dated to the late Neolithic/early Bronze Age was recovered from pit 1071 (Ballin Smith, Appendix 14). None of these features had a clear function; however, the high quantity of possible domestic artefacts suggests that it may have been an area of habitation. Radiocarbon dating of the two postholes (1049 and 1055) and of pit 1089 provided consistently late Neolithic dates across the period 2900–2570 cal BC (UBA-41490, -41671, and -41491, respectively). However, an early Neolithic date (3660–3530 cal BC, UBA-41672: 4842 ± 30 BP) was obtained from the fill (874) of pit 1086.

Finally, at the east corner of the site, just before it sloped down towards the unclassified small road and Site 2, several pits/postholes were discovered. No particular pattern or obvious focal point was discernible and none of them presented any datable finds apart from a single crested flake/blade (CAT 496) of possible Neolithic date recovered from pit 468 (Ballin, Appendix 12).

2.5.6.1.7 Bronze Age

The Bronze Age features encountered across Site 10 included multiple cremation burials, either with urns or aceramic, and three ring-ditches that are the remains of barrows of different scale.

2.5.6.1.8 Bronze Age–Cremations

The majority of the cremations were concentrated in a cluster, just southwest of the smallest ring-ditch 577. A

Illustration 2.114: Group of postholes and pits

total of 12 cremation burial pits were recorded in this area (Illus 2.140), while the remaining eight cremation pits were scattered throughout the site, two of which were dug during evaluation (C19050 and 149003). These cremation features were found centred in the ring-ditches 203 and 577, with the cremation 149003 within 577 placed in an inverted urn SF 92 (see vessel 3 in Illus 2.115).

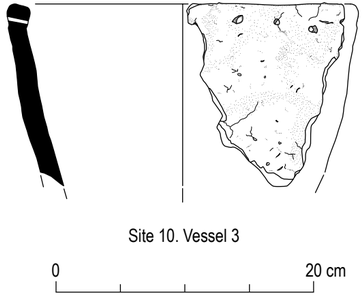


Illustration 2.115: Detail drawing of inverted urn SF 92 (vessel 3)

Most of the cremation burial pits found in this group were circular or oval in plan and measured between 0.4 m and 0.6 m in diameter and between 0.13 m and 0.52 m deep. Their fill colours and compositions varied from firm black charcoal-rich sandy silt, to loose brown sandy silt, with no evident charcoal inclusions. Datable finds were retrieved from four of the cremation burial pits. In cremation pit 531 a possible burnt short end-scraper flint tool was found (CAT 499) (Ballin, Appendix 12) and a single carbonised apple pip (Ramsay, Appendix 4). Pits 516, 531 and 533 contained traces of hazel nutshell and 518 revealed a single carbonised barley grain. Furthermore, dating of cremated bone samples retrieved from some of these cremations (516, 518, 520, 528 and 539) has revealed that many of them date to the first quarter of the second millennium cal BC (UBA-41656, SUERC-87523–5, SUERC-87530–1, and SUERC-87534).

Analysis of the cremated bone within this cremation cluster revealed that they were quite fragmentary assemblages composed of fully calcified white bone with some of the remains presenting signs of weathering (Kilpatrick, Appendix 8). All appeared to contain the remains of at least one individual of probable adult age based on bone size and thickness. Based on an intact auricular surface it was possible to determine an estimated aged between 40-44 years at death for cremation 528 (Kilpatrick, Appendix 8).

Two of the most significant finds, two early Bronze Age accessory vessels SF 95 and a vessel base SF 98, were retrieved from pit 528 (Ballin Smith, Appendix 15) (Illus 2.116). This oval-shaped pit measured 0.74 m by 0.56 m in plan and was 0.3 m deep. This feature contained six different fills all of which were disturbed by animal burrowing. The basal fill of the cremation pit consisted of black charcoal-rich silt 687 measuring 0.04 m thick. Analysis of its botanical remains revealed a large amount of alder charcoal with traces of oak (Ramsay, Appendix 4). Within this fill, on the northwest edge of the pit, an inverted vessel SF 95 with incised decoration was discovered. Above this cremation deposit two additional fills (667 and 668) were recorded at the northern and southern sides of the pit. A probable ash deposit, loose grey silt 666 measuring 0.01 m thick, was identified covering these two fills. This in turn was sealed by loose brownish-black silt charcoal-rich fill 654, which produced mostly alder charcoal with traces of oak (Ramsay, Appendix 4). Finally, the upper fill 527 in which the base sherd SF 98 was found was light greyish-brown sandy silt 0.14 m thick with frequent charcoal inclusions. Botanical analysis of this fill revealed a very different charcoal assemblage with high concentration of oak charcoal present compared to the 20% of alder; an indeterminate grain was also identified in this fill (Ramsay, Appendix 4). Possibly associated with this pit and to its immediate west, a deposit consisting of brown silt 629 with gravel, charcoal and cremated bone inclusions was identified. This deposit was interpreted on-site to be the result of 'over spill' from the large cremation 528 (Kilpatrick, Appendix 8). The comparable radiocarbon dating obtained from cremated bone samples from these two deposits does support this hypothesis, with bone from 629 dated to 1890–1700 cal BC (SUERC-87532: 3492 ± 23 BP) and bone from 528 dated to 1890–1700 cal BC (SUERC-87530: 3491 ± 24 BP).

Illustration 2.116: Close up of Bronze Age accessory vessel SF 95

A stone-filled pit 537 was identified to the west of burial pit 539 and c. 1.5 m away from this cluster of cremation burial pits. Sub-rectangular in form and almost vertical sides dropping to a flat base, it measured 1.65 m by 0.95 m and was 0.28 m deep. It was filled by irregular shaped stones 725 measuring between 0.1 m and 0.4 m across. It appeared that the cremation 539 was overlying the fill of this pit. The cut of the pit appeared to deviate slightly to accommodate the insertion of cremation burial 539 which would suggest that they may have been contemporary. Due to its form and its association with the cremation cluster, and cremation burial 539 in particular, it was noted during

excavation that this stony feature may have acted as a focal point from which the group of cremations radiated east forming an arc.

Truncated by two of the cremation burial pits (531 and 535) at its southeast and northwest end, a linear pit 1016 was located south of the stone-filled pit. No finds or carbonised remains were retrieved to help determine its function and date, but it does pre-date at least two cremations.

Southwest of the smallest ring-ditch 577 and in the vicinity of the area of cremation burial pits cluster, two of the postholes (535 and 549), showed evidence of the intrusion of cremated bones. The loose dark orangey brown silty sand fill 534 within 535 had inclusions of cremated bone fragments at its upper surface; while the loose dark grey silty sand 548 filling 549 also had inclusions of small fragments of cremated bone. A single posthole 529, also situated in this area, was cut by a cremation burial 528, again showing that at least some of the funerary activity post-dates the main early Neolithic 45 posthole line (see 2.5.6.1.2 above). The fill of this posthole 693 consisted of loose grey sandy silt with charcoal flecks at its base and also showed intrusion of cremated bone, probably introduced by animal burrowing and related to cremation pit 528.

To the west of the smallest ring-ditch 577, two additional cremation deposits (669 and 837) were identified. Deposit 669 consisted of brownish-black silt 0.1 m thick with inclusions of mostly oak charcoal and was placed to the northeast of posthole 819, just above its pebble-lined base 820. This cavity resembled a post-pipe which may indicate that the post had been removed and replaced by this cremation deposit. A fragment of alder charcoal was dated from this deposit (1890–1680 cal BC, UBA-41662: 3455 ± 26 BP). The posthole fill consisted of loose beige-brown coarse sandy silt 820 measuring 0.77 m by 0.59 m and 0.1 m thick was found around the cremation deposit. Cremation pit 837 lay immediately north of posthole 819. Sub-circular in form, this cremation burial measured 0.7 m by 0.52 m and 0.33 m deep. It was filled by compact dark greyish-black silty gravel fill 670 with hill wash found around the edges of the cut. An early Bronze Age date of 1880–1690 cal BC (SUERC-87533: 3452 ± 23 BP) was obtained from a cremated bone fragment from this feature. Cremation deposit C19050, investigated during the evaluation, was located southwest of posthole 819. A fragment of cremated bone from this deposit provided an early Bronze Age date as well (1950–1770 cal BC, SUERC-87516: 3547 ± 24 BP). Both cremations revealed remains of at least one adult individual (Kilpatrick, Appendix 8).

2.5.6.1.9 Bronze Age–Urn cremations

Urn cremations were found at the central north area of the site, with one of them, within pit 579, located at the centre of the smallest ring-ditch (this cremation will be described in context with the ring-ditches). Two further urn cremations were encountered forming a possible ENE/WSW alignment, similar to the lines of the early Neolithic postholes. The first one 212, with a plain inverted large urn SF 61, was situated north of the largest ring-ditch 297 (Illus 2.117). It was discovered during the excavation of circular posthole 213 which was filled by dark brown sandy silt 038; it measured 0.46 m by 0.51 m in plan and was 0.17 m deep. No cut was discernible for the urn at the surface but it was discovered when the edges of the posthole 213 were being tested. The cut for this posthole truncated cremation pit 212 at its SSE edge. Circular and approximately 0.85 m by 0.7 m in plan, and 0.45 m to 0.48 m deep, the posthole had three fills. The basal fill consisted of loose yellowish-grey coarse sand 225 which was overlain by loose greyish-brown silty sand 224. Radiocarbon dating from a sample of alder (*Alnus* cf *glutinosa*) from this fill gave a late Neolithic date (2410–2140 cal BC, UBA-41649: 3814 ± 30 BP), suggesting possible contamination from earlier activity on site. The upper-most fill consisted of loose yellow-grey coarse sand 223 measuring 0.14 m thick. The urn was placed tightly into the SSE edge of the cremation burial pit and it was recovered fully intact (Ballin Smith, Appendix 15). A second posthole 250, sub-circular in plan and measuring 0.3 m by 0.27 m by 0.2 m deep, was exposed and cut by the slot excavated to assist the recovery of the urn. Due to this truncation its relationship, if any, with pit 212 is uncertain. Later analysis of the cremation urn revealed that it contained the cremated remains of at least two individuals based on two femoral heads with marked size differentiation, one of which was tentatively identified as possibly female based on some skull elements (Kilpatrick, Appendix 8). Dating of the cremated bone revealed a middle Bronze Age date (1430–1260 cal BC, SUERC-87540: 3085 ± 23 BP).

Illustration 2.117: Northeast facing section of pit 212 showing complete urn SF 61

The second urn cremation 160 was further east on the site, approximately 6 m east of ring-ditch 203. Circular in plan, the pit that contained the urn measured 0.65 m by 0.6 m and 0.23 m deep. The fragmentary urn (SF 5-16, SF 19-26 and

SF 30-56), was placed in an upright position (Ballin Smith, Appendix 15), the opposite to the other two urn cremations found on site. Filled by loose light greyish-brown silty loam 093, roughly circular stones 210 encompassed the urn. Two courses of stone with no bonding material were visible at the southwest corner with only one course visible on the rest of the surrounding circle of stones. Some of these stones were found to cover urn fragments but this could be due to later disturbance. A minimum number of one adult was identified during the analysis of these cremated bones. Moreover, pathological changes were noted on a small vertebral articular facet which presented surface porosity and slight osteophyte formation around its margin which could indicate osteoarthritis of the spine (Kilpatrick, Appendix 8). Dating of a sample from the cremated bone revealed a middle Bronze Age date (1450–1300 cal BC, SUERC-87521: 3122 ± 24 BP).

Further east, but still at the north side of the site, another isolated cremation pit 209 was identified; this measured 0.6 m in diameter and 0.1 m to 0.15 m deep. It was filled by firm dark brownish-grey sand 127 with very occasional fragments of charcoal and cremated bone concentrated mostly on the northeast and north side. A date of 1420–1220 cal BC (UBA-41648: 3060 ± 28 BP) was obtained from alder charcoal within this feature. During excavation of this feature, a further cremation pit 239 was found underneath. Slightly larger in diameter at 0.65 m, it was 0.29 m deep. Pit 239 was filled by loose black sandy gravel 240 with cremated bone fragments and frequent charcoal inclusions, mainly of alder. A mixture of hill wash and firm greyish-brown sand with frequent gravel 218 partially overlaid fill 240 initially obscuring the extent of the cremation deposit. No datable finds were encountered in either cremation pit (209 or 239) apart from charcoal and cremated bone. A middle Bronze Age date (1420–1220 cal BC, SUERC-88508: 3057 ± 30 BP) was obtained from the cremated bone from 240 which is comparable to the date obtained from cremation 127 (above). Both cremations revealed remains of at least one adult individual (Kilpatrick, Appendix 8).

2.5.6.1.10 Bronze Age–Ring-ditches (Illus 2.106, 2.107 and 2.109)

Located towards the north centre of the site, three ring-ditches were found (203, 297 and 577) (Illus 2.118). The smallest and most westerly of these 577 was circular in plan and measured 3.7 m in external diameter with inner diameter of 2.36 m (Illus 2.119). The ditch had fairly steep sides and a rounded base; it was 0.7 m wide and 0.14 m to 0.34 m deep. The north side of this ring-ditch truncated the hill wash deposit 241 while the southern side was cut into the natural sand and gravel 002. It was filled by moderately compacted dark reddish-brown sandy silt 578 with occasional charcoal flecks. No datable finds were obtained from this fill but a sample of hazel charcoal (*Corylus* cf *avellana*) revealed an early Neolithic date (3710–3630

Illustration 2.118: Ring ditches 203 and 297 prior to excavation

Illustration 2.119: Small ring ditch 577 with cremation cluster in upper right hand corner

cal BC, UBA-41486: 4889 ± 32 BP). The Neolithic date is much earlier than expected for what is assumed to be a Bronze Age ring-ditch associated with the cremations here, but the hazel charcoal may have been residual. For this reason, another sample of short-lived species of *Prunoideae* roundwood (cherry) was sent for radiocarbon dating which provided an early to middle Bronze Age date 1670–1500 cal BC (UBA-42827: 3311 ± 31 BP). At the centre of the area enclosed by the ring-ditch a circular cut 579 containing the truncated remains of an inverted urn SF 92 was uncovered; the feature measured 0.52 m by 0.41 m in plan and was 0.24 m deep. The urn base had been truncated by ploughing leaving only the rim and a portion of the body. Within the urn was a loose dark greyish-brown sandy silt cremation deposit 580. The large barrel-shaped urn, which was cracked in several places, was lifted after it was fully exposed and wrapped with cling film and bandage. It measured approximately 0.2 m in height and 0.18 m in diameter and it seemed to have no decoration (Ballin Smith, Appendix 15) (Illus 2.120). Analysis of the cremated remains recovered from within this urn revealed fragmentary bones representing mostly skull and upper and lower long bone fragments including two dental roots of an adult individual (Kilpatrick, Appendix 8). Cremated remains produced a radiocarbon date in the middle Bronze Age period (1430–1260 cal BC, SUERC- 87535: 3086 ± 24 BP).

Illustration 2.120: Urn SF 92 *in situ* prior to excavation

2.5.6.1.11 Medium ring-ditch

To the northeast of the largest ring-ditch 297 was the second largest ring-ditch 203. Sub-circular in plan its outer diameter was 5.6 m, while the inner diameter was 3.4 m. The profile of the ditch was predominantly 'U' shaped with a flat base although it presented a 'V' shaped profile towards the south side of the ring-ditch, possibly down to variation during its original construction (Illus 2.109). It varied widely in width between 0.95 m and 2 m and measured 0.43 m to

0.55 m deep. While its northern side was cut through the hill wash 241, its southern end was cut into more compact natural dark brown sand and gravel 002. The ring-ditch had silted up naturally with multiple silt and sand deposits present (291, 202, 204, 201, 122, 708, 709, 731 and 732).

A flint piece with edge-retouched (CAT 485) (Ballin, Appendix 12) was recovered from the basal fill 291 of the ditch. Dating of alder from this fill revealed an early Neolithic date of 3940–3650 cal BC (UBA-41482: 4983 ± 33 BP). A similar dating of 3950–3650 cal BC (UBA-42826: 5000 ± 41 BP) was also obtained of hazel charcoal from basal fill 731. However, both dates could be the result of possible intrusion of earlier charcoal through backfilling as we would expect this ring-ditch to be more recent due to its form and funerary connection. In the interior of this ring-ditch there was a centrally-placed cremation deposit 149003, which was discovered during the evaluation. Dating of the cremated bone revealed a middle Bronze Age date (1450–1300 cal BC, SUERC-87520: 3126 ± 23 BP), similar to the cremation found in the centre of the smallest ring-ditch 577. Two more features were also found in the interior of the ring-ditch: stakehole 254, and plough scar 304 of suspected recent date. The stakehole measured 0.13 m by 0.1 m wide by 0.05 m deep and was sub-circular in form. It was filled by loose dark greyish-brown silt with occasional charcoal 054. This feature was situated just west of the cremation deposit.

2.5.6.1.12 Largest ring-ditch

Originally discovered during the evaluation, large ring-ditch 297 was located southwest of the medium size ring-ditch 203. It was sub-circular in shape with outer diameter measuring 6.9 m and an inner diameter of 4.5 m. The ditch was between 1.14 m and 1.6 m in width and 0.36 m to 0.53 m deep. 'U' shaped in profile, the boundary of the ring-ditch was steeper on the inner edge and towards the north side. As the ditch was excavated the remains of charred wood identified as alder (Ramsay, Appendix 4) were discovered around the base of the northern arc of the ditch (Illus 2.121). Two isolated fills were identified underneath this charred wood when lifting it; 610 consisted of mid-grey brown silty sand and was found directly under wood 232 and overlaying this was loose orangey-brown gravely sand 611 measuring 0.14 m thick; both were likely initial silting deposits accumulated soon after the digging of the ditch. All the wood fragments were recorded as deposits (230, 231, 232 and 233) prior to being lifted and 100% sampled. Dating of the charred alder remains in 233 gave a range of 1450–1270 cal BC (UBA-41481: 3107 ± 33 BP), placing it firmly in the middle Bronze Age. On top of the burnt wood, a thin dark greyish-brown silty clay 234 (same as 109) was recorded. A sample of alder charcoal from this deposit produced a similar date (1420–1210 cal BC, UBA-41650: 3048 ± 30 BP).

Illustration 2.121: Bottom of ring ditch 297 lined with charred wood

Above the charred wood deposits were five fills (771, 805, 806, 295 and 296). The dark orangey-brown silty sand 296 with frequent gravel was very similar to the fill of an earlier pit 293 cut by the ring-ditch at this location. It was interpreted as possible silting from pit 293 following truncation. Within the north and east areas of the ring-ditch, a dark greyish-brown fine sandy silt (287=290) was identified overlaying deposits 771, 805 and 806. All these layers were covered by fairly compact greyish-brown fine sandy silt upper fill (034=294) with inclusions of stones and pebbles.

Located at the south side of ring-ditch 297, an area of loose stone deposit 298 measuring c. 1.6 m by 0.9 m and 0.15 m deep was recorded. As the deposit had overlain two earlier pits (896 and 908), this may have functioned as a levelling layer to stabilise this locale. The fill was overlaying a moderately firm light to mid yellowish-brown gravely sand deposit 880, the upper fill of the ring-ditch. Underneath this fill a compact brown silty sand fill 881 with occasional pebbles and 0.24 m thick was recorded.

Three features (264, 265 and 267) were encountered inside the largest ring-ditch. At the south side of the ring-ditch, east of pit 908, an oval-shaped shallow pit 267 measuring 0.28 m by 0.18 m and 0.02 m deep was uncovered. This pit was filled by greyish-brown silt with frequent gravel 035. To the north of this pit lay a possible posthole 264 filled by firm dark brownish grey silt 037 with frequent gravel and

measuring 0.39 m in diameter and 0.13 m deep. Finally, east of the inner ring-ditch and south of pit 293, a shallow pit 265 was identified. Oval in plan it measured 0.45 m by 0.4 m and 0.05 m deep, and was filled by very loose dark orangey brown silty gravel 055. None of these features presented datable finds and only fill 037 produced traces of oak charcoal.

2.5.6.1.13 West of the ring-ditches

An isolated large pit 205, similar to those found at the east side, was located east of ring-ditch 577 and northwest of ring-ditch 297. Some large to medium-sized boulders, interpreted as packing stones, were found at the centre of its loose dark brownish-grey silty sand 008 fill, with some re-deposited hill wash deposit 241 also noted on its south side. Recutting into the centre of pit 205 was posthole 242, also with packing stones and measuring 0.55 m in diameter and 0.4 m deep. The fill consisted of light orangey-brown clay silt with gravel 013. A roughly oval small pit 216 was located southeast of this feature. It measured 0.65 m across and was 0.19 m deep. There was no clear association between the two although their proximity does suggest a potential connection.

2.5.6.2 Site 2A and 2B

Situated east of Site 10 and an unclassified road which passes under the railway line further north, the archaeological features of Site 2 were found cutting into orange silty clay 011 or orange sand subsoil 019. These layers were covered by 0.29 m thick greyish-brown silty gravelly sand 004 intermediate deposit. This layer in turn was overlain by a 0.32 m thick light orangey-brown gravelly sand 003, which was covered by dark greyish-brown silty gravelly loam topsoil measuring 0.3 m thick. The increased overburden in this location is likely down to landscaping downslope associated with the railway embankment to the north.

During the initial investigation two areas of potential archaeology were defined, 2A and 2B (Illus 2.122). The features here were identified during the evaluation although none were fully excavated during that phase of the work due to the presence of a live service that was to be diverted later in the construction programme. In 2A, one possible curved linear feature 028, two pits (004 and 007), a possible hearth 038, and a possible stakehole 031 were identified and a former topsoil layer 022 and two possible occupation layers (023 and 024), the latter three of which were only visible in the trench section. Analysis of the

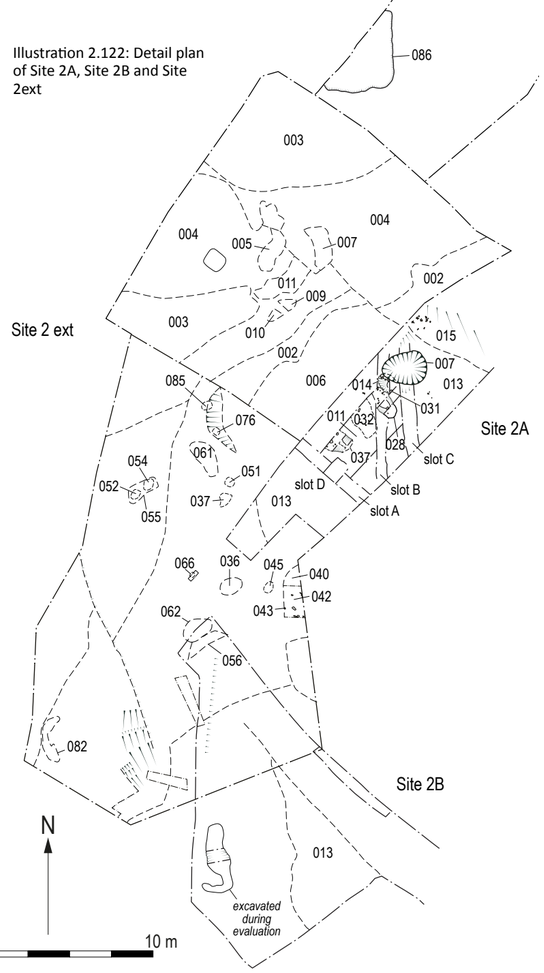


Illustration 2.122: Detail plan of Site 2A, Site 2B and Site 2ext

mixed assemblage of alder, birch, hazel, and oak charcoal from fill 024 (same as 033) indicated that the remains were of domestic hearth waste (Ramsay, Appendix 4). A microlith/backed bladelet (CAT 28) was recovered from this fill indicating a late Mesolithic date (Ballin, Appendix 12). Curvilinear feature 028 measured a minimum of 1.1 m in length (within the excavated area) by 1.9 m in width with a maximum depth of 0.26 m and was filled by a thin layer of charcoal-rich sand 035. A sample of birch provided an early Neolithic date of 3700–3520 cal BC (UBA-43314: 4847 ± 36 BP). This deposit was overlaid by dark brownish-grey silty sand 027, the secondary fill in which a scale-flaked/serrated knife (CAT 9) dated to the early Neolithic period (Illus 2.123) and two additional undiagnostic flint fragments (CAT 10 and CAT 25) were discovered (Ballin, Appendix 12). A possible hearth 038, filled by loose black silty sand 014 with frequent alder and oak charcoal inclusions, was overlying this feature which in turn was sealed by a possible curvilinear feature 020 and pit 007. The pit fill consisted of dark grey silty sand 006, and three lithic flakes and an indeterminate piece (CAT 1-4) were found within it (Ballin, Appendix 12). A middle Bronze Age date of 1370–1120 cal BC (UBA-43313: 2982 ± 26 BP) was obtained from a sample of alder. The pit 007 truncated hearth 038 and deposit 013 Illus 2.124). Overlying this pit 007 was spread 005 which consisted of dark black silty sand with small amounts of birch and hazel charcoal and with carbonised seeds of sedges, ribwort plantain, and buttercup. The presence of

these seeds suggests on site burning as these are weeds of pasture land or wet meadows (Ramsay, Appendix 4).

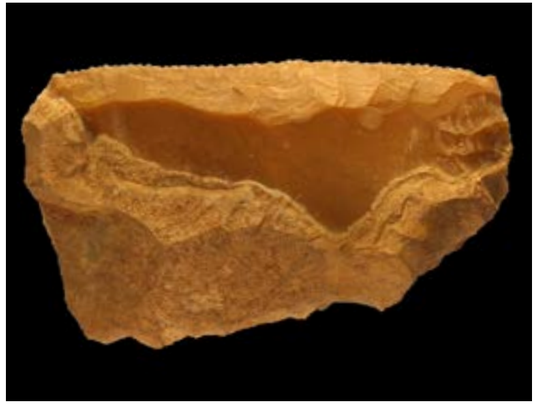


Illustration 2.123: Detail photo of serrated flint knife CAT 9

Cutting into light yellowish-brown silty sand subsoil 005 and visible in a southwest section a linear feature 021 was filled by three different fills (006, 007 and 008). It was truncated at its southeast side by another possible linear feature 022 filled by dark greyish-orange mottled silty clay with charcoal 010. This was then sealed by a former topsoil layer of brown silty clay 004 which was subsequently overlain by an orangey-brown silty clay intermediate layer 003. Overlaying this layer was a greyish-brown silt clay 002 interface deposit, this was then covered by topsoil. Another possible linear feature, 020, was identified in this locale. This was filled by grey silty clay with orange mottling and charcoal inclusions 017 and it measured 0.4 m across and 0.12 m deep. A sample of alder provided an early Bronze Age date between 1740–1530 cal BC (UBA-43315: 3349 ±27 BP). At its west edge it cut greyish-brown sandy clay 016, a possible silting deposit. The east edge of the cut was not well defined. A brownish-grey silty clay deposit 018 was identified overlying 017. This layer was abutting another similar deposit of greyish-brown silty clay 014. Both deposits (014 and 018) were overlain by black charcoal-rich silt 013 with large amounts of alder charcoal together with hazel and oak (Ramsay, Appendix 4), a possible occupation layer from where four pieces of flint (CAT 5-8), one of them a single-platform core (CAT 8), were recovered (Ballin, Appendix 12). Finally, and sealing this deposit was a layer of orange-brown silt clay 015, a former soil layer.

Due to the deep and narrow nature of the trench all the investigated features were not fully exposed which hindered their interpretation. For that reason, a later extension of the site was granted (Site 2 ext.) during the construction phase works.

Illustration 2.124: Site 2A showing pit 007 and hearth 038 on the top right corner

2.5.6.3 Site 2 Extension

2.5.6.3.1 Prehistoric remains (Illus 2.122)

The removal of the 0.35 m to 0.4 m thick dark greyish-brown silty gravel topsoil revealed 0.25 m to 0.45 m thick dark brown-greyish silty gravel re-deposited topsoil 003 with numerous stones throughout. This layer was most likely related to the old railway line construction. Underneath both deposits orangey-brown silty sand hill wash (004, 019), into which most archaeological features seemed to be cut, was identified.

On top of the hill wash 004, charcoal-rich black sandy silt deposit 005 was identified covering the majority of the north of the site (Illus 2.125). Similar deposits were encountered in other areas of the site (009, 010 and 011) and extending downslope 018. The whole extent of this later spread was unclear since it was covered by pale creamy orange sandy silt hill wash 016. In close proximity to deposit 005 and covered by hill wash 016 and redeposited material 028, three more deposits (013, 026 and 044) were found. These were dark blackish-brown sandy silts with charcoal inclusions and measuring between 0.07 m and 0.14 m in thickness.

A series of nine pits and three postholes were found in the first area extended, south of the trench. Located at the southwest corner a curvilinear shallow pit 082 filled by dark greyish-brown sandy silt 077 was identified. Further east three more pits (039, 062 and 066) were exposed. Rounded shallow pit 066, measured 0.25 m in diameter and 0.03 m deep, whereas similar pits 062 and 066 were much larger and measured 1 m to 1.28 m long, 0.98 m wide and 0.29 m to 0.33 m deep. *Prunoideae* charcoal recovered from pit 062 provided an early Bronze Age date of 1930–1740 cal BC (UBA-43316: 3507 ± 28 BP).

Illustration 2.125: Site 2ext working shot of surface (005) with slots through it

North of these pits isolated shallow oval pit 043 was partially exposed at the edge of the trench. Measuring a minimum of 1 m in length by 0.45 m in width and 0.05 m in depth it was filled by dark brown silt 040 with charcoal. A sample of hazel provided a middle Bronze Age date of 1440–1280 cal BC (UBA-43317: 3106 ±27 BP). Two more pits (037 and 061) and three postholes (051, 076 and 085) were identified northwest of pit 043. The three postholes filled by similar greyish-brown silty sands seemed to be in alignment. Finally, a large pit 055 with five fills (052, 053, 054, 067 and 068) was recorded in the northwest area of the site. None of these pits had any datable finds which could help in interpreting their date and function, and there was no stratigraphic relationship between the archaeological features. However, one unstratified decorated small fragment of prehistoric pottery SF 1 was found in the area (Ballin Smith, Appendix 15) between pits 037 and 039.

At the north side of the extension trench, two pits (023 and 024) were visible on the south facing section (Illus 2.126). Situated further west was a large oval pit 023 that measured 2.9 m by 0.95 m and up to 0.7 m deep. Sealed by topsoil, it had four fills (033, 034, 035 and 036) all of which consisted of sand and gravel in varying proportions. Oval pit 024 was identified to the east and measured 0.85 m by 1.1 m and 0.35 m in depth; it had two fills (065 and 069).

North of the extension area isolated linear feature 020 measuring 1.9 m in length by 0.58 m in width and 0.2 m in depth was identified cutting deposits 017 and 018. It was filled mainly by brown sandy silt 021 in which a flake of flint CAT 829 was found. A sample of three ring roundwood hazel (Ramsay, Appendix 4) from this fill provided a middle Bronze Age date (1430–1280 cal BC, UBA-43318: 3100 ± 25 BP). In its upper fill 007, a hazel and oak charcoal-rich (Ramsay, Appendix 4) black sandy silt, further finds were found: CAT 826, one flint flake and CAT 827 and CAT 828, consisting of two small burnt flint fragments (Ballin, Appendix 12).

A large sub-rectangular pit 086 was recorded against the west edge of the trench, next to the unclassified road.

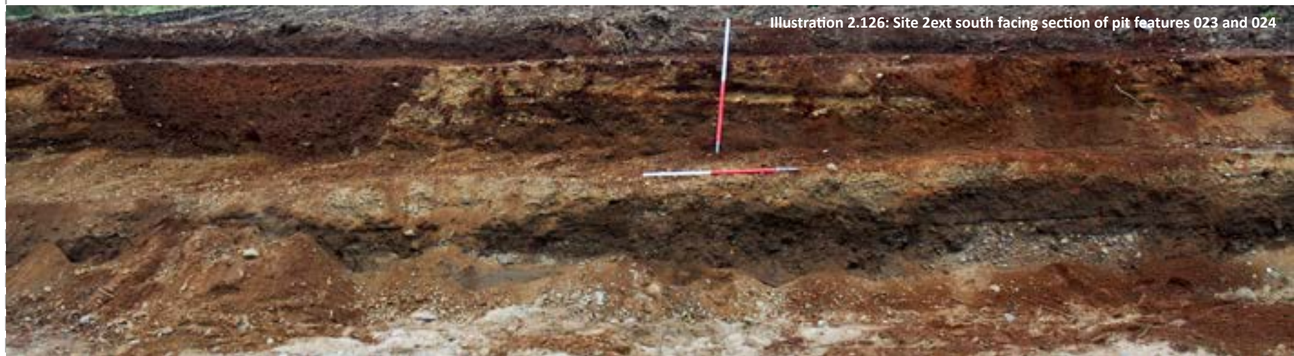


Illustration 2.126: Site 2ext south facing section of pit features 023 and 024

Measuring 3.77 m in length by 3 m in width and 0.18 m deep it was cut into heat-affected gravel 089. A fragment of flint was recovered from this layer CAT 833. A sample of alder charcoal from this gravel gave a medieval date cal AD 1020–1160 (UBA-41931: 956 ± 22 BP). At the south edge of the cut was a grey mottled deposit 091 containing oyster shell fragments (Smith, Appendix 11), while at the north and northeast edge of pit 086, charred wood and dark greyish-black silt 087 with high oak charcoal quantity was recorded. Overlaying both deposits lay heat-affected material 088, which also produced large quantities of oak charcoal (Ramsay, Appendix 4). This series of deposits were originally thought to be a pyre site related to the cremation cemetery complex to the west during excavation, but the medieval date suggests otherwise. A total of 43 fragments of flint (CAT 834-877) retrieved from this fill were considered to be residual as most of the lithics are tiny chips and waste flake fragments (Ballin, Appendix 12). This in turn was covered by 0.11 m thick brown sandy gravel 090 in which oyster shell SF14 was found (Smith, Appendix 11). A comparable medieval date of cal AD 1030–1210 (UBA-41932: 927 ± 27 BP) was obtained from a sample of willow from context 090. On top of it and part of the backfill of the pit, dark grey silty sand 085 measuring 0.15 m in thickness was recorded. Although the function of this large pit is unclear, the large quantity of oak present in the fills indicate that it was most likely used for some kind of industrial activity that required the high temperatures that can be achieved by burning oak (Ramsay, Appendix 4). One additional feature 071 lay to the east, this sub-circular pit measured 0.3 m by 0.33 m in plan and 0.25 m deep and its fill consisted of dark brown sandy gravel 070.

2.5.6.4 Site 23

2.5.6.4.1 Prehistoric remains

Located north and slightly upslope of Site 10, and south of the railway line, Site 23 revealed numerous circular, oval, and linear features and a cluster of cremation burial pits. A layer of moderately compacted orange-brown silty clay hill wash 002 between 0.2 m to 0.3 m thick was found across the site.

2.5.6.4.2 Cremation cluster and associated features (Illus 2.127)

A total of four cremation pits (015, 017, 034 and 037) were found in the northwest area of site, less than 2 m to the north of the ring-ditches from Site 10 and arranged in a line orientated NNE/SSW. Oval or circular in shape they measured 0.38 m to 0.87 m in length, by 0.38 m to 0.65 m wide, and 0.14 m to 0.27 m deep. They were filled by moderately compacted mid to dark brown coarse clayey loam to dark brown sandy silt (016, 018, 024 and 038). During excavation it was observed that the cremation deposits appeared to be contained within one specific locale within each pit: the southwest side in pit 015, the southeast area in pit 017, centrally in pit 034, and in the northwest quadrant in pit 037. All the cremated remains were highly fragmentary and appeared weathered. All the cremation deposits represent the remains of a single individual with the exception of pit 015, which contained remains of a minimum of two people; an adult and sub-adult (Kilpatrick, Appendix 8). No other remains or finds were found within these pits. Dating of the cremated bones from cremations 015 and 017 revealed middle Bronze Age dates of 1420–1230 cal BC (SUERC-87544: 3061 ± 24 BP) and 1420–1260 cal BC (SUERC-87545: 3073 ± 24 BP) respectively. Dating of the bones from cremations 015 and 017 revealed a middle Bronze Age date of 1410–1230 cal BC and 1420-1260 cal BC (SUERC-87544: 3061 ± 24 BP; SUERC-87545: 3073 ±24 BP, respectively) (Illus 2.128). Dating obtained from short-lived species of alder (*Alnus cf glutinosa*) within cremation fills 024 (pit cut 272) and 038 (pit cut 213, which truncated pit 212 containing an intact urn SF 61, see 2.5.6.1.9 above) provided early Neolithic dates between 3910–3650 cal BC and 4040–3810 cal BC (UBA-41929: 4981 ± 29 BP; UBA-41928: 5145 ± 29 BP, respectively) which suggests possible intrusion of charcoal through backfilling. Further dates from other short-lived species obtained from both of these fills provided similar early Neolithic dates between (024) 3710–3530 cal BC (UBA-42836: 4883 ± 29 BP) and (038) 1900–1690 cal BC (UBA-42835: 3487 ± 28 BP). However, as both these pits were truncated by, or were truncating, other features it is possible to suggests that the dates obtained were result of intrusion of earlier charcoal through backfilling.

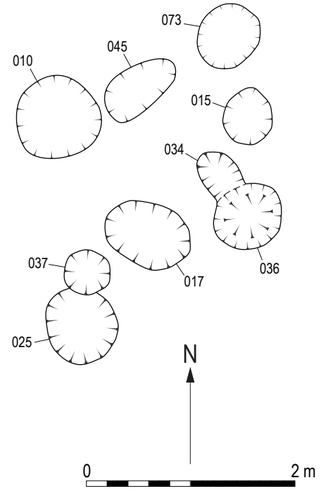


Illustration 2.127: Detail plan of cremation cluster in Site 23

While cremation 034 was cut by a large posthole 036 at its southeast edge, cremation pit 037 seemed to truncate pit 025 on its north side; this last association however was not completely clear during excavation. Both appeared to be in alignment with the cremation pits, suggesting a possible association with them, perhaps marking the cremations.

Illustration 2.128: Site 23, excavating cremation pit 017

An additional group of two postholes (010 and 073) and a pit 045 were identified less than 1 m to the north of the cremations. Circular in plan and 'V'-shaped in section, posthole 010 was 0.6 m long by 0.5 m wide and filled with compact mixed light orangey-brown to light greyish-brown sandy silt with moderate inclusions of charcoal 006. Small and medium size stones lined the cut, with large packing stones placed at its west edge. Further east another large sub-circular posthole 073 with two fills (063 and 074), reinforced by packing stones 084 placed within the interface of these two deposits, was recorded. This posthole measured 0.6 m by 0.68 m in plan by 0.5 m in depth. Its lower fill 074, loose dark greyish-brown fine gravel with some sandy silt, was overlain by loose dark brown soft silty sand 063, both with infrequent charcoal and 063 containing unidentified burnt bone inclusions. A date of 2470–2200 cal BC (UBA-42837: 3881 ± 30 BP) was obtained from alder from 074. Between these two postholes lay, pit 045, which measured 0.75 m by 0.55 m in plan, and was 0.24 m deep. It was filled by light brown-orange sandy silt 040 with infrequent charcoal present. The function and date of this group of features is still unclear due to the lack of datable finds, moreover the carbonised remains do not indicate that any of these postholes had *in situ* burning.

2.5.6.4.3 Line of postholes

Two possible parallel ENE/WSW orientated lines of postholes were extended across most of the site, with the exception of the western corner. They were more spaced out and in varying groups, between less than 1 m to a maximum of 4 m apart, differing from the close setting of the alignments just south at Site 10. However, both lines appear to continue from the alignments across Site 10. The postholes ranged from 0.2 m to 1.6 m across, with depths of 0.12 m to 0.25 m. They were filled by varied fills from light yellowish-brown sandy silt to loose dark brownish grey silt with occasional charcoal and friable greyish-brown silt with pebbles and gravel. Some of the postholes did not produce any carbonised remains. Only posthole 042 produced large amounts of oak charcoal (Ramsay, Appendix 4) that could suggest the remains of an oak post burnt *in situ*, or pre-erection charring.

2.5.6.4.4 Large pits/postholes

Two large pits or postholes (131 and 133) were found in the east central area of Site 23. Pit 131 was located just on the north edge of the site. Circular in plan, it had a diameter of 0.8 m and measured 1.05 m deep, although its full extent is not known as it extended beyond the limit of excavation to the north. It was filled by a range of sandy silts and silty sand deposits (161, 160, 148 and 128).

The second sub-circular pit 133, located south of pit 131 and cutting through hill wash 002 also had four fills (092, 127, 158 and 159). It was larger in size than pit 131 measuring 1.4 m by 1.5 m in plan, although slightly shallower at 1 m depth. A 20 mm thick basal layer 159 of dark brown silty clay was recorded. Willow charcoal from this fill provided a date of 2350–2140 cal BC (UBA-42838: 3802 ± 29BP). Overlaying this was brownish-orange silty sand 158 with inclusions of gravel and medium to large stones and a mixture of alder and oak charcoal. Two flint flakes (CAT 1725-6) were retrieved from this fill, but they were not diagnostic (Ballin, Appendix 12). Above this lay a thin layer of 0.03 m thick moderately compact dark brown silty clay 127 with inclusions of frequent charcoal. Large stones, some of them lining the south side of the pit, were found overlying 127 (Illus 2.129). They were covered by moderately compacted mid to dark brown clayey silt 092. Small amounts of alder, oak and willow were recovered from this pit, and an indeterminate cereal, carbonised seeds of deadnettle, campion and corn spurrey which may indicate that crop processing was happening nearby (Ramsay, Appendix 4).

Illustration 2.129: Pit 133 showing 127 during excavation

Between these two large pits three smaller pits or postholes (100, 102 and 116) were uncovered. The three pits were very similar in size ranging from 0.5 m to 0.6 m across, and 0.2 m to 0.24 m deep. The pits were filled by gravelly and sandy silt deposits, some of which may be from hill wash. Pit 116 was cut by a small later pit 117.

2.5.6.5 Site 23 Extension

2.5.6.5.1 Prehistoric remains

This site was located to the north of the western end of Site 10 and it was the last area to be stripped and excavated here. The site was stripped of medium to loose dark brown-black silty topsoil 0.35 to 0.4 m thick revealing numerous circular and oval features and two cremation burial pits cut into compact orange-brown sand and gravel subsoil 003. A layer of moderately compacted orange-brown silty clay hill wash 002 between 0.2 m and 0.3 m thick was found infilling undulations across the site.

2.5.6.5.2 Cremation deposits

Situated north of the site, just south of a line of postholes, two cremation burial pits 041 and 045 were uncovered (Illus 2.130). Oval in plan, pit 041 measured 0.7 m by 0.8 m, and 0.2 m to 0.48 m deep; it was filled with mid to dark brown silty sand 019. Remains of a single barley grain and traces of hazel nutshell were noted from the sample with a small amount of mixed, possibly residual, charcoal. An upright urn with pierced holes at its neck was discovered at the base of the pit. Some large stones were noted south and southeast above the cremation deposit. The pottery vessel (SF 9-59) identified as an early Bronze Age urn (Ballin Smith, Appendix 15) was severely crushed with fragments collapsing towards its interior at the south and southeast ends, suggesting that later disturbance by ploughing and/or slumping of the stones around the edge could have caused the breakage (Illus 2.131). Possibly due to the soil accumulated within the urn, the preservation of the bone was good with all the main skeletal elements identified during analysis. A minimum number of three individuals, two adults with different petrous bones, and one sub-adult, were recorded within the cremation deposit (Kilpatrick, Appendix 8). Radiocarbon dating from a cremated bone sample provided a middle Bronze Age date of 1410–1220 cal BC (SUERC-87550: 3058 ± 23 BP).

Northeast of this cremation a much smaller cremation pit 045 was encountered. It was circular in plan, and measured 0.33 m by 0.22 m and 0.32 m deep. It had two fills; the basal fill consisted of greyish-brown silty sand 047, the upper fill lower fill consisting of greyish-brown silty sand 044 with some small charcoal flecks. The cremation deposit was within the lower fill and provided a middle Bronze

Illustration 2.130: Detail plan of Site 23ext

Age date (1420–1230 cal BC; SUERC-87546: 3064 ± 24 BP) (Illus 2.132). At least three individuals were also recorded here, an adult and possibly two sub-adults, although this is tentative (Kilpatrick, Appendix 8). The cremation pit was truncated by later sub-circular pit 043, which measured 0.67 m in diameter and 0.25 m deep.

Illustration 2.131: Close up of urn (SF 009 to 059) with cremation

Illustration 2.132: Cremation burial pit 045 truncated by pit 043

2.5.6.5.3 Line of postholes

Similar to the alignment of postholes discovered during the excavation of Site 10 but a further 35 m northwest, a total of eight possible pits/postholes were recorded at the north end of the site (004, 016, 018, 023, 026, 029, 036 and 038) orientated ENE/WSW (Illus 2.133). They were circular or sub-circular in form measuring 0.18 m to 0.6 m in diameter. Their fills ranged between orangey-brown sandy silt with few charcoal inclusions to greyish-brown silty clay or sandy clay deposits. Analysis of the carbonised remains revealed

a mixture of alder, birch, hazel, and oak charcoal, possible hearth waste (Ramsay, Appendix 4) that entered the postholes through backfilling. Packing stones were visible at the southern extent of 004, on the northwest side of 026 and north side of 031. A stone lining was also recorded on the edge of 016 and large stones found at the base of 038 could also have a structural function.

Illustration 2.133: General location of line of postholes and pits

Several small finds were retrieved from these features, suggesting a prehistoric date. These included a badly abraded sherd from an early Bronze Age vessel SF 6 (Ballin Smith, Appendix 15), which was discovered within fill 024 of posthole 026, two flint pieces CAT 1728-9 from upper fill 033 of posthole 036, and a flint flake CAT 1730 (Ballin, Appendix 12) discovered in the same posthole, from basal fill 034. Dating obtained from a hazel sample from the lower fill 025 of posthole 026 revealed a date of 3790–3640 cal BC (UBA-42839: 4929 ± 39 BP) cal BC which is comparable to the early Neolithic date obtained from the main 45 posthole alignment recorded in site 10.

Two more pits (008 and 021) were also recorded extending in the same alignment as the postholes. They were located between postholes 004, 031 and 018 (See Illus 2.130). The first sub-circular pit 008 was situated west of postholes 004 and 018, measuring 0.9 m by 0.8 m in plan and 0.49 m in depth. A 50 mm thick layer of re-deposited natural 011 was found at the base of pit 008 and this contained infrequent charcoal inclusions. Sealing it was a charcoal-rich black sandy silt layer 010, also 0.05 m thick. Overlaying it some possible packing stones 012 were identified at its south side contained within loose dark brown silty sand with occasional charcoal and one prehistoric pottery sherd SF 1 (Ballin Smith, Appendix 15).

To the north of postholes 004 and 031, a shallow pit 021 measuring 0.86 m in diameter and 0.28 m deep, was identified. Filled with moderately compacted orangey-brown silty clay 020, it contained a prehistoric pottery sherd

SF 4 (Ballin Smith, Appendix 15). A sample of alder charcoal from this fill provided a late Mesolithic date between 5470–5220 cal BC (UBA-42840: 6374 ± 30 BP).

2.5.6.6 Site 18 *(Illus 2.106)*

Site 18 was located west of the field where Site 10 and Site 23 ext. were situated. The features were divided into two grids: A and B.

2.5.6.6.1 Prehistoric remains

After stripping the site of firm dark brownish-grey sand topsoil numerous circular, oval and linear features and a possible ring-ditch were revealed. Orangey-brown sandy silt hill wash of loose compaction 113 was also identified across the site, being thicker to the north.

2.5.6.6.2 Line of postholes

In the east corner of the site, close to Site 23 ext., a north/south alignment of seven postholes (005, 007, 010, 013, 016, 017 and 023) were uncovered (Illus 2.134). Oval or sub-circular in form they measured 0.38 m to 0.45 m wide, 0.68 m to 0.8 m long, and 0.25 m to 0.49 m deep. Packing stones were visible in three of the postholes (010, 016 and 023), and around the east side of posthole 007. The small quantities of carbonised remains recovered from the samples included alder, birch, hazel and oak; likely from scattered hearth waste (Ramsay, Appendix 4). Most had one fill, a firm orangey-brown silty sand or light to mid brown sandy silt or silt clay, although some postholes (007, 013 and 016) did have upper and lower fills. Birch charcoal from posthole 010 provided an early Neolithic date of 3900–3650 cal BC (UBA-42841: 4966 ± 30 BP) while alder from posthole 023 provided a similar date of 3940–3650 cal BC (UBA-42842: 4988 ± 29 BP).

Illustration 2.134: View of trench showing line of postholes

2.5.6.6.3 Ring-ditch

Located at the central north edge curvilinear feature 109 measuring 0.58 m wide by 0.34 m deep was thought to be the remains of a possible ring-ditch (Illus 2.135). Its projected ring was 6.4 m diameter with the ditch measuring 1.95 m in width, and with gaps in the ditch at the west and southeast sides. This ring-ditch was therefore only marginally smaller than the large ring-ditch 297 on Site 10 (Illus 2.107). It was filled by moderately compact light grey sandy silt 108 which was 0.28 m thick with frequent oak charcoal inclusions and occasional gravel and large stones. Hazel charcoal from this fill provided a late Mesolithic date of 5630–5470 cal BC (UBA-42845: 6587 ± 42 BP).

A possible pit 131 was situated adjacent to the gap in the southeast side of the possible ring-ditch 109. Partially visible because it extended under the trench edge, it looked sub-circular in shape and measured 0.59 m across by at least 0.17 m deep. It was filled by a single orangey-brown sandy silt fill 119.

Two postholes (152 and 163) were recorded in the interior of the ring-ditch. Filled by brownish-orange gravely silt 147, posthole 152 extended under the trench baulk. It consisted of a sub-oval shaped feature measuring 0.8 m by 0.65 m and 0.2 m deep. Situated west of the southeast gap of the ring-ditch, posthole 163 measured 0.9 m by 0.85 m and was 0.25 m deep, and sub-circular in form. It was filled with large packing stones and orangey-brown gravely silt 148.

2.5.6.6.4 Possible structure

Approximately 4.5 m southeast of the possible ring-ditch 109, a group of 18 pits/postholes of small to medium size were recorded cutting into hill wash 113 (Illus 2.135). They seemed to form a sub-rectangular pattern, measuring c. 7.5 m long by 5 m wide, with a pit (115) located in the interior of this possible structure. In one of these pits 100, frequent charcoal, possible hearth waste, and inclusions of unidentifiable eroded burnt bone were recorded, mixed with its dark brownish-black sandy silt fill 097. However, in general the pits were filled by firm brown sandy silt to silty clay. Dating of alder from context 097 provided a late Bronze Age date between 1210–980 cal BC (UBA-41930: 2892 ± 30 BP). Most of the postholes were oval to circular in plan, their size ranged from 0.31 m to 0.58 m across, and 0.14 m to 0.24 m deep. They were filled by orangey-brown silty sand to brown sandy silt with occasional charcoal and frequent gravel inclusions, with packing stones only recorded in posthole 094. Further dating from alder charcoal from posthole 094 revealed a late Bronze Age date of 1000–810 cal BC (UBA-43323: 2752 ± 33 BP). Additional dating from hazel from posthole/pit 079 provided a comparable date between 910–800 cal BC (UBA-43320: 2698 ± 26 BP). However, birch charcoal from context 096 of pit 099 provided an early Mesolithic date of 8200–7600 cal BC (UBA-42844: 8790 ± 50 BP).

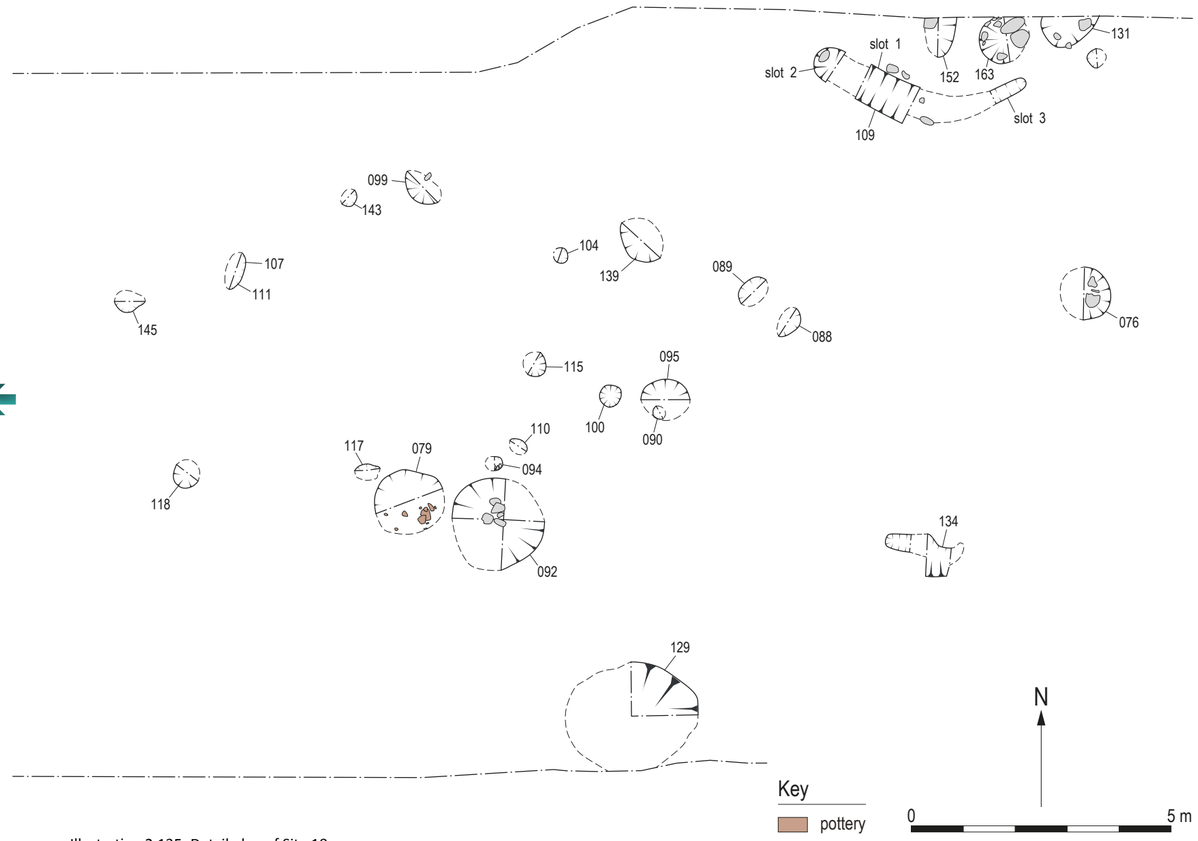


Illustration 2.135: Detail plan of Site 18

Diagnostic finds were encountered in pit 079 and posthole 090. A Bronze Age pottery sherd (SF 26) was recovered within possible posthole 090 while 22 sherds of Bronze Age pottery including rim and body sherds were retrieved from pit 079 (SF 24-31 and SF 33-42) (Ballin Smith, Appendix 15) and a flint flake (CAT 1673) (Ballin, Appendix 12), and small fragments of unidentified burnt bone. Some of these latter pottery fragments were identified as a Bronze Age vessel (Illus 2.136). Three fragments of lithic flakes and one indeterminate chunk/piece were found within posthole 145 (CAT 1668-1671). However, they seemed to have entered through backfill (Ballin, Appendix 12). This structure is further evidence, with the oval structure at the west end of Site 10, and group of multi-period postholes further west at East Challoch (see 2.5.5 above), of possible domestic occupation along this ridge in the Neolithic and Bronze Age periods.

Illustration 2.136: Pit 079 showing fragments of pottery during excavation

2.5.6.6.5 Large pit alignment (Illus 2.106)

To the west of the possible rectangular structure, five large pits (124, 129, 092, 065 and 057) were recorded. They formed a slight arc, aligned east/west, measuring 50 m long with gaps of 12 m to 20 m between the features.

Positioned on the western end of the alignment, oval-shaped pit 124 measured 2.1 m by 1.5 m and was 0.72 m deep. This pit was later truncated by a linear cobble drain 126 through its centre. To the west of the possible rectangular structure, pit 092 was identified. Sub-circular in plan, it measured 1.74 m by 1.68 m, and was 0.4 m deep. Just south of this last pit, pit 129 was located, the largest in this group. Oval in plan and measuring 2.7 m by 2.3 m by 0.5 m in depth it had six fills (Illus 2.137). Only its basal fill 157 contained traces of identifiable birch and oak charcoal (Ramsay, Appendix 4). Pit 065 located east of pit 129 was oval in plan, and measured 1.98 m by 1.44 m, and was 0.6 m deep.

The last pit 057 was filled by orangey-brown gravely silt 049 with frequent pebbles and 0.31 m thick. In the centre of this sub-oval pit that measured 1.48 m by 1.39 m by 0.31

m in depth, another later possible pit 061 was identified, which had three fills (058, 059 and 060). Two of these fills, 058 and 060, contained oak charcoal with traces of hazel and hazel nutshell (Ramsay, Appendix 4). The basal fill of the pit consisted of loose grey to light grey silty sand 060, quite ashy with frequent charcoal and occasional pebbles between 0.16 m and 0.33 m deep. Several lithic flint flakes and cores fragments were retrieved from this fill (CAT 1660-6 and CAT 1668-71), including one 'flaked flake' (CAT 1666) (Ballin, Appendix 12). Within the upper fill 058, dark greyish-brown silty gravel with frequent charcoal and 0.09 m thick, CAT 1667, a flake flint fragment was recovered (Ballin, Appendix 12). A sample of hazel recovered from basal fill 060 provided an early Neolithic date between 3970–3700 cal BC (UBA-42843: 5062 ± 48 BP).

Illustration 2.137: Pit 129 with northeast quadrant excavated

2.5.6.6.6 Group of pits, postholes and stakeholes

A concentration of five pits, two postholes and three stakeholes with no apparent pattern were found at the north side of the site, just east of the possible ring-ditch 109. A possible fire pit 038, potentially a focal point for the surrounding features, measured 0.85 m by 0.65 m and was 0.2 m deep. Its basal fill 037 consisted of light to mid brown silty sand with alder, hazel and oak charcoal, with two indeterminate cereal grains and traces of hazel nutshell indicative of a domestic hearth (Ramsay, Appendix 4). Its upper fill was dark grey sandy silt 028 with frequent charcoal flakes and small sub-angular stones some of which showing signs of heat-cracking. Hazel charcoal from 037 provided a late Bronze Age date of 1210–1000 cal BC (UBA-43321: 2900 ± 25 BP).

East of this feature three stakeholes (072, 073 and 074) and one small posthole 070 were uncovered. The stakeholes were approximately 0.1 m in diameter and 0.08 m to-0.1 m deep forming a possible arc pattern in plan. They were filled by brownish-black sandy silt with frequent alder and hazel charcoal. Posthole 070, south of the stakeholes, was circular in plan measuring 0.24 m in diameter and 0.11 m in depth. This posthole was filled by brown sandy silt 071 deposit which was noted as having a greasy consistency.

South of the possible fire pit, two postholes (039 and 066), similar in size at c. 0.4 m in diameter and 0.11 m to 0.19 m in depth, and one pit 048, were identified (Illus 2.138). Pit 048 measured 0.36 m by 0.47 m in plan and was 0.17 m deep, and a total of 19 sherds of prehistoric pottery including some rim sherds (SF 1-2, SF 5-18), two of which were identified as Bronze Age vessel fragments, were recovered from it. Greyish-brown silty clay 033 with charcoal inclusions of hazel, oak and fragments of hazel nutshell filled this pit.

Illustration 2.138: Postholes 039 and 066 and pit 048 before excavation

West of the central fire pit, three more pits or possible postholes (044, 045 and 084) were uncovered. Oval in plan they measured between 0.38 m to 0.5 m in width, 0.52 m to 0.8 m in length and approximately 0.18 m in depth. Each had a similar fill: loose dark brown sandy loam 043 with occasional alder and oak charcoal in pit 044, greyish-brown sandy silt 040 with frequent cobbles and rare flecks of charcoal in possible posthole 045, and brownish-orange fine sand silt 085 in pit/posthole 084. A sample of alder from context 043 provided a late Bronze Age date between 1050–900 cal BC (UBA-43322: 2810 ± 27 BP).

2.5.6.6.7 Stony feature

None of the postholes and pits found west of the site presented any noticeable pattern. Rather, they seemed to be isolated. The most significant feature, stony deposit 216, thought to be structural remains of domestic activity in this area, was located on the western half of the trench at the bottom of the slope. A firm greyish-brown clayey silt 218 was covered by large deposit of stones 216 measuring approximately 7 m in length by 3.2 m in width and 0.5 m in depth. This deposit of stones ranging from pebbles to large stones was mixed with firm, mid to dark brownish-grey silty clay 217. Numerous oak charcoal fragments with traces of alder and hazel mixed together with a possible grain of wheat and some indeterminate cereals were recovered from this fill (Ramsay, Appendix 4). A burnt shale fragment SF 50 and five pieces of flint (CAT 1701-5) one of them a microblade CAT 1704 were found in the fill (Ballin, Appendix 12). Alder charcoal recovered from fill 217 provided a late

Neolithic date of 3090–2890 cal BC (UBA-42846: 4345 ± 34 BP). The location of the stony feature, in a boggy area, suggested that it might have been built as a track, however the significant quantities of oak charcoal, the traces of alder and hazel, and a possible grain of wheat and some indeterminate cereals (Ramsay, Appendix 4) suggests domestic activity or structural remains (Illus 2.139).

2.5.6.7 Boreland Cottage Upper Discussion

This site was one of the most complex areas of archaeology of all the sites investigated during the fieldwork. Groups of features and finds were discovered ranging mainly from the Mesolithic to the Bronze Age, but also including medieval remains. The site was located on a ridge situated at c. 17 m OD and dropping to 11 m OD to the south of the ridge where the land undulates gently towards the shoreline. As the sea levels were changing the ridge would have offered some level of protection during inclement periods or particularly high tides. The density of archaeological remains found at Boreland Cottage Upper, in the form of features as well as small finds, indicate a significant archaeological site that had been used at least periodically for over 8000 years, with evidence of more sustained use in the Bronze Age as a cremation cemetery.

There is certainly strong evidence of different phases and ritual/burial traditions starting from the earliest features to posthole alignments, continuing with ring-ditches/barrows and cremation cemeteries containing fragments of Bronze Age funerary material culture. Apart from this monumental and ritual use of the landscape, which was mostly concentrated on Site 10, Site 18, Site 23 and Site 23 ext., there seems to be a more mundane or everyday use of the land in certain areas. It was evident from occupational layers and some small finds, functional pits, refuse pits and structures encountered in Site 2, on the west side of Site 10, and in Site 18. The identification of Mesolithic as well as middle to late Neolithic lithic artefacts, possibly the results of domestic waste, corroborates this assumption.

2.5.6.7.1 Mesolithic

Stratigraphically the earliest activity consisted of a series of ephemeral features and spreads pre-dating an accumulation of hill wash. Other possible early features consisted of irregular and relatively sterile pits filled by material very similar in composition to the hill wash in which they were cut. The recovered lithics, as well as radiocarbon dates, demonstrated that the site was visited during the early and late Mesolithic periods.

None of the pits formed discernible alignments or patterns that could suggests a possible temporary structure or shelter/windbreak, instead they were distributed across the site. However, the partial ring-groove recorded in

Illustration 2.139: Stony feature 216 after excavation

site 18 could represent possible structural remains. The radiocarbon dates suggested that the area was utilised at different time between 7739 and 4534 cal BC.

The scattered nature of the features and finds correspond with the hunter-gatherer lifestyle, their reliance of wild-resources and mobility. This location on the higher ground would have offered protection from the rising sea level, but also proximity to the sea as a food resource and/or way of transport/communication (see ScARF 'Palaeolithic and Mesolithic Scotland: ScARF Panel Report 2012, 96-102).

2.5.6.7.2 Early Neolithic

This period was characterised by a monumental/ritual landscape evidenced by numerous and significant features across the whole of Boreland Cottage Upper. These features include posthole alignments creating a possible timber cursus monument, and groups of large stone-lined postholes forming a possible arc, as well as other large postholes.

A line of postholes forming an ENE/WSW alignment with additional smaller parallel alignments were recorded across different sites including Site 10, 18, 23 and 23 ext. A small line of postholes extending north/south, considered to be a possible terminal for this post-arrangement, was also present at the east corner of Site 18, just west of Site 23 ext. None of the postholes revealed signs of being burnt *in situ* with the exception of one posthole in Site 10. The scarcity of charcoal remains found within these postholes suggests that the posts were not destroyed by fire but rather left to rot *in situ* or removed. The principal alignment, which runs approximately for c. 70 m suggests a possible association to Droughduil Mound, as they were aligned in that direction. Bayesian analysis has indicated c. 200 years of activity spanning from 3885–3740 cal BC (95% probability) to 3715–3605 cal BC (95% probability) (Hamilton, Appendix 1). The early Neolithic dates would suggest this may represent part of a timber cursus monument.

Similar dating was obtained from an arc-shaped group of large stone-lined postholes leading southward beyond the edge of excavation at Site 10. In contrast to the posthole alignment, located to its north, two of them presented evidence of an oak post burnt *in situ*, as well as scorched soils and heat-affected stones. Evidence of deliberate burning of the posts within the postholes forming the timber cursus was also recorded by Thomas during his excavation at Dunragit complex, with most posts that defined the rounded terminal area of this monument burned down (Thomas 2015, 149).

Other large pits, situated north of the main posthole alignment, were also dated to the fourth millennium period. However, they were earlier than the line of postholes, as one of them was truncated by a posthole from a shorter secondary line of postholes. Nonetheless, their date and proximity to the aforementioned features suggest that they were part of the wider ceremonial landscape here (see Brophy, 4.2).

2.5.6.7.3 Late Neolithic and Beaker period

By the third millennium there was a clear spatial and functional change between the previous monumental landscape to a more localized and probably domestic concentration of features. One of the most significant features included the oval-shaped cluster of pits and postholes in Site 10. The quantity and variety of material (lithic, pottery, coarse stone) and the different pottery styles, including Beakers, represented within these features indicate that structured deposition took place here. The recutting of some of the features, as well as the range of finds and their time span, suggests that the area might have been marked on the ground as a place for deposition although no visible signs survived. Although the function of these features is still debatable there was certainly a long running tradition of structured depositions on site from the middle Neolithic to the early Bronze Age (see 4.3.3).

Northeast of this concentration, further domestic features including spreads of hearth material, a pit filled with burnt and fired cracked cobbles and two curvilinear features were encountered. The number of lithic artefacts recovered within the two curvilinear features suggest a flint knapping area (Ballin, Appendix 12). The presence of postholes underneath each spread could also indicate some kind of shelter or windbreak, possibly forming part of a temporary campsite associated with flint knapping.

2.5.6.7.4 Bronze Age

By the second millennium the site became a complex burial ground with cremation as the predominant burial rite. There is a clear distinction between early Bronze Age, and later middle Bronze Age practices, although cremation is the principal and sole funerary rite preserved in Boreland Cottage Upper (Illus 2.140).

2.5.6.7.5 Early Bronze Age

The earliest burial practice was characterised by a cluster of cremation burial pits dated between the second millennium to c.1600 BC (Hamilton, Appendix 1; Table RC1 and Figure RC3). The majority of them, were concentrated in Site 10 approximately at the centre of the site and distributed in an arc radiating east from a stony feature. Similar arrangements of cremation burials have also been found at Cairnpapple Hill, West Lothian (Barclay 1999) and Forteviot, Perth and Kinross (Noble and Brophy 2017) although the cremation cemetery at Forteviot was late Neolithic in date. The cremation remains were deposited in pits and postholes and did not represent complete burials. Instead

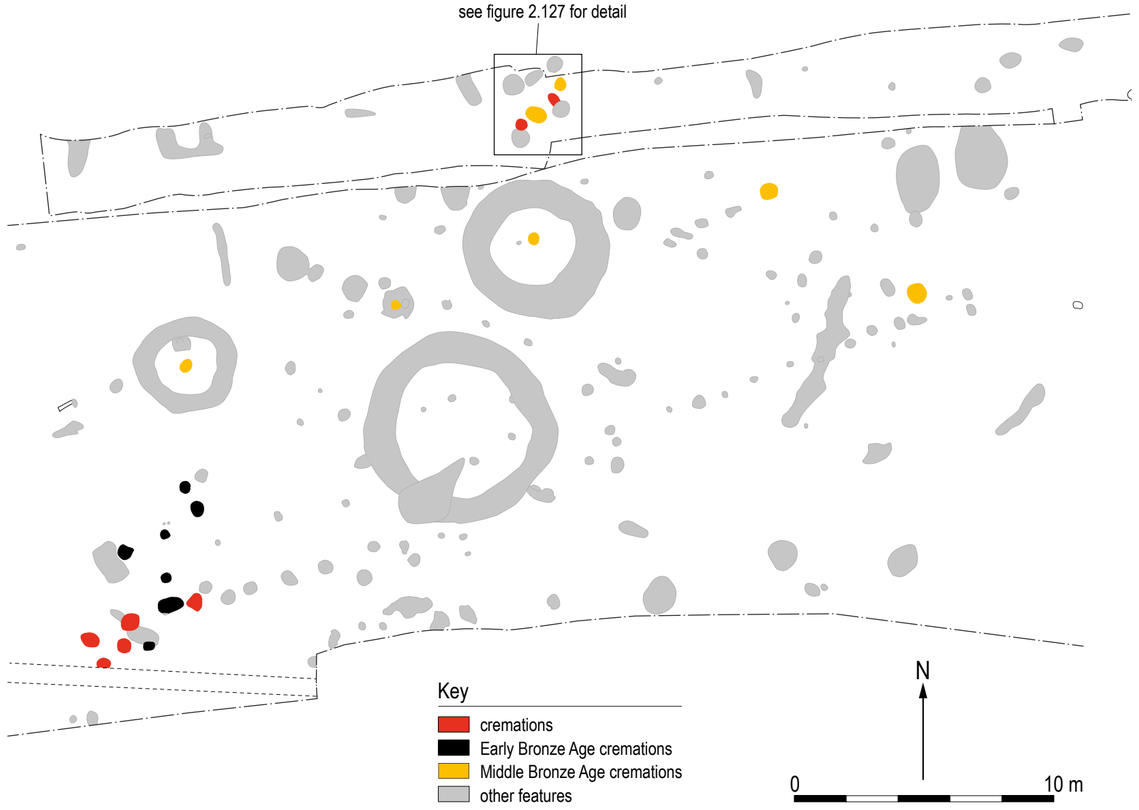


Illustration 2.140: Detail plan of cremation clusters in Site 10 and Site 23

their small weight and lack of certain skeletal elements indicates that they were token deposits. All the remains were fully calcified and each deposit had included at least the remains of one adult individual.

Datable grave goods were retrieved from five cremation burial pits including a short end-scraper flint tool (CAT 499) (Ballin, Appendix 12) and fragments of prehistoric pottery sherds SF 91 (Ballin Smith, Appendix 15). Two of the most significant finds; two early Bronze Age accessory vessels SF 95 and a vessel base SF 98 were also retrieved from cremation burial pit 528. Similar small pottery vessels were also discovered within a cremation pit at Forteviot and they have been found in early Bronze Age cremation burials; these may have been used to help start the fire on the funerary pyre (Noble and Brophy 2017). Furthermore, the recovery of a single carbonised apple pip and a barley grain, and traces of hazel nutshell from four of the burial pits, suggests that some sort of food consumption occurred, or that the dead were cremated with food offering as part of the cremation ceremony.

2.5.6.7.6 Middle Bronze Age

The use of the ridge for a cremation cemetery continued during the middle Bronze Age between mid-1400 to mid-1200 cal BC (Hamilton, Appendix 1; Table RC1 and Figure RC4). However, the cremation burials are more varied than earlier in the Bronze Age as they are either placed in urns or unurned. Furthermore, there is a significant change to the funerary landscape with the creation of three ring-ditches at the centre of Site 10, two of them with associated cremations. Although the cremation burials are more dispersed than the earlier examples (they appear in Site 10, 23, and 23 ext.), there is a significant concentration around the three ring-ditches.

As in earlier cremations, the remains are fully calcified, burnt in high temperature and probably not long after death. However, the remains were more complete and the preservation and skeletal representation was better than that seen in the earlier Bronze Age cremations, thus allowing the identification of multiple individuals in some of the cremation deposits.

Some of the vessels containing middle Bronze Age cremations were identified as early Bronze Age in style suggesting a possible continuation in tradition or longer use of these particular styles or typology of potteries.

The use of the site as cemetery comes to an end towards the late Bronze Age. A possible rectangular structure dated to this period (between 1210-980 cal BC to 910–800 cal BC: UBA-41930 and UBA 43320), respectively) was discovered at the western side of Boreland Cottage Upper, in Site 18. Although its function is unclear, two of the pits forming the structure presented possible structural depositions

composed mostly of pottery sherds within their fills. Further east, similar dates were also obtained from isolated pits and postholes with no apparent pattern. Numerous fragments of pottery sherds, including rims, were recovered from one of the pits suggesting structural depositions too, a practice already recorded during through the late Neolithic to the early Bronze Age in Site 10.

2.5.6.7.7 Medieval

Finally, medieval remains of a possible fire pit were recorded on the north side of Site 2 ext. demonstrating the long use of the area throughout different periods. Its function was unclear, although the large quantity of oak charcoal recovered from within, indicate that a type of industry requiring high temperatures occurred on site.

2.5.7 The Burnt Mounds–from west to east

Warren Bailie and Dave McNicol

During the investigations for the A75 Dunragit Bypass a series of ten burnt mounds were discovered, two possible sites at Droughduil Bridge, one at both Whitecrook Bridge and Mid-Challoch, and six at Boreland Cottage Lower. Burnt mounds are an extremely common monument, and although each is unique, they all usually have at least one pit or trough for holding water with an associated mound or spread of burnt organic material and heat-affected stones. They tend to be located near to water in the landscape. The generic function of these sites is to heat water with heated stones, although the specific function is much debated and ranges from cooking to saunas (ScARF 2012, Section 3.3.1; Ó Neill 2005, 8).

All burnt mounds found during our investigations were located in the lower lying areas of the landscape that the road line cut through. In the west at Droughduil Bridge, Whitecrook Bridge and Mid-Challoch the burnt mounds were set on the grey clay of the former estuary at Whitecrook Bay. In the east the burnt mounds at Boreland Cottage Upper were set on a sandy clay within another smaller bay defined to the north by the curving southern edge of a raised beach, on which the funerary complex of Boreland Cottage Lower was located to the north, and on which the Neolithic settlement activity of Mains of Park was located to the east. In the west there remains the presence of sinuous channels holding water in periods of wetter weather. In the east of the road line a palaeochannel was exposed within the excavation area of Site 1 and this same channel extending around to the north and east following the bottom break of slope of the raised beach. The common and readily available resource that was available at each burnt mound site was water, and the nearby shoreline would have provided ample supply of stone, the two main ingredients for the operation of a burnt mound site.

2.5.7.1 Droughduil Bridge

During the evaluation and advance works two sites were encountered at this location. The first of these was initially discovered through the investigation of one of a group of possible features with peaty upper fills, all but one being naturally filled hollows in the impermeable blue-grey clay subsoil. This area was fairly low lying in relation to the slight rise to the northwest towards the Dunragit complex and the undulating gravel deposits and remains of braided streams of the former estuarine expanse which extended eastwards from this location.

2.5.7.1.1 Site 8 (Illus 2.141)

This was the smallest of the sites explored during the advance works, measuring only 25 m² in extent and consisting of essentially one feature, a pit or trough and associated channel 007. The preliminary findings from the evaluation suggested a feature, which contained a quantity of flint debitage and pottery of possible late Neolithic/early Bronze Age date (Ballin, Appendix 12). More lithic material was recovered from this site than all other sites combined during the advance works.

The analysis of the stratigraphy of the trench edges in this area revealed a series of layers of sediment some of which are most likely to have been deposited naturally with others showing signs of potential anthropogenic origin or influence. The earliest layer encountered consisted of loose bluey-grey sandy clay 038 which contained one small wood fragment 036 and overlying this was compact whitish-grey clay 037. Above this lay a compacted light grey with a white hue 027, which was in turn overlain by compact grey clay (009=020) with charcoal mottling. Above this lay a compact, dark greyish-brown silty clay 026 with charcoal flecks. Overlying this was a layer of dark brown silty clay 028. The next two layers above this consisted of fine wind-blown sand (023 and 025). Above the sand lay a layer of rusty brown-orangey red sand 024, probably iron panning. This was then sealed by a layer of compact, dark brown silty clay 022, which was in turn sealed by light grey clay with orange flecking 002. To complete the stratigraphic sequence the topsoil consisted of dark brown peaty clay 001.

On expansion of the evaluation trench, and after further investigation, it was revealed that feature 007 was cut after the formation of the grey clay layer 020 in the sequence. This cut 007 was found to be a large amorphous pit with a narrow channel inclining northward beyond the edge of excavation. The main pit area of the feature measured 2.6 m wide, 3.8 m long and up to 1 m deep; the channel part of the feature measured 4 m in length within the limits of excavation, and up to 1 m in width. This channel contained a length of waterlogged wood (019) lying perpendicular to the direction of flow in a slight hollow infilled by sandy silt (013

and 014). A fragment of birch charcoal from deposit 013 was dated to 980–830 cal BC (UBA-41898: 2760 ± 23 BP). The piece of wood lay on the edge of the channel before it sloped into the main pit area. The basal layer of this pit consisted of bluish-grey silty clay 008 with inclusions of reddened, heat-affected stones, and overlying this were a series of pieces of waterlogged wood framing the edge of a sub-rectangular hollow in the deepest part of feature 007.

In the base of the main pit area there was a sub-rectangular hollow around which several waterlogged wood fragments (015, 016, 017, 018, 019, 032, 033- and 034) were found. 019 was identified as birch and 016 as oak. The wood formed part of the remaining wood lining of the trough or pit, and wooden sluice of the channel (019), and therefore represented more secure material for dating than the sediment from the various layers of the feature, which were not necessarily *in situ* deposits given their location in the estuarine environment (Illus 2.141). Birch (019) was dated to 480–380 cal BC (UBA-42847: 2356 ± 30 BP). Sealing these wood fragments and layer 008 was a layer of dark brown sandy silt 012 with many stones towards the base, some of which were heat-affected. No suitable dateable material was recovered during the processing of samples from this layer. There was a layer of firm, light grey with a blue hue, sandy clay 021 with stone, flint and wood inclusions, deposited

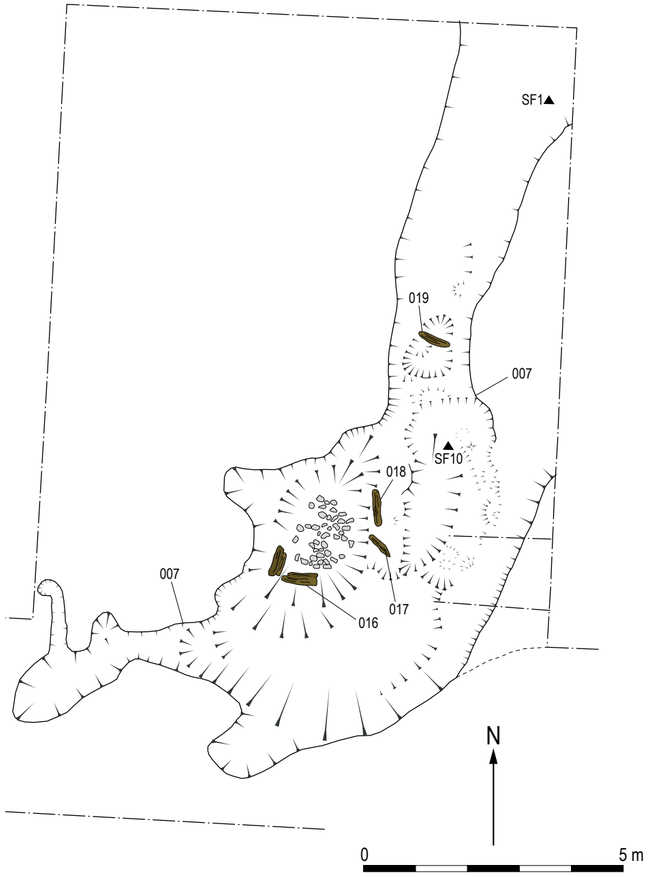


Illustration 2.141: Detail plan of pit 007 in Site 8

around the eastern edge of the main pit to a thickness of 0.1 m. This clay appeared to be in roughly-shaped lumps (Illus 2.152 and 2.153) which had been built up around this side of the pit possibly to consolidate the edge of the pit 007 at some point during its use. Sealing the underlying layer 012 was a brownish yellow silty sand 006 with inclusions of degraded wood and peat lenses; a hazel charcoal fragment from this layer was dated to 350–50 cal BC (UBA-41897: 2147 ± 25 BP). This was sealed by a layer of brown peaty silt (030=029) with occasional vegetation detritus and small chunks of wood. This layer extended from the channel and was laid in a slight incline across the main pit area. The next layer in the sequence consisted of light brownish-yellow silty sand 005 with inclusions of degraded wood fragments. This was then sealed by a brownish-grey loam (004=035). Above this was a compacted dark brown peat clay layer 011 with sand which was subsequently overlain by very firm dark reddish-brown peat 003.

A total of 569 lithic artefacts (138 from the evaluation of C6 and 431 from the main investigation of Site 8) were recovered (Ballin, Appendix 12). The assemblage was almost wholly flint, with only one piece of chert and two of quartz. Also recovered were four sherds of coarse black undiagnostic prehistoric pottery (SF 1-2 and SF 10) (Ballin Smith, Appendix 15), seven fragments of waterlogged wood, and a quantity of burnt stone. The majority of the flint debitage came from the lower layers 008 and 012 filling feature 007 with the pottery coming from 008 and 004. The lithic assemblage has been noted as typical of the middle/late Neolithic period (Ballin, Appendix 12) which is contrary to the dates for one of the lower fills of the trough and channel.

2.5.7.1.2 Site 11

This site was uncovered during the evaluation of the C 22 trenches to the north of the C6 Field 2 trenches. There was a palaeochannel extending east/west across the evaluation trench and while testing this channel archaeological deposits were discovered. These deposits consisted of two lines of what, on initial observation, appeared to be waterlogged stakes extending in the same direction as the axis of the channel (east/west). The two lines of stakes were approximately 3 m apart and between them there was a dark brown peaty silt deposit 22009 containing large chunks of charcoal and small fragments of possible worked wood. Charcoal fragments and two pieces of worked wood (C22007 and C22008) were retained for further analysis. Heat-affected stones were also noted during the rapid investigations that took place here. The wood and charcoal were situated at 7.521 m OD, with the surface along the trench base varying between 0.75 m to 1 m below current ground surface, and located at NGR: NX 15368 57097. The level to which the trench was reduced took it below the water table and the trench quickly filled with water during the excavations. A rapid recording of the *in situ* wood and

channel was undertaken, and wood samples retained for potential dating. This site was not explored further during the advance or construction phase, but wood samples were identified as hazel and alder (Alldritt, Appendix 3) with the hazel being dated to the late Neolithic/early Bronze Age (2890–2490 cal BC, UBA: 42848: 4123 ± 54 BP).

2.5.7.2 Whitecrook Bridge–Site 20 *(Illus 2.142)*

This site was investigated after its discovery during topsoil stripping. The initial findings suggested archaeological deposits relating to a burnt mound.

The natural subsoil here consisted of firm pale greyish-brown sandy clay 002 with occasional orange mottling. Plough marks truncating this layer were observed during the topsoil strip. The site comprised three amorphous shallow features (003A, 003B and 003C/D) and a sub-rectangular pit 003E positioned around the summit of a low natural mound which sloped gently down to the north (Illus 2.142). With the exception of 003E, these features were cut into a layer of dark brown peat 004.

The three amorphous shallow features measured between 5.2 m by 1.78 m, and 8.1 m by 3 m, ranging from 0.24 m and 0.37 m thick. They were filled with similar deposits consisting of dark greyish-brown sandy clay with frequent shattered burnt stone and oak and alder charcoal inclusions (Illus 2.143). An area of concentrated charcoal was also noted at the top of 003A. Alder charcoal from 003B produced a date of 2470–2200 cal BC (UBA-41496: 3867 ± 31 BP) placing it in the early Bronze Age. The base of these features sloped gently downhill, in line with general downwards slope of the surrounding natural ground level, with a fairly steep side visible on the eastern edge of 003C/D. One quartz pounder/hammerstone SF 6 (Ballin Smith, Appendix 14), and five lithic fragments (CAT 1709-13) (Ballin, Appendix 12) were recovered from the fills of 003A and 003C/D.

Illustration 2.143: Southwest facing section through burnt mound 003A

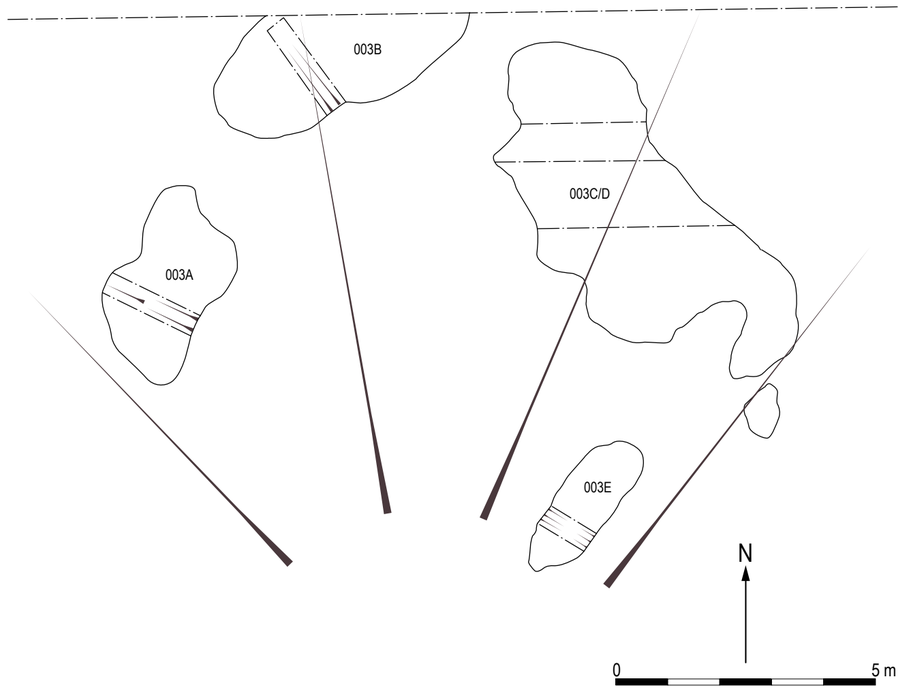


Illustration 2.142: Detail plan of Site 20

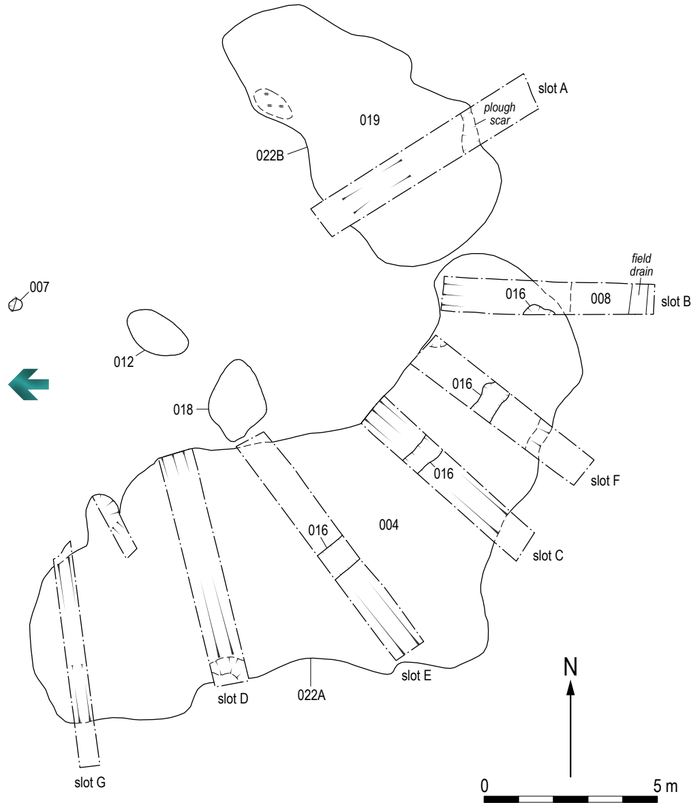


Illustration 2.144: Plan of Mid Challoch

Pit 003E was sub-rectangular in plan, measuring approximately 3.1 m by 1.1 m, with a depth of 0.14 m. It had gently sloping sides, with a concave base and was filled with mottled blackish-orangey brown sandy clay 005 with frequent shattered burnt stone and oak and hazel charcoal inclusions. A hazel nutshell sample from this pit revealed a date of 2890–2620 cal BC (UBA-42824: 4169 ± 32 BP). This pit was located on slightly higher ground compared to the nearby amorphous features and was cut directly into the natural bedrock.

2.5.7.3 Mid-Challoch–Site 24 *(Illus 2.145)*

This site was discovered during the construction phase topsoil stripping and was investigated due to the presence of significant remains interpreted as a possible burnt mound.

The site was located on the edge of a gently undulating former estuarine area with a stream running east/west directly to the south. The natural subsoil here consisted of very firm mid to light yellowish grey clay 002 with patches of light yellowish grey sand 003. Plough marks and field drains truncating this layer were observed during the topsoil strip. The site consisted of the remains of two large features (022A and 022B) which together formed a probable crescent-shaped burnt mount which enclosed two pits (012 and 018), and a small burnt spread 007 (Illus 2.144).

Illustration 2.145: General view of excavated site 24 from east

The larger southern half of the burnt mound 022A measured approximately 18 m by 8 m, with a thickness of 0.3 mm, with the northern half 022B measuring 9 m by 4 m, and 0.1 m deep. Both had gradually sloping sides with slightly concave and/or uneven bases and consisted of similar dark grey black silt deposits (004 and 019) with frequent burnt stones and charcoal. Lenses of burnt material (014 and 026) were also located throughout deposit 004. The burnt mound had been disturbed by ploughing, with the resulting deposit 027 comprising of a mixture of topsoil 001 and the main burnt mound deposit (004/019). Within Slot D in the southern half of the burnt mound 022A, two further deposits (020 and 021) were revealed sealed by the main burnt mound deposit 004. Layer 021 consisted of dark grey clay with charcoal inclusions and may represent part of a clay lining. Overlying deposit 020 consisted of light brownish-yellow silt clay with charcoal inclusions, and may represent a silting up event, prior to the dumping of the main burnt mound material 004. Two lithic fragments were recovered from the southern half of the burnt mound 022A, one from deposit 004 (CAT 1733), and one from the possible clay lining 021 (CAT 1734). An early Bronze Age date was obtained from an alder sample from this deposit (1930–1690 cal BC, UBA-42817: 3485 ± 38 BP). A further three lithic fragments were recovered from unstratified deposits nearby (CAT 1731, 1732 and 19933), Cat 1731 being a scale flaked flint knife (Ballin, Appendix 12).

At the base of the southern half of the burnt mound 022A a roughly linear gully 016 was uncovered within four of the six excavated slots, cut into the natural subsoil and sealed by burnt mound deposit 004. It measured on average 1.1 m in width, with a depth of 0.25 m, and had fairly steep sides with a relatively flat base. Compact brown silty clay 013 with occasional charcoal and burnt stones inclusions filled this gully, with this deposit also visible extending out and along the bottom of the burnt mound at different points along its length. It may represent a small channel or trough for water to run through the middle of the burnt mound, as although no lining was visible, the natural clay would have been sufficient for this purpose. Radiocarbon dating of alder charcoal revealed an early Bronze Age date for burnt mound 022A of 1940–1740 cal BC (UBA-42816: 3523 ± 28 BP).

Within the area enclosed by the crescent-shaped burnt mound, a line of two pits (012 and 018) and a spread (007), were uncovered. Pit 018 was located directly adjacent to the internal edge of the southern half of the burnt mound 022A, although no direct relationship between these features was uncovered during the excavation. It was sub-rectangular in form, measuring approximately 2.4 m by 1.8 m, and was 0.33m deep. It had steep, near vertical sides with a fairly flat base. A layer of 0.08 m thick yellowish-brown clay 025 was located at the base and sides of the pit, possibly representing clay lining. This was sealed by a 0.2 m thick compact black clay silt 024 with frequent charcoal fleck inclusions, which in turn was sealed by 0.07 m thick dark grey brown clay silt 005 with frequent charcoal fleck inclusions. The presence of a possible clay lining within this feature may suggest that it represents a trough for containing the water being heated by hot stones from a nearby hearth.

Approximately 1 m to the northwest of pit 018, a second sub-rectangular pit 012 was uncovered. It measured 1.6 m by 0.8 m, and was 0.35 m deep, and was filled with a deposit of black clayey silt 006 with frequent charcoal inclusions. A concentration of heat-affected stones was noted at its northwestern end (Illus 2.146). The base of this pit was also visibly heat-affected, suggesting *in situ* burning, and it is likely that this pit represents a hearth used for heating the stones, which comprise the main deposit of the adjacent burnt mound 022A/B.

Further to the west, still within the arc of the burnt mound material, a small sub-circular spread of dark grey black silt 007 with charcoal and burnt stones inclusions, was uncovered. This measured 0.3 m by 0.2 m, and had a thickness of 0.05 m. Given its small size, it is likely that this represents either a waste deposit or plough disturbance from one of the nearby features associated with the burnt mound.

Illustration 2.146: SSW facing section through pit 012

2.5.7.4 Boreland Cottage Lower–From west to east *(Illus 2.147)*

2.5.7.4.1 Site C18 (Illus 2.147)

This site was discovered during the construction phase topsoil strip and consisted of two features (005 and 006) lying approximately 5 m apart. Given the proximity of several burnt mounds of possible Bronze Age date, in the same landscape setting and with similarities in fill composition as features from Site C18, it has been included alongside the burnt mounds of Boreland Cottage Lower. The

Illustration 2.147: Plan of Boreland Cottage Lower

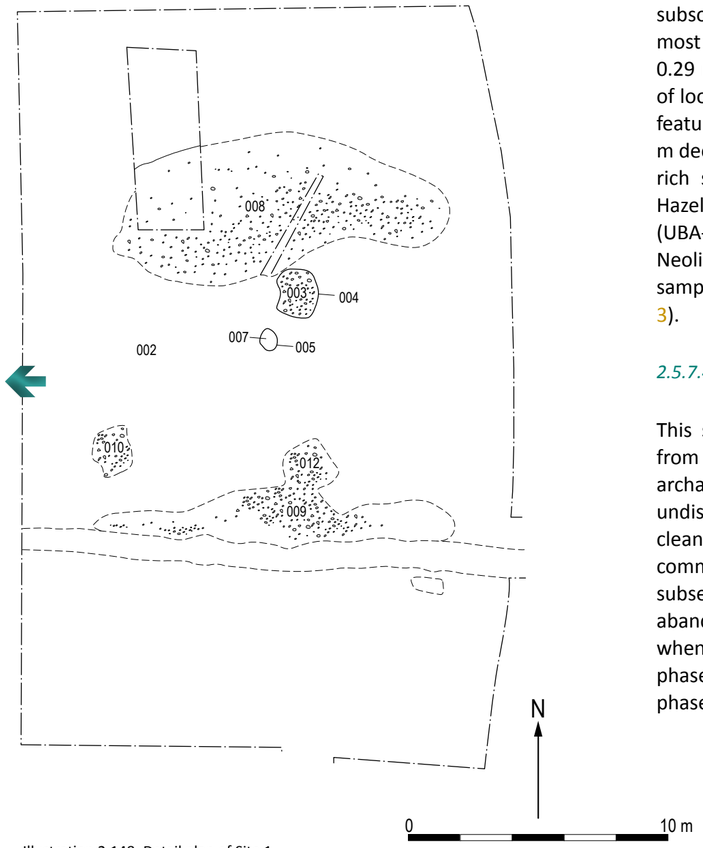


Illustration 2.148: Detail plan of Site 1

subsoil here consisted of yellowish-brown sand 002. The most westerly feature 005 was circular in plan, measuring 0.29 m in diameter, and 0.09 m in depth. Its fill consisted of loose dark grey charcoal-rich silty sand 003. The easterly feature 006 measured 0.52 by 0.64 m in plan and was 0.06 m deep. Its fill 004 consisted of dark greyish-black charcoal-rich silt with occasional small angular stone inclusions. Hazel charcoal from this fill was dated to 2890–2620 cal BC (UBA-41501: 4172 ± 32 BP) placing the activity in the late Neolithic period. Oak charcoal was also present in the two samples (from 003 and 004) processed (Alldritt, Appendix 3).

2.5.7.4.2 Site 1 (Illus 2.148)

This site was opened as a result of preliminary findings from the evaluation suggesting that significant sub-surface archaeological deposits relating to the Bronze Age remained undisturbed in this location. The site underwent an initial clean up, was planned, and preliminary investigations commenced. However, a period of sustained rainfall and a subsequent rise in groundwater levels led to the temporary abandonment of this site until the construction phase, when dryer conditions prevailed. This later more extensive phase of investigation undertaken during the construction phase is labelled Site 1 ext. and is described below.

Site 1 consisted of two separate burnt mounds situated 5 m apart either side of a sand bank which extended west to east parallel to an obvious palaeochannel (Illus 2.13). The southern burnt mound only underwent cleaning and planning. This charcoal and burnt stone deposit 009 measured approximately 4 m by 14 m in plan with three other possible features observed, one on the edge of the spread 012, measuring approximately 2 m by 2 m, and two on the periphery to the south 010 and 011, measuring 1.5 m by 2 m and 0.7 m by 0.75 m in plan respectively. The deposits observed here were high in charcoal content with frequent burnt stone inclusions.

The northerly burnt mound deposit 008 was situated on the south bank of the east/west orientated palaeochannel and some of the deposit extended below the alluvial layers filling the palaeochannel. This burnt mound deposit consisted of black charcoal-rich silty clay 008 with frequent burnt stone fragment inclusions and measured 5.5 m by 13 m in plan, although as previously mentioned this material extended below alluvial layers for an unknown distance to the north. Two features were partially excavated on the southern edge of this northern burnt mound deposit. The larger of these was possible trough 004 which lay on the edge of the deposit (Illus 2.149). This oval feature measured 1.65 m by 2 m in plan and was 0.4 m deep. The fill consisted of a mix of charcoal-rich silty sand 003 with frequent reddened heat-shattered stone inclusions with some inclined greyish-brown silt lenses suggesting multiple episodes of deposition. The smaller of the two features was sub-circular pit 005 measuring 0.75 m by 0.8 m in plan; this feature was not fully investigated. However, two fills were noted; the basal fill consisted of charcoal-rich silty clay 006 and the upper fill consisted of brown sandy silt 007. One flint short end scraper (CAT 2189) (Ballin, Appendix 12) was recovered from upper fill 007 during these investigations and environmental samples were retained for further analysis and potential dating. A fragment of hazel charcoal from the basal fill 006 was dated to 1890–1690 cal BC (UBA-41492: 3474 ± 34 BP) placing its use in the early Bronze Age.

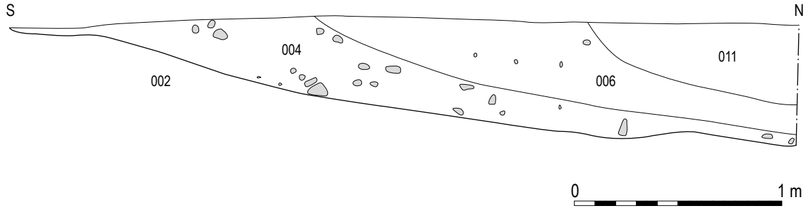


Illustration 2.149: East facing section through burnt mound deposit 004

2.5.7.4.3 Site 1 Extension

After the inundation in October 2012 the site was temporarily abandoned until better conditions prevailed. During the construction phase, beginning April 2013, the site was covered by a protective layer of sand and the area was used for spoil storage. The sand was subsequently removed, and the pair of burnt mounds originally found when Site 1 was opened were more fully investigated and recorded. In the process of depositing and later removal of the sand across the site a number of the smaller peripheral features were lost from Site 1 (cut 005 and deposits 006, 007, 010, and 011, and the southerly burnt mound deposit 009 was heavily truncated by machinery). As Site 1 and Site 1 ext. are one and the same site, but where new numbers were given to deposits the former context number from Site 1 is noted in brackets to enable a synthesis of both sets of data description.

A series of hand-excavated slots (A-D) were cut through the northerly burnt mound deposit to investigate its full extent and stratigraphic relationship with the adjacent palaeochannel and alluvial layers. The orange yellow sand subsoil 002 was overlain by the burnt mound deposit 004/009 (008). This was up to 0.45 m in thickness and extended downslope below a layer of alluvial material 006 in the palaeochannel extending east to west, this was in turn overlain by a charcoal-rich clay layer 011 (Illus 2.149). The trough (004) on the edge of the main burnt mound deposit was oval in plan and was filled by burnt stone and charcoal 012 (003). The southerly burnt mound deposit 008/014 (009) was sectioned to reveal a thickness of 0.45 m. The trough 015 on the edge of this deposit was sub-circular in form measuring 1.55 m by 1.85 m and 0.42 m in depth. This was filled by 008 (012) black charcoal-rich silty clay with frequent burnt stone fragments. There was material 010 with an 'ashy' appearance around the edge of both 015 and deposit 008/014; this is likely to be because of podzolisation or staining of the underlying subsoil.

2.5.7.4.4 Site 3 (Illus 2.147 and 2.150)

This site was opened as a result of preliminary findings from the evaluation suggesting that significant sub-surface archaeological deposits relating to the Bronze Age remained undisturbed in this location.

This site consisted of the remains of a burnt mound which took the form of a large spread 012 with three associated pits (006, 008 and 009) (Illus 2.150). The underlying subsoil consisted of firm, orangey-brown sand 002 with few inclusions; occasional plough-marks were visible across the surface of this deposit. The edges of the main deposit appeared to be cut into the underlying subsoil. This cut 012 measured 9.2 m long by 5.5 m wide with a maximum depth of 0.2 m. The basal layer consisted of loose, brownish-

black silty sand 011 with frequent charcoal staining and frequent burnt stones. Birch charcoal from the basal fill 011 provided a radiocarbon date of 1540–1440 cal BC (UBA-41493: 3240 ± 27 BP) placing the deposition of this layer in the middle Bronze Age. The other charcoal present in this layer consisted of oak and cherry wood. This thin basal layer measured between 0.08 m and 0.15 m in thickness. Overlying this was very compact, dark greyish-brown silty sand 010 with frequent charcoal flecks and burnt stone fragments.

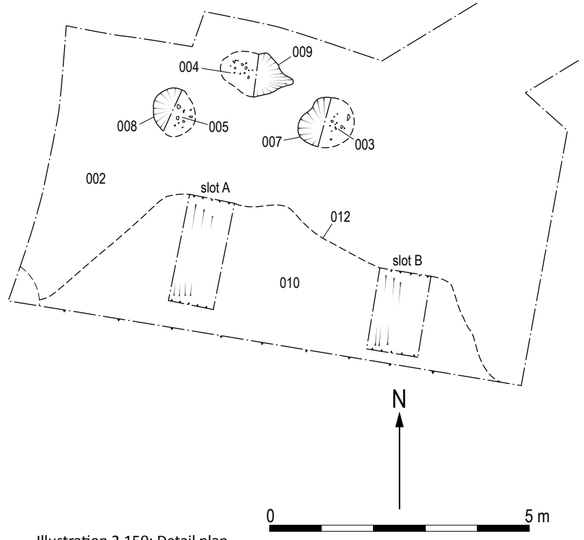


Illustration 2.150: Detail plan of Site 3

The three small pits lay beyond the north edge of the main spread 012. The first of these 007 was circular in plan, 0.3 m in diameter, with a near vertical southern edge, more gently sloping sides towards the north, and was 0.28 m deep. There were two fills present, with the basal fill consisting of light brown sand 006 with inclusions of heat-cracked stones. The upper fill was black sand 003 with fine charcoal fragments and frequent reddened burnt stones. The second of the three pits 008 was sub-circular in plan, with gently sloping sides and a broad flat base. This pit measured 0.75 m in diameter and was 0.14 m deep, and its fill consisted of dark grey black sandy silt 005 with burnt sandstone fragments and charcoal. The third pit 009 was oval in plan with steep, almost vertical sides with a narrow, rounded base. This pit measured 1.6 m long by 0.7 m wide and it was 0.38 m deep, and its fill consisted of 004, black silt containing small rounded stones, burnt stones, and charred wood fragments.

2.5.7.4.5 Site 4 (Illus 2.147 and 2.151)

This site was opened as a result of preliminary findings from the evaluation suggesting that significant sub-surface archaeological deposits relating to the Bronze Age remained undisturbed in this location.

This site consisted of the remains of a burnt mound which took the form of a large deposit of burnt stone and charcoal-

rich material 005 (Illus 2.151). Hazel charcoal from this layer was dated to 1670–1500 cal BC (UBA-41494: 3305 ± 33 BP) placing its deposition in the middle Bronze Age. Other charcoal material present included a large quantity of oak, and a hazel nutshell fragment (Alldritt, Appendix 3). The underlying subsoil consisted of firm, orangey-brown sand 002 with few inclusions, and occasional plough-marks were visible across the surface of this deposit. The layer overlying the subsoil around the periphery of the burnt mound consisted of 004, light grey silty sand with small flakes of ash. This layer measured 6 m by 15 m in plan and was up to 0.25 m in thickness. The edges of the main burnt mound appeared to be cut into the underlying subsoil. This cut 006 measured 6.5 m long by 1.5 m wide with a maximum depth of 0.15 m. The burnt mound material consisted of loose, black silt with charcoal and burnt stones. An intermittent layer of grey silty sand 007 with occasional burnt stones lay across the area. Overlying this and the burnt mound

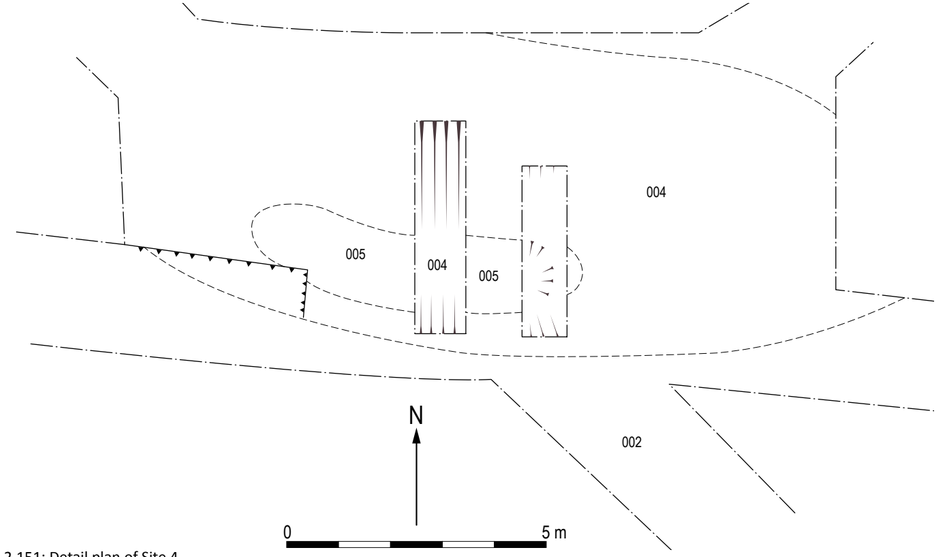


Illustration 2.151: Detail plan of Site 4

material was a layer of dark grey-black sandy silt 003 with inclusions of charcoal and burnt stones. This measured up to 0.2 m in thickness and covered the burnt mound, with topsoil 001 immediately overlying this.

2.5.7.4.6 Site 13 (Illus 2.147)

This site was discovered during the construction phase topsoil stripping and was investigated due to the presence of significant remains of a possible burnt mound.

The remains of this burnt mound measured 4 m by 5 m in plan with a trough 012 lying at the southern limit of excavation measuring 1.28 m by 4.2 m in plan and 0.82 m in depth. The feature was cut into the natural subsoil 005, a pale brown sandy clay. There were a number of fills present in the feature with clay lining around the eastern edge suggesting reuse and/or repair. The basal fill of this large oval feature, a probable trough, consisted of greyish-brown clay 016 which was overlain by dark grey sandy clay 007 and very firm pale greyish white clay 010. These deposits may be evidence of repair or consolidation of the eastern side of the feature. These deposits were further consolidated by loose grey silty sand 008 with frequent sub-angular and sub-rounded stones. The next deposit in the trough consisted of greyish-brown silty clay 014 with moderate charcoal inclusions which was in turn overlain by very dark greyish-brown silty sand 015, again with moderate charcoal inclusions. Above this was a layer of pale greyish-white sandy clay 004 with occasional charcoal flecks. Overlying this was a deposit of pale greyish-brown loam 013 which was overlain by dark greyish-black silty sand with frequent charcoal flecks and heat-shattered stones. Above this were two deposits; brown sand 002 with moderate charcoal flecks and heat shattered stones, and pale greyish-brown sandy clay 009 with occasional reddened heat-shattered stones. The uppermost fill of the trough 012 consisted of dark greyish-black silty sand with frequent charcoal flecks and reddened heat-shattered stones. Topsoil 001 then sealed the site. One flint flake (CAT 1572) was recovered during clean-up of the area. Unfortunately, processing of samples from this site did not produce any suitable dating material.

2.5.7.4.7 Site 15 (Illus 2.147)

This site was discovered during the excavation of a drainage gully along the north edge of the road strip to the east of Site 4 on the lower edge of a natural river terrace just west and downslope from the Mains of Park site. The drainage ditch was limited in depth, so it was possible in this case to preserve the site *in situ*. Prior to this the site was recorded in plan and sampled accordingly but not excavated. The deposits uncovered were indicative of a burnt mound with high concentrations of charcoal and reddened heat-shattered stone present.

The subsoil 002 consisted of very firm brownish orange sandy clay with occasional gravel and rounded stone inclusions. There were two main deposits making up the burnt mound feature; the most extensive of which was loosely compacted, almost black charcoal-rich silty clay 003 with frequent inclusions of burnt stone fragments. This measured 8 m north/south and extended for an unknown distance to the east and west beyond the limits of the drainage cut. The second deposit which was observed along the west edge of 003 was a very compact greyish-brown stony silty clay 004 with frequent rounded stones. This deposit was dated using hazel charcoal to 2140–1940 cal BC (UBA-41495: 3659 ± 30 BP) placing it in the early Bronze Age. These deposits were overlain by dark greyish-brown silty loam 001 with pockets of sand, occasional gravel, and small rounded stone inclusions.

2.5.7.5 Burnt Mounds Site by Site Discussion

2.5.7.5.1 Droughduil Bridge Discussion

The complex feature of Site 8 was set into the estuarine alluvium and is evidence for the exploitation of environmental resources here during the late Neolithic and early Bronze Age periods, based on the lithic assemblage. A fragment of birch charcoal from one of the basal deposits 013 was dated to 980–830 cal BC (UBA-41898), a late Bronze Age date; and a birch sluice (019) was dated to 480–380 cal BC (UBA-42847), an Iron Age date. This suggests that the trough and channel were dug through a much earlier occupation layer which contained the lithic assemblage. The feature was certainly positioned here due to the proximity of a readily available water source. This was evidenced in the channel, with small wooden sluice, extending northwards coupled with the deliberate plugging of the east edge of the pit with lumps of clay to possibly consolidate the edge of the pit and contain and direct water towards the main sub-rectangular trough (Illus 2.152 and 2.153). The function of this feature is not certain but the proximity to water, the evidence for channelling this water, the presence of a partially wood-lined trough feature, and the presence of burnt and reddened heat shattered stone fragments all point towards a burnt mound. Modification of palaeochannels around a burnt mound has been noted elsewhere, at Arisaig, Lochaber for example (Cressey and Strachan, 2003). It may be that the mound or spread has been eroded to such an extent that only the deposits contained within the large hollow survive. Occasional burnt stone fragments were also noted in the vicinity during investigations here and fragments were also found at Site 11 to the northeast which would support the interpretation of this feature as being the remains of a burnt mound.

Both sites were in a similar landscape setting and in proximity to Whitecrook Bridge and Mid-Challoch burnt mound sites, and the Mesolithic site of West Challoch. The archaeology discovered across these three sites ranged

in period from the Mesolithic through to the Bronze Age. These sites collectively show that the estuarine environment to the south and east of Dunragit was utilised over several millennia which may be some indication of the rich resources it offered those who inhabited this area.

Illustration 2.152: Image of lumps of clay placed around the edge of the trough and channel

Site 11, although not investigated beyond preliminary observations and sampling, was evidence of further, and potentially related, prehistoric activity in the vicinity of Site 8, and indeed beyond to Site 7 across this relict prehistoric landscape evaluated by the bypass route. One of the wood pieces recovered from Site 11 was dated to 2890–2490 cal BC (UBA-42848), placing it in the late Neolithic/early Bronze Age period, contemporary with sites at Whitecrook Bridge and Boreland Cottage Lower.

As the A75 route sweeps downslope along the Droughduil Holdings site, the subsoil levels drop to around 7.5 m to 8 m OD. As Tipping notes in Part 2, sea level was at around 10.5 m OD from around 4400 BC with the Whitecrook Basin emptying by around 2500 BC so any structure in this location, and indeed Site 8, is likely to have been submerged, at least intertidally. The lithic assemblage does suggest that there was activity at or around Site 8 during a period when sea level was up to 3 m above the upper edge of the trough at Site 8. Although the palaeoenvironmental evidence does suggest this sea level for this locale, it is important to remember that there are variations at a much more local level and of course that intertidally large parts of the estuarine area could have been exposed for human exploitation twice daily.

2.5.7.5.2 Whitecrook Bridge Discussion

The three shallow amorphous features (003A, 003B and 003C/D) were cut into a peat layer which surrounded a low summit. Given the evidence of agricultural activity in the area, it is probable that these represent a single crescent-shaped burnt mound which has been eroded and/or

ploughed out over time. This burnt mound would have been situated within a relatively high, and therefore dry, area in comparison to the surrounding peatland. The size of this burnt mound is approximately 12.5 m², although originally it would most likely have been larger. This small size is not uncommon amongst burnt mounds and may suggest that it represents a single phase of activity (Anthony 2003).

The sub-rectangular pit (003E) which was cut into highest point of the area may represent the truncated remains of a hearth which would have been used to heat stones for the surrounding burnt mounds. The presence of oak and alder within the burnt mound deposits, as well as oak and hazel within pit 003E, all suggest that the wood used was collected from nearby scrub and open woodland areas (Alldritt, Appendix 3).

The five flint fragments recovered were spread throughout the burnt mound deposits and consisted of two flakes, one with edge-retouch, two primary blades, and one vitrified indeterminate piece. None of the fragments were diagnostic (Ballin, Appendix 12). However, a quartz pounder/hammerstone was recovered, which was a common tool type throughout the prehistoric period (Ballin Smith, Appendix 14).

A single fragment of cattle bone, from the right humerus, and most likely butchered (Smith, Appendix 10), was recovered from an unstratified deposit. It is uncertain if this butchery was contemporary with the burnt mound, or from a later phase of activity.

An AMS date of 2470–2200 cal BC (UBA-41496) was obtained from the fill of 003B, dating this burnt mound to the late Neolithic period. This date, although not unknown, is relatively early for a burnt mound, as these generally are expected to date to the middle – late Bronze Age (ScARF 2012, 3.3.1).

2.5.7.5.3 Mid-Challoch Discussion

The burnt mound (022A/B) located within this site formed a crescent shape in plan, a common burnt mound form. It covered an area of approximately 47m², which is slightly larger than average, with burnt mounds typically under 20m², although larger ones are not uncommon (ScARF 2012, Section 3.3.1). It is likely that hearth 012 would have been used to heat the stones, with these then used within trough 018 to heat water, before being deposited within the burnt mound. The clay lining seen within pit 018 is a fairly common component within troughs associated with burnt mounds. The shallow channel/trough which runs along part of the base of the burnt mound may have been used to allow excess water to run off, or it may also have been used to heat water within.

The archaeobotanical analysis showing the presence of oak and alder within the burnt mound deposits, as well as smaller quantities of hazel within the elongated gully/at the base of the burnt mound, suggest that the wood used was collected from nearby scrub and open woodland areas (Alldritt, Appendix 3). This mixture of wood shows a marked change in the fuel types in use during the Bronze Age compared to the oak-dominated Mesolithic and Neolithic deposits analysed from across the whole of the Dunragit site. Lithics recovered from the site were all flint and consisted of one flake and one scale-flaked knife, both recovered from unstratified deposits, and one chip, one burnt flake, and one flake from the burnt mound deposits. The majority of the flint fragments were undiagnostic; however the scale-flaked knife (CAT 1731) is of a type commonly found throughout the Neolithic to early Bronze Age period (Ballin, Appendix 12) which could have been contemporary with the burnt mound.

2.5.7.5.4 Boreland Cottage Lower Discussion

The archaeology uncovered at Boreland Cottage Lower is significant because it not only represents up to six burnt mounds, but it also forms one part of a complex relict Bronze Age landscape present in this area. There were three similar burnt mounds discovered further west in the scheme: Droughduil Bridge, Whitecrook Bridge and Mid-Challoch. During the works it was apparent that a palaeochannel existed along the lower edge of the raised beach area which accommodated the funerary complex of Boreland Cottage Upper to the northwest and prehistoric settlement activity of Mains of Park to the east. In particularly wet conditions this palaeochannel was readily visible (see above Illus 2.13). The burnt mounds represent a different aspect of later Neolithic and Bronze Age activity which may have some association with the communities utilising the raised beach above.

2.5.8 Mains of Park

Iraia Arabaolaza

2.5.8.1 Site 12 *(Illus 2.153 and Illus 2.13)*

This site/area was opened as a result of preliminary results from the evaluation suggesting that significant sub-surface archaeological deposits relating to the prehistoric period remained undisturbed in this location. Due to the number of the archaeological features encountered, one of them containing a prehistoric pottery rim, the site was extended and excavated, with a watching brief during the construction phase uncovering further remains. It is important to note that there was a substantial level of overburden in this area along the west edge of the raised beach area, just north of Mains of Park Farm. At some point in the relatively recent past a layer of refuse material containing paper and other modern debris was deposited here with depths of up to 1 m

noted. This overburden overlay the former plough soil layer which overlay the archaeology.

Site 12 was located further east on the same raised beach formation that accommodated the sites of Boreland Cottage Upper (Illus 2.154). Here, the edge of the raised beach, and the palaeochannel (Illus 2.13) that was observed at the foot of the slope, curved from an east/west orientation, to a north/south orientation, leading out towards Luce Bay. The site was characterised by numerous charcoal-rich deposits consisting of dark greyish-black silt with gravel recorded across the site overlaying the subsoil. A total of 316 lithic artefacts were recovered from this site, however they were mostly unstratified. Evidence of sand-blasted artefacts and a water-rolled piece were also identified. The 15 tools recovered included three microliths and two microburins, six scrapers, one *meche de foret* (a small drill-bit), one burin, and three pieces with edge-retouch. Although the lithic assemblage was mixed in nature, lithic analysis indicated that the site was visited at least twice in prehistory (Ballin, Appendix 12). The smallest blades possibly relate to a Mesolithic microblade industry while the larger, more robust blades were evidence of a Neolithic blade industry.

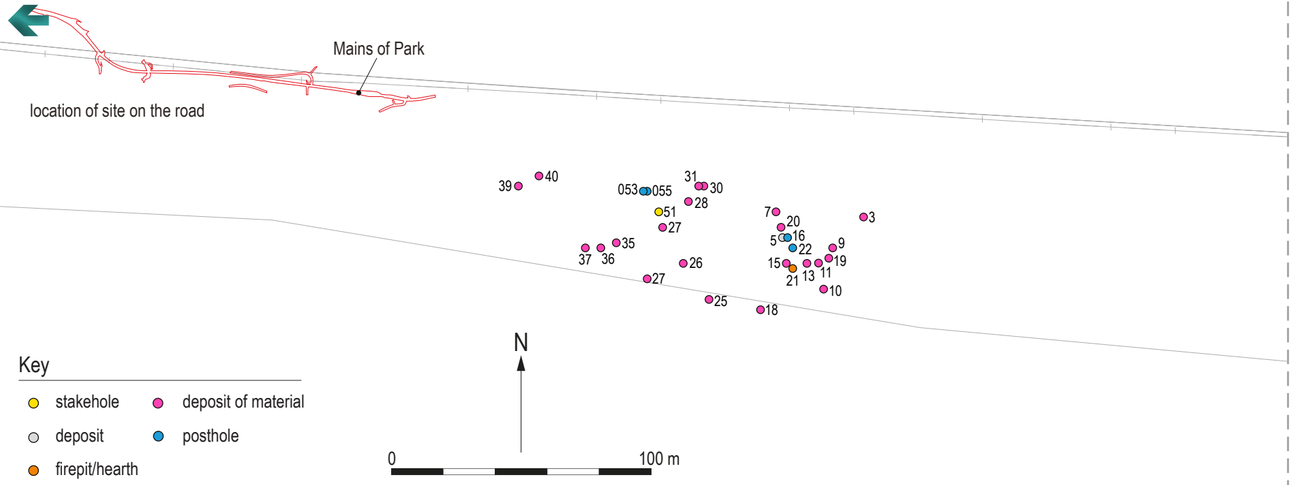


Illustration 2.153: Plan of Mains of Park

Illustration 2.154: View of Site 12 location taken from east

Illustration 2.155: Hearth 021 from south

2.5.8.1.1 Mesolithic activity

Central to the site was sub-rectangular hearth or fire pit 021, measuring 0.88 m by 0.72 m wide in plan and 0.13 m in depth (Illus 2.155). It was filled by dark grey silt 014 with frequent charcoal, including a small quantity of oak and birch charcoal and heat-cracked stones (Illus 2.156). A sample of the birch charcoal produced a late Mesolithic radiocarbon date of 6220–5990 cal BC (UBA-41500: 7205 ± 39 BP).

2.5.8.1.2 Neolithic activity

Just north of the fire pit, two postholes (016 and 022) lay 1.5 m apart (Illus 2.156). Posthole 016 was oval in form and measured 0.25 m by 0.24 m by 0.07 m in depth. It was filled with grey coarse silty sand 004 with sub-angular cobbles and gravel and flecks of oak charcoal. Posthole 022 was also oval in plan and was filled by grey silty sand 006 with seven flint fragments recovered from this deposit (CAT 1304 and CAT 1383-8). Hazel charcoal sample from this feature

provided an early Neolithic date of 3700–3530 cal BC (UBA-41499: 4856 ± 28 BP).

A similar date of 3650–3520 cal BC (UBA-41498: 4789 ± 30 BP) was produced from a hazel charcoal sample from spread 011 located southeast of posthole 022. An earlier early Neolithic date of 3970–3790 cal BC (UBA-41497: 5090 ± 33 BP) was also obtained from another spread 003 situated at the northeast corner of the site. It consisted of dark grey/black silty gravel with inclusion of oak charcoal and 46 hazel nutshell fragments (Alldritt, Appendix 3). The latter suggests that it was the truncated remains of a fire pit used for processing this woodland resource for food. A further possible deposit 015 was identified west of the fire pit 021, with nine lithic fragments (CAT 1562-71) recovered (Ballin, Appendix 12).

At the northwest corner of the site an isolated shallow stake-hole 051 was encountered. This measured 70 mm by 60 mm by 15 mm and was filled with charcoal rich dark grey/black silt 032. Further west another posthole 053 and shallow pit 055 were identified (Illus 2.156). The latter measured 0.21 m by 0.16 m, with vertical sides, but was only 0.04 m deep. Located 1 m further east was the larger oval posthole

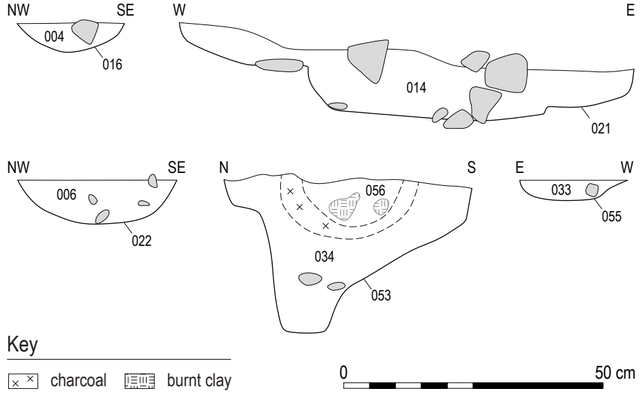


Illustration 2.156: Section drawings of posthole 016, pit 021, postholes 022 and 053 and possible shallow pit 055

053. This oval-shaped posthole measured 0.6 m by 0.47 m in plan and was 0.3 m deep (Illus 2.157). Its basal fill 034 consisted of brown silt with gravel inclusions and occasional charcoal flecks. Overlaying this and concentrated in the centre of the posthole was charcoal-rich black-brown silt with frequent angular pebbles and some burnt clay patches 056. One piece of a Levallois-like flint flake was found just under this fill 056 (CAT 1504) suggesting a late Neolithic date (Ballin, Appendix 12).

Illustration 2.157: West facing section of posthole 053

2.5.8.2 Mains of Park Discussion

The archaeology uncovered in this site is evidence that the area was used and occupied during the Mesolithic and Neolithic periods. Although the duration of each different occupation is unclear, the high volume of lithic material recovered, including flint cores, debitage, flakes and tools indicates that the area was used for manufacturing tools at least during these two periods. The fact that all the diagnostic pieces were late Mesolithic in date suggests that most of the assemblage may be also of this period (Ballin, Appendix 12). However, since most of the finds were unstratified, and some presented signs of being redeposited, at least towards the east side of this area, no particular areas of distribution/activity were apparent. The evident reuse of Mains of Park for flint manufacture over the Mesolithic and Neolithic does, however, indicate that the site presented favourable conditions for this type of activity. Like much of the raised beach area which extends from East Challoch, across Boreland Cottage Upper and around to Mains of Park, there is evidence of multi-period, and indeed multi-functional use of this part of the landscape through time.

The large quantities of hazel nutshells recovered from one of the Neolithic deposits also indicate that food processing/storage took place on site. Although no significant structures were exposed during the excavation, the

presence of features in pairs, such as 016/022 and 053/055, some of which are interpreted as the remains of postholes, suggests possible transient structures such as wind breaks could have been constructed during this seasonal activity. Truncation by later ploughing and agricultural activities however have affected the number of features preserved and hinders their interpretation.

The recovery of a late Neolithic flint flake within posthole 053, could be evidence of structured deposition. The concentration of possible domestic hearth waste found at the upper centre area of the posthole suggests that it might have been used to fill a gap from when the post was removed or became rotten. The fact that the flint flake was recovered just below the charcoal lens in this fill suggests that it was probably placed there purposely prior to backfilling the feature. There are numerous examples of pits with structured deposition found across Scotland during the Neolithic. Their function has been subject to debate with some authors arguing that the artefacts indicate deliberate deposition (Thomas 1999, 63; Alexander 2000, 66) while others suggest they are evidence of domestic material (Conolly and MacSween 2003, 43). More recently Brophy and Noble (2012) have proposed the idea that the domestic material found in Neolithic pits may encompass both ritual and mundane activities.

Mains of Park, as all the other sites along the Dunragit Bypass was a palimpsest site. The palimpsest nature of the site made the interpretation of undated features difficult. Nonetheless the reuse of the site for flint knapping demonstrates that this location had some favourable features, conditions and resources that made it ideal for human occupation and use.

Part 3. The changing environment, resources and economies

Richard Tipping with Diane Alldritt and Susan Ramsay

Environmental change and human inhabitation

This section is ordered chronologically, from the earliest excavated Mesolithic archaeological features to the Iron Age and Romano-British settlement remains at Myrtle Cottage and Drumflower. It attempts to relate the archaeological sites to their contemporary environments using the available palaeoenvironmental and ecofactual data. It is evidence-led, moving from the local to the general. The evidence is varied and has different strengths at different times and places. It is rarely abundant.

Because the A75 Bypass runs parallel to the northern shore of Luce Bay, it is natural to assume that coastal resources were of some concern to Mesolithic hunter-gatherer-fisher communities, whose activities are recorded at six sites (Ballin, Appendix 12). However, the precise locations and chronologies of some sites at Dunragit suggest this may not be so. Site C20 at Droughduil Holdings in the west of the Whitecrook Basin was visited, at the least, around 7700 cal BC (UBA-41894), although early Mesolithic lithic forms are also present (Ballin, Appendix 12). Relative sea level was then below 0 m OD (Part 1). West Challoch is also in the Whitecrook Basin, to the east, probably frequently visited by people between c. 6900 and c. 6800 cal BC, or perhaps after c. 6500 cal BC and later that millennium (Ballin, Appendix 12) when relative sea level was only a little higher, maybe around 1.5 m OD. But at these times, the sea, if it entered the Whitecrook Basin at all, it was confined to a narrow valley at Droughduil Bridge (Tipping *et al.* 2015, 106). The open sea lay to the south of these sites, over the hill and probably out of sight of people at either Droughduil Holdings or West Challoch. If coastal resources were paramount, the Whitecrook Basin was not

the place to be in the early Holocene. The sites at Boreland Cottage Upper, inhabited around 7600 cal BC, East Challoch around 6800 cal BC, and Mains of Park around 6100 cal BC, were always better positioned for access to the shore, though how distant the coast was at these times is hard to gauge because we do not know the width then of the glaciofluvial terrace these sites are on or how far out across Luce Bay the shore was. Luce Bay was shallow, sediment from deglaciation trapped within it by the currents (Part 1), providing a source for the dune sand building on a pre-existing shingle ridge, so that the shore may have been a long way out, even given the large tidal range of the bay.

By 6000 cal BC, relative sea level lay around 7.5 m OD. It did not rise at a constant rate, however, and large parts of Luce Bay may have been inundated very quickly between 6800 and 6270 cal BC (Lawrence *et al.* 2016). Very rapid sea level rise may be the explanation for the pattern of radiocarbon assays obtained by Smith *et al.* (2020) at The Plots, near Droughduil Bridge in the Whitecrook Basin, where the estuarine sediment surface rose some 3.5 m in, seemingly little time at all. It may have been this event that saw salt marshes initially spread to east and west of Droughduil Bridge within the basin. Later Mesolithic sites were closer to the sea as the sea moved nearer, such as at Droughduil Holdings SAM B at c. 4130 cal BC (UBA-41888) (2.5.2). Coastal resources might then have become more important through time, though this cannot be demonstrated from ecofactual data at Dunragit and there was no Mesolithic or early Neolithic inhabitation at Droughduil Bridge (see 2.5.7) to take advantage of relative sea level rise. By c. 5200 cal BC, when people were at SM A, on a ridge to the west of the Whitecrook Basin, salt marshes were just to the east, but from SM A, those people could also drop down west to the newly emerging salt marshes of the 'inland' sea of the Piltanton Burn north and west of Torrs Warren. Around the same time (c. 5350 cal BC (UBA-41911); c. 4980 cal BC) people at Drumflower (see 2.5.1) could walk south to the same marshes along the Ballancollantie Burn, as the sea surged through the Genoch Mains-Droughduil gap, flooding an area of some 350 ha in the hinterland of Torrs Warren as far west as the farm of Barsolus. The changing palaeogeography supports with some delicacy, Ballin's (Appendix 12) suggestion that Mesolithic activities migrated from east to west over time in response to rising sea level.

Dunragit throughout the Mesolithic was at the seaward edge of deciduous forest. *Betula* (birch) and *Corylus* (hazel) were the dominant trees until the immigration of the more competitive *Quercus* (oak) and *Ulmus* (elm). Eighteen fragments of Betula charcoal were dated from the excavations. The oldest radiocarbon dated *Betula* charcoal was found at Boreland Cottage Upper (Site 18) (see 2.5.6), c. 7830 cal BC (8790 ± 38 BP: UBA-41894), collected when *Betula* was abundant in the forest. *Corylus* charcoal was dated far more commonly, from 118 fragments. Whether this means that *Corylus* was much more common in the forest than *Betula* is unknown. It is recorded from all archaeological sites of Mesolithic age, the earliest, c. 7700 cal BC, at Site 19, West Challoch (UBA-42821: 8694 ± 36 BP) (see 2.5.3). The abundance of *Corylus* in the vegetation may have been maintained at coastal locations on the west coast even after it lost ground inland to bigger trees like *Quercus* (below), because it grows best at forest edges. *Corylus* maintained a closed woodland community in areas of high oceanicity (Coppins and Coppins 2012), although Galloway is today south of this zone, and through the effect of wind-pruning by inshore winds on the size and canopy cover on competing trees: the preserved stake-holes in the southern quadrant at Structure 1 at West Challoch might suggest shelter from onshore winds. These coastal locations may have remained attractive to people who focused on terrestrial resources, with hazelnuts seemingly central (Holst 2010). The recovery of large quantities of hazel nutshells from a Neolithic deposit at Mains of Park (see 2.5.8) indicates that food processing there continued beyond the Mesolithic (Alldritt, Appendix 3).

Pinus (Scots pine) grew in the Machars at least, on dry peat mosses, at some time in the Mesolithic (Part 1). Mitchell (2006) suggested its colonisation, palynologically, in Antrim at c. 7500 cal BC and it was a common tree in the Antrim lowlands (Bennett 1989), but its charcoal was not recorded at Dunragit (Alldritt, Appendix 3). *Quercus* (oak) was a significant wood in several structures at West Challoch and was the primary fuel source in several hearths there, suggesting oak to have been a common forest tree then. Hearths (224) and (247) at West Challoch were dated by *Corylus* (hazel) charcoal to c. 7700, c. 7660 and c. 7560 cal BC, suggesting that oak was a common tree in the region earlier than Birks' (1989) estimate from radiocarbon dated pollen diagrams for its colonisation of Southwest Scotland between c. 7500 and c. 7100 cal BC, and much earlier than dated in pollen diagrams from the region at c. 6150 cal BC near Gretna (Tipping 1995) and c. 6370 cal BC at Cooran Lane in the Galloway Hills (Birks 1972). Pollen based estimates are not of colonisation, however, but when *Quercus* became significant in the regional pollen 'rain': the two measures are sharply different. *Quercus* continued to be a significant fuel later in the Mesolithic at Droughduil Holdings (SM A: c. 5200 cal BC; SM B: c. 4100 cal BC), and at the Bronze Age burnt mounds (Alldritt, Appendix 3). Indeed, into the Iron Age, *Quercus* timbers were probably used for construction at East Challoch Site 5 (Alldritt, Appendix 3). Whether these were from managed or wild woods cannot be determined from the evidence.

Colonisation and establishment of *Alnus* (alder) has long been seen as highly variable in timing because some form of disturbance is necessary for it to gain a foothold (Chambers and Elliott 1989; Bennett and Birks 1990; Tallantire 1992). Its first palynological appearance amid sand dunes at

Brighouse Bay is dated to c. 6500 cal BC (Wells *et al.* 1999) and its earliest local establishment on the salt marshes of the Moss of Cree, at Blairs Croft, to c. 6100 cal BC (Smith *et al.* 2003): Wells *et al.* (1999) relate the *Alnus* rise to rising sea level. These environments were similar to large parts of the Dunragit Bypass landscape. The earliest radiocarbon dated *Alnus* charcoal on the A75 Bypass is c. 6340 cal BC (UBA-41485: 7472 ± 40 BP), Site 10 at Boreland Cottage Upper (see 2.5.6). It is probable that people used *Alnus* pretty much as soon as it became locally established. Dated *Alnus* fragments are overwhelmingly from one archaeological site, the multi-period Site 10 at Boreland Cottage Upper (Ramsay, Appendix 4): 52 *Alnus* fragments were radiocarbon dated in total, 28 from Site 10 (see 2.5.6). It is interesting that *Alnus* was consumed at sites on well-drained gravel soils and less so at archaeological sites in the increasingly wet Whitecrook Basin where it most likely grew more abundantly.

At Droughduil Holdings (see 2.5.2), the road-line stretches from high ground at area SM A, around 15 m OD, eastward along the falling slope eastward to Droughduil Bridge (see 2.5.7). The shallow east-flowing palaeochannels seen in Grid B pre-date archaeological features and may be pre-Holocene features. Site C20 exposed the natural substrate in a c. 30 m wide strip of the western side of the Whitecrook Basin. Reddish-brown coarse sands and gravels, meltwater deposits, were ubiquitous. At c. 10.3 m OD a break of slope eroded in the gravel was interpreted as a degraded sea-cliff. Some 10 m east of this, lying on glacifluvial gravel at around 8.7 m-9 m OD, a small thin (90 mm) patch of pale brown clay, highly organic at its top, radiocarbon dated to c. 1830 cal BC, and covered by a thin, white, bleached well-sorted medium-coarse sand, may be the remains of a salt marsh, though diatoms could not confirm this. This is the only sedimentological evidence above Droughduil Bridge of the basin being a former marine embayment: the regional relative sea level curve (Smith *et al.* 2020) is generated from data outwith this basin. This led Tipping *et al.* (2015) to suggest that the sea at its highest, at around 10 m OD for a few hundred years after c. 4500 cal BC, was closely integrated with the early Neolithic monumental complex at Dunragit (Thomas 2015). This is still true but the recognition that c. 3 m of wind-blown sand, its base on till around 7 m OD, probably post-dating c. 2700 cal BC (Part 1) lay under the Droughduil Mound, means that the Dunragit monumental complex faced an open coast. East of Droughduil Bridge the sediment forming the southern ridge of the Whitecrook Basin is less well understood, but formed a barrier to the sea, a sea-cliff being cut in its southern edge. The post-defined cursus at Dunragit (3760–3630 cal BC) is close to c. 20 m OD, well above the contemporary sea level. The late Neolithic palisaded enclosure (c. 2730-c. 2530 cal BC) falls in altitude from c. 20 m to c. 14 m OD. But Thomas' (2015) figure 1.6 shows as cropmarks, three curvilinear features (features 14, 16 and 17), the last two at

c. 11 m OD, which may have run parallel to a shoreline: they were not excavated. Of the nine radiocarbon dated features excavated along the road-line at Site C20, all except one are above 10 m OD. The exception is the possible firepit in SM B, dated to the Mesolithic-Neolithic transition c. 4100 cal BC (UBA-41888: 5281 ± 35 BP), just below 10 m OD, which places it intriguingly close to the contemporary shoreline.

Prehistoric archaeological features at Boreland Cottage Upper, beneath the 12% gradient slope of Challoch Hill, quite frequently contained deposits described as 'hill wash', or colluvium. No other archaeological site along the bypass produced such clear evidence, so that soil erosion was probably related to slope. 'Hill wash' may have part-filled some Mesolithic-age pits, though if the pits remained open, 'hill wash' might have been later. It is radiocarbon dated to the early Neolithic in pit 255, after c. 3800 cal BC, and commonly recorded in features thereafter to c. 1100 cal BC at Site 18. A single grain of *Hordeum* (barley) was recovered from pit 041 but this may be little more than a chance find; cereal grains are few in most prehistoric contexts along the bypass (Alldritt, Appendix 3). At Boreland Cottage Upper this may be because the archaeology represents non-domestic functions. The lines or rows of postholes, of early Neolithic age, may be evidence for land division but need not represent agricultural activity. What promoted soil erosion on the slopes above for, seemingly much of later prehistory is unclear then, but of note in its apparent long duration. Pollen data were not generated during the GUARD excavations at Dunragit, or from Thomas' (2015) excavations despite peat deposits lying at the lowest point of the Whitecrook Basin (Tipping *et al.* 2015), and the Stranraer isthmus has no interpretable pollen diagram from which to understand the timing or scale of prehistoric woodland clearance (Part 1), another potential cause of soil erosion. Pollen data from the uplands at Lagafater (Flitcroft 2005; Part 1) do not serve as comparanda because Challoch Hill is too steep to support extensive peat. There is no doubt that the Bronze Age woodlands of Galloway were very different, in species composition, extent, continuity and density, to those around Stonehenge (Bennett 1989; Tipping 1994; French *et al.* 2012) as Schulting and Snoeck suggest from cremated individuals at Boreland Cottage Upper (Appendix 9) but detailed analyses concerning prehistoric woodland loss is missing. The only measure of this from the excavations at Dunragit might be that more fragments of *Betula* charcoal (10 or 77%) were radiocarbon dated after c. 3700 cal BC than in the Mesolithic, which may relate to *Betula* being more common in disturbed woodland, if selection by people was not significant. This is not so for *Corylus*: Mesolithic contexts account for as many fragments as contexts after 4000 cal BC (48 to 52%).

Understanding the chronology of wind-blown sand deposition is important not simply to understand changing environments, soils and resources (Lang, Appendix 5) but

because aeolian activity on the Atlantic coast is widely understood to reflect climate change, sand becoming a proxy for much-heightened storminess accompanying the dislocation of air-masses in severe climatic deteriorations. The chronology at Dunragit, attempted in Part 1, largely from archaeological excavation, is very incomplete. Excavation and OSL dating at Myrtle Cottage (see 2.54) adds considerably to our understanding. The Iron Age and Romano-British settlement at Myrtle Cottage sits on top of a raised shoreline, 10-12 m OD, dated elsewhere to c. 5500-6000 cal BC (Part 1): this constrains the date of initial sand deposition. The earliest dated sands, above an unknown depth of sand, are OSL dated to the later Neolithic, c. 3100 cal BC (Cresswell *et al.* Appendix 2). Overlying sand layers are dated to c. 1540 cal BC (context 147), c. 380 cal BC (context 115) and c. 330 cal BC (context 138). Sand layers above the basal excavated context 047 are thin, and though this might imply limited amounts of sand-blow, it is likely that much sand was stripped by wind erosion. None are characterised by significant organic matter accumulation. Soil micromorphological analyses (Lang, Appendix 5) show that later Iron Age contexts have some soil structure, implying geomorphological stability, and a Romano-British brooch (Hunter, Appendix 19) was associated with a thin, intermittent layer of blown sand. The complex of structures seems not to have been sealed by extensive blown sand, suggesting that major sand-blow events away from Torrs Warren had significantly lessened by the later Iron Age.

On the north coast of Northern Ireland, dune instability is recorded around the Mesolithic- Neolithic transition. Older sand is difficult to find or access in dune systems, so that later Mesolithic events recorded in Galloway (Part 1) are of interest: Gilbertson *et al.* (1999) identified on the Outer Hebrides, our most complete record, a phase of sand-blow c. 7000-c. 6300 cal BC. Later phases of aeolian activity in Northern Ireland are recorded around 2000, 1500, 1000-500 cal BC, and in the last few centuries (Wilson *et al.* 2004). What seems to be a major spread of blown sand c. 2700 cal BC beneath the Droughduil Mound (Part 1) is different to other west coast sequences but is poorly dated. Wind-blown sand in the Whitecrook Basin at evaluation trenches C3 and C4, and the discrete event within the estuarine sediment fill seen in trench edges at the Droughduil Bridge burnt mound (see 2.5.7) probably date to this phase.

A single phase of sand-blow between 3800 and 2200 cal BC described by Gilbertson *et al.* (1999) is likely to conflate several discrete events. Other studies identify dune-building in the early Bronze Age c. 2200-c. 2000 cal BC (Tooley 1990; Bjorck and Clemmensen 2004; Wilson *et al.* 2001; Wilson *et al*. 2004; Clemmensen *et al.* 2009; Orme *et al.* 2015). Middle Bronze Age activity is found at some sites (Northern Ireland (Wilson *et al.* 2004: c. 1400 cal BC; Orkney (Tisdall *et al.* 2013: 1450-1150 cal BC); Orme *et al.* 2015: c.1820-c. 1660 cal BC). Heightened storminess and the increased deposition of sea-spray on soils close to the coast (Snoeck

2014) may be an explanation of Schulting and Snoeck's data on shifting 87Sr/86Sr ratios in people at Boreland Cottage Upper between c. 1700 and c. 1450 cal BC (Appendix 9): more work is needed on non-coastal localities and other periods (cf. Snoeck *et al.* 2020).

The remains of up to ten probable burnt mounds were uncovered along the A75 Bypass. Most were clustered at Boreland Cottage Lower (see 2.5.7), strung along the road-line for more than 400 m. Given the common association between water and burnt mound troughs, their occurrence on well-drained gravel soils would seem atypical, but excavation at Site 1 revealed a small east-west trending palaeochannel cut in sand. Its orientation might suggest an origin as a swale between former, Late Devensian beach ridges. Excavation demonstrated, however, that the channel was active in later prehistory, alluvial sediment deposited along it after c. 1800 cal BC. Similarly, the burnt mound at Site 15 was overlain after c. 2050 cal BC by alluvium. It is tempting to suggest a relation between alluviation in these channels and the contemporary supply of 'hill wash' to the same terrace surface nearby at Boreland Cottage Upper (above). The early Bronze Age burnt mound at Mid-Challoch was also on the terrace surface of glaciofluvial gravel, though much closer to water draining from Challoch Hill to the north, and also on the edge of another shallow east-west trending channel. It is underlain by clay, either mid-Holocene estuarine sediment or pre-Holocene clay exploited in the nineteenth century by the Whitecrook tile works. These channels contrast with recently studied burnt mounds in Ireland which were groundwater-fed (Brown *et al.* 2016).

The burnt mounds at Droughduil Bridge and Whitecrook Bridge (see 2.5.7) are situated on what was always wetter ground, now peat, on the lowest point of the Whitecrook Basin below 8 m OD. That at Whitecrook Bridge was south of a spring probably forced to the surface by impermeable estuarine sediment. The Whitecrook Bridge mound is undated. On the same natural watercourse a few tens of metres southwest, the Droughduil Bridge mound is radiocarbon dated by waterlogged *Betula* wood to 980–830 cal BC (UBA-41898), and an even later date of 480–380 cal BC (UBA-42847) was obtained from *Betula* wood of a possible sluice gate. Tipping *et al.* (2015; Smith *et al.* 2020) independently dated at Droughduil Bridge, falling relative sea level at 7.5 m OD to c. 2400 cal BC. These values relate to sediment: contemporary water levels would have been higher, though not necessarily very much higher because diatom assemblages probably reflect environments on salt marsh surfaces inundated at high tides (Smith *et al.* 2020). If the Droughduil Bridge burnt mound was used in the mid-late Neolithic, it may have lain in the inter-tidal zone: the salt marsh surface at c. 3000 cal BC would probably have lain around 8.5 m OD. The wooden trough to the mound might have been filled by salt-water. Such inter-tidal

settings for burnt mounds have been identified, though not so directly associated with contemporary sea levels, and specific purposes suggested, including retaining flavour to boiled marine foods (Bonsall and Dowd 2015). To the east of the Droughduil Bridge mound, C22 evaluation trenches encountered charcoal unworked wood at around 7.5 m OD, interpreted as lines of waterlogged wooden stakes. One fragment of wood was radiocarbon dated, producing a late Neolithic date (2890–2490 cal BC; UBA-42848).

The Iron Age and Romano-British settlement remains at Myrtle Cottage (see 2.5.4) and Drumflower (see 2.5.1) provide almost the only clear evidence for later prehistoric domesticity uncovered in excavation. It is not clear why, or whether this represents a significant change in how this coastal land was regarded, although the review in Part 1 indicates the rarity of similar archaeological evidence before c. 500 cal BC. One pit and one posthole at Drumflower contained significant deposits of cereal grain, mostly of spelt wheat with lesser amounts of barley (Alldritt, Appendix 3), undated. Small quantities of oat, barley, spelt and emmer wheat were found at Myrtle Cottage (Alldritt, Appendix 3). These accord with finds from other sites (Part 1) but in total are, perhaps, hard to equate with the commitment to arable farming seen at crannogs (Cavers and Crone 2018). It was suggested in Part 1 that there is, to date, little pollen-analytical evidence west of the River Cree for extensive later Iron Age deforestation and agricultural expansion. Further west in Ireland, pollen-analytical evidence for agricultural contraction persists (Weir 1995), its dating recently refined to the period c. 200 cal BC to c. cal AD 200 (Coyle McClung 2013), precisely when agricultural activity in central Britain was rapidly accelerating (Tipping 2018). This apparent westerly decline in the vigour with which agriculture was pursued needs clarification.

Part 4. Overall Discussion-Sequences of Activity

4.1 Mesolithic Settlement

Warren Bailie and Dave McNicol

4.1.1 The Mesolithic in Southwest Scotland

Late Mesolithic activity, spanning nearly 4000 years, was recorded over six sites uncovered as part of the Dunragit Bypass excavations. The earliest activity, a pit dated to 7940–7490 cal BC (UBA-41894), is the earliest activity uncovered in Southwest Scotland to date, and was uncovered at Droughduil Holdings (C20) at the western end of the excavations; a second pit at the Boreland Cottage Upper site produced a similar date 7740–7580 cal BC (UBA-41661). These suggest low levels of landscape occupation in the eighth millennium BC.

More concerted Mesolithic activity uncovered during the bypass excavations was concentrated within two phases. The first, spanning a period of approximately 1000 years, occurred in the period 7048-6003 cal BC, located to the east within the West Challoch, East Challoch, Boreland Cottage Upper, and Mains of Park sites (Illus 4.1). This phase included Structure S1, dating to c. 6900 cal BC, at West Challoch, making it the earliest substantial structure uncovered in Southwest Scotland to date. A hiatus of at least 300 years occurred before the second main phase of activity located to the west within the Droughduil Holdings

Illustration 4.1: Aerial view of West Challoch, East Challoch, Boreland Cottage Upper and Mains of park

(SM A) and Drumflower sites, with activity here spanning a period of c. 700 years between 5676-4901 cal BC, based on the earliest and latest dates for this phase (Illus 4.2). These main phases of activity suggest a move through time from east to west, which may have been in response to rising water levels during this period, with the eastern Dunragit sites located closer to a small inlet where the Piltanton Burn runs along the edge of the current shoreline.

A second hiatus of approximately 600 years was broken by the final Mesolithic activity we have evidence for, consisting of a hearth at Droughduil Holdings (SM B) dating to 4250–3980 cal BC (UBA-41888), on the very cusp of the Mesolithic/Neolithic transition.

The Mesolithic activity found during the Dunragit Bypass excavations should be viewed in the context of local and regional patterns of sites and findspots of broadly the same date. Luce Bay is well known for a concentration of Mesolithic activity, with a number of flint scatters/ findspots uncovered in close proximity to both the western (i.e. Kirkmabreck (Canmore: 61114), and Balgowan (Canmore: 61122)), and eastern, (i.e. Kilfillan (Canmore: 62253) and Gillespie (Canmore: 62254)) shoreline. However, only two sites, Low Clone and Barsalloch, both of which lie on the eastern shoreline of Luce Bay c. 22 km to the southeast of the Dunragit sites, have so far been excavated (Illus 4.3). Low Clone was excavated in the 1960s and is located on a prominent erosion scarp, known as the Heugh, above a

Illustration 4.2: Aerial view with West Challoch (bottom right corner during excavation), Droughduil Holdings (centre) and Drumflower (top) sites

Illustration 4.3: Sites with concentration of Mesolithic activity around Luce Bay

raised beach, and revealed evidence of a shelter/windbreak, along with a collection of over 1600 flints (Cormack and Coles 1968). The shelter/windbreak consisted of a long hollow, measuring c. 13.7 m by 5.5 m, with a flat base and an average depth of 0.57 m. A series of stakeholes, along with stone settings, was uncovered at the base of the hollow, with a substantial fire spot located outside of the structure to the southwest. Evidence for the reuse of the site was noted in the possible intercutting of two hollows, and a second hollow, possibly representing a second structure, was uncovered c. 25 m to the west, although this was only partially excavated. Given the large size of the hollow at Low Clone it is unlikely that it represents a single Mesolithic structure as originally interpreted, as these have been shown to measure between c. 0.5 m and c. 6 m in diameter (Wickham-Jones 2004). The large hollow may therefore represent a number of separate or interconnected structures, either contemporary or related to separate phases of activity on the site. Barsalloch was also excavated in the 1960s and is located approximately 3 km to the southeast of Low Clone. The site consists of a small natural hollow on a raised beach, with associated hearths, pits and stone settings, from which a date of 4050 ± 100 BC (GaK-16010) (Cormack and Coles, 1968, 44-72) was obtained, making it broadly contemporary with the possible hearth uncovered within the Droughduil Holdings SM B site of 4250—3980 cal BC (UBA-41888). Over 450 flints were recovered during the excavations, the majority from the topsoil, with a further 430 flints recovered during previous fieldwalking of the site (Cormack 1970). No structural evidence was noted at Barsalloch, however the number of fire pits indicated that it may have been visited on a number of occasions, with the stone settings possibly indicating that temporary shelters/windbreaks were erected on site.

Further afield, Mesolithic activity in the area is attested to by numerous flint scatters discovered along the Solway Firth to the east, the Firth of Clyde to the north, as well as along the shorelines of Loch Ryan, Loch Doon, and Clatteringshaws Loch (reservoir) to the north and northeast. However, only a few of these sites have been excavated, and even fewer have been radiocarbon dated, with only three sites (Redkirk Point, Littlehill Bridge, and Gallow Hill) so far dated to the late Mesolithic period. Redkirk Point, located at the eastern end of the Solway Firth, was excavated in the 1970s with a ‘pear-shaped’ hollow, measuring 1.03 m by 0.65 m, with a depth of 0.25 m uncovered. At the base of this hollow a semi-circular stone setting was uncovered and identified as a hearth (Masters 1981, 111-14). Radiocarbon dates of 7350–6550 cal BC (UB-2445: 8000 BP ± 65) and 7150–6500 cal BC (UB-2470: 7935 ± 110 BP) were obtained from charcoal from the hearth, however no artefacts were uncovered during the excavation and therefore the nature of the activity that these features represent is uncertain. The sites of Littlehill Bridge and Gallow Hill are both situated on the northern outskirts of Girvan, close to the shoreline of the Firth of Clyde, approximately 40 km north of Dunragit.

Excavations at Littlehill Bridge were undertaken in 1994 and revealed evidence of at least one structure in the form of a shallow sub-oval scoop measuring approximately 4 m by 2.5 m, with a depth of 0.25 m, along with a concentration of 366 lithics. A possible second sub-oval structure was also uncovered here, however this may represent an earlier phase of activity to the same structure rather than a separate structure itself. A third possible structure was uncovered c. 12 m to the west however this was only partially excavated, and its function remains uncertain (MacGregor and Donnelly 2001). No postholes, stakeholes, or hearths were uncovered at Littlehill Bridge, although a compacted surface was uncovered within the hollow which produced a high concentration of lithics, indicative of a knapping floor. A radiocarbon date of 6355–6012 cal BC (Beta-108701: 7350 ± 60 BP) was obtained from this surface making this structure broadly contemporary with the Mesolithic activity uncovered at Mains of Park (6220–5990 cal BC; UBA-41500: 7205 ± 39 BP). The Mesolithic features uncovered at Gallow Hill, directly to the northeast of Littlehill Bridge, consisted of at least two pits, one of which contained over 100 lithics, and a series of lithic scatters likely representing multiple phases of activity (Donnelly and MacGregor 2006, 31-69). A radiocarbon date of 4800–4550 cal BC (GU-9806: 5835 ± 45 BP) was obtained from the pit containing the large concentration of lithics, placing this activity between that observed at Droughduil Holdings (SM B) and Drumflower (Borrow 1 ext.). All of these sites are located in similar settings, either on or just above a raised beach/coastline during the Mesolithic period. These locations would have allowed the exploitation of both marine and terrestrial resources, and although no faunal evidence for marine exploitation was uncovered at Dunragit, there are undated midden sites in the wider area associated with Mesolithic lithics, such as those at Stair Haven (Canmore: 62266) and Sheddock (Canmore: 63070), evidencing that such exploitation was taking place.

The majority of Mesolithic sites uncovered in this area, and throughout Scotland, have been located on the coastline, with only a few, such as those excavated by Tom Affleck in the 1980s at Starr 1 on the edge of Loch Doon (Affleck 1986, 10-21), and Smittons, Stewartry (Edwards 1996), uncovered inland. Excavations at Starr 1 revealed evidence of a possible stake-built structure along with occupational deposits and a stone setting, 0.4 m in diameter. A radiocarbon date of 5370–4990 BC (OxA-1596: 6230 ± 80 BP) was obtained from a fire spot at this site, however this is generally thought to be an unreliable date as the excavations were inundated by water from the loch, stopping a detailed record of the site being made. An arc of stakeholes, possibly representing a temporary structure, along with fire spots and occupation material was uncovered at Smittons. Four dates were obtained from this site, with two post-dating the Mesolithic period, although both of these came from the northern end of the site, where signs of disturbance and silt in wash were noted in areas (Hedges *et al.* 1989, 207-34). The remaining two radiocarbon dates were 4460–4060 cal BC (OxA-1594: 5470 ± 80 BP) and 5470–-5000 cal BC (OxA-1595: 6260 ± 80 BP), with the latter suggesting contemporaneity with the nearby Starr 1 site, along with the Droughduil Holdings (SM A) and Drumflower (Borrow 1 ext.) sites.

The imbalance between coastal and inland sites is likely down to the relatively common revelation of coastal sites by erosion and by the concentration of archaeological work in these areas. However, over the last few decades more inland sites have been uncovered, such as those around the Daer Reservoir in the Lowther Hills, South Lanarkshire (Ward 1995, 1997, 2000, 2010 and 2017) and Tarf Water (Cullen and James 1995), which has allowed us to gain a fuller understanding of the true extent of Mesolithic inhabitation throughout Southwest Scotland. Investigations at Daer Reservoir by the Biggar Archaeology Group have been undertaken since 1995 and have revealed numerous lithic scatters as well as a group of small pits/postholes which have been tentatively suggested to form the remains of a structure (Ward 2010). This structure has produced two radiocarbon dates of 7044–6779 cal BC (AA-30355: 8055 ± 75 BP) and 8095–8026 cal BC (AA-30355: 9075 ± 80 BP). The excavations at Tarf Water uncovered a large lithic scatter consisting of over 1000 Mesolithic lithics, although no date for the site was obtained. There are many more inland sites that have been potentially identified within Southwest Scotland through fieldwalking programmes, and further investigation and dating is needed to allow us to gain a more complete picture of the Mesolithic period in this area.

4.1.2 Mesolithic Structures

Although Mesolithic activity was recorded at six of the sites investigated as part of the Dunragit excavations, it was only at West Challoch (Site 7) where this activity included evidence for a structure. The West Challoch structure consisted of a sub-oval ring of post and stakeholes, measuring c. 3 m in diameter. This formation of structural elements is not uncommon within the Mesolithic period, with similar arrangements interpreted as temporary shelters, windbreaks, or food smoking/drying structures. As noted above, at Daer Reservoir, a group of four or five postholes has been interpreted as a small sub-oval/sub-rectangular post-built shelter measuring c. 1.5 m by 2 m (Ward 2010). Elsewhere in Scotland, at Fife Ness in Aberdeenshire, a small structure measuring c. 2 m in diameter and made up of an arc of pits with a central hearth was excavated in the 1990s (Wickham-Jones and Dalland 1998). This was tentatively interpreted as a meat/fish smoking structure due to the presence of a large amount of both fish and bird remains, and has been dated to c. 7600–400 cal BC. More recently, three structures have been uncovered at Echline Fields, City of Edinburgh (Structure

519) and Castlandhill, Fife (Structures 1179 and 1280) on the edge of the Firth of Forth. Structure 519 has been dated to c. 8400–8300 cal BC and comprised 11 postholes in an oval shape, measuring 2.95 m by 2.1 m. Two hearths were located within the structure, with fish, bird, and small mammal bones recovered from the internal features suggesting it may also have been used for the smoking of meat/fish (Robertson *et al.* 2013). At Castlandhill, a six-post oval structure (Structure 1280), measuring 4.7 m by 2.3 m and a 12-post structure (Structure 1179), measuring 4.2 m by 3.3 m were uncovered. Neither of these structures showed evidence of an internal hearth and no dates for them were obtainable. However, one of the postholes of Structure 1179 was seen to partially truncate a hearth which was dated to c. 4500 cal BC, suggesting this structure at least was of a very late Mesolithic date (Robertson *et al.* 2013).

The postholes of the West Challoch structure were fairly substantial, with an average diameter of 0.35 m and depths of between 0.19 m and 0.28 m. This is in stark contrast to the majority of Mesolithic structures from northern Britain which were stake built, such as those uncovered at Morton, Fife (Coles 1971), Daer Reservoir (Ward 1997), Stainton West, Cumbria (Brown forthcoming a), and Low Clone, Luce Bay (Cormack and Coles 1968). However, over the last two decades there have been a number of structures uncovered that do show evidence of similar sized substantial postholes, including the Echline Fields, Castlandhill, and Fife Ness structures described above.

A second structure uncovered at Echline Fields, Structure 273, also presented evidence of substantial postholes. This structure was made up of a ring of eight paired and inclined postholes, measuring between 0.3 m and 0.7 m in diameter, with depths of up to 0.3 m. These postholes were set within a larger hollow, measuring c. 7 m by 6 m, with *in situ* floor deposits, and most likely represents a sunken-floored building. At least two phases of occupation were noted within this structure, with the earliest dating to c. 8400—8300 cal BC and the latter to c. 7350–7050 cal BC (Robertson *et al.* 2013). Further evidence of Mesolithic structures with substantial postholes have been uncovered at East Barns, Dunbar (Gooder 2007) and Cass-Ny-Hawin II, Isle of Man (Brown forthcoming b). At East Barns a structure consisting of a sub-circular hollow, measuring c. 6.5 m in diameter, with a central hearth was uncovered. Thirty postholes, the majority inclined and measuring between 0.25 m and 0.5 m in diameter, with depths of up to 0.6 m, were located around the edge of the hollow. Dating of hazel nutshell from one of the postholes has dated the structure to c. 8000 cal BC (Gooder 2007). The recently uncovered structure at Cass-Ny-Hawin II is of a similar size and form to those uncovered at East Barns and Echline Fields. It consists of a sub-rectangular hollow measuring 7.3 m by 5.3 m and with a depth of 0.3 m. Seven postholes were associated with the structure, with six located around the edges of the hollow, and measuring between 0.23 m and 0.3 m in diameter, with depths of up to 0.3 m. This structure has been dated to c. 8200–8100 BC, making it only slightly later than those uncovered at Echline Fields. With the exception of Structure 1280 which is undated, and Structure 1179 which post-dates c. 4500 cal BC at Castlandhill, all of the structures with substantial postholes are of an early date. These substantial postholes, along with the larger size of the structures, appears to indicate a permanence not seen on later sites, with the change in structural form to smaller stake-built structures possibly related to a more mobile lifestyle. The combination of substantial postholes with a smaller sized structure at West Challoch is therefore unique, and may indicate a midway point between the structural styles, or it may be that the a more substantial structure was needed here, although the reason for that is uncertain.

The West Challoch postholes also showed no evidence of being inclined, which is a common component in the sturdier Mesolithic structures uncovered to date (Wickham-Jones 2004). This inclination has been used to suggest that the Mesolithic structures were of a tepee or conical shape, similar to the reconstructed structure at Howick (Illus 4.4), Northumberland (Waddington 2007). The lack of any visible inclination within the postholes at West Challoch may suggest a different form to the structure, or it is possible that given the more substantial size of the postholes, it was only the posts themselves which were inclined. No evidence for how the West Challoch structure would have been constructed was uncovered, although Waddington (2007) has postulated that Mesolithic structures were built with one of four types of material: bark, hide, thatch, or turf. It is not possible to confirm what might have been used on the West Challoch structure but the substantial posts do suggest that the structure had some permanence, and the structure could have been replenished with whatever coverings were available on a seasonal basis.

The function of the West Challoch structure is uncertain, however unlike those structures uncovered at Fife Ness and Echline Fields (Structure 519), no hearth was located internally precluding it from being a smoking or drying structure, although it is possible that any internal features had been lost to truncation. The substantial postholes indicate a more robust structure, although if it represents a dwelling, its size of 10.5 m^2 means it would have only been big enough for up to two people, as comparative studies have shown an area of 5-7 m^2 per person to be needed within a dwelling (Belfor-Cohen and Goring-Morris 2013). The multiple lithic scatters located adjacent to the West Challoch structure clearly show that multiple people were using the site, and therefore it is more likely that this structure represents a storage or working area. Although flint artefacts were recovered in abundance just a few metres west of this structure, flint was predominantly

Illustration 4.4a: Reconstruction in progress at Howick © Clive Waddington

Illustration 4.4b: Completed reconstruction of Howick structure © Clive Waddington

found within pits and postholes associated with the structure, perhaps suggesting that knapping was not taking place within or in proximity to the structure as this would have left debitage from the process on the surface. Whatever function the structure had, it was separate from the extensive knapping activity just to the west.

The enclosing drainage gullies at West Challoch are highly unusual for the Mesolithic period, and their presence may explain why the structure was not situated within a hollow, as is more common amongst Mesolithic structures (Wickham-Jones 2004). During excavation the water table was near the surface at approximately 8.5 m OD, with it likely having been at around the same level during the Mesolithic period when this site was in use (Tipping, Part 1, 1.2 and Part 3, 3.1). The drainage gullies would therefore have been created, either by the augmenting of natural drainage channels or by the creation of new ones, to maintain a drier area of land both around the structure and the knapping areas. With the water table at this level, the creation of a hollow for a structure would also have been impractical as it would have been likely to fill with water. Evidence for the enhancement of natural features or land manipulation is rare during the Mesolithic, one example being Port of Larne, on the north coast of Ireland. At this coastal site an area of raised beach was modified by creating a slightly raised stone platform measuring around 12 m by 32 m on plan, sometime after 7000–6500 cal BC (Stevens and McConway 2012). There are also later examples in Ireland such as at Moynagh Lough, County Meath, where two natural knolls were enhanced with stones and mud so as to divert water away from the site and provide dry areas (Bradley 1991); the consolidation of a natural platform with wood was noted at Clowanstown 1, County Meath (Mossop 2009), the wood of which returned a radiocarbon date of 4320–3990 cal BC (Beta-246999: 5310 ± 40 BP) and at Williamson's Moss, Eskmeals, Cumbria, a possible raised artificial platform was noted (Bonsall *et al.* 1990). The scarcity of evidence for land manipulation in the Mesolithic may be down to the location of many of the excavated sites on shorelines, where later inundation may have removed any signs of such activity. The fact that these drainage gullies were uncovered at West Challoch also suggests the location of the site was of importance, being worthy of some expense of effort to manage the occupation area rather than using a slightly higher and drier point further inland. O'Sullivan (2007, 159) suggests that Mesolithic groups would be largely confined to coastal sites and along river courses at this time. Its location on the edge of an estuarine area at the head of Luce Bay would have provided an excellent source for marine exploitation. However, the lithic scatters suggest that this site was used primarily for the production of microliths from beach pebble flint, and it is therefore likely that this location was selected for its abundance of suitable raw material, rather than the exploitation of the marine or faunal resources.

4.1.3 Resources in the Mesolithic

Despite extensive sampling of the Mesolithic features at Dunragit, the palaeoenvironmental assemblage was limited for this period. Two sets of multi-element samples were taken, one covering the area of the West Challoch structure, and one within the adjacent multiple lithic scatters. The results of these were inconclusive and no evidence for any specific activity or occupation was able to be gleamed from them. No evidence for the exploitation of marine resources or faunal remains was uncovered. However, this may be down to the local conditions being unfavourable for the survival of these remains, as it is highly unlikely that at least limited exploitation of these resources was not taking place at this time.

The presence of large amounts of charred hazel nutshells recovered from the Mesolithic features indicate that foraging was taking place at this time, with hazel likely to have been abundant in the locale. This may indicate that occupation of the West Challoch site was seasonal, with activity concentrated during the autumnal months when these would have been ripe for foraging. However, it is possible that the charred hazel nutshells are an accidental by-product of the drying of the nuts for storage and consumption at a later date (McCullagh 1989).

The lithic assemblage recovered from Dunragit comprised mostly local beach pebble flint, with small amounts of chert, quartz, baked mudstone, as well as three fragments of pitchstone. The majority of the assemblage was recovered from the West Challoch sites, with blades and macro-blades dominating the assemblage from Site 7, and microliths dominating that from Site 19 Grid, suggesting a distinct separation in terms of specialisation between the two adjacent areas. Within the Site 19 Grid area a total of 13 distinct areas of activity were noted, most of which appear to have been associated with hearths, although the remains of these did not survive. Scalene triangles (c. 74% of the definable formal microlith types) dominated these scatters, with Scatter 3 producing only this form. Interestingly, all of the scalene triangles within Scatter 3 were also produced by a left-handed knapper, suggesting this scatter was the product of a single visit by a single craftsperson (Ballin, Appendix 12). The composition of the lithic assemblage is similar to that uncovered at Standingstones, Aberdeenshire, which has been interpreted as a microlith production site (Ballin 2019c).

The low level of non-microliths within any of the scatters at Site 19 Grid, along with the predominance of blades and macroblades at the adjacent Site 7, suggests a separation in activities between these areas. Site 7 appears to have been used for subsistence-related activities, while the scatters within Site 19 Grid were used for the production of narrow blades and microblades, and the transformation of the micro-blades into microliths.

4.1.4 Wider Mesolithic Activity

The location of the Dunragit Bypass sites, at the southwestern tip of Scotland, means that any attempt to place them into context is problematic given the small few sites that have been excavated in the region. The structures and other activity at West Challoch at the time of writing are the earliest of their kind in Southwest Scotland.

A personal world, the area in which individuals engage with their physical surroundings and interact with others, has been suggested to lie between 40-100 km for hunter-gather societies (Gamble 1999). For the Dunragit sites, at the 100 km limit, this would include the whole of Southwest Scotland, but more importantly it would also include the edge of the Solway Firth within northwest England, as well as the Isle of Man and Arran. The recovery of two fragments of a single burnt pitchstone blade, along with an edge-retouched pitchstone flake, from secure context dating to 7020–6650 cal BC (7886 ±31 BP: SUERC-44560) at West Challoch shows that travel and exchange with Arran was taking place during this period although not necessarily directly between Dunragit and Arran. To date, only one other site has recovered evidence of Mesolithic pitchstone from a radiocarbon dated layer, that of Succoth, Argyll, where two fragments were recovered from a layer dating to 5968–5766 cal BC (SUERC-77125: 6967 ± 23 BP) (Ballin *et al.* 2018a). Excavations at Stainton West, on the banks of the River Eden, Carlisle, have also recovered 231 pitchstone fragments from typologically Mesolithic lithic scatters (Brown forthcoming a), with all these sites suggesting a wider and earlier spread of pitchstone than previously thought.

The early use of pitchstone seen at West Challoch is likely to represent sporadic rather than systematic trade or travel to Arran (Ballin *et al.* 2018a), and certainly does not imply that there was a direct link between West Challoch and Arran at this point. Given the similar distances between the Isle of Man, the northwestern English coast, and Dunragit, it is possible that travel between these locations was also being undertaken. The Isle of Man would have been highly prominent on the horizon from Dunragit, and conversely Luce Bay would have been visible from the Isle of Man, with its appealing large, sheltered bay. Although the northwestern English coast would not have been visible from Dunragit, it would have become visible upon exiting Luce Bay, with travel along the Solway Firth allowing a shorter and therefore possibly more attractive crossing over open water than that to the Isle of Man. Multiple Mesolithic sites have been recorded on this stretch of coast, with two, Monk Moors and Williamson's Moss, showing evidence of multiple phases of occupation between 6000–2870 cal BC and 5210–1610 cal BC respectively (Bonsall *et al.* 1990), contemporary with the activity uncovered at Droughduil Holdings and Drumflower sites.

The personal world model of 100 km would also place Northern Ireland into this interaction area for the people at Dunragit. However, typologically, the Mesolithic in Northern Ireland is different to that of Scotland and there are very few sites which have produced any evidence for contact or similarities, with those that do appearing to be exceptions that prove the rule (Saville 2009). It is therefore likely that if there was travel between these points during this period, then like that with travel to Arran, it was sporadic and unsystematic. This may also have been the case with travel to/ from the Isle of Man, however, the prominent nature of the Isle of Man from Luce Bay, and vice versa, may have provided a greater impetus for this interaction.

The sites at Dunragit have shown that the spread of Mesolithic activity in this area was happening at a much earlier time than previously thought. The West Challoch structure with its substantial postholes, suggests a degree of permanence in line with the earlier structures uncovered at Echline Fields, East Barns, and Cass-Ny-Hawin II, and given its date it is possible that it marks a midway transition between these more permanent structures, and the more 'common' temporary structures. However, the relatively small number of Mesolithic structures uncovered so far means that we can only speculate at this point and wait for further sites of this period to be uncovered to aid our interpretation.

4.2 Neolithic Discussion- A forest of posts: Dunragit in the Neolithic

Kenneth Brophy

The evidence for Neolithic activity found along the A75 Bypass route has added considerably to our understanding of this period in Southwest Scotland, with broader connections evident across Scotland and beyond. The area around Dunragit and Luce Bay is rich with Neolithic sites and monuments, which belong to two rough periods, the early Neolithic (c. 4000–3000 BC) and the late Neolithic (3000 BC to the middle of the third millennium BC) (Illus 4.4). This section will review the Neolithic evidence reported on in this volume and set it within the local and wider context. To compliment this discussion, see Thomas's (2015, Part 2) summary of Neolithic and early Bronze Age Luce Bay.

Dunragit is a significant location, likely a pre-eminent ceremonial power centre in the Neolithic period of Britain and Ireland. The evidence suggests this power was not related to isolation (the perceived remoteness of this place today from major population centres is misleading), but rather from connections to both the remainder of northern Britain, but also the so-called Irish Sea zone (cf. Cummings and Fowler 2004; Cummings 2009, 2017). Neolithic sites and monuments around Luce Bay, and more generally those found along the north side of the Solway Firth, from the Machars to the River Nith, include components of both the 'eastern lowland' Neolithic traditions of timber and earthwork monumentality (Brophy 2006) but also western megalithic traditions in the form of chambered cairns and standing stones (Cummings 2009). To what extent this is predicated on this region including an extensive and fertile coastal strip receptive to aerial reconnaissance is unclear (e.g. Cowley and Brophy 2001; Cowley 2002) but there is nowhere else in Scotland quite like this.

In this discussion, the lowland nature of the Neolithic traces found inevitably mean the focus will largely be on comparable non-megalithic sites. However, it is worth noting that Thomas (2015, 12) lists the presence of a number of stone circles and standing stones in the area, while two chambered cairns at Mid Gleniron are located just 6 km to the northeast of Dunragit (Corcoran 1969). Cummings (2002) has noted the extensive coastal southern views of such monuments suggests visual connections to other places across the Irish Sea. The coast here is a significant player, being located closer to Dunragit in the Neolithic than it is now, with the sand dunes around Luce Bay playing host to Neolithic occupation and lithic processing sites many of which remain poorly understood (cf. McInnes 1964; Cowie 1996; Telford 2019), and the survival of which hints at what we may have lost in the plough zone. Sand plays a recurrent role in the Neolithic of this area, a dune being the foundation of the spectacular third millennium BC Droughduil Mote mound (Thomas 2015, 95ff) that lies immediately south of the route of the bypass.

Neolithic activity identified during the A75 excavations largely consisted of pits and postholes, many of which may have been part of coherent enclosures, arrangements, or clusters, with rarer evidence for possible occupation layers and hearths. A small but varied assemblage of material culture was recovered including limited quantities of Neolithic pottery from Carinated Bowls and Impressed Ware (but, unlike the Dunragit complex (Thomas 2015, 112) no Grooved Ware was identified). Lithics were found in larger quantities, often separately in pits, sometimes in scatters, with deliberate and residual deposition both evident. Rule-bound deposition of high-status stone objects was hinted at by the shaft-hole adze and spherical diorite hammerstone/pounder found at Boreland Cottage Upper. Yet as with Thomas's work at Dunragit (2015), Neolithic material culture in secure contexts was relatively rare, and it may be that some sites and features were kept 'clean' or there were rules against deposition.

The most striking Neolithic discovery made during the A75 Bypass excavations is the suggestion that this area had one of the densest and longest-lived traditions of oak post erection in the Neolithic of Britain, with its origins very close to the beginning of the period. This was already suspected because of a cluster of timber cursus monuments in this area (Brophy and Millican 2015). Thomas (2015) identified

a cursus of this type at Dunragit. Two unexcavated pitted rectangular enclosures are the most distinctive aspects of a spectacular complex of cropmarks at Kirkmabreck (NX14NW 31, 34) located 10 km or so round the coast to the west and south of Dunragit. A pair of posthole alignments spaced 30 m apart were investigated ahead of pipeline insertion at Fox Plantation and identified by the excavator as a possible cursus (MacGregor *et al*. 1996). Earthwork cursus monuments, generally a phenomenon of the second half of the fourth millennium BC, have not been found in this area, with the nearest examples a group along the River Nith to the east (Brophy 2007). Cursus monuments are a good example of an 'eastern lowland' monument tradition being present in this area, with few other cursus sites of any type found in western Scotland, and the Luce Bay timber cursus monuments apparently sharing many characteristic with those found in Perth and Kinross, and Angus; all of these sites date to the first few generations of farmers (Brophy and Millican 2015).

Yet these cursus monuments did not exist in isolation. Three parallel lines of postholes of probable or confirmed early Neolithic date were identified at Boreland Cottage Upper Site 10. This consisted of 45 features in a line, a further seven postholes in a line 3.5 m to the north, then six more postholes another 3.5 m to the north; all three alignments (the true extent of which is unknown) shared an ENE/WSW alignment. Dates associated with the longest row are early Neolithic (3943–3651 cal BC), the other rows probably of similar date due to alignment and form. These postholes overlap in date with the Dunragit cursus, and intriguingly share an alignment with the cursus enclosure, located over 1 km to the west, suggesting these locales may have at least been conceptually connected. It is even possible that the Boreland Cottage Upper postholes are in fact the remnants of another timber cursus monument with at least one possible squared terminal identified. Discoveries at Drumflower make it likely that postholes hinted at by cropmarks were also oak post alignments or arrangements; a very early Neolithic feature at Drumflower (posthole 025) contained burnt oak post remains (Illus 4.5).

Taking a broader view around Luce Bay post erection appears to have been undertaken across the wider landscape in the early Neolithic; where charcoal has been found and identified in postholes, it has almost always been oak, either related to pre-erection charring, or more rarely, post burning. A series of post-alignment clusters and arrangements is now evident from Fox Plantation in the west, to Drumflower, Dunragit itself, and on to Boreland Cottage Upper to the east, revealed by a combination of excavation and cropmark evidence. These alignments in some cases form avenues (pairs of parallel posts) as evident at Drumflower, timber cursus monuments (Fox Plantation, Dunragit and possibly Boreland Cottage Upper Site 10). Excavations at the latter site therefore have offered additional valuable evidence that this was a landscape of posts amidst the early Neolithic woodland. The review by

Illustration 4.5: Aerial view showing Droughduil Mound, Dunragit complex and Drumflower Bridge

Tipping (Tipping, Part 1, 1.2 and Part 3, 3.1) suggests that there is some evidence for clearance and cereals in the early Neolithic of Southwest Scotland.

The collection of post lines across the landscape appear to fit more broadly with traditions of oak post erection in the fourth millennium BC in eastern Scotland, which has been connected to issues related to woodland clearance (Noble 2006, 2017; Brophy 2015; Brophy and Millican 2015). These posts need not be part of enclosures or cohesive structures; scattered postholes of Neolithic data across the bypass route attest to this. The act of post erection, extending pre-existing alignments, may have been part of this process and so this arrangement of posts may have been constantly changing. We should be cautious about assuming plan coherence of postholes suggests that they were contemporary features (Barclay in Kendrick 1995). Brophy and Millican (2015) note that some cursus monuments such as Inchbare 1 and 2, Angus, could equally be interpreted from cropmark evidence as being distinct post lines that shared an alignment but were built at different times, rather than being a cohesive enclosure. The triple alignment at Boreland Cottage Upper is reminiscent of similar arrangements at sites such as Castle Menzies Home Farm timber cursus in Perth and Kinross (Halliday 2002; Brophy 2015) and closer by, Holm Farm 'cursus', near Dumfries (Thomas 2007). These post lines suggest ritual practices amongst the first few generations of farmers in this area, emerging during the establishment of agriculture and woodland clearance (Brophy 2015). The shared orientation of some of these alignments may have directed movement within this landscape, or had some other socio-political significance, but was not universally adopted (the alignments at Fox Plantation ran SSE/NNW).

The practice of farming, and evidence for settlement, is less obvious in this area for this time period. Pits and pit clusters of Neolithic date were identified along the A75 Bypass route. Such features have in the past been considered as proxies for settlement although in truth this is more in hope than expectation (Brophy 2016). Neolithic pits found during the bypass work could have served a number of domestic roles, from stone-lined cooking pits, to places for firing pots, and rubbish deposition. However, pits may also have been locations for the deposition of ritually charged material (see Brophy and Noble 2012). Interpreting the hazel nutshells from late Neolithic/early Bronze Age pit 310, or sooted Impressed Ware post sherds found within pit 070, both from Drumflower, as wholly rubbish or structured deposition probably does not do justice to the nuances of Neolithic pit deposition and material categorisation.

Sporadic Neolithic pits of variable size and arrangement were identified at Boreland Cottage Upper with dates in the first few centuries of the fourth millennium BC, similar to the posthole lines found here. Stone-lined pit 255 was adjacent to a possible occupation layer containing flint fragments, material from which produced early Neolithic dates. Possible early Neolithic occupation layers were also identified at East Challoch site 17. These layers were rich in organics, charcoal, lithic fragments, and Neolithic pottery, and had pits cut into them, suggesting multiple or extended phases of domestic activity. Hearths with early Neolithic dates were identified at Droughduil Holdings SMA, and taken together with nearby pit 722 which contained sherds of locally made round-bottomed Neolithic pottery, and assorted other features, suggests that this was another likely location for domestic activity. No structures were found in association with these features. The Droughduil Holdings location is especially interesting, being just south of where the cursus was, and palisaded enclosure would be.

No obvious Neolithic buildings or structures were found during the A75 excavations, perhaps not surprising as few such buildings have, to date, been found in mainland Scotland (Brophy 2016). However, it is possible that the arc of stone-lined postholes found at Boreland Cottage Upper could have been part of a domestic-related enclosure, with deposits in postholes suggestive of hearth sweepings, and hazel charcoal perhaps indicative of wattle fencing. The date of this setting is unknown although the curvilinear form of this setting recalls later the Neolithic 'yard' found at Overhailes, West Lothian (Lelong and MacGregor 2008).

Later Neolithic activity appears to have continued to be evidenced by post erection and pit digging, although on a scale much reduced from the earlier Neolithic, perhaps reflecting the increasingly centralised focus on the extreme monumentality at Dunragit itself. There seems to have been a general decline in post erection activity in particular beyond the Dunragit complex itself. Pits at East Challoch site 25B (048, 052) contained mixed deposits including late Mesolithic and a probable later Neolithic scraper, and a shell fragment, suggest an element of structured deposition at this time. A substantial late Neolithic or early Bronze Age lithic scatter was identified at Droughduil Bridge, once again suggesting that people were active in this area in the first half of the third millennium BC, but not making as much impact on the landscape as they had before.

The late Neolithic focus in Luce Sands areas seems increasingly to have been the Dunragit palisaded enclosure. As with cursus monuments a millennium earlier, this enclosure type has broader connections, with similar monuments found elsewhere in eastern Britain and southern England, with classic sites of this type in Scotland all – bar Dunragit – located east of Stirling (Gibson 2004; Noble and Brophy 2011). These monuments tend to be associated with Grooved Ware, and it is telling that no pottery of this type was found at any of the posthole alignments in the wider landscape, reinforcing their likely earlier Neolithic origins. The construction of the palisaded enclosure also suggests a general shift away from linear monuments to circular, a characteristic of what has recently become known as the late Neolithic Grooved Ware complex

in Britain and Ireland (e.g. Thomas 2010). Here once again we see the Dunragit area as connected to broader trends and traditions in Britain and Ireland, although there are no henge monuments in the area, another monument associated with this cultural tradition, suggesting patchy regional buy-in; the closest henge of note in the southwest being the Pict's Knowe, south of Dumfries (Thomas 2007).

It is tempting to see the exertions and control required to construct the enclosures at Dunragit as becoming a focal point for almost all oak post erection in this area in the third millennium BC, with the dispersed nature of post-alignments of the fourth millennium BC a thing of the past. This monument was constructed between the 29th and 27th centuries BC (Thomas 2015, 141–3). Palisaded enclosures required massive amounts of labour, time, and wood, and would have been building sites for years, perhaps decades (Gibson 2002; Brophy and Noble 2020). Thomas (2015, 163) estimated that the entire triple-palisaded enclosure monument at Dunragit consisted of some 365 posts, which would have required the felling or collection of scores, perhaps hundreds, of tall, straight oak trees. This in turn would have had an impact on the surrounding environment (Noble and Brophy 2015) even allowing for some oak management (Tipping *et al.* 2006). A decline in oak pollen from c. 2800 BC documented from Brighouse Bay, on the east side of Wigtown Bay (Wells *et al*. 1999) may hint at the impact such activities would have had on the local environment.

As with other palisaded enclosures, we have little understanding of where any 'work force' may have been living, with the limited evidence found during the A75 Bypass excavations shedding little light on this, and it may be that labour was carried out by transient visitors rather than an established local population. It is also possible that settlement was situated in the uplands, amongst the megaliths, with the coastal plain restricted to more sacred activities, and it is clear that people were living and working on the coastal fringe around this coastline (Cowie 1996).

The excavations discussed in this volume suggest that the Neolithic period around Luce Bay was one characterised by oak timber post erection, at first in linear formations widely across the landscape, later coalescing in a circular form at one specific locale. Evidence for how these structures may have been used is very limited, but all these monuments were likely significant in terms of communal construction, the control of movement, and ceremonial activity. Everyday life within this landscape is much more difficult to pin down, with much evidence for this lost beneath the plough, or in the sands. During the period of some 1500 years it appears that this area was something of a melting pot of traditions and fashions, probably a routeway, and very likely a central and significant place. It is this lengthy tradition of significance that Beaker and other Bronze Age burial activities appear to have been attracted to.

4.3 Bronze Age Discussion - Ritual and everyday life including belief systems in the Bronze Age

Iraia Arabaolaza

As was the case at many Neolithic monument complexes in northern Britain, this location retained significance into the Bronze Age, with evidence of activity continuing in the vicinity of older Neolithic monuments, deposition of material culture into Neolithic features, and the development of burial practices. This trend is evident at the other major prehistoric ceremonial complex in Southwest Scotland, Holywood (Thomas 2005), and elsewhere in northern Britain, including Forteviot in Perth and Kinross (Brophy and Noble 2020), Balfarg/Balbirnie in Glenrothes, Fife (Barclay and Russell-White 1993), and the Milfield Basin, Northumberland (Waddington 1999). The Neolithic monument complex at Dunragit is no exception, being the focus of Bronze Age burials as excavated by Thomas (2015) and during the bypass project (Illus 4.6).

At Dunragit evidence for burials dating from the early into the middle Bronze Age were encountered on the same raised ground (East Challoch and Boreland Cottage Upper Sites) overlooking the estuary with views to the south-west towards the Droughduil Mound (which itself may have been a Bronze Age burial site with a cairn on top (Thomas *et al*. 2015, 85ff)) (See Illus 4.1). However, some later cremations were also discovered at Drumflower at the western end of the bypass route, suggesting a possible geographical, and perhaps topographical, shift of focus away from East Challoch and Boreland Cottage Upper as the Bronze Age went on.

4.3.1 Earliest burials - stone-lined graves and 'rich' grave goods

The earliest burials discovered during the Dunragit Bypass excavations were the stone-lined graves at East Challoch. The earliest grave, burial pit 009 (Site 16 ext.), produced a radiocarbon date of 2570–2300 cal BC (UBA-41923), corresponding to the All-Over Corded (AOC) Beaker recovered within the grave. Grave 023 (Site 16) was dated to 2410–2140 cal BC (UBA-4337), but the associated grave goods from this and another grave 177 (Site 17) suggest a later date: the jet jewellery likely dates from c. 2150–1950 BC (Sheridan, Appendix 13). A radiocarbon date comparable with this date suggested by the jet jewellery was obtained from the plank coffin grave 2140–1940 cal BC (UBA-43319). Assuming the date from pit 009 was not derived from residual material, this suggests that East Challoch was used for burials over a number of centuries.

Although differing in form and size, all the stone-lined graves were similarly constructed with stones lining their base and

each was infilled by surrounding redeposited subsoils. None of the graves were overlapping or cutting each other, thus the stratigraphic sequence among the graves is unknown. Furthermore, and in contrast to other comparable sites in the region such as Lockerbie Academy (Kirby 2011), none of the graves seemed to be a central grave or primary foundation burial in relation to which other secondary burials would have been arranged. Nonetheless, three of them (009, 022 and 023) were relatively close to each other. The exception was burial pit 177, the only example with the remains of disturbed cairn material covering the grave, which was significantly removed, being approximately 90 m north of the rest of the group in the north-east of the East Challoch site. The cairn covering grave 177 would have been a visible monument in the landscape as it was set on slightly higher ground than the rest of the graves, and may have provided a visual focal point. It is not inconceivable that the deposit (050) located to the south-west of this cairn, and containing the Food Vessel and Neolithic blade, was a later burial deliberately positioned near grave 177.

Even though no human remains were encountered in any of these early stone-lined graves, it seems likely that at least one of them, 177 (Site 17) did originally contain a crouched inhumation, based on the distribution of the jet jewellery. The position of the jewellery suggests that the person was wearing them at the time of burial. In contrast, the other jet necklace from 023 (Site 16) was carefully placed on top of the stones lining the base of the burial, with the Food Vessel at its northwest edge (Sheridan, Appendix 13). A similar careful arrangement, with jet beads placed on top of the gravel floor as they would have been threaded, was also observed in a short cist at Masterton, Pitreavie in Fife (Henshall 1962). The possible degraded leather recorded at the centre of grave 009 could have been the remains of a container for cremated bones or perishable grave goods, or could be a hide to wrap or be laid on a corpse. However, as the remains were poorly preserved and disintegrated upon analysis any interpretation is speculative. Examples of hide, identified as leather and associated with inhumation and cremation burials, have been recorded in Dalgety, Fife (Watkins 1982) and within the Bronze Age dagger burial at Forteviot, Perth and Kinross (Brophy and Noble 2020). The use of containers to hold cremations have been suggested at Skilmafilly, Aberdeenshire (Johnson and Cameron 2012) and again at Forteviot, Perth and Kinross (Brophy and Noble 2020) (Illus 4.6) although the latter dated to the late Neolithic.

What is clear is that some of the grave goods (such as the jet jewellery) encountered in these graves were rare and unusual objects, made by skilled craftspeople and sourced through inter-regional trade of materials or finished objects. Moreover, the wear and tear visible in all pieces of jewellery indicate that these were worn, either by the deceased, or by the mourners who decided to gift them as

Illustration 4.6: Aerial view of Drumflower Bridge complex cropmarks

Illustration 4.7 a-c: Jet necklaces and bracelet cleaned and conserved

part of the burial rite (Parker Pearson 1999). It is assumed, based on the association of such objects with bodies that have been sexed, that the human remains associated with jet spacer-plate jewellery are female (Sheridan 2015). Thus, it is possible to assume that at least two of the graves belong to high status women. The wealth of the graves is also highlighted by the placement of high-quality tripartite Food Vessels and an AOC Beaker vessel either in graves or in features associated with them. In contrast, other grave goods like the scraper, scale-flaked knife, and possible leather were perhaps more everyday items which were easier to acquire. Most of these items fulfilled everyday needs, thus symbolizing the belief in an afterlife, to equip the deceased for the next world (Hunter 2000).

Why some grave goods were chosen above others is still unknown. They could indicate different age, gender, status, or kinship, or represent how mourners characterised the dead. What these grave goods proved was that the community had the availability and the capability through trade to acquire these 'exotic' goods; the jet jewellery was procured from Whitby demonstrating links with Yorkshire (Sheridan, Appendix 13), while the manufacture and decoration of the Food Vessel from Site 16 suggests links with Ireland (Ballin Smith, Appendix 15). The variety and richness of grave goods indicated the high status of these burials. Whether this status was a reflection of the person buried in the grave, or the status that the community accorded the deceased, is and will remain unknown (Hunter 2000, 173).

No grave goods were recovered within the oak plank coffin grave 022 (Site 16 ext., East Challoch) dated between 2137–1955 cal BC, although the discovery of this feature was significant, as such coffins are extremely rare in Scotland. Similar examples, found in association with larger cemeteries, have been recorded at Seafield West, near Inverness, Highland (Cressey and Sheridan 2003), and Upper Largie Quarry, Argyll and Bute (Cook *et.al.* 2010). A possible example described as a 'wooden coffin of uncommon size' made of oak and with signs of been charred was recorded at Culsalmond, Aberdeenshire (Ellis 1845) (Illus 4.8). Similar early Bronze Age log coffin burials in Britain are associated with high-status burials and often contain precious grave goods, such as gold, amber and jet as well as daggers and knife-daggers (Cressey and Sheridan 2003).

4.3.2 Cremation cemetery complex

Towards the late second millennium BC, cremation became the predominant funerary rite at Dunragit, a recognised trend across northern Britain at this time (e.g. Cook *et al.* 2010). Furthermore, as indicated above, the loci of burial activity shifted towards the east of the bypass area over time, and away from East Challoch and Boreland Cottage Upper.

Illustration 4.8: Map of sites mentioned on the text

Based on the dating evidence, it is apparent that there were two distinctive phases of cremation activity at Dunragit; one in the early Bronze Age, and the other in the middle Bronze Age. Further analysis and modelling of the dates (Hamilton; Appendix 1, RC1) estimated that the unurned cremation practice began approximately in 2060–1840 cal BC at 95% probability and probably ended in 1770–1590 cal BC at 90% probability (Illus. 5.3) while the middle Bronze Age (mostly) urned cremation burials began in 1435–1310 cal BC at 95% probability and ended in 1390–1255 cal BC at 95% probability (Illus. 5.4). This distinction was also clear in the strontium analysis of the bones which indicated a clear difference between these two periods and the anthropogenic use of the land. While less arable lands to the west of the site and/or coastal lands to the south were used during the early Bronze Age period, lands surrounding the site as well as the fields on the peninsula to the south were exploited for farming later in the Bronze Age. This differentiation in the land-use during different stages in the Bronze Age may reflect local landscape changes such as receding sea levels with the sea vacating the Whitecrook Basin after c. 2500 BC (Tipping *et al.* 2015). The earliest burials discovered during the Dunragit investigations would have been deposited in the centuries following this major landscape change.

Most of the early Bronze Age cremations were deposited in pits in an arc organized around a stone-filled pit in Boreland Cottage Upper. A similar arrangement was recorded at Cairnpapple Hill, West Lothian (Barclay 1999) and Forteviot, Perth and Kinross (Noble and Brophy 2017), although Forteviot's cremation cemetery is Neolithic in date and this may also be the case for Cairnpapple (Barclay 1999). All cremated remains from Dunragit had a small average weight, compared to a complete cremation, and they lacked certain skeletal elements. Both these characteristics are not uncommon in Bronze Age remains and this has been linked to a variety of possible factors. It could be the results of pyre efficiency, selection and collection of particular bones leaving others behind on the pyre, unfavourable taphonomic conditions in the burial environment (soil acidity, animal burrowing), or weathering (McKinley 1997).

Due to the fragmentary nature of most of the deposits it could be argued that the selection and collection of the bone was undertaken with a good deal of care. Recent research by Henrikson (2019) has indicated that the collection of cremated material is easier and less time consuming than previously assumed. Therefore, the small and incomplete deposits of cremated bone represent a deliberate choice, a token burial. The presence of a small quantity of bones (5 g), but with fragments large enough to determine the age of an individual inside one of the accessory vessels, further supports the idea that remains were selected and buried in the ground as tokens. All the cremated remains from the early Bronze Age assemblage were represented by at least one adult individual with no multiple burials noted. Most of the cremations were composed of a single deposit with the exception of cremation pit 528. This pit contained six fills with possible pyre deposits composed of ashy deposits and charcoal rich silts identified as primary and lower fills sealed by two distinct contemporary cremation deposits. Two accessory vessels were also recovered from this pit.

As with the earlier stone-lined graves, grave goods were present in some of these cremation burials. Most of them, including both accessory vessels and a short end-scraper, presented signs of being severely burnt. This suggests that they were probably burnt together with the body on the pyre and later collected and deposited with the cremated bone. Other sites where grave goods showed evidence of being on the pyre with the corpse include Lockerbie Academy (Kirby 2011), Ratho, City of Edinburgh (Smith 1995) and Skilmafilly, Aberdeenshire (Johnson and Cameron 2012) (Illus 4.8). It has been suggested that accessory vessels might have been used as chafing vessels for transporting the embers that would have lit the pyre (Sheridan in Noble and Brophy 2017). The recovery of a single carbonised apple pip, traces of hazel nutshell, and a single carbonised barley grain from various burial pits suggests some sort of food consumption, or perhaps that an offering may have formed part of the cremation ceremony.

The second phase of cremation burials in the middle Bronze Age (c. 1435–1255 cal BC) were arranged around and within three ring-ditches at Boreland Cottage Upper, two of which enclosed a central cremation deposit. The fact that these new funerary monuments were in proximity to the earlier cremation burials, and Neolithic monuments, is unlikely to be coincidental.

The ring-ditches are the remains of barrows, or fenced enclosures. They are small (less than 7 m in diameter) relative to comparable monuments such as Ratho (Smith 1995) and Seafield West, near Inverness, Highland (Cressey and Sheridan 2003). However, both these examples were of a single ring-ditch, and not of multiple ditches as is the case in these investigations near Dunragit. The recovery of charred alder wood from the largest ring-ditch was interesting. Although its purpose was not determined, it seemed that it was put at the bottom of the ditch after been burnt. An example of five charred timbers lying parallel in a ring-ditch, thought to be part of a roof or a burnt fence, were recorded in Whitton Hill, Northumberland, and it was therefore possible that this was a fenced monument (Barclay and Russell-White 1993).

The cremation process was similar throughout the Bronze Age; however, the burial rite was more varied across this period with cremated remains placed both unurned and in urns. Typically, in the middle Bronze Age there was an increase in the weight of the cremation deposits, and their preservation was also better, especially those within the urns (ScARF 2012, 5.5). These factors aided the analysis and identification of the remains. Three certain multiple burials at Boreland Cottage Upper were identified during analysis, with two of these multiple burials found within an urn. Two of the cremations included an adult with a sub-adult, while one unurned cremation burial contained the remains of three individuals, an adult, sub-adult and possible infant. At Drumflower, two cremation deposits were found within the same feature, although they were deposited over two centuries apart. Co-mingled cremation burials dating to the Bronze Age are not uncommon in Scotland, as seen at Lockerbie Academy (Kirby 2011) and Skilmafilly Aberdeenshire (Johnson and Cameron 2012) and could suggest individuals were cremated together as well as being buried at the same time (McKinley 1997). However, the reason why these individuals were buried together remains unknown. It is not unreasonable to surmise that individuals were buried in family groups, but this is purely speculative, and cannot be demonstrated as DNA cannot be extracted from cremated bone.

Pathological conditions were identified during analysis. They included an unidentified healed infection/trauma and small bony growth, osteoarthritis on the spine, Schmorl's nodes, and a possible tentative sharp trauma/dismembering cut mark. Most of these are relatively easy to identify and are common within the archaeological record. However, the cause of the possible infection/healed trauma remains unknown, as its causes can be varied and are difficult to interpret without looking at the complete skeleton. The possible cut marked bone is more unusual, although not unheard of from archaeological assemblages; as seen in Seafield West Bronze Age cemetery (Cressey and Sheridan 2003). The lack of healing indicated that the cut mark occurred close to the person's death, although it is not possible to determine if it occur pre or post-mortem. Moreover, as its location on the skull was not identifiable it is not possible to identify its cause.

Apart from the urns that contained the cremations, no other grave goods were found associated with the burials. From the four urns containing cremations, two of them were placed inverted within pits while the other two were upright. All were similar in style and manufacture. They all had perforations in a horizontal line just below the rims that could have been used for a leather or cloth lid to be sewn on to the pot to secure their contents and facilitate transportation to their burial place. Patterns of sooting were identified in some of them, which indicated that the bones were still hot when placed inside. Furthermore, a skull fragment recovered from an urned cremation showed green/blue staining which could indicate that the bone was in contact with a pyre good such as a copper alloy object during its cremation (McKinley 1994). However, no grave goods were found within the urn of this particular cremation, which indicates that it was deposited elsewhere, deliberately not recovered from the pyre, or that it melted in the pyre. Animal bone was also identified in some of the cremation burials, including an urn cremation. A small quantity of carbonised sheep bone was found with an urned cremation burial of a female adult of middle Bronze Age date within the Dunragit Neolithic complex (Thomas 2015, 128-9) with animal bone also recovered from a middle Bronze Age cremation adjacent to the cursus there. MacGregor (2003) has noted that animal bone is not an uncommon find with Bronze Age cremations, although their role is not clear. They could have been used as part of feasting, possibly a food offering on the pyre, or it could be the remains of a sacrifice or could fulfil a symbolic role representing the deceased gender or kinship (Parker Pearson 1999).

Middle to late Bronze Age cremation deposits were also recorded at Drumflower at the western end of the bypass. Cremation pit 001 was particularly interesting as two distinct episodes of deposition, corroborated by the radiocarbon dating of the bones, were identified in this burial. Although no grave markers were recorded in its vicinity the re-use of the pit indicates that the location of the grave was known. Its location could have been marked

by using a wooden marker or by a small mound or cairn which was subsequently ploughed away. None of the three cremation burial pits contained large amount of cremated bones suggesting that they represented secondary burials or token deposits.

Although no pyre remains were encountered during excavation, the analysis of the cremated bone and botanical remains shed some light on the cremation process. While oak was more frequently used on the earlier cremations, a mixture of alder and other species was used in later middle Bronze Age cremations as fuel for the pyres. The results were similar for both periods, as analysis of all cremated remains indicate that they were fully calcified and subjected to a high and even temperature. The surface and texture of the bones, cracked and warped, suggest that most bodies were placed on a pyre and were possibly burnt not long after death. The rite of cremation is one of transformation which involves the construction of the pyre, the preparation of the body and associated grave goods, the selection and collection of the cremated remains, their burial and in some instances, the creation of funerary monuments (Williams 2015). The rite itself was probably a social and memorable event (Brophy *et al.* 2018, 74-91; Williams 2004, 263-91).

The use of Boreland Cottage Upper as a burial ground ceased in the late Bronze Age. Instead, a possible posthole structure dating to the late Bronze Age was recorded on the western edge of the site (Illus 2.112). Groups of features with possible domestic function were also recorded dating to the middle Bronze Age further west along the raised beach area at East Challoch, suggesting a more mundane use of the site too.

A possible association or close relationship between the mundane (i.e. settlements) and ritual (i.e. cemetery) has been noted in other recent excavations at Nether Beanshill, Milltimber (Dingwall *et al*. 2019, 142). This association manifests not only in the geographical proximity of settlements and cemeteries but also, as noted by Bradley, in the use of similar circular architecture and monuments for domestic and ceremonial purposes like ring-ditches (roundhouses) and/or ring cairns (ScARF 2012, 5.5). However, there was no evidence of comparable architecture on the route of the bypass, probably due to the palimpsest nature of the sites obscuring any apparent patterns of structures related to habitation. Nonetheless, the structural depositions recorded in the sub-rectangular structure at Site 18 (see 2.5.6.6.4; Illus 2.135) did reiterate the link that these two worlds, the ritual and the ordinary, had during prehistory.

4.3.3 Conclusion

The use and re-use of sites in several episodes of activity across the Bronze Age demonstrates the importance of the landscape around Dunragit as a whole during the Bronze Age, and in particular of the East Challoch, Boreland Cottage Upper locations. The fact that both sites were used before the Bronze Age, with Boreland Cottage Upper playing a pivotal role during the Neolithic, highlights the importance of both sites through the biography of Dunragit. The presence of different burials and funeral monuments were evidence of an ever-changing interpretation of a landscape. Their location, on areas with previous ritual landmarks does not seem coincidental and indicates a collective memory and a will to link the new ceremonial areas to ancestral landmarks perhaps to gain status or validity through association. Furthermore, the variety and quantity of burials and their rich grave goods tells us of a community open not only to other regions in Scotland but also further afield in Britain and Ireland.

4.4 The Burnt Mounds - regional, national, and wider context

Warren Bailie

4.4.1 Droughduil and Whitecrook Bridge, Mid-Challoch and Boreland Cottage Lower

The burnt mounds in these sites are in keeping with that typically associated with this site type, with a mound or spread of burnt stone and charcoal usually associated with a pit or pits, usually referred to as a trough or troughs, which would have held water. Other features that do not conform to this definition, for example, a mound of burnt stone and charcoal such as that at Myrtle Cottage (Structure 7), are not referred to here as a burnt mound. Burnt mounds are amongst the most common prehistoric site type in Britain, with a density of one per 1.5 km stream length known in parts of England, Wales, and Scotland (Brown *et al*., 2016). In Ireland, during works for the A1 Newry bypass (Dunlop 2015) a series of six burnt mounds was discovered within a 1 km section alongside a former river channel at the north end of the bypass, giving a density of nine per 1.5 km. These burnt mounds, north of Newry were excavated by the author and all lay along a low-lying wet area dotted

with peat, with more extensive peat marking the former line of a major palaeochannel, the sort of landscape setting where one might expect to encounter such structures. The other eight burnt mounds uncovered on the scheme, in similarly, although less extensive, wet areas outwith this 1 km stretch, were spaced at around every 1.3 km, more in keeping with Brown's conclusions on site density. Most dated to the early Bronze Age period although slightly earlier (Neolithic) and later (middle Bronze Age) examples were noted. At Dunragit the ten burnt mounds were found across a 2.9 km length of the bypass route, giving a ratio of one every 290 m, or a density of five per 1.5 km.

Burnt mounds are generally thought to date to the middle-late Bronze Age, although both earlier and later examples are known. Although common, there is still debate on the purpose of these sites, with the most likely functions being related to cooking, steam baths or saunas (O'Drisceoil 1988, 671-80), utilising a system of hot stone heated water. Other interpretations utilising the same technology are also feasible; Brown *et al*. (2016) have recently undertaken detailed analysis of the macromorphological and paleoenvironmental materials on eight burnt mound sites in Ireland and conclude that some form of textile working is possible or even probable. There was no evidence pertaining to food production or brewing, and botanical materials associated with dying were present at several sites of; there were apparently also attempts to filter the water coming into troughs. Other possible interpretations for burnt mounds include fulling wool (Jeffery, 1991, 97-108), working leather, building boats (*Ó* Neill, 2009, 74-75), and even possibly spiritual experiences (Loktionov 2013). Regardless of the exact nature of the activity it seems that the features are probably too substantial, and the processes involved too labour intensive to be indicative of transient activity, suggesting there may have been more extensive settlement present somewhere within the vicinity.

Burnt Mounds rely on some basic resources; water, wood and stone. But they also rely on the subsoil being sufficiently impermeable to contain water, and even where this is the case modifications in the form of wood and stone linings are used in the troughs associated with the burnt mounds. This may be to consolidate the base and edges of the trough, and evidence of wood lining was present in at least one of the burnt mounds discovered during the A75 Bypass works, Droughduil Bridge. Lining of the trough is not uncommon in burnt mounds in this area and elsewhere; a wooden plank lined the base of a trough on a burnt mound at Dervaird, Glenluce (NGR: NX 224 582) (Russell-White in Buckley 1990), with another Mound 3, Auld Taggart 4 (NGR: NX 1513 6696) noted as having stone lining around the edges of the trough.

During survey work by RCAHMS in the mid-1980s, 75 burnt mounds were recorded in the East Rhins of Galloway, and

of the 110 recorded across Wigtownshire, Perthshire, and Easter Ross during this same period of survey, '75 were characterised by a crescentic mound around a shallow hollow' (Halliday in Buckley 1990, 61). Only one of the burnt mounds encountered on the bypass fits this description, that at Mid-Challoch, although the degree of survival of each burnt mound varied. What survives above ground in areas that are relatively undisturbed does not necessarily reflect what survives beneath, and very few of the extant mounds in this region have been investigated. Of seven burnt mounds investigated in the East Rhins of Galloway in the summer of 1987, only two were confirmed as crescentic in form (Dervaird, Glenluce, and Mound 3, Auld Taggart 4), with the remainder described only as mounds. One thing that was consistent throughout though was that every one of the burnt mounds was located, '…on the edge of wetland or burns.' (Russell-White in Buckley 1990, 71). All of the burnt mounds on the bypass were located within lower, former inter-tidal estuarine areas, containing a braided palaeochannel system, and it is likely that these streams and rivulets provided the main, and readily accessible, source of water for their function. The investigated East Rhins burnt mounds range broadly in date from the earliest date of 2200–1930 cal BC (GU 2412: 3680 ± 50 BP) for Mound 5, Stair Lodge (NGR: NX 1771 6686) to as late as 990–1280 cal AD (GU2413: 950 ± 50 BP; GU2414: 800 ± 50 BP and GU2417: 890 ± 50 BP) for Mound 3, Auld Taggart 4 (NGR: NX 1513 6696) (*Ó Neill,* 2005, 322 and 331), giving a range from the middle Bronze Age to the medieval period.

Ten burnt mounds were uncovered during the archaeological work on the A75 Bypass with the range at Boreland Cottage Lower being from the late Neolithic to middle Bronze Age (earliest to latest: Site C18 (late Neolithic) 2890–2620 cal BC (UBA 41501: 4172 ± 32 BP); Site 15 (early Bronze Age) 2149–1940 cal BC (UBA 41495: 3659 ± 30 BP), Sites 1, 4 and 3 (early to middle Bronze Age) 1890–1690 cal BC (UBA 41492: 3474 ± 34 BP), 1670–1500 cal BC (UBA 41494: 3305 ± 33 BP) and 1540–1440 cal BC (UBA 41493: 3240 ± 27 BP) respectively. At Whitecrook Bridge a late Neolithic and early Bronze Age date were recorded 2890–2620 cal BC (UBA 42824: 4169 ± 32 BP) and 2470–2200 cal BC (UBA 41496: 3867 ± 31 BP). At Mid-Challoch the burnt mound was dated to the early Bronze Age 1940–1740 cal BC (UBA 42816: 3523 ± 28 BP) and 1930-1690 cal BC (UBA 42817: 3485 ± 38 BP). The most westerly burnt mound at Droughduil Bridge provided dates from the late Bronze Age: sediment in channel of 974–830 cal BC (UBA 41898: 2760 ± 23 BP) to the early/middle Iron Age, wood from the sluice 480–380 cal BC (UBA 42847: 2356 ± 30 BP), and the basal fill of the trough 350–50 cal BC (UBA 41897: 2147 ± 25 BP). Therefore, the burnt mounds discovered along the bypass

provided a broad date range from the late Neolithic and Bronze Age through to the Iron Age, although this range was not quite as broad as that of those investigated in the Rhins, which spanned some 2900 years, with the Dunragit group spanning a marginally lower range of a maximum of around 2840 years using the upper and lower ends of the date ranges above (2980 cal BC and 50 cal BC). In looking at these two groups alone, and while not suggesting that they are necessarily representative of burnt mounds across Scotland, it does challenge the assumption that burnt mounds are *usually* middle to late Bronze Age. From the six dated in the East Rhins group, two were medieval; from the seven dated Dunragit examples one was very early Bronze Age with the latest date potentially placing the burnt mound at Droughduil Bridge in the middle Iron Age. More widely, a synthesis by Russell-White (1990, 90) of the available data at the time of writing suggested that the burnt mounds of the Northern Isles were generally Iron Age, with only one dated to the late Bronze Age; Arran burnt mounds have all dated to the early Bronze Age, with the East Rhins also mentioned in this synthesis providing Bronze Age and medieval dates, east and west of the Water of Luce respectively.

Ó Neill (2005, 39) collated the dating evidence, available at the time, for burnt mounds across, Scotland, Wales, England, Ireland and Scandinavia, and while there is a predominance in the Bronze Age there are some notable variations between countries. Forty-one dates from Scotland, 14 from Wales, 22 from England, 93 from Ireland, and 55 from Scandinavia were used for this comparison. From this the date range for Scottish examples extend back as far as the early Neolithic around 3600 BC, with a hiatus in the Iron Age and a resurgence in the medieval period. A similar date range and hiatus is observed in Ireland and Wales. In England, the date range extends from around 3000 BC to around 600 BC with none dated to the later period. In Scandinavia, the earliest dates bridge the Neolithic/Bronze Age transition around 2500 BC with the dates for these monuments then tailing off towards the end of the first millennium AD. Although we cannot assume that this dataset is wholly representative, and we must acknowledge that our data are limited by the areas studied and the number of burnt mounds excavated and dated; this does suggest that we should be more open to the idea that burnt mounds were a ubiquitous part of prehistoric life for a much more prolonged period, beyond the typical Bronze Age preconception. They were in use from the early Neolithic period to as late as the medieval period, spanning some 5000 years, surely one of the most fundamentally unchanged sites constructed and used during this time span.

4.5 Iron Age Structural Traits

Warren Bailie

The Iron Age settlement discovered at Myrtle Cottage, although atypical for the region in its unenclosed layout, is in many ways typical of the period in terms of its roundhouse structures. To place the structures at Myrtle Cottage into a regional and national context, they will be compared here with other Iron Age settlement sites across Scotland, both enclosed and unenclosed. Research across Scotland has tended to focus on higher status sites, and those with above ground remains of Iron Age structures, forts and enclosures. There has been no apparent structured attempt made to determine whether there was an unenclosed population (Banks and Ballin Smith 2002, 219). The unenclosed settlement at Myrtle Cottage will, it is hoped, lead to further research to address this gap in our knowledge of how everyone else lived outwith the conspicuous hillforts, duns and enclosures.

The structures at Myrtle Cottage range from c. 8 m to 9 m in diameter and this falls within the lower part of the range where some structures can reach 20 m in diameter in unenclosed settlements, one example of such a substantial building being at Douglasmuir, Angus (Edwards and Ralston 2003, 175). Two ring-groove structures discovered at Drumflower, one of which was dated to the late first millennium BC/early first millennium AD, ranged in diameter from 10.6 m to 13 m. Later Iron Age structures at the enclosed hillfort settlement at Broxmouth, East Lothian were of a similar scale to those found at Myrtle Cottage and Drumflower, ranging from 7 m to 12.6 m in diameter (Armit and McKenzie, 2013, 116-170). Two other possible posthole-defined structures at East Challoch, one oval and one circular, were dated to the late first millennium BC/ early first millennium AD, so roughly contemporary with structures at Myrtle Cottage, although neither could be clearly defined here as a roundhouse (Illus 2.84 and 2.85).

The interpretation of ring-grooves and ring-ditches defining the outer perimeter of Iron Age roundhouse structures has been discussed widely elsewhere (Harding 2017, 137), the pertinent question being whether it is a product of wear and erosion over time, or it if it is in fact part of the design. The structures at Myrtle Cottage differed widely, with some displaying no discernible outer ring-groove (Structures 6 and 9), being defined by posts externally (Structure 6) and internally (Structure 9). Structure 4 had the remains of part of a ring-groove containing a fragment of charred wooden plank *in situ* possibly hinting at a variation in construction technique here. Others including Structures 1 and 2 had substantial outer wall-slots with evidence of posts and/or stakes set along their circumference, Structure 1 having cavities within the stone packing showing the position of posts now decomposed or removed. Structure 2 displayed

a particularly substantial wall-slot measuring up to 0.8 m in depth with large packing stones throughout. Both Structure 1 and 2 also displayed a floor level set lower than the outer walls, a trait observed elsewhere at for example House 3 at Broxmouth (Armit and McKenzie, 2013, 135) where the floor is described as 'dished'. Structure 3 showed evidence of the remains of small posts or intermittent stakes around its circumference with a continuous ring-groove joining the spans between them with little evidence of any packing material. Structure 5 was only partially uncovered within the investigation area, but a substantial amount of stone packing material was evident around its circumference. For Structures 1 and 2 then it can be said that their outer wall or ring was a deliberate construct to accommodate posts around the outer edge of the structure, whereas with the other structures the ring is more ephemeral, or not present. The structures at Drumflower had ephemeral ring-grooves with no evidence of posts around their circumference, with the exception being the entrance posts.

One could argue that there was differential survival of the structures rather than different construction methods represented at Myrtle Cottage, however using Structure 3 as an example, the internal postholes and central oven/ furnace were relatively undisturbed and survived at a similar ground level to that of the shallow outer ring-groove. So too, the stone-packing and internal features of Structure 1, 2 and 5 survived intact in comparison to the more denuded Structures 4, 6 and 9. There is of course the possibility that the builders of successive roundhouses reused stone from earlier structures, leaving any ring-grooves and other features more prone to erosion in this windblown sand area.

At Myrtle Cottage, Structure 1 had an internal wall-slot that was eccentric to the outer ring: at the northeast the inner ring joined with the outer. This is a trait seen elsewhere on Roundhouse A at Cults Loch where it was interpreted as a partition defining different internal spaces/functions (Cavers and Crone 2018, 179). Similar eccentric internal additions are seen on House 4 at Broxmouth, East Lothian where successive internal walls, albeit in stone were added, each time reducing the internal space (Armit and McKenzie 2013, 138-152). The internal ring on Structure 1 would have restricted the internal space as well as direct access from the outer western entrance to the central floor space. There was evidence of an access point to the central areas and hearth area through the internal divide from the south side, probably a staggered entrance.

Structure 3 had no such internal ring, and the internal area was defined by an irregular, though generally central, group of postholes which surrounded the central oven/ furnace. The entrance to this structure in contrast to Structure 1 was facing east through a protruding porch defined by postholes, similar to some examples (RH04, RH18, and RH20) at Kintore, Aberdeenshire (Harding 2017, 138).

The other structures at Myrtle Cottage were either only partially within the investigation area (Structures 2, 5 and 6) or only partially surviving (Structures 4, 7 and 9) leaving any entrances or internal layout unconfirmed. Entrances are predominantly facing west in Hebridean wheelhouses (Armit 2006, 250) whereas examples of ring-ditch and post-ring buildings at Kintore had mostly east or south-east facing entrances (Harding 2017, 138). The Myrtle Cottage site, like much of the western coastline is open to the prevailing south-westerly winds, and the oven or furnace within Structure 3 may have generated fumes which may account for the east facing entrance/exit on this structure.

Although much of what is discussed in relation to structural traits above is based on the decomposed and denuded remains of Iron Age roundhouses and what remains of their hearths and other features to determine function, recent investigations by AOC Archaeology at Black Loch of Myrton, further southeast along the Solway coastline, have opened up new insights to Iron Age roundhouse structures and settlement (Cavers and Crone 2017, 2018, 2019). In one of the timber roundhouses (Structure 2) measuring c. 13 m in diameter there was evidence for the repeated repair and refurbishment of the entrance, hearth, wattle panels, and reed flooring. The outer wall was formed of a double ring of stakes with remnants of woven branches intact and a vertical-set oak plank entrance. The lower levels of the structure revealed dressed logs with holes for doweling and slots for wooden uprights. Provisional radiocarbon dates from the occupation deposits in this structure indicate a mid-first millennium BC date for its occupation. Structure 3, a roundhouse on the same site measured 9.4 m in diameter, being less substantially built but containing a series of crucibles and well preserved wooden and bone artefacts included a turned yew baton and incised decorated wooden bowl. This work along with the work at Cults Loch (Cavers and Crone, 2016) has highlighted the rich assemblage that can survive in Iron Age contexts with the right conditions.

4.5.1 The artefact assemblage

It is noted elsewhere of the Iron Age sites of Southwest Scotland that generally the recovery of artefacts is of a lower level than that from Iron Age sites in the Highlands and Islands (Banks 2002, 31). But so too are the southwest Iron Age sites underrepresented in terms of research and excavations (Banks 2002, 28; ScARF 2012, 2.4). New discoveries made at Cults Loch and Black Loch of Myrton since the turn of the millennium help address the paucity of artefacts.

A number of cobbles and pebbles recovered from the investigations at Myrtle Cottage were used for pounding and polishing, with hammer stones and whetstones also identified. Clark (2006, 1) notes that such tools are a 'significant component' of Iron Age tool assemblages in

Scotland, and the assemblage from Myrtle Cottage, like that from Cults Loch, is 'typical of later prehistoric coarse stone assemblages from southern Scotland' (McLaren in Cavers and Crone 2018, 106). Part of a saddle quern was discovered in proximity to Structure 6 (Ballin Smith, Appendix 14), although this was also close to the neighbouring Structures 3 and 4. The fragmented quern had been used on both sides, signifying its value to the owners and/or the difficulty in acquiring a similar stone. The remains of a possible pivot stone were found within the outer wall slot of Structure 1.

Seventy-two lithic artefacts were recovered from the investigations at Myrtle Cottage and all are thought to be residual earlier prehistoric artefacts dating from the early to late Neolithic period (Ballin, Appendix 12). A possible enclosure investigated as part of the Site 22 work which formed part of the Myrtle Cottage investigations was dated to the early Neolithic (UBA- 41966), and one layer 075, pre-dating Structure 1 dated to the late Bronze Age period (UBA 49133), hinting at earlier activity across the site which may account for some of the lithic assemblage.

Aside from the coarse stone tools and lithics recovered from the excavations at Myrtle Cottage, there were three metal finds of particular interest, two brooches and a possible leather-working knife. One brooch recovered during the investigations on Structure 1 was a Aucissa brooch likely dating to the late first century AD (Hunter, Appendix 19). This brooch, Hunter notes, is likely to pre-date the Roman army's advance north, and represents the wide trading networks in place during this period. One other Aucissa brooch is known from Scotland, found in an unknown context at Dores, near Inverness in 1897 (MHG3601) (Hunter, Appendix 19). The second brooch at Myrtle Cottage was recovered as an iron lump from a rectangular feature adjacent to Structure 3. Following X-ray, a penannular form was revealed (Illus 4.9 and 4.10a and 4.10b). The item was confirmed to be a penannular brooch, usually associated with burial contexts in the Iron Age (Cruickshanks, Appendix 21). Conservation work was carried out on the brooch but the corrosion was so severe that further work would have damaged the object (Illus 4.10c), and it was therefore consolidated in its current state (Murray, Appendix 20).

The leather-working knife (SF 113) from one of the floor layers of Structure 2 was noted by Cruickshanks (Appendix 21) as a rare object with no others of this form known in Scotland. Evidence of leather-working is noted elsewhere at Broxmouth (Armit and Mckenzie 2013, 228) where staining on stone tools was the indicator. Bone tools indicative of textile -working and basketry were also noted from Broxmouth. Cunliffe (1991, 447) notes that although the process of leather working may leave little trace behind, iron knives would have been, '…sufficient for skinning and cutting….'

A perforated stone disc was also recovered during investigations on Structure 3. This small object weighing

Illustration 4.9: Aerial view of Myrtle Cottage and East Challoch

Illustration 4.10a: The penannular brooch as a lump of metal

Illustration 4.10b: The penannular brooch X-rayed

Illustration 4.10c: The penannular brooch cleaned and conserved

only 6.7 g had signs of wear around a narrow and thinner section of the disc indicating that it may have been suspended from twine or a thong of some description (Ballin Smith, Appendix 14), possibly suggesting that it may been a personal item, perhaps a clothing accessory.

Although no Iron Age pottery was recovered from any of the structures at Myrtle Cottage, East Challoch or Drumflower, 138 pieces and 65 small fragments of raw and burnt clay (daub) weighing 923.5 g were found across 16 contexts at Myrtle Cottage (Ballin Smith, Appendix 16), mainly from Structure 2. Ballin Smith (Appendix 16) states, 'In the part of this structure that was excavated, a significant amount of daub has been recovered to indicate clay was a structural component of the building, Structure 2 was only partially exposed within the investigation area with an estimated 80% or more of the structure extending beyond the baulk edge, therefore the quantity of burnt clay that may survive across the whole of the structure is likely to be significantly higher.

Animal bone was scarce in the assemblage from Myrtle Cottage with only two cattle molars, a fragment of ungulate tooth enamel and a relatively large cattle humerus shaft, and a cattle molar recovered from the initial evaluation phase (C10). Only the cattle humerus (SF 110) was from a secure context, a pit at Area 6B and this bone is interpreted as likely to be of modern date (Smith, Appendix 10).

4.6 Dunragit Iron Age Settlement Context

Ronan Toolis

The Iron Age settlement at Myrtle Cottage (Illus 2.64-2.83) is unique in Dumfries and Galloway. Another open, unenclosed multiple household settlement dating to the turn of the first millennium AD has not as yet been encountered or excavated in the region. Other remains of later prehistoric settlements have been encountered in Southwest Scotland, such as the Iron Age roundhouses discovered near Fox Plantation, excavated in advance of the Scottish Northern Irish Pipeline development (MacGregor 1996). An early Iron Age settlement was excavated in advance of the Whitecrook Quarry (Gordon 2009) while a later prehistoric ring-groove was encountered at South Boreland also in advance of quarrying (Engl and Wilson 2015). Fragmentary remains of Iron Age activity and occupation were also apparent at Brighouse Bay near Kirkcudbright in advance of the Scotland/Ireland Gas Interconnector project (Maynard 1994). All but the last are located in close proximity to Dunragit. This could be construed as reflecting a concentration of later prehistoric settlement within the East Rhins of Galloway, which is also evidenced by an abundance of cropmarks in the same district and which may indicate sites of the same period (Illus 4.11). However, a dearth of recorded cropmarks in other districts of Galloway may merely reflect the predominance there of pasture and poorly drained soils, which inhibit detection from aerial surveys (Toolis 2015, 24). It is important to acknowledge that the East Rhins has been the focus of intensive RCAHMS aerial and field survey surveys, resulting in more known cropmarks and unenclosed hut circles here than other parts of the region (Cowley 2000, 169; Cowley and Brophy 2001; Cowley 2002). The apparent preference for the occupation of either lochs, high ground or the coastal edge in the rest of Iron Age Wigtownshire (Illus 4.11) therefore reflects the survival and visibility of sites in the agricultural margins of the modern landscape, rather than the true settlement pattern.

Nevertheless, concerted attention has been given to Iron Age settlements in the East Rhins, driven not just by development but also by research, such as the Scottish Wetland Archaeology Programme and the Cults Loch Community Heritage Project (Henderson *et al.* 2006; Cavers and Crone 2018). This allows the local context of the Iron Age settlement at Dunragit to be examined in more detail than if it was located in any other part of Galloway.

To begin with the chronological context, comparison of the OSL and radiocarbon dates as well as the stratigraphy (see 2.5.4.4) suggests that Structures 2, 1 and 9 seem likely to have been the earliest structures, with Structures 3, 5 and 4 in use in the centuries that followed, with perhaps Structures 2 and 3 the last to be abandoned. Bayesian analysis of the radiocarbon dates indicates that the main

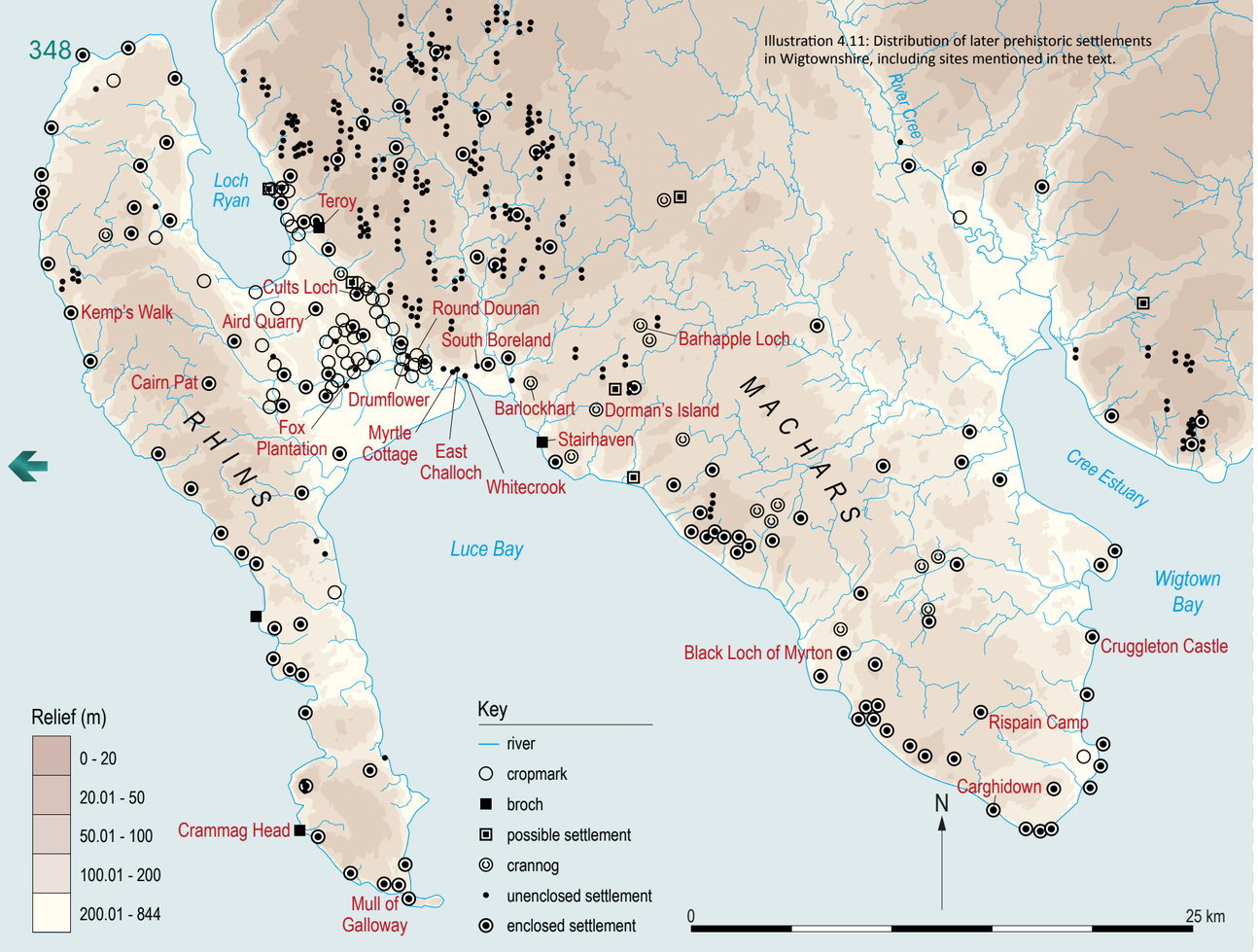


Illustration 4.11: Distribution of later prehistoric settlements in Wigtownshire, including sites mentioned in the text.

floruit of settlement was probably from the latter half of the second century BC until the early second century AD; the total lifespan of the settlement probably being 165–250 years (Hamilton, Appendix 1, RC1).

However, it must be borne in mind that a much shorter lifespan of individual timber structures, and therefore the settlement as a whole, is more likely. Bayesian analysis of roundhouses in Northeast and Southeast Scotland indicates an average roundhouse lifespan of around 30-40 years (Hamilton *et al.* 2015, 654-655). In sites where dendrochronology is possible, a much tighter timespan is routinely demonstrated in comparison with radiocarbon dating of the same structures (Barber and Crone 2001, 71-73). For instance, radiocarbon dating of Dorman's Island crannog near Glenluce indicated occupation sometime between 780 BC and AD 1 (Crone 2012, 142); dendrochronology narrowed this down to the last five decades of the second century BC (Crone 2012, 158). Similarly, while radiocarbon dating indicated many hundreds of years for the individual roundhouses at Buiston Crannog in Ayrshire, dendrochronology demonstrated that these only lasted between five and twenty years, and the hearths and floors within each underwent repair and replacement within 2-5 year cycles (Crone 2000, 160). The same pattern of short-term periodic renewal of a roundhouse interior in Galloway was apparent at Carghidown promontory fort in the Machars, where numerous phases of internal replacement were apparent within the roundhouse there, while the more exposed outer wall of the building only required minimal repairs (Toolis 2007, 301). This same pattern is evident too in at least one of the roundhouses at Black Loch of Myrton (Cavers and Crone 2016, 47) and maybe Structure 2 at Myrtle Cottage (see 2.54). Furthermore, while most of the material assemblage from the Myrtle Cottage site was residual from earlier phases of the settlement (the final phase having been severely plough truncated), none of it indicates that the settlement continued beyond the first century AD. The leather-working knife may closely resemble a Roman knife from near Gloucester (Cruickshanks, Appendix 21) but this may have come to this settlement by the same means as the early Roman brooch that predates the Roman conquest of Scotland (Hunter, Appendix 19). Likewise, the spelt wheat, suggested as indicative of Roman influence (Alldritt, Appendix 3) may have also derived from trade or exchange prior to the Roman invasion. Therefore, a shorter lifespan for the settlement might well have been the case.

Nonetheless, it is evident that the Iron Age settlement by Myrtle Cottage existed within a broadly contemporary distribution of dispersed settlements around Dunragit. This includes discoveries made during the bypass excavations. Around 250 m to the northeast at East Challoch a number of postholes yielded radiocarbon dates ranging from the second century BC to the third century AD (Hamilton,

Appendix 1, RC1). A little further away at Drumflower, at the western end of the A75 Bypass works, were two ring-groove structures; one of these was radiocarbon dated to between the mid-first century BC to mid-first century AD. A little further west again, at Fox Plantation, a number of roundhouses were excavated (MacGregor unpublished), including one that produced radiocarbon dates indicating occupation between the second century BC and the first century AD (GU-7435; AA-28047). Radiocarbon dating from another roundhouse near Fox Plantation indicated occupation in the first half of the first millennium AD (AA-28059; AA-28054). As well as carbonised oats and hulled barley, which are commonly found on Iron Age settlements across Scotland (Tipping 1997, 21) including at Myrtle Cottage, the Fox Plantation roundhouses yielded bread/club wheat. While this represents a rare example in Pre-Roman Iron Age Scotland, the presence of bread wheat at Rispain Camp in the Machars and Cults Loch in the East Rhins from around this same time, as well as the spelt wheat recovered from the Myrtle Cottage and Drumflower settlements at Dunragit (Alldritt, Appendix 3), indicates more widespread growing of varieties of wheat across Galloway than previously understood (Haggarty and Haggarty 1983, 37; Robertson 2018, 83-84). The secure dating of the Cults Loch souterrain to the last two centuries BC (Cavers and Crone 2018, 181) is also significant in demonstrating, in Southwest Scotland as in eastern Scotland, the same cultural and economic pattern of accruing food surplus were played out. This stems from the intensification of farming, a process that landscape pollen analyses indicate began in the last centuries BC (Tipping 1997, 20) and which is supported by the growing body of evidence from Iron Age settlements in Galloway.

The work undertaken a few miles to the northwest at Cults Loch is especially important to bear in mind when considering the distribution of settlements dispersed around the rest of the East Rhins. Here excavations of a palisaded settlement, two crannogs, and a promontory fort have revealed a dynamic and sequential settlement pattern between the mid-sixth century and fourth century AD rather than a hierarchical pattern of contemporary Iron Age settlements (Crone 2012, 141; Cavers and Crone 2018, 241, 245). Therefore, while some settlements in the East Rhins may be contemporary with each other, others were not and new settlements, predominantly single households, emerged and declined over the course of the first millennia. This is demonstrated only a few hundred metres to the east of Myrtle Cottage by a single roundhouse at Whitecrook Quarry, radiocarbon dated to sometime between the eighth and fifth centuries BC (Gordon 2009, 28) and therefore predating the Myrtle Cottage settlement.

Many of the roundhouses in the East Rhins probably predate the Myrtle Cottage settlement by some time. Late Bronze Age dates were recovered from some of the roundhouses at

Fox Plantation (AA-28056; MacGregor 1999) and from the settlement at Aird Quarry a few miles further to the west (Cook 2006, 17). So too further east from the roundhouse at Ross Bay near Kirkcudbright (Ronan and Higgins 2005, 66). Caution should probably be exercised before then assuming an Iron Age date to the single roundhouses located nearby at South Boreland. Without radiocarbon dating evidence, it is not possible to differentiate Iron Age roundhouses from Bronze Age roundhouses from their morphology alone. But evidence from these sites does demonstrate that the dispersed distribution of discrete roundhouse settlements, both unenclosed and enclosed, extends back into the Bronze Age, a settlement pattern also evident elsewhere in Scotland including Clydesdale (Toolis 2005), Falkirk (Barclay 1983), the Lothians (Rees *et al.* 2010, 34-35), and Aberdeenshire (Cook and Dunbar 2008). Nonetheless, the dating evidence from Whitecrook is significant in suggesting that the agglomeration of roundhouses at Myrtle Cottage may have developed from the abandonment of some of the single household settlements in its vicinity.

Furthermore, a pattern of dispersed and predominantly single household settlements within the specific lifespan of the Myrtle Cottage settlement is apparent across the Rhins. Along with Drumflower, Fox Plantation, and the sequence of settlements around Cults Loch datable to the latter centuries BC and into the first century AD, are the crannogs at Barlockhart, Dorman's Island, and Barhapple Loch around Glenluce (Crone 2012, 141). At the margins of the East Rhins are the brochs at Stairhaven and Teroy, part of a cluster of Atlantic style settlements within a 400 km² area in the Rhins of Galloway and comparable to similar clusters of brochs elsewhere in southern and eastern Scotland. Of the Galloway brochs, only Teroy and Crammag Head have produced dating evidence in the form of Roman artefacts, suggesting occupation during the first or second centuries AD (Hunter *et al*. 2018, 216), possibly overlapping with the lattermost phase of occupation at Myrtle Cottage. The evidence from Dorman's Island and Cults Loch suggest that not all of these settlements co-existed with each other but it does demonstrate that the majority of settlements during this period were single household settlements.

The multiple household nature of the Iron Age settlement at Myrtle Cottage thus distinguishes it from the majority of other Iron Age settlements in its locality. The exposed part of the Iron Age settlement at Myrtle Cottage appears to comprise of at least five roundhouses, Structures 1-5, with another possible two roundhouses, Structures 6 and 9, and a kerbed mound of burnt stone, Structure 7. The analysis of the scientific dating and the stratigraphy suggests that though these roundhouses may not have *all* co-existed together, several did exist during the same period (see 2.5.4.4). Furthermore, the excavated area only skirted the southern edge of this settlement. It is uncertain how far north the archaeological remains extend but it is

highly likely that the remains of many more roundhouses lie buried there. The circular cropmark immediately to the west of the excavated area indicates the potential for more roundhouses in that direction too. Therefore, while it might be tempting to view the Myrtle Cottage settlement as following a linear arrangement, this merely reflects the linear route of the excavation trench and a thus could be only a sample of the roundhouses within the settlement (Illus 2.64a and 2.64b).

What further distinguishes the Myrtle Cottage settlement is the lack of any evidence of an enclosing ditch or rampart. This might be due to the nature of the underlying sand sheets in which it was located, though this would not preclude the construction of a palisade. Nor is the choice of a more prominent location unavailable in the vicinity; the Round Dounan hillfort is located just to the north of Dunragit, albeit more limited in area and probably much later in date (Baker and O'Flaherty 2014, 10). The unenclosed nature of the Iron Age settlement at Myrtle Cottage nevertheless marks it out as unusual in comparison with other potential multiple household settlements in the Rhins such as Cairn Pat hillfort and Kemp's Walk promontory fort, or further afield such as the enclosed settlement at Black Loch of Myrton in the Machars of Galloway, another low-lying village site (Cavers and Crone 2016, 47). Notwithstanding this peculiarity, a broadly similar settlement pattern is apparent elsewhere in Galloway, such as to the south of the Machars, where the multiple household settlement at Rispain Camp is markedly different in scale to the predominantly single household settlements, such as the promontory forts at Carghidown and Cruggleton Castle, during this same period (Toolis 2007, 305-307).

Permanently occupied multiple household settlements might be expected to create opportunities for increased social interaction and reflect different cultural practices for social cohesion from those of single households (Roberts 1996, 36). However, it is difficult to identify tangible archaeological evidence to demonstrate this. While the unique presence of bread wheat at Rispain Camp was previously considered to demonstrate the agricultural innovation of a multiple household settlement (Toolis 2015, 21), as noted above this cereal species is also now apparent on a number of single household settlements in Galloway from around this same time. The slim evidence for a mixed farming economy at the Myrtle Cottage settlement, comprising emmer and spelt wheat, barley and oats, and cattle, is not unique to multiple household settlements in the region, though it does mark a greater variety of cereal grains than apparent at the earlier Iron Age settlement at Whitecrook nearby, where only barley was found (Gordon 2009, 35). Related to livestock farming at the Myrtle Cottage settlement may have been leather-working, as suggested by the iron knife (Cruickshanks, Appendix 21) and perhaps some of the stone polishers (Ballin Smith, Appendix 14).

The initial identification of pottery during the excavations at Myrtle Cottage (Arabaolaza *et al.* 2015, 120) was also considered to be an innovation within a regional aceramic Iron Age culture (Toolis 2015, 21) but post-excavation analyses revealed these to be daub cladding from the roundhouse walls (Ballin Smith, Appendix 16).

The evidence of extensive burning and heat-affected surfaces around a furnace within Structure 3 was considered by the excavators to be evidence for a specialised metal working workshop. Post-excavation analysis of the botanical evidence revealed a hearth used for industrial *and* domestic purposes (Alldritt, Appendix 3) while analysis of the metal working debris concluded that only intermittent and small-scale blacksmithing and some non-ferrous metal working was undertaken (Cruickshanks, Appendix 22). However, the scale of the surviving record may be the result of plough truncation; after all, small quantities of ironworking residues were recovered from across the site. Furthermore, while iron tongs were recovered from Rispain Camp (Haggarty and Haggarty 1983, 45-46) and iron-working debris from Drumflower, Teroy, Black Loch of Myrton and Dowalton Loch Crannog, no *in situ* evidence for metal working, whether for blacksmithing or non-ferrous metals, has been recovered from any other late Iron Age settlements in Galloway.

The working of non-ferrous metals was, however, evident at Whitecrook during the early Iron Age (Gordon 2009, 32). This may perhaps imply that by the last two centuries BC, the inhabitants of the multiple household settlement at Myrtle Cottage possessed some level of metal working and leather-working skills not commonly found on single household settlements.

Drawing comparisons, albeit much earlier and at a more impressive scale, the wide range of metal working, pottery production and antler-working skills evident at the large multiple household settlement at Broxmouth in East Lothian, for instance, were also not considered as specialised to any significant degree (McDonnell 2013, 399; Armit and Mackenzie 2013, 503). However, iron-working is only evident on 28% of excavated Iron Age settlement sites in East Lothian, and non-ferrous metal working on 25% (Hunter 2009, 144). Across lowland Scotland, iron-working and non-ferrous metal working is only apparent on 23% of excavated Iron Age settlements (Ibid). In Galloway, iron-working is only evident on 12% of excavated Iron Age settlements, and non-ferrous metal working on 10% of settlements.

Whether or not the inhabitants of multiple household settlements such as Broxmouth or Myrtle Cottage pursued 'full-time' specialised occupations, even if this were possible within an Iron Age economy, the wide *range* of skills not common to single households may have distinguished these communities from neighbouring settlements in pre-Roman Iron Age Scotland. In East Lothian, for instance, a fairly flat hierarchy of settlements is apparent where just over half

Activities	Enclosed settlements (n=24)	Open settlements (n=9)	Caves (n=2)	Crannogs (n=16)
Exotic items	9	4	2	7
Ornamental metalwork	3	1	1	3
Iron-working	2	2	0	2
Shale-working	0	1	0	3
Non-ferrous metal-working	1	1	0	2

Table 4.1: Restricted activities by site type

of settlements had access to a variable range of distinctive attributes, comprising exotica (such as Roman objects), ornamental metalwork, iron-working, shale-working and non-ferrous metal working (Hunter 2009, 150). Only 15% of settlements in East Lothian showed a broad range of three or more of these categories, and one of these, Traprain Law, towering over the others in the quantity and wide range of its assemblage (Hunter 2009, 150-156). Likewise, in Galloway, of the 60% of settlements that have yielded evidence for at least one of these attributes (Table 4.1), only 8% exhibited a broad range of three or more categories. Amongst these, only two sites share four or more of these attributes and the settlement at Myrtle Cottage is one of these, with evidence for exotic items (the Roman brooch), ornamental metalwork (the penannular brooch), iron-working and non-ferrous metal working. Only at Dowalton Loch Crannog are all five attributes apparent (Cavers and Crone 2018, 278). While it must be borne in mind that, unlike East Lothian, no extensive excavations have been undertaken at any of the large enclosed settlements in Galloway, the multiple household settlement at Myrtle Cottage can be distinguished in this way from most of its contemporaries, suggesting that it was perhaps no ordinary run-of-the-mill settlement.

However, what is not apparent at the Myrtle Cottage settlement is any evidence of hierarchical status, either within the site or distinguishing it physically from other settlements. None of the roundhouses appear to be significantly superior in terms of architectural scale or material culture from the others, or indeed any of the known contemporary single household settlements in the Rhins. The early Roman brooch is undoubtedly significant in itself, demonstrating pre-Roman contacts with central southern England, as too may be the leather-working knife. But these distant contacts are consistent with the regional context for this period (Hunter, Appendix 19). Neither does the brooch or iron penannular pin suggest that the inhabitants were of a higher status than those of other contemporary households. Ornamental or otherwise unusual personal jewellery is also apparent in a range of contemporary Iron Age settlements in Galloway, including Rispain Camp and the promontory forts at Cruggleton Castle and Carghidown (Haggarty and Haggarty 1983, 46-8; Ewart 1985, 64; Toolis 2007, 300). Given the significance of enclosing ramparts and ditches as reflecting the status

of Iron Age households and communities in Southwest Scotland (Banks 2000, 276-7; Toolis 2007, 307), the absence of such features at the Myrtle Cottage site hardly suggests a high status to the settlement either.

The range of types of Iron Age settlements in Galloway have previously been suggested as hierarchical (Banks 2002, 32; Toolis 2007, 307). However, if comparisons are drawn with the evidence for the differential status of early medieval settlements across the region (Toolis and Bowles 2017, 141-146), the Iron Age settlement pattern appears more heterarchical in nature than hierarchical. Unlike the early medieval settlement pattern, there are no Iron Age settlements in Galloway that have produced evidence for specialised production of gold and silver jewellery, continental trade, significant material wealth or royal inauguration rites. Within the Rhins of Galloway, the excavations around Cults Loch revealed no evidence for a hierarchical pattern of Iron Age settlements (Cavers and Crone 2018: 241 and 245). So too in the Machars, the excavations of Carghidown, Rispain Camp, and Cruggleton Castle revealed no equivalent evidence to distinguish the hierarchical status of one settlement household over another (Toolis 2007; Haggarty and Haggarty 1983; Ewart 1985). Indeed, social hierarchy across Iron Age Scotland in general, most clearly in the form of demonstrable evidence for royal and elite status of settlements, is not apparent until the fourth century AD at the earliest (Noble *et al.* 2019, 74) and not until the late sixth century in Galloway (Laing and Longley 2006, 174 and 179; Toolis and Bowles 2017, 141).

Nevertheless, as an unenclosed, multiple household settlement, the Myrtle Cottage site is, along with its range of material culture, archaeological distinguishable from the other later prehistoric site types that predominate in the Rhins of Galloway. Along with hillforts, promontory forts, and unenclosed single roundhouses, uniquely Scottish Iron Age site types such as crannogs, brochs and souterrains are all found in this part of Galloway. Souterrains, for instance, though undoubtedly more common to the north of the Forth, are also present in Galloway, elsewhere in southern Scotland and on the Atlantic seaboard (Harding 2004, 199). Brochs, more usually associated with the Atlantic seaboard and the Northern Isles, are also found in clusters in lowland eastern and southern Scotland (Armit 2003, 120). Iron Age crannogs are also found across Scotland (Crone 2012, 141-146; Stratigos and Noble 2017, 148 and 153). The distribution of these site types across Scotland, but not south of the Solway Firth or the Cheviots, implies that Iron Age societies across Scotland were open to the building and occupation of brochs, crannogs and souterrains to varying degrees but that Iron Age societies further south were not. The formation of broch villages in Orkney by the first century BC (Armit 2015, 194), evident perhaps also in the early centuries AD at Edin's Hall in the Scottish Borders

(Dunwell 1999, 351) suggests that Scottish architectural forms were not limited to dispersed single households either. In Galloway though, as most commonly across Scotland, these distinctive Scottish site types are only found on single household settlements.

Leaving cultural distinctions aside, there were also shared cultural traits across Iron Age Britain, exemplified most clearly by the ubiquity of roundhouses. The unenclosed multiple household settlement at Myrtle Cottage may represent another aspect of cultural similarity, akin to settlements such as East Brunton and West Brunton in Tyne and Wear (Hodgson 2017, 97) and Heslerton in the Vale of Pickering in eastern Yorkshire (Bevan 1997, 185) as well as the early Iron Age settlement at Douglasmuir in Angus (Kendrick 1995, 64) and East Barns in East Lothian (Dunbar 2017, 73). These multiple household settlements are not at the scale of the large enclosed settlements occupying prominent regional landmarks such as Traprain Law, Eildon Hill North, Burnswark; and closest to Dunragit, the large enclosed space at the Mull of Galloway that may be the Southwest equivalent to the better-known tribal oppida (Ralston 2015, 207). But small agglomerated open settlements are nonetheless differential to single household settlements. Whether they were markedly differential, in Iron Age eyes, to the unenclosed phases of small hillforts such as Broxmouth is another matter. Like hillforts, the historical trajectories of these open settlements differed between sites; the settlements at East Brunton and West Brunton appear to have been replaced with smaller enclosed settlements of a social elite (Hodgson 2017, 96-98) while the settlement at Douglasmuir remained non-hierarchical (Kendrick 1995, 64).

Regardless of the varying trajectories, the initial formation of these open multiple households may have been the result of shared underlying cultural impulses. Given that the grouping of houses becomes more apparent in Denmark and the Netherlands around this time (Audouze and Büchenschütz 1991, 218-219; de Vries 2019, 125), this settlement pattern may have followed cultural processes occurring across Northwestern Europe. Differing transformations of settlements during the latter two centuries BC are also apparent in western continental Europe, including the expansion of some settlements and the alteration of others (Mecking 2019, 193).

The agglomeration of households into a small open settlement, such as that encountered at Dunragit, represents a significant aspect of Iron Age society in Scotland. In a landscape predominantly occupied by single household settlements this new evidence reinforces the dynamic nature of settlement patterns in Galloway during the latter part of the first millennium BC.

Part 5. Overall Discussion

Warren Bailie

In addressing the research framework agreed as part of these post-excavation works, this monograph has enhanced our understanding of Mesolithic settlement, Neolithic ritual activity, Bronze Age funerary and ritual activity, and Iron Age settlement in Southwest Scotland. This has been achieved through an extensive post-excavation programme which included the archaeobotanical analysis of all processed samples, analysis of all artefacts recovered from the excavations and processing, analysis of the human remains both in osteology and isotopes, analysis of faunal remains, selective multi-element and micromorphology analysis, environmental analysis on a landscape scale, a comprehensive dating programme (13 OSL and 224 radiocarbon), and Bayesian Analysis. In the various discussion sections the findings have been considered in their local and wider contexts by period. These discussions will not be repeated here but the main points drawn from the various excavations will be summarised.

In order to find parallels for the discoveries at Dunragit, we need to look at similar prehistoric landscapes where there is evidence for multi-period settlement and funerary activity, although those that have been excavated to any great extent are few in Scotland. There are a number of landscape areas noted for their rich prehistoric landscapes, such as the Isle of Arran and Kilmartin Glen in the west of Scotland, Forteviot in the east, and Orkney in the north to name the obvious. These landscapes are characterised mainly by their ritual monuments with patchy levels of excavation (with the exception of Orkney and Forteviot). But what makes the findings along the bypass route at Dunragit stand out is their contribution to our understanding of what was going on before, after, around, beyond and between the ritual monuments, giving us glimpses of everyday life, rituals, economies, subsistence and how people utilised the varying arenas this landscape had to offer to prehistoric populations. It must be acknowledged here that

the available evidence for landscapes densely populated with archaeology of multiple periods is no doubt skewed by areas where investigations have taken place, and/or where the palimpsest of multi-period sites is obvious above ground, thus making the approach taken along the bypass – in effect sampling the landscape – so significant.

Dunragit too has large scale ritual monuments, albeit based around what has been highlighted by aerial photography, and what survives beneath the surface, partially investigated at Dunragit (Thomas 2015) with further evidence of wide-ranging ritual structures at Boreland Cottage Upper discovered during these works (see 2.5.6). Here there were lines of postholes some of which were dated to the 37th to 38th centuries BC making them roughly contemporary with the cursus at Dunragit which was dated to 3760-3630 cal BC (SUERC 2103). It is noted elsewhere, In the context of the Neolithic activity around Dunragit that the 'sheer numbers and scale of the monuments in this area are not easily paralleled' (Noble 2006, 157). Mainly for its Neolithic monument complexes, Dunragit is discussed alongside some of the most significant concentrations of Neolithic monumental archaeology in Scotland. The sites it is often compared with include other monument complexes including Balfarg, Fife; Machrie Moor, Arran, and Kilmartin Glen, Argyll & Bute (Noble 2016, 139-193). Brophy (see 4.2) discusses the Neolithic context of the A75 bypass findings more fully.

Mesolithic sites, in contrast with the monumental structures of the Neolithic, are characterised by flint scatters and discrete structures. Numerous flint scatters are noted across the Luce Bay area but no structures had been identified prior to our findings at West Challoch. Around 22 km southeast of Dunragit two sites were investigated in the twentieth century on the east shoreline of Luce Bay, at Low Clone and Barsalloch (Bailie and McNicol 4.1). The Low Clone site consisted of two hollows and wind-break structures, and Barsalloch was a hollow. The findings from Low Clone include c. 1600 lithics. At Barsalloch the lithic count was c. 900 with a date for one hearth being 4050 ± 100 BC (GaK-16010) putting it on a cusp of the early Neolithic. Aside from the general spread of Mesolithic dates along the bypass route, the main Mesolithic hut circle at West Challoch had an earliest date of 7056 – 6825 cal BC (GU-29796) with an earlier date 7738 – 7591 cal BC (UBA- 42822) for a hearth feature adjacent to the structure and within the main flint scatter on site suggesting some earlier transient activity. The structure itself is currently the earliest for the Mesolithic period in Southwest Scotland; other groups of post and stakeholes were also noted on the periphery and are likely to be contemporary. Aside from the significance of the structure and ancillary structures, there was evidence for a series of gullies enclosing the main structure but also enclosing neighbouring areas, with this network of gullies also extending outwith the investigation area to the north and south. There are no other examples of water management of this nature on Mesolithic occupation sites in Scotland, although an example of a possible artificial platform is noted at Williamson's Moss in Cumbria, with three examples of augmented natural features on Mesolithic sites in Ireland, at Port of Larne, Antrim; Moynagh Lough and Clowanstown 1, both Co. Meath (see 2.5.3.8).

The funerary complex discovered at Boreland Cottage Upper and East Challoch, along with some similarly dated cremations at Drumflower, does not have any local parallels. The succession of burials from the early Bronze Age and Beaker burial pits at East Challoch, to the early and middle Bronze Age cremations at Boreland Cottage Upper, demonstrate periodic reuse of this part of the landscape for funerary practices. This area lay along an area of raised beach with views south out to the nearby coastline, and views towards Droughduil Mound to the west which we know was in use in the early Bronze Age, and likely related to the later palisaded enclosure of the Dunragit complex. A mid-Bronze Age (1397–1132 cal BC- SUERC 363379) unurned cremation was also discovered by Thomas (2015, 145) which was part of a complex of features aligned with the earlier cursus in the Dunragit complex, and this cremation is roughly contemporary with the middle-Bronze Age dates for the later cremations at Boreland Cottage Upper. Excavations and dating have shown that both the Dunragit complex and post alignments at Boreland Cottage Upper were part of the collective memory of later populations, with cremations set alongside earlier cursus and other Neolithic monuments. This is a trait observed elsewhere at other ceremonial complexes in Scotland like Pict's Knowe, Holywood and Holm Farm in Dumfries and Galloway (Thomas 2005), Forteviot in Perth and Kinross (Noble and Brophy 2017; Brophy and Noble 2020) and Balfarg/Balbirnie in Glenrothes, Fife (Barclay and Russell-White 1993), although the volume of cremations in the cemetery complex at Boreland Cottage Upper stands out as an exceptional example.

The unenclosed Iron Age settlement at Myrtle Cottage is the first of its kind to be investigated in Dumfries and Galloway, although undoubtedly there are other such settlements to be found both in this region and further afield, this settlement provides an insight into activity here in the latter centuries BC and early centuries AD. Previous investigations have concentrated on high status sites where cropmarks and upstanding earthworks highlight their location, where some similarities in roundhouse construction can be drawn (see 4.5). The investigations at Myrtle cottage revealed up to seven roundhouse structures of varying construction and state of survival, but only three of these were exposed in full, with the others extending north beyond the investigation area. The investigations therefore more accurately discovered the edge of a settlement. Evidence for other Iron Age structures was apparent to the

north at East Challoch and a circular cropmark indicating another potential roundhouse west of the investigation area which was observed during the investigations after a prolonged wet and then frosty period in 2013 (Illus 2.76). Other Iron Age roundhouse structures were discovered at the west end of the bypass route at Drumflower and two undated circular later prehistoric structures, one with east facing porch. were found by Thomas (2015, 91) during the excavations on the Dunragit complex 1999-2003, with another known Iron Age structure investigated just east of Myrtle Cottage at Whitecrook Quarry (Gordon 2009). This all suggests that unenclosed Iron age settlement is widespread across the areas of free-draining gravel present along much of the bypass route, with Myrtle Cottage being set on sand, it being more prevalent from Myrtle Cottage eastwards and beyond Whitecrook Quarry. The east end of the route also encountered deep sand deposits, but no archaeology of any date was encountered here.

The location and landscape around Dunragit, and its importance in influencing the prehistoric populations we found evidence of, cannot be overstated. Although there were major changes in the coastal landscape from the Mesolithic through to Iron Age (Tipping, Part 3), the land will have had, and still does have, ready access to the Irish Sea. The Isle of Man is clearly visible to the south, follow the peninsula beyond Portpatrick to the southwest and the north coast of Ireland is in view, look west and northwest and the isles off the west coast come in to view. This location therefore surely brought with it connections outwith the local area by land and sea across this area. Evidence of wide trade links are found in the small quantities of worked Arran pitchstone recovered from West Challoch, as well as East Challoch and Myrtle Cottage. Yorkshire flint was also recovered as part of the lithic assemblage, although most flint was likely local and from the coasts of Dumfries & Galloway and Ayrshire. A small quantity of chert, likely from the Scottish Borders, Lothians, and South Lanarkshire (Ballin, Appendix 12) was also present within the assemblage. From the jet jewellery at East Challoch it is surmised that the status indicated by this exotic assemblage may be indicative that they were involved in the channelling of, '…Irish metal from south-west Ireland via north-east Ireland, thence up the Great Glen to north-east Scotland, and eastwards to northern England' (Sheridan, Appendix 13). The grave containing the AOC Beaker at East Challoch also shows the connections with the Beaker Cultural phenomenon of the later third millennium BC, whether through migration or cultural exchange. The subject is explored in depth by Parker Pearson et.al (2019), and a further 28 Beakers have been noted across the Luce Bay area (Clark 1970) so this area was clearly well connected at this pivotal time. Later still the presence of a Romano-British brooch at Myrtle Cottage hints at trade links with communities much further south in England during the middle to late Iron Age.

Future archaeological research and investigations may discover new landscapes rich in prehistoric archaeology, some perhaps with the level of concentration and periodic coverage encountered around Dunragit. If in search of archaeological landscapes of this nature, the investigations have shown that these southwestern reaches of Dumfries & Galloway, with evidence of occupation from the Mesolithic through to the Iron Age, and of wide-reaching trade links and cultural exchange, would be a good place to start. Indeed, there is scope for further work to expand on what has been achieved here, many of the sites are clearly extending beyond the limits of investigation, at Drumflower, Droughduil Bridge (adjacent to the Dunragit complex), West Challoch, Myrtle Cottage, Boreland Cottage Upper, and Mains of Park.

Part 6. Conclusions

Warren Bailie

The bypass around Dunragit was a major infrastructural road project, it being around 7.4 km in length including side roads, but the findings from the ground works led it to also become a major archaeological project. Some 19 months of fieldwork from evaluation trenching, to exploratory expansions around areas of potential significance, and then further investigation during the construction phase, uncovered one of most significant, previously unknown, collection of archaeological sites ever discovered in Dumfries & Galloway. The discoveries made are also an indication of the serendipity of archaeology: it is likely that most sites and material culture would have remained beneath the ground, undiscovered, had a decision not been taken to upgrade the road here.

Prior to these works, it was no secret that Dunragit was home to a complex Neolithic palisaded enclosure and cursus complex and an adjacent Bronze Age, 'Silbury Hill style' Droughduil Mound, both explored by Julian Thomas 1999-2003 (2015). Not acknowledged at that time was the likely contemporary timber complex and post alignments at Drumflower, around 0.5 km WNW of Dunragit, hinting at an even more widespread ceremonial prehistoric landscape, indicative of a general lack of engagement with cropmarks in Scotland's archaeology (Brophy 2006, 14–17). This assumes the similar layout and scale of Drumflower indicates contemporaneity with the palisades of Dunragit. The construction of these monuments would have required a concerted effort from a community, and represents a considerable investment of time, labour, and resources. Dunragit and the landscape around it had great value to those who resided here and given the scale of the monuments, and the inherent conspicuous nature of the structures, one can imagine a much wider community congregated there for the ceremonial purpose they were built for. But no-one could have predicted the wealth of

significant archaeological sites to be found along much of the bypass route.

We discovered a remarkable number of previously unknown archaeological sites within what was a narrow 20 m road corridor. These investigations suggest that this part of the Galloway coastline was at the heart of successive prehistoric occupations over some eight millennia. We discovered evidence of some of Southwest Scotland's first settlers dating to the Mesolithic period, while a distinctive piece of worked flint at West Challoch suggests that people may have been present at this location even earlier than previously thought, in the Upper Palaeolithic around 14,000 years ago at the end of the last Ice Age. Also discovered were post alignments of Neolithic date and early Bronze Age burial pits with grave goods such as jet jewellery, pottery vessels, and flint tools. This was followed by a complex cremation cemetery with pottery and aceramic cremations within and around two small barrows, and a series of mainly Bronze Age burnt mounds dotted along the lower lying areas of the route. The latest prehistoric site uncovered was an unenclosed Iron Age settlement, at the time of writing unique in Galloway, at least in terms of sites investigated.

The results of the investigations along the Dunragit Bypass have not resolved the full complexity and extent of archaeology present here, but have certainly shed some light on the rich prehistory of this landscape. The route of the bypass provided a linear snapshot of what archaeology survives, but in each case, it has also demonstrated that the true extent of each of the archaeological sites remains unknown. There is therefore yet more to discover of the Mesolithic site, the Neolithic posthole alignments, the Bronze Age cemetery complex and the Iron Age settlement, each site extending beyond the limits of the investigations carried out here. This was by any measure a major archaeological project, but it must be acknowledged here that we have only scratched the surface in terms of the full extent of the prehistoric activity that must be present.

The works carried out at Dunragit highlight the importance of archaeological investigations in the lead up to and during ground breaking works for developments such as this. Although desk-based assessments and records of previous investigations provide a back-drop for expected findings on a project, there can be no substitute for visual inspection by experienced archaeologists in collaboration with relevant specialists to recognise and then address significant archaeology to the appropriate standard. Not least the subsoil presented a phenomenon whereby archaeological deposits not apparent on initial inspection, revealed themselves over subsequent days through weathering out. Although this had been observed by the excavators elsewhere, the extent to which this occurred at Dunragit was notable. It does bring into focus the open and

shut nature of trial trench evaluations across the country, where the subsoil barely sees the light of day before being backilled; this does raise the question: should we be incorporating 'weathering out' time into all archaeological investigations? As the work progressed the excavators became more and more familiar with the subsoil and the elusive nature of the archaeology, particularly in the free-draining gravel areas present across much of the route. The team at Dunragit had to adapt and innovate in investigating and recovering, in some cases sensitive, and rare items under the pressures of the construction programme, while recording the archaeology to the level it deserved.

The post-excavation programme involved specialists from across Scotland, Northern Ireland, England and Belgium in analysing the various elements of the assemblage. The interpretations within this monograph could not have been drawn without a collaborative approach to archaeological research involving the commercial, academic, and scientific parts of the heritage sector. It is envisaged that further academic research could stem from the Dunragit works leading to further opportunities for an emerging generation of archaeological specialists and academics.

GUARD Archaeology have already presented the preliminary results of the excavations at a series of formal presentations during and following the excavations to Dumfriesshire & Galloway Natural History and Antiquarian Society; Ayrshire Archaeological and Natural History Society; European Association of Archaeologists Conference Glasgow 2015; Glasgow Archaeology Society at the University of Glasgow; Renfrewshire Local History Forum; Wigtownshire Antiquarian & Natural History Society; Archaeological Research in Progress conference; the Society of Antiquaries of Scotland, and the Alan Saville Memorial Conference June 2017. Further presentations are planned by GUARD Archaeology to disseminate the full results of the post-excavation work through lectures at key conferences across Scotland. As well as these formal presentations we engaged with local schools (Glenluce and Castle Kennedy Primary Schools) and provided hands-on opportunities for pupils to handle the more robust artefacts and learn through art and photography about the significance of the findings at Dunragit. In light of the COVID-19 Pandemic, outreach had to evolve to create innovative ways to deliver meaningful engagement. GUARD Archaeology have created and delivered lesson plans for activities to help pupils understand the various elements of the archaeology discovered in their landscape. We are also preparing digital presentations so that the results of these works can still be disseminated, despite the virus.

Throughout the excavation process, and the subsequent post-excavation programme of works, we have shown that although this region is rich in upstanding forts and duns, and other historically significant sites that have stood the test of time, what lies beneath can deliver more in portraying how successive populations of all stature have utilised this landscape through the ages. The works at Dunragit have revealed significant new findings, data and information to benefit our understanding of the Mesolithic through to Iron Age periods in this region and as such, it is deserved of the title, The Prehistoric Heart of Galloway.

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The opportunity for archaeological investigations in southwest Scotland was made available in 2012/13 by Transport Scotland prior to the construction of the A75 Bypass around Dunragit in Dumfries and Galloway. The results were spectacular with major archaeological findings that extensively expanded the earlier work of archaeologist Julian Thomas, who partly investigated a Neolithic timber ceremonial complex that had been identified through aerial photography. This new exploration revealed that the landscapes around the bypass contained a long, rich and varied record of the prehistoric peoples that visited, lived, worked and were buried in the area.

The excavations produced the earliest Mesolithic hut circle in south-west Scotland, a Neolithic posthole alignment that possibly linked with the Dunragit timber complex, three graves with impressive Beaker period grave goods including outstanding jet jewellery, a Bronze Age funerary complex, an unexpected unenclosed Iron Age settlement, and the survival of wooden timbers in burnt mounds for water management and containment. The number of archaeological sites along the new road highlights the importance of the area as a prehistoric routeway for the movement of people and goods to and from Ireland, Arran and Cumbria.

Also available with this publication is a more popular version for the general and younger reader.

Warren Bailie is the current Operations Manager for GUARD Archaeology where he has worked for almost 10 years, having worked for 7 years in commercial archaeology in Ireland prior to this. During his time in the commercial sector in Ireland and Scotland he directed excavations on some major archaeological sites. He has also project managed works for two of Scotland's World Heritage sites, St. Kilda and the Antonine Wall, and has managed the archaeological works on several other major sites. The works at Dunragit in 2012/13 were Warren's first major archaeological excavation in Scotland.