



**ARO66: The Investigation of Two Bronze Age
Hut Circles at Aultcraggie, Brora, Sutherland**

By Alan Hunter Blair

**with contributions by Diane Alldritt, Torben Ballin and
Beverley Ballin Smith**

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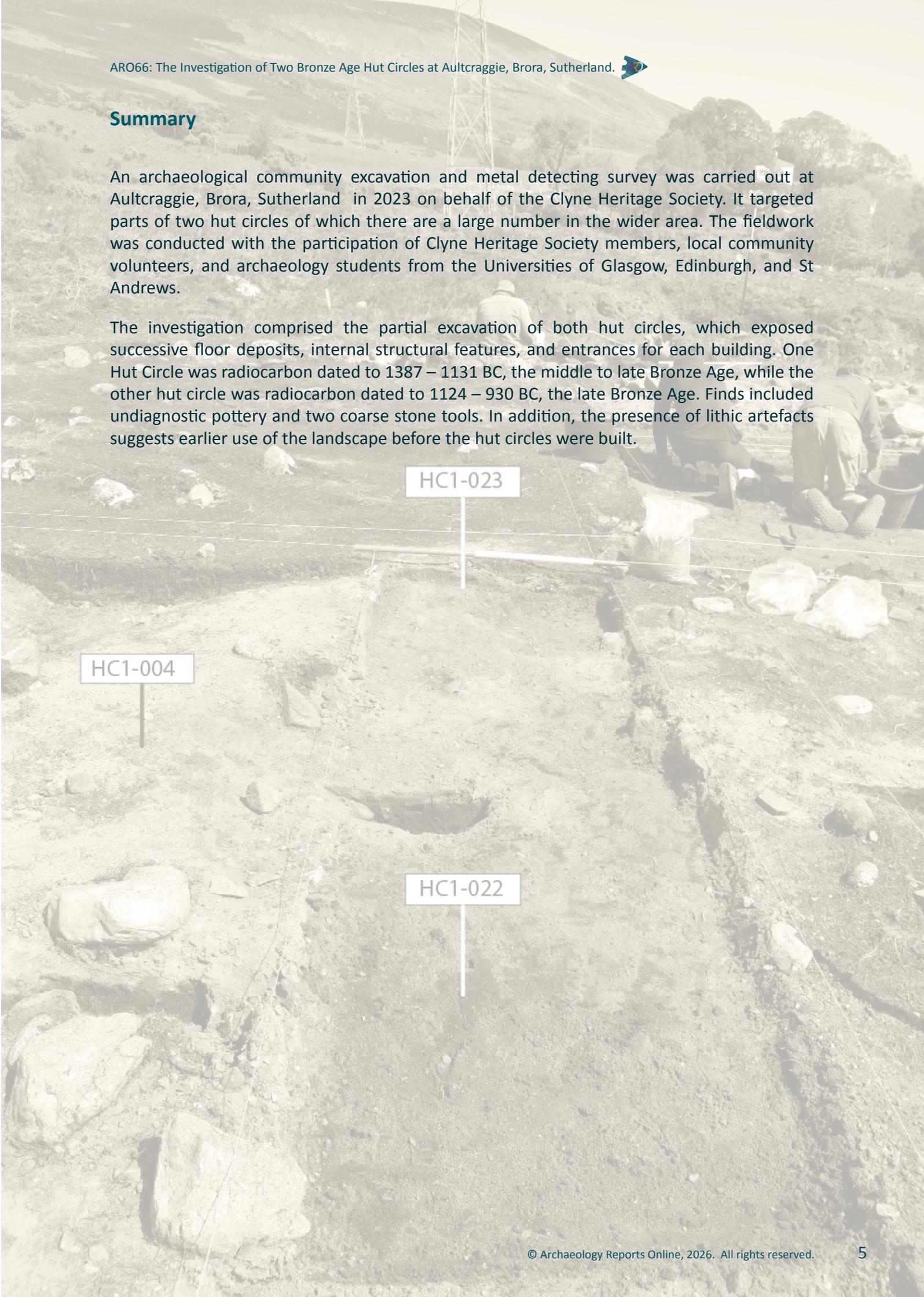
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Summary

An archaeological community excavation and metal detecting survey was carried out at Aultcraggie, Brora, Sutherland in 2023 on behalf of the Clyne Heritage Society. It targeted parts of two hut circles of which there are a large number in the wider area. The fieldwork was conducted with the participation of Clyne Heritage Society members, local community volunteers, and archaeology students from the Universities of Glasgow, Edinburgh, and St Andrews.

The investigation comprised the partial excavation of both hut circles, which exposed successive floor deposits, internal structural features, and entrances for each building. One Hut Circle was radiocarbon dated to 1387 – 1131 BC, the middle to late Bronze Age, while the other hut circle was radiocarbon dated to 1124 – 930 BC, the late Bronze Age. Finds included undiagnostic pottery and two coarse stone tools. In addition, the presence of lithic artefacts suggests earlier use of the landscape before the hut circles were built.





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Figure 1: Site Location.

Introduction and Site Location

This report sets out the results of an archaeological excavation undertaken by GUARD Archaeology Ltd, on behalf of Clyne Heritage Society, at Aultcraggie, Brora, Sutherland. The work was carried out from the end of May to the beginning of June 2023 to investigate the remains of two hut circles, set within a wider dispersed group of similar hut circles, at Aultcraggie, Brora.

The area of investigation at Aultcraggie (NGR: NC 87764 05393), lies approximately 3 km north-west from the centre of the village of Brora (Figure 1), at approximately 48 m OD and is situated in rough heather moorland on a gentle slope leading down to the south-east. The site is accessed from the north-east where a farm track leads over a fording point across the Allt Craggie Burn to the west of Aultcraggie Farm.

The underlying geology comprises the Clynekirkton Sandstone Formation - Sandstone and argillaceous rocks, interbedded formed during the Jurassic period. The superficial deposits consist of Devensian – Diamicton till (British Geological Survey, Geology of Britain Viewer 2025).

Archaeological and Historical Background

The site at Aultcraggie contains remnants of well-preserved field systems and a group of four structures commonly referred to as ‘hut circles’ (Canmore ID 6457; MHG 10944). These features were first recorded during a site visit in 1961, with Canmore describing the location as “a settlement of four huts ... situated within a well-preserved associated field system.” All four structures, with entrances noted in the east or south-east arcs, are largely obscured by peat accumulation. The hut circles range in diameter from approximately 9 m to 13 m. Despite dense vegetation, the use of LiDAR imagery (Figure 2) provided by the National Library of Scotland allows for clear identification and delineation of these features.

In advance of the excavation, a site visit was conducted in June 2022 by Clyne Heritage Society and GUARD Archaeology to assess the suitability of the hut circles for a potential community-led excavation (Baillie 2023). The inspection confirmed that the hut circles were substantial in form, each defined by a surrounding bank of rubble and seemingly constructed on natural terraces along a south-east facing, undulating

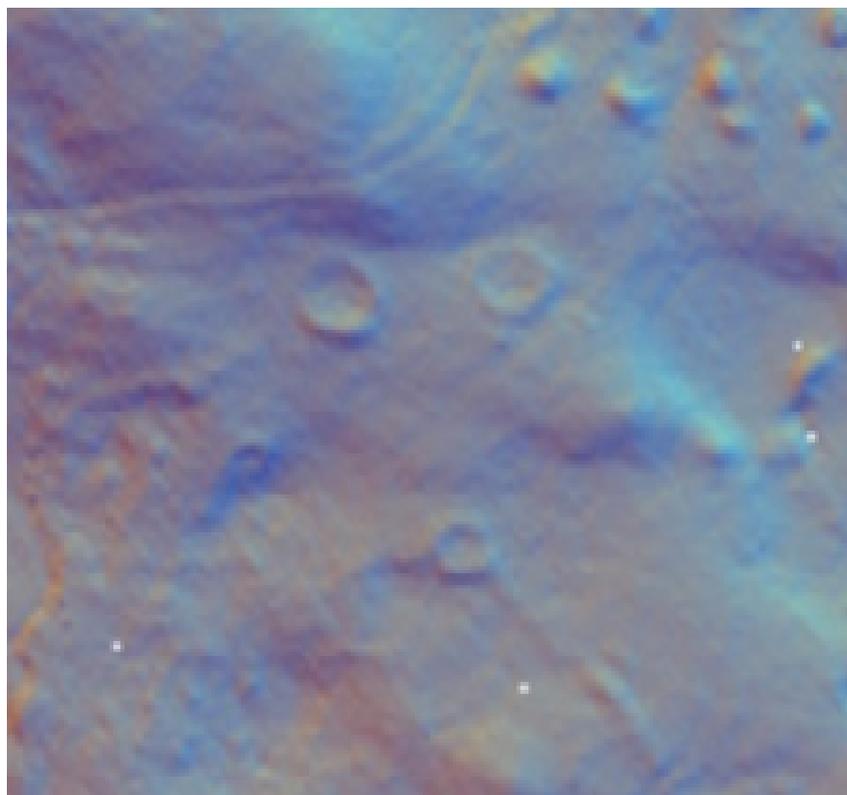


Figure 2: LiDAR Imagery of group of three roundhouses and part of the field system at Aultcraggie.

slope. The site has elements of the associated field system still visible, including segments of field boundaries and potential clearance cairns. Three of the hut circles are located within 10-15 m of one another, while the fourth lies approximately 35 m to the north-west, beyond a meandering farm track running broadly east/west. The present investigation focused on two of the three closely grouped hut circles, specifically those situated to the north of an existing overhead powerline.

These hut circles were considered to be of prehistoric origin and were presumed to date to the Iron Age, a period during which stone-built domestic structures of this type are most commonly found. A comparable site is recorded 236 m to the north-east listed as being located at Aultririe but in reality closer to Aultcraggie than is suggested, where another hut circle and associated field system are documented (Canmore ID 6479; MHG 10809). Further evidence of prehistoric occupation is found to the west, in the upland areas around Killin Rock and along both sides of the Brora River, where numerous hut circles, enclosures, brochs and field systems have been identified. These remains collectively attest to a significant and widespread pattern of prehistoric settlement across the uplands, of which the Aultcraggie roundhouses and their associated field system form a representative, though relatively modest, component.

Immediately to the east of the site is the Aultcraggie farmstead (Canmore ID 91158; MHG 19087). As shown on the 1st Edition Ordnance Survey 6-inch map (Sutherland 1879, sheet xcviii), the farmstead at that time consisted of two roofed and two unroofed buildings, three enclosures, and a partially enclosed field. An associated structure and a well are also depicted to the west of the investigation area. Additionally, another farmstead was recorded to the north of the site, situated upslope on the edge of the Alltcraggie Burn (Canmore ID 91157; MHG 19114). The earliest map that acknowledged the hut circles at Aultcraggie is the Ordnance Survey National Grid 1:10,560 scale map (sheet NC80NE) published in 1964 where they are marked as enclosures.

The Results of the Metal Detecting Survey and the Excavation

A metal detecting survey was conducted across the investigation areas and the wider area around the hut circles. Two musket balls were found, one with impact marks, and a smaller calibre pistol shot was also recovered.

The excavation was designed to target parts of two stone-built hut circles with the intention of investigating specific features noted during the initial site visit. Where it was deemed appropriate, trenches were expanded to provide an opportunity to better understand the various internal elements of the structures.

Hut Circle 1 (HC1)

The stone-built structure was stripped of its covering of heather, grass, bracken and a shallow layer of dark brown peat (HC1-001) by machine (Figure 3). This layer was 0.10 m-0.22 m thick and contained frequent bracken roots and small stones but it, and layers below it, had been poached by livestock and deer.

Beneath the peat layer, the remains of a collapsed, roughly circular wall (HC1-003) were revealed, featuring a 1.6 m wide entrance on its eastern arc (Figure 4). The structure measured 15.2 m north/south by 14.5 m east/west externally (11.75 m by 11 m internally), enclosing an internal area of approximately 94 m². Along the northern arc, the wall was a spread of rubble at least 0.84 m in width with a surviving height of 0.42 m. On the southern arc it reached c. 3.1 m in width and 0.71 m in height. It was constructed from sub-rounded and sub-angular random rubble, with indications in some areas of a rubble core, and appeared to be bonded with sand and gravel. No clear wall faces were observed, possibly due to stone robbing, livestock disturbance, and natural collapse through weathering. However, the presence of a large recumbent orthostat on its western arc suggested an original wall height of c.1.1 m (Figure 5).



Figure 3: Pre excavation view of HC1, from a drone.

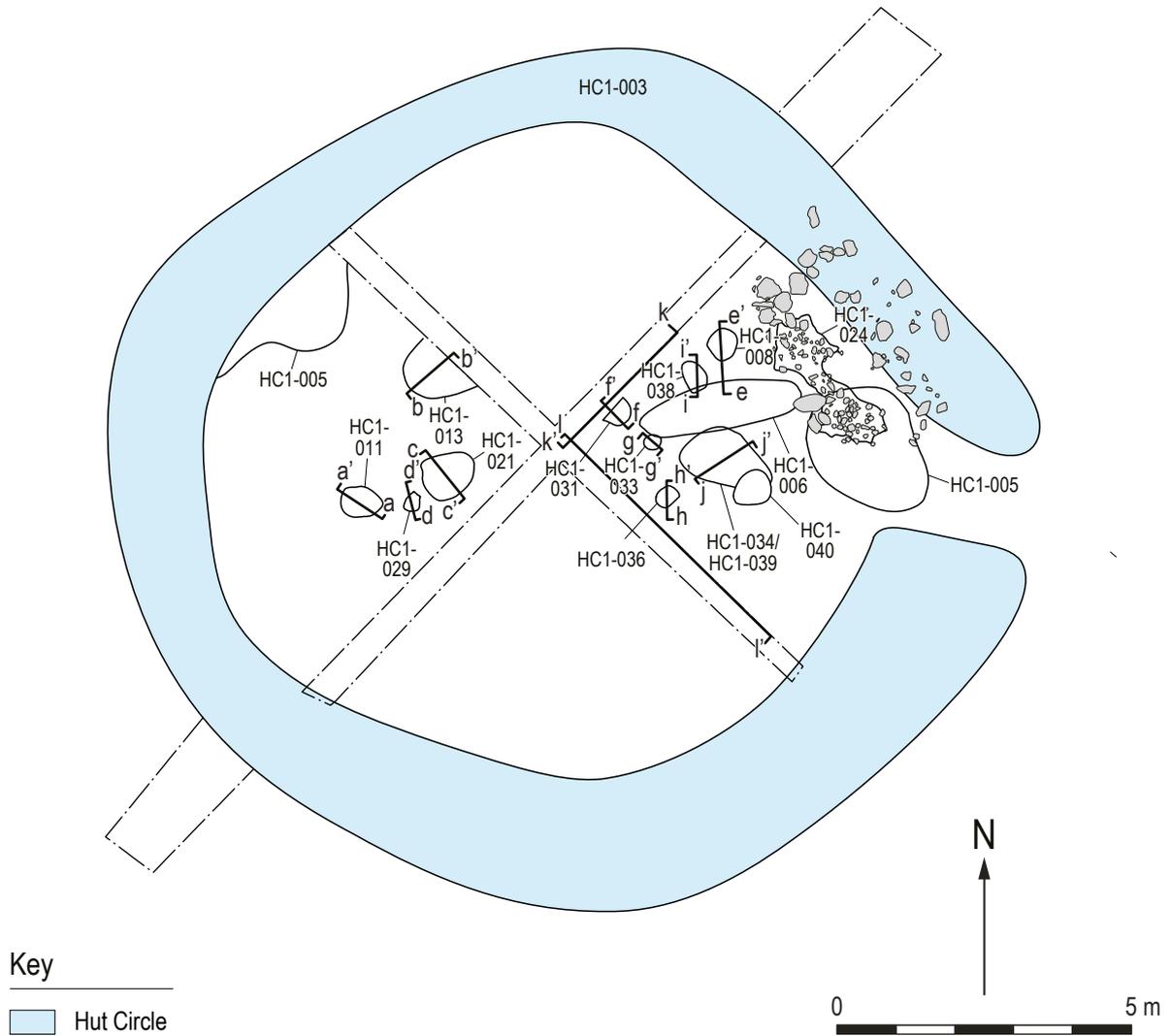


Figure 4: Plan of HC1.



Figure 5: Wall (HC1-003) at the west end of the building with a recumbent orthostat.

Two quadrants, established on the east and west arcs of the structure's interior, were cleaned by hand following the removal of the overlying peat horizon. At the base of this layer, patchy remnants likely representing the final phase of occupation of the building were identified as dark grey-black silty sandy clay (HC1-005). This deposit, 0.06 m and 0.08 m in thickness, contained small stones, frequent rootlets and roots, and occasional charcoal flecks.

Beneath this occupation layer, a floor surface of re-deposited pale grey-brown natural sand and gravel (HC1-004) was exposed in both quadrants. It was 0.15 m in thickness and appeared to have been intentionally laid. In the west quadrant, three pits were identified, all dug into the surface of this floor.

The first pit (HC1-011) was sub-circular in plan with slightly concave sides to a broad, rounded base. It measured 0.48 m in length, 0.45 m in width, and 0.11 m in depth. Its fill (HC1-010) consisted of mid-grey-brown sandy silt with occasional small stones throughout with larger stones near its surface (Figure 6).

The second pit (HC1-013), was also sub-circular in plan (though only partially excavated), and extended beneath the baulk into the unexcavated

north-east quadrant. It had moderately sloping sides and a rounded base. As excavated, it measured 1.22 m in length, 0.81 m in width, and 0.21 m in depth. It contained two fills: an upper layer (HC1-012) 0.15 m in thickness of dark brown sandy silt with occasional small stones; and a lower layer (HC1-019), 60 mm in thickness of dark grey-black sandy silt, with occasional stones, gravel and charcoal flecks (Figure 6).

The third pit (HC1-021), was sub-oval in plan, aligned north-east/south-west and had a relatively flat base. It measured 0.46 m by 0.39 m by 0.10 m. Its fill (HC1-20) comprised dark grey-brown sandy silt with occasional small stones and charcoal flecks (Figure 6).

In the east quadrant two pits were dug through the upper floor surface (HC1-004) (Figure 7). The first (HC1-006) was an elongated-oval shape in plan, aligned ENE/WSW with an uneven base. It measured 2.98 m in length by 1.12 m in width and was 0.14 m deep. It was filled with dark grey/brown sandy silt (HC1-007).

The second pit (HC1-008) was sub-circular in plan to a broad rounded base. It measured 0.48 m by 0.45 m by 0.11 m. Its fill (HC1-009) was similar to pit (HC1-007) but with occasional small stones.

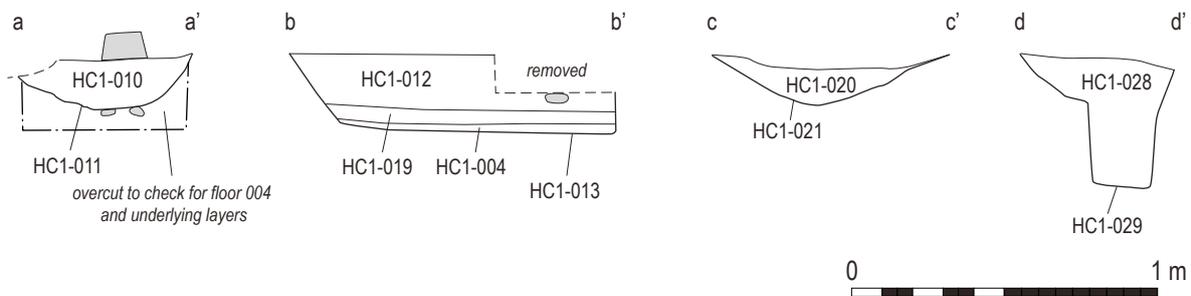


Figure 6: Sections through pits (HC1-011), (HC1-013), (HC1-021) and posthole (HC1-029) in the west quadrant of HC1.

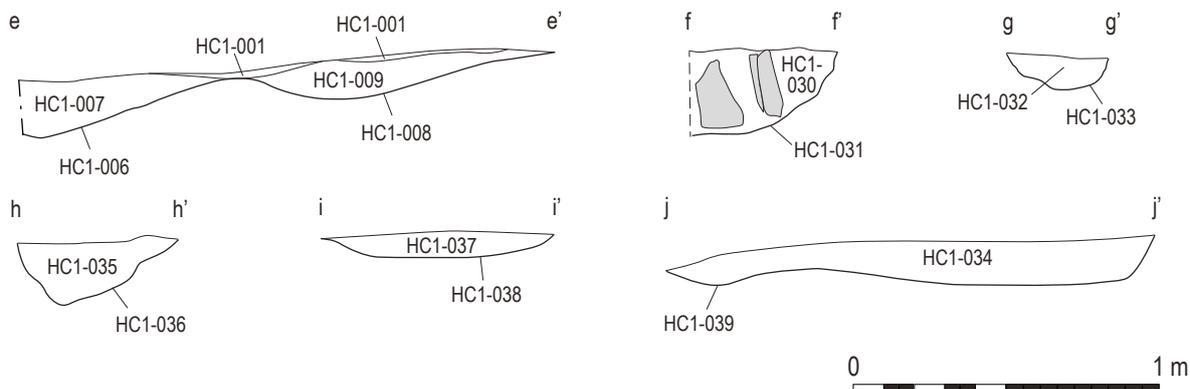


Figure 7: Sections across pits (HC1-006), (HC1-008), (HC1-031), (HC1-033), (HC1-036), (HC1-038) and hearth (HC1-039) in the east quadrant of HC1.

An additional pit (HC1-036) was identified in the east quadrant but it was not fully excavated until further reduction of floor levels had taken place.

Grey/brown sand and gravel with tightly butted cobbles and the occasional larger stones formed a cobbled surface (HC1-024) at the entrance to HC1 that measured 3 m by 1.4 m. It continued over the threshold of the structure and into its interior in the east quadrant where it was bedded into the surface of floor layer (HC1-004). Here it covered an area 2.4 m by 1.10 m (Figure 8).

After excavating the pits dug into the floor surface (HC1-004) in both east and west quadrants a trench 1 m wide was partially excavated along the southern edge of the west quadrant to explore what lay beneath it. A dark occupation layer (HC1-022), 1-2 mm thick, was exposed comprising brown/black silty sand with occasional gravel and charcoal flecks (Figure 9). Below this a further floor deposit of a compact layer of re-deposited orange/brown sand and gravel (HC1-023) with occasional charcoal flecks, 1-20 mm thick.

During the course of cleaning this trench possible daub remnants (HC1-SF 057) were recovered that appeared to be overlying or possibly contained within the fill (HC1-028) of dark brown sandy silt with charcoal and a single vertical packing stone of a sub-circular posthole (HC1-029). This feature had near vertical sides to its uneven base, and measured 0.45 m by 0.33 m by 0.32 m (Figure 6).

The same sequence of occupation layers and floor deposits was encountered in the east quadrant as in the west (Figure 9). Below the grey floor layer (HC1-004), a shallow occupation layer (HC1-022) was removed down onto the top of the redeposited subsoil (HC1-023). Initially, this floor level was considered to be the top of the natural gravel until a small sondage excavated through it indicated a further occupation layer (HC1-025) that was sealed below. (HC1-025) comprised grey/black sandy silt with discrete charcoal and small stones intrusions and measured 5-15 mm in thickness (Figure 10).



Figure 8: Cobble surface (HC1-024) at the entrance to HC1, from the east.



Figure 9: Occupation layer (HC1-022) overlying an earlier floor surface of re-deposited orange-brown sand and gravel (HC1-023), from the south-west.

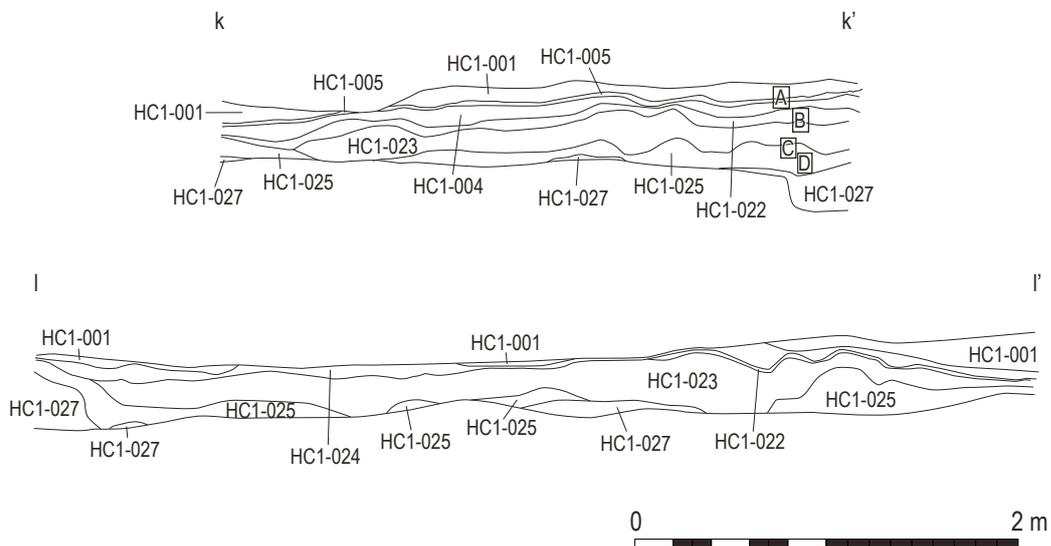


Figure 10: SE and NE sections of occupation and floor layers in the east quadrant of HC1.

After removal of the occupation layer (HC1-025) a further four pits were identified along with a hearth (HC1-39) all dug into what was believed to be a levelling layer of redeposited sand and gravel (HC1-027) forming part of a platform around the south and east edges of the building (Figure 10). To the south of the hearth and partially subsumed by it, was a possible hearth stone (HC1-040). Pit (HC1-031) was sub-circular in plan (Figure 7) with steep sides to a fairly flat base. It was 0.53 m in diameter by 0.18 m in depth and was filled with brown/black sandy silt with sub-angular packing stones and occasional charcoal flecks (HC1-030).

Adjacent to this a smaller sub-circular shaped pit (HC1-033), 0.3 m in diameter with a filling (HC1-032) of brown/black sandy silt with occasional stones (Figure 7).

Pit (HC1-036) was identified earlier during the excavation of the east quadrant but was further defined after reduction of the upper floor and trample layers. It was sub-circular in plan with a steeply sloping south side and a more gently sloping north side to a narrow base (Figure 7). It measured 0.4 m by 0.36 m by 0.17 m and was filled with grey/brown sandy silt with moderate stones and charcoal flecks (HC1-035).

Pit (HC1-038) may have been a remnant of the occupation layer (HC1-025) lying in a shallow depression measuring 0.58 m by 0.49 m by 0.07 m (Figures 4 and 7). Its fill resembled the material forming the occupation layer and comprised brown/black sandy silt with moderate amounts of small stones and occasional charcoal flecks. Hearth (HC1-039) was sub-oval in plan, aligned north-west/south-east and measured 1.9 long by 1.5 m (Figure 7). It was only 0.1 m deep and had a broad slightly uneven base. It was filled with (HC1-034) - brown/black sandy silt with some orange mottling, some peat ash, gravel and charcoal including a large charred chunk of timber. At the south-east end of the hearth and partly enclosed by it was a possible stone setting (HC1-040) (Figure 11). This was made of granulite

and sandstone rubble laid in a haphazardly. The stones ranged in size from 0.12-0.3 m by 0.12-0.27 m by 0.07-0.19 m and covered an area 0.8 m by 0.7 m.



Figure 11: Hearth (HC1-039) and possible hearth furnishing (HC1-040), from the SE.

There was evidence that the east and probably south sides of the building had been built on a partially landscaped deposit over an area of sloping ground. A layer of redeposited orange/brown sand and gravel 0.18 m thick was visible below the wall in the trench excavated outside the building at its east end (Figure 12).



Figure 12: Post-excitation view of HC1, from a drone.

Hut circle 2 (HC2)

This stone-built structure was revealed by mechanically stripping back its covering of heather, grass and bracken to a shallow peat layer beneath (Figure 13). Like HC1 the surface had been disturbed by livestock and deer, and vegetation and peat measured 0.04 m to 0.12 m in thickness on the north side of HC2 and 0.23 m-0.33 m on its south side.

Below the vegetation the remains of a collapsed roughly circular wall (HC2-003) were found (Figure 14). It had a stone-floored entrance 1.4 m wide in the south-eastern arc that narrowed to 0.92 m as it entered the building. Externally the wall measured 15.05 m north/south by 17.6 m east/west (13 m by 10.7 m internally), and enclosed an area 95 m². The double-faced wall was a minimum of 0.90 m in width at the northern arc of the structure. It had gravelly rubble fill and survived to a height of 0.28 m - a single course of stone. The wall at this point had been built at the top of a natural sloping bank. The wall on the southern arc of the structure measured up to 4.12 m in width and survived

to a height of 0.71 m. It comprised a wide bank built from sub-rounded and sub-angular stones with evidence in places of a rubble core bound by redeposited grey/brown sand and gravel. Large boulders measuring c.0.5 m by 0.4 m by 0.3 m were visible along parts of the outer edge of the existing rubble bank forming this part of the wall and appeared to revet it (Figure 15). Only scarce evidence survived of wall facing stones, other than those partially visible on the northern and southern arcs of the structure, due to stone robbing, displacement by livestock, and natural collapse from weathering. A trench excavated across part of the south wall revealed a short section of what appeared to be external facing stones.

The patchy remnants of an occupation layer (HC2-005) survived within the structure that consisted of grey/black silty sandy clay with rare small stones, occasional charcoal flecks and roots. This layer was 2 mm thick and overlay a 4 mm thick layer of pale grey/brown sand (HC2-004) with gravel and charcoal flecks. This appeared to have been redeposited material similar to that found in HC1, forming the uppermost floor layer.

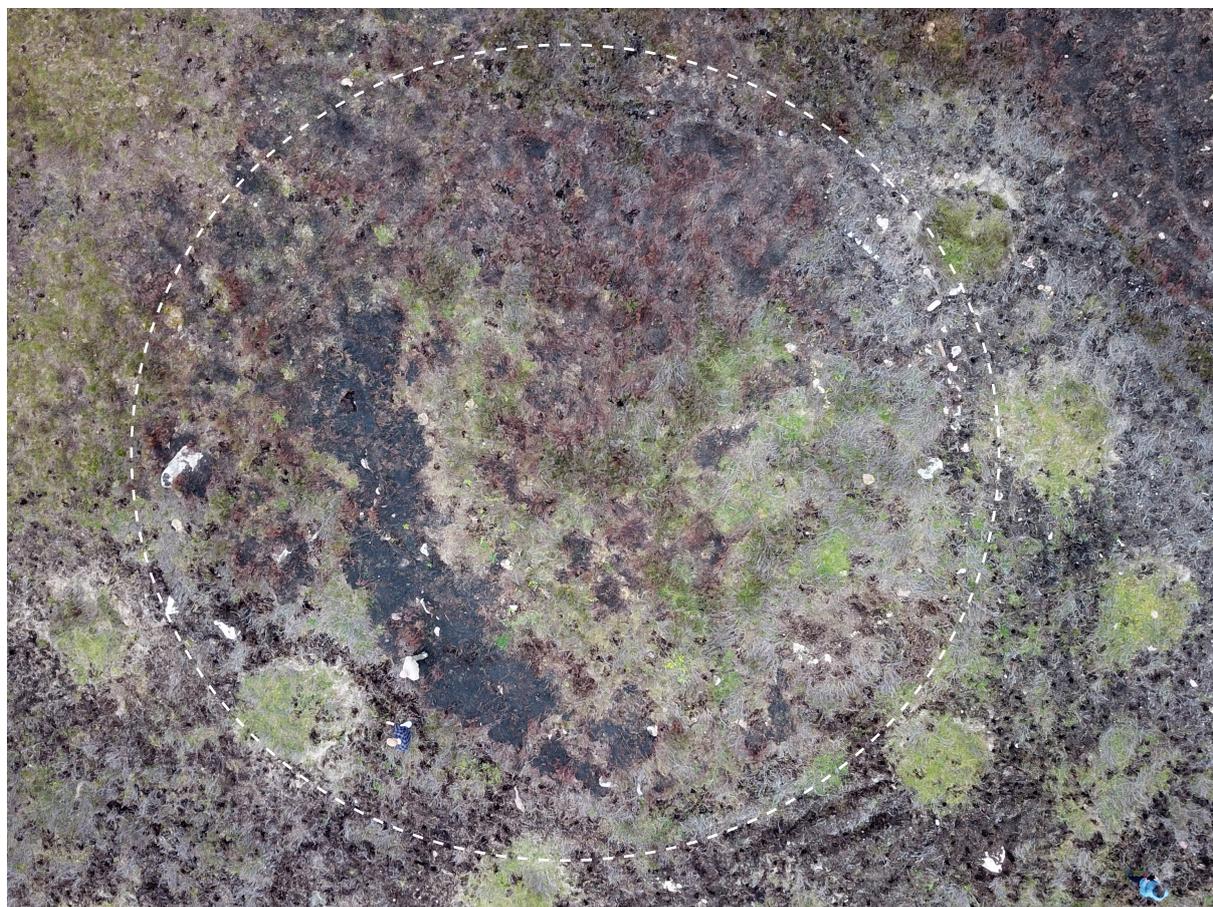


Figure 13: Pre-excavation view of HC2, from a drone.

A single small circular and flat-based pit (HC2-012) was dug into the surface of the floor layer (HC2-004). It was 0.28 m in diameter and 0.06 m deep and was filled by dark greasy brown silty sand with lenses of grey gritty sand and two stones (HC2-011) (Figure 14).

A stone setting (HC2-006) was located towards the centre/south of the interior of HC2 made from six larger predominantly flat stones with smaller stones between and with a single slightly larger

centrally placed stone (Figure 16). The setting incorporated a stone (HC2-SF 021) at its south side that appeared to have a series of incisions; it was left in situ. The stone setting measured 0.3 m by 0.6 m, stood c. 0.1 m in height and covered an area 1 m². It sat on pale grey/brown sand (HC2-009) that was 5 mm thick and appeared identical to the pale grey/brown floor layer (HC2-004). Below (HC2-009) was dark brown silty sand (HC2-010) 50 mm thick with gravel and occasional charcoal flecks.

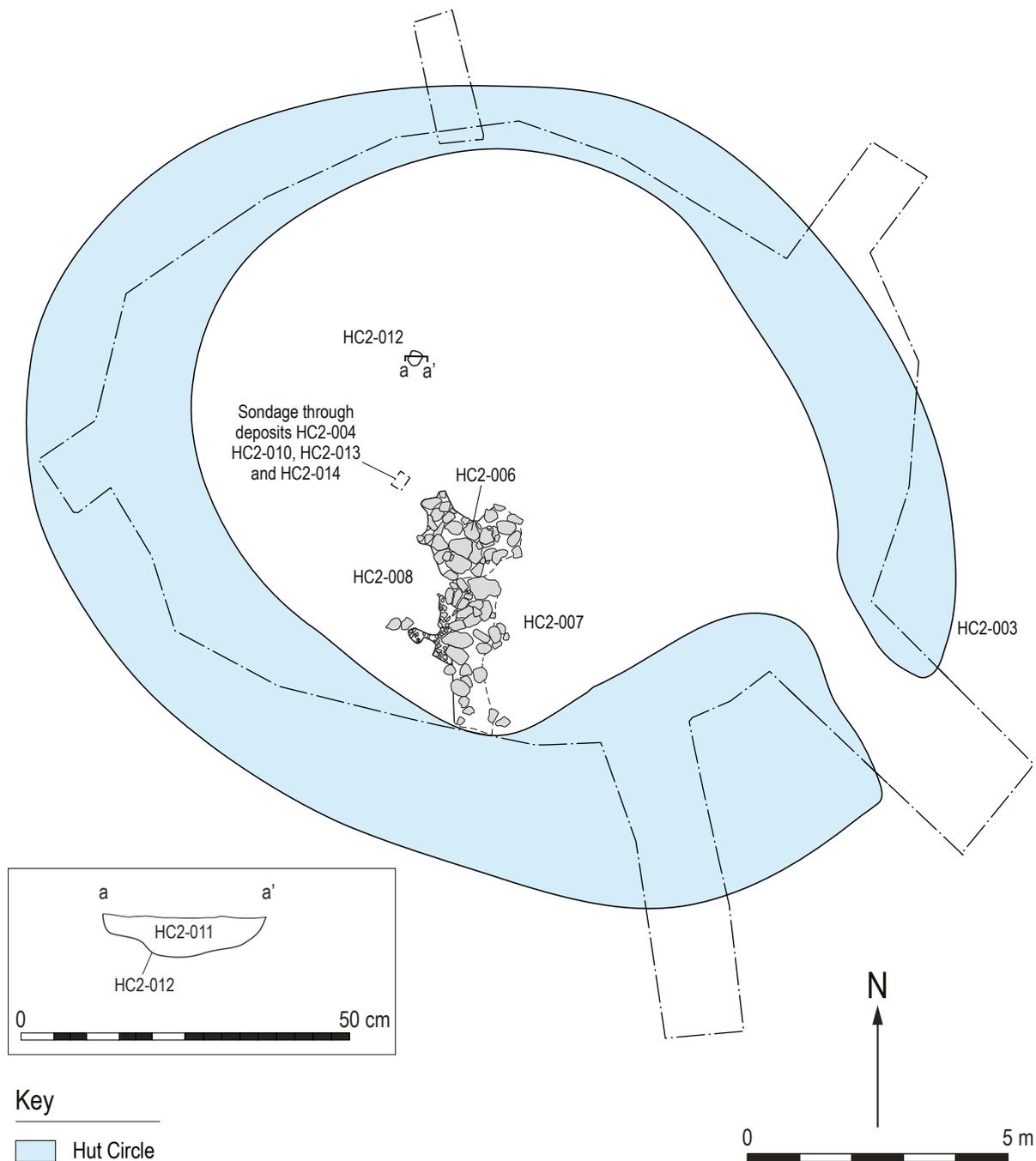


Figure 14: Plan of HC-2, with section through pit (HC2-012).



Figure 15: View of the spread rubble wall (HC2-003) at the south side of the building west of the entrance, from the SW.

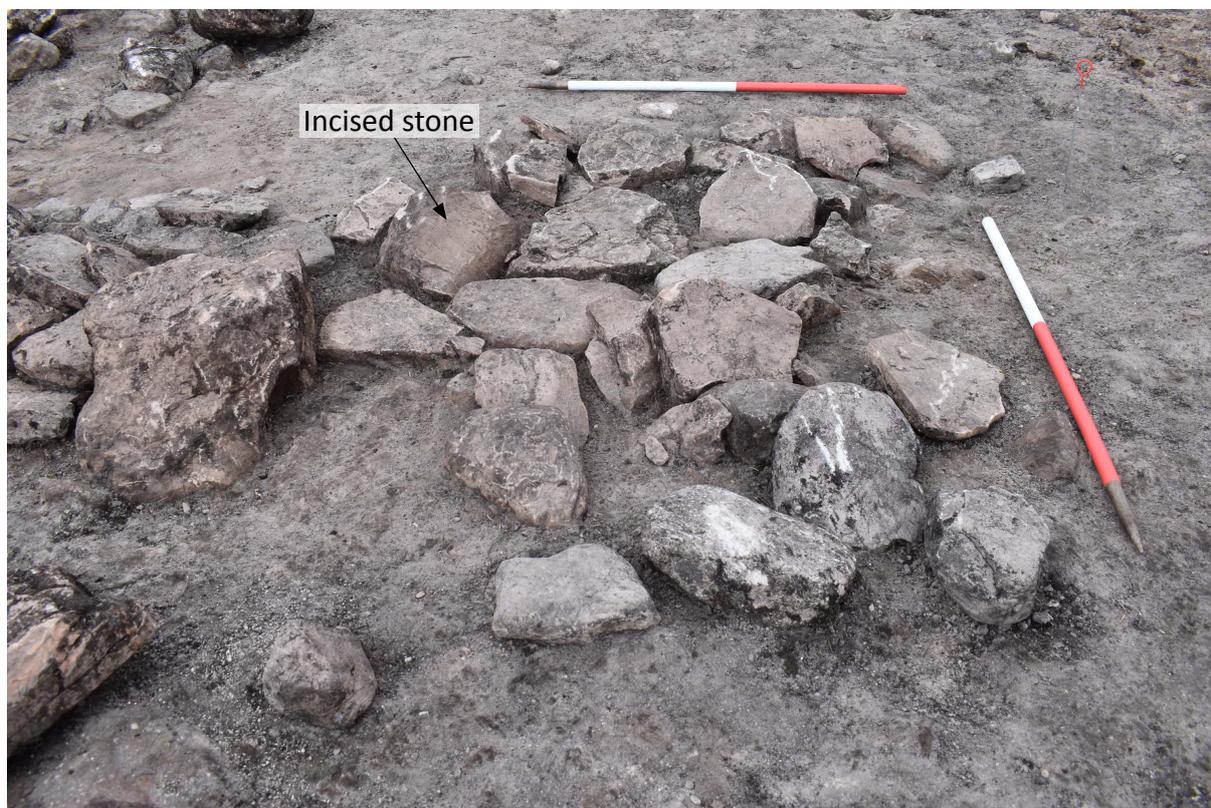


Figure 16: Stone setting (HC2-006) below top ranging rod, from the east.

A putative stone wall (HC2-007) abutted the south side of the stone setting (HC2-006) (Figure 17). This measured 3 m by 0.6 m-1.2 m by 0.2 m-0.3 m, aligned north/south. It had an intermittent basal course of flat stones with sub-rounded stones laid above, with tumbled stones visible along the east side of the wall. It was abutted on the west side by the remnants of a cobbled surface (HC2-008) that consisted of stones butted tightly together into the surface of deposit (HC2-004). It covered an area 1.4 m by 0.9 m by 4 mm-8 mm. A further detached area of cobbling was recorded to the immediate west that abutted the west side of the wall (HC2-007),

that measured 0.34 m by 0.28 m and abutted a flat stone.

A small sondage was excavated adjacent to the stone setting (HC2-006) through deposits (HC2-004), (HC2-010), (HC2-013) and (HC2-014). (HC2-013) lay beneath deposit (HC2-010) described above and comprised an orange sandy soil with a green tinge, and was 8 mm thick (Figure 14; Figure 18a and b). A near vertical stone was positioned along the south edge of the sondage, which overlay orange-brown sand (HC2-014) with a flat stone at the north side of the base of the sondage.



Figure 17: Putative wall (HC2-007) and cobbles (HC2-008), from the west.

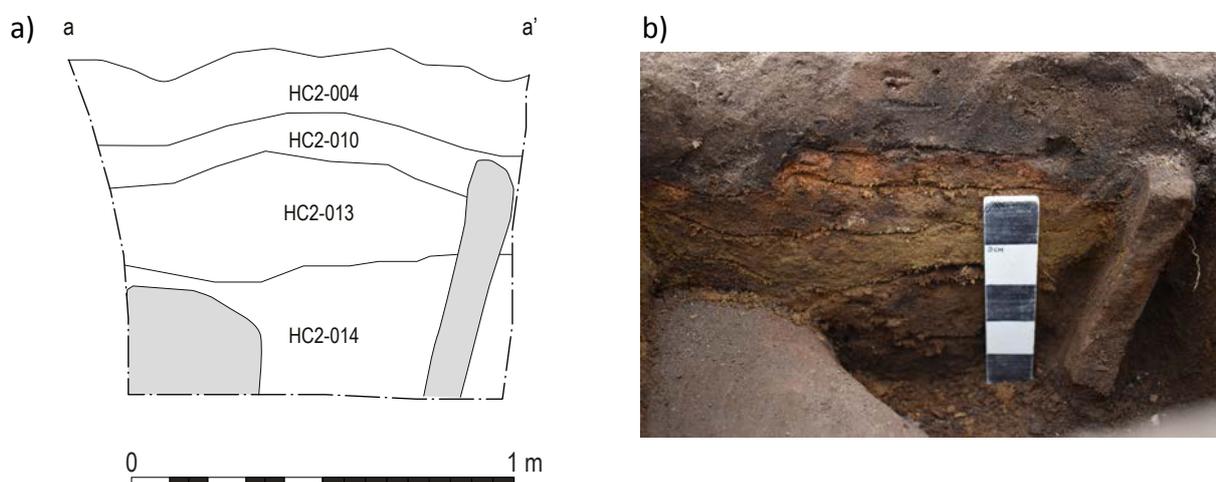


Figure 18: a) Section through deposits recorded in sondage adjacent to the stone setting (HC2-006). b) Deposits (HC2-004, HC2-010, HC2-013 and HC2-14) recorded in sondage adjacent to stone setting (HC2-006), from the west.

The extent of the excavation of HC2 is shown on (Figure 19)



Figure 19: The extent of excavation of HC2 viewed from a drone.

Specialist’s Analyses

Radiocarbon Dates

Two samples of charcoal, birch from the earliest floor layer in HC1 and willow from the floor layer in HC2 were submitted to the CHRONO Centre at Queen’s University Belfast for AMS dating. The results date the Aultcraggie Hut Circle 1 to 1387 – 1131 cal BC (UBA-56505) and Hut Circle 2 to 1124 – 930 cal BC (UBA-56506),(Table 1).

Environmental Results: carbonised plant macrofossils and charcoal

By Diane Alldritt

Introduction

Five environmental sample flots taken during excavation of Hut Circle 1 and Hut Circle 2 at Aultcraggie, Brora, were examined for carbonised plant remains and charcoal. Charred material including hazel nutshell and charcoal fragments sorted from the sample retents were also analysed for identifiable remains. Samples were taken from occupation layers or floor deposits and a hearth place (1039) in HC1, and from two occupation or floor layers in HC2. The samples from HC1 produced significant concentrations of charcoal likely to be fuel waste, in particular from hearth (1039), whilst the floor deposits from HC2 contained lower quantities of charcoal, probably trampled remains from burning activity taking place within the structure. Both HC1 and HC2 produced a few trace finds of hazel nutshell fragments, with better preservation of the remains in HC1. No cereal grain was recovered from either structure.

Methodology

The bulk environmental samples were processed using a Siraf style water flotation system (French 1971). The samples were from 4 litres up to 40 litres in volume. The flots were dried before examination under a low power binocular microscope typically at x10 magnification. All identified plant remains including charcoal were removed and bagged separately by type.

Wood charcoal was examined using a high-powered Vickers M10 metallurgical microscope at magnifications up to x200. The reference photographs of Schweingruber (1990) were consulted for charcoal identification. Plant nomenclature utilised in the text follows Stace (1997) for all vascular plants apart from cereals, which follow Zohary and Hopf (2000).

Results

The environmental samples produced varied quantities of carbonised remains 5 ml up to 500 ml in volume with the majority of recovery at the lower end. The remains consist mainly of charcoal fragments <5 mm to 30 mm in size together with trace finds of degraded hazel nutshell in amongst ashy crushed charred detritus below the level of identification. The most abundant charcoal finds came from hearth (1039) in HC1. No carbonised cereal grain or weed seeds were recovered. Modern material was present in amounts 20 ml to 250 ml, mostly root detritus likely to be derived from the peat and turf overburden and indicating bioturbation was taking place. Results are given in Table 2 and discussed below.

UB No	Sample No.	Context	Material	Radiocarbon Age BP	Calibrated 1-sigma (68.3% probability)	Calibrated 2-sigma (95.4% probability)	Period
UBA-56505	HC1-028	Occupation layer in HC1 (1025)	Betula sp	3018 ± 26	1370 – 1356 cal BC 1295 – 1219 cal BC	1387 – 1338 cal BC 1318 – 1195 cal BC 1173 – 1162 cal BC 1142 – 1131 cal BC	MBA to LBA
UBA-56506	HC2-002	Occupation layer in HC2 (2004)	Salix sp	2868 ± 27	1110 – 1091 cal BC 1086 – 1064 cal BC 1058 – 1003 cal BC	1124 – 930 cal BC	LBA

Table 1: Radiocarbon dates from HC1 and HC2.

Aultcraggie, Brora, Sutherland	Context	1022	1025	1034	2004	2005
	Sample	HC1-019	HC1-028	HC1-037	HC2-002	HC2-001
	Feature	occupation layer	occupation layer	hearth	floor layer	occupation layer
	Cut			-1039		
	Radiocarbon Y/N	Y ch, hznt	Y ch, hznt	Y ch, hznt	Y ch	Y ch (v.small)
	Sample Volume (litres)	4	7.5	40	4	7.5
	Total CV	10ml	120ml	500ml	10ml	5ml
	Modern	40ml	200ml	250ml	20ml	250ml
Charcoal	Common Name					
Corylus	hazel	1 (0.20g)				2 (0.05g)
Betula	birch	2 (0.12g)	10 (5.28g)	25 (50.57g)		
Salix	willow				1 (0.12g)	
Carbonised Wild Resources						
Corylus avellana nutshell		1 (0.03g)	2 (0.03g)	2 (0.11g)		1 (0.01g)

Table 2: Environmental catalogue.

Discussion

Hut Circle 1

The samples from HC1 produced evidence for significant episodes of burning activity associated with domestic settlement. Hearth (1039) fill (1034) contained a large volume of *Betula* (birch) charcoal in sizes up to 30 mm by 30 mm, likely to be remains of fuel waste burnt in situ. A small quantity of degraded *Corylus avellana* (hazel) nutshell fragments up to 10 mm in size were also present and were probably a gathered food resource roasted on the fire. Occupation layer (1025) also produced substantial amounts of birch charcoal which was probably fuel waste sweepings from the hearth, or perhaps scattered and trampled material used to form a floor or levelling deposit. Occupation layer (1022) contained lower quantities of birch charcoal with a small amount of *Corylus* (hazel) also present. Crushed fragments of hazel nutshell were present in both deposits (1022 and 1025) and probably represented scattered waste burnt during the processing of hazel nuts for food.

Hut Circle 2

Two floor surfaces or occupation layers were sampled from HC2 and these produced small quantities of charcoal and crushed fragments of

hazel nutshell indicating low levels of burning activity taking place within the structure, and possibly including trampled and bioturbated remains. Floor layer (2004) contained a small amount of *Salix* (willow), whilst floor deposit (2005) had <5mm sized crushed fragments of hazel charcoal, likely to be trampled fuel waste. Degraded hazel nutshell was present in deposit (2005). No hearth place was found in HC2 and recovery and preservation of remains was at lower levels than in HC1, perhaps as a result of recent livestock disturbance or trample in HC2.

Conclusion

The samples produced significant volumes of charcoal together with hazel nutshell from HC1 indicating domestic settlement activity taking place within this structure. HC2 contained substantially less and was possibly not contemporary with HC1 or had a different use - certainly recent animal disturbance had not aided preservation in HC2. The charcoal from HC1 was primarily birch with a small amount of hazel present, whilst HC2 produced low quantities of hazel and willow, probably all fuel material sourced from locally growing scrub woodland and wetland environments. The hut circles are middle to later Bronze Age in date and the radiocarbon dates will enable further comparisons with similar sites in the region.

The Lithic Assemblage

By Torben Bjarke Ballin

Introduction

The purpose of this report is to characterize the 79 lithic artefacts in detail, with special reference to raw-materials and typo-technological attributes. From this characterization, the finds are discussed and dated where possible. The evaluation of the lithic material is based upon a detailed catalogue of the artefacts (see site archive), and in the report the lithics are referred to by their CAT number (CAT no.).

The assemblage

From the excavation at Aultcraggie, 79 lithic artefacts were recovered (Table 3). In total, 95% of this small assemblage is debitage, whereas 5% is tools. In the present paper lithic artefacts are classified according to Ballin (2021). GD = greatest dimension.

Raw materials – types, sources and condition

The assemblage includes three lithic raw materials (Table 4): flint (14%), quartz (34%) and granulite (52%).

The flint is generally fine-grained, and apart from CAT 1, deriving from the surface peat layer (HC1-001) overlying HC1, which is mottled-grey and highly fossiliferous, all pieces are honey-coloured. CAT 4 deriving from an occupation layer (HC1-005) directly below the surface peat layer is fire-crazed and discoloured white. Two cortical pieces have abraded cortex, suggesting that this raw material may have been procured from the local shores of the North Sea, where

they would probably have eroded out of the till. The quartz is white milky-quartz, and three cortical pieces have abraded pebble cortex. Most likely, the quartz was collected either as pebbles from local watercourses or in the form of erratic pieces.

	No.	%
Flint	11	14
Quartz	27	34
Granulite	41	52
Total	79	100

Table 4: Raw material composition.

In the interim fieldwork report (Hunter Blair 2023), a large number of grainy pieces were defined as quartzite and, admittedly, they do show similarities with this rock type. However, as shown in Woodland (1979), and explained in Johnstone and Mykura (1989), these pieces are more likely to be in granulite (two granulite flakes are shown in (Figure 20a and b), CAT 71 derives from the natural (HC1-002) below the building HC1 and CAT 48 from the peat (HC1-001) overlying the building, a type of material dominating the Moine rocks of the Northern Highland region. As explained by Strekeisen (2020b), quartzite is a granoblastic metamorphic rock consisting mainly of quartz (>90%) and formed by recrystallization of [mostly] sandstone by either regional or thermal metamorphism. Accessory minerals include feldspar, micas, and detrital heavy minerals such as titanite, magnetite, zircon and rutile. He defines granulite (Strekeisen 2020a) as a high-grade granoblastic metamorphic rock in which Fe-Mg-silicates are dominantly hydroxyl-free; the presence of feldspar and the absence of primary muscovite are critical, cordierite may also be present. The rocks with >30% mafic (dark-coloured) minerals (dominantly pyroxene)

	HC-1				HC-2				Total
	Flint	Quartz	Granulite	Total	Flint	Quartz	Granulite	Total	
Chips	2	13	1	16	2	2	1	5	21
Flakes	4	8	25	37	2	1	6	9	46
Blades			3	3	1		1	2	5
Indeterminate pieces		1		1		1		1	2
Crested pieces		1		1			1	1	2
Pieces with edge-retouch			2	2			1	2	4
Total	6	23	31	60	5	4	10	19	79

Table 3: General artefact list.

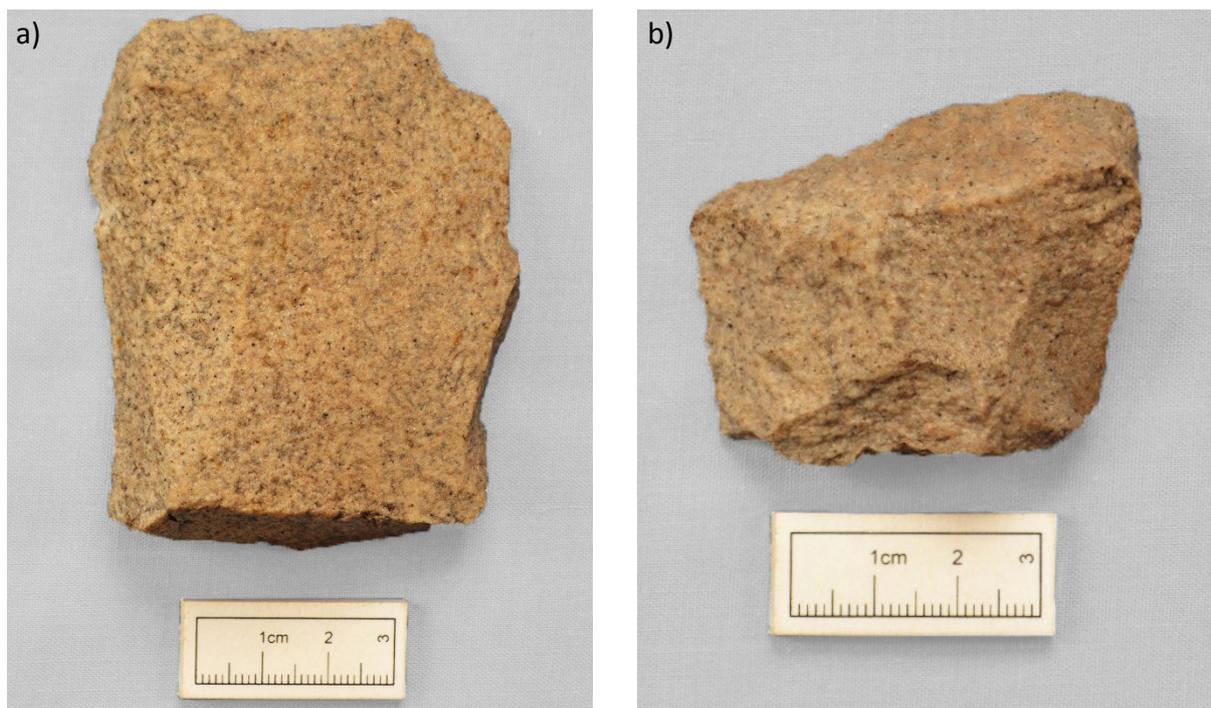


Figure 20: Two robust flakes in felsic granulite a) is CAT 71 and b) is CAT 48.

may be called mafic granulites, those with <30% mafic minerals may be called felsic granulites. This defines the dominant, light-coloured 'quartzite-like' material from Aultcraggie as felsic granulite. Fifteen cortical pieces all have abraded cortex, suggesting that these pieces may have been collected either as pebbles from local watercourses or in the form of erratic pieces.

Debitage and reduction techniques

The debitage includes 21 chips, 46 flakes, five blades, two indeterminate pieces and two crested pieces. The flakes vary in size from having a GD of 12 mm to a GD of 106 mm. The average GD of 20 intact flakes is 38 mm, but as indicated by the GD of the largest fragments substantially larger flakes were produced. Importantly, five broad blades were also recovered, as well as one crested blade CAT 36, from the earliest occupation layer (HC1-025) in HC1. The five unmodified blades are all in granulite (a broad blade and a thin flake in granulite are shown in Figure 21), CAT 40 derives from the peat (HC1-001) overlying HC1 and CAT 65 from an occupation layer (HC2-010) inside HC2, whereas CAT 36 is in quartz and CAT 12 is in flint. The unmodified blades have widths between 9 mm and 28 mm, and two intact blades have lengths exceeding 50 mm. The blades are generally well-executed and regular.



Figure 21: Broad blade CAT 40 and distal fragment of thin flake CAT 65 in felsic granulite.

Two crested pieces include one in quartz CAT 36 from HC1 and one in granulite CAT 70 from a floor (HC2-004) in HC2. The former is a very large bilateral medial-distal fragment measuring 90 by 42 by 22 mm, whereas the latter is a smaller unilateral distal fragment measuring 15 by 18 by 4 mm.

The two roundhouses were radiocarbon dated to of the late Bronze Age. However, the technological attributes of the debitage and tool

blanks indicate a considerably earlier date for the lithic assemblage. Herne (1991, 47) describes the operational schema of the late Bronze Age in the following way: 'There were no stages of reduction to follow, nor were there any standardised products to create. The commonly held view of flintworking as a learned tradition, often implicitly assumed in British studies, would seem to be inappropriate in this context. Equally hard to apply would be a cognitive, or 'mental template', model of flintknapping, as for instance that proposed by Bonnichsen (1977). If any model is a useful one in this instance it might simply be that which is given by the notion of 'following a rule', the rule perhaps being: 'rotate the core to find a flat platform above a ridged face and hit it' (also see Ballin 2002). The lithic industry of Aultcraggie (dominated by the use of granulite) is defined by its products as a well-controlled blade-industry, with sophisticated core preparation, including the production of initial bilateral crests or guide-ridges such as CAT 36 and later corrective crests like CAT 70. Two very large granulite flakes (GD = 75-78 mm) show that coarse (CAT 79) as well as fine (CAT 78) (Figure 22) platform-edge trimming was also applied. Both derived from the earliest floor level (HC1-025) in HC1.

This suggests that a) the fine-grained granulite had surprisingly good flaking properties, which allowed the production of regular blades, and b) that this probably later Neolithic assemblage is residual, and that it was mixed into the features and contexts of the two roundhouses at a later stage when these structures were built and used.



Figure 22: Robust flake in felsic granulite with platform-edge trimming CAT 78.

Tools

The assemblage includes no cores, but three tools. All tools are pieces with edge-retouch, with CATs 60, 66 and 74 being the medial and distal fragments of granulite flakes with sporadic or continuous retouch along one lateral side (GD = 17-79 mm). CAT 60 was recovered from the earliest floor horizon (HC1-025) in HC1, CAT 66 derives from a shallow layer (HC2-009) found below the stone setting (HC2-006) in HC2 and CAT 74 from the peat layer (HC1-001) above HC1.

Discussion

As mentioned above, radiocarbon-dating from the two houses confirmed a date for HC-1 of the middle Bronze Age 1387 – 1131 cal BC (UBA-56505) and for HC-2 of the late Bronze Age 1124 – 930 cal BC (UBA 56506).

However, the lithic industries of that period are generally unschematic and produced mostly irregular blanks and informal tools, whereas the lithic industry from Aultcraggie is characterised by systematic core preparation, including the production of crests and regular platform-edge trimming. Most likely, the lithic assemblage is residual, and the finds probably entered the various contexts and features in connection with the construction of the buildings and activities within and around those.

The industry is based on coastal flint pebbles, supplemented by quartz and, predominantly, granulite cobbles and pebbles which may have been collected from local watercourses or in the form of surface erratics. The granulite, which has similarities to quartzite, is fine-grained and it has good flaking properties, which allowed the production of regular broad blades with parallel lateral sides and dorsal arrises (see for example CAT 40 from the peat layer (HC1-001) above HC1 and CAT 61 from a floor horizon (HC2-004) in HC2. This raw material is available in abundance throughout the northern Highland region (the Morar Division of the Moine Succession; Johnstone and Mykura 1989).

The Coarse Stone Assemblage

By Beverley Ballin Smith

Of the stones collected for analysis from the excavation of hut circle 1 (HC1), only two are classified as tools.

SF 049 is a sub-rounded thin piece of Middle Old Red Sandstone. Its flat surfaces are uneven and unfinished but it is the circumference of the piece that indicates it was intended to be a pot lid. Around its edges, small pieces of stone have been knocked off as a form of trimming. There are no flaking scars. The piece weighs 426 g and it measures 134 mm by 115 mm by 26.2 mm. It was found in the latest floor of the structure (HC1-1004).

SF 1048 is a quartz cobble with one broad and one narrow end, both displaying scars from the use of the tool for pounding. The broad end has evidence of a broad stripe of use across the width of the tool and the wear is extensive. At the narrow end the wear is discretely contained. The pounder weighs 545 g and measures 88.5 mm by 64.4 mm by 63.6 mm. It too was found in the latest floor of the structure (HC1-1004).

Neither of the finds is dated independently but they could be later Bronze Age or Iron Age tools.

General Discussion

The Landscape Setting

Palaeoenvironmental evidence suggests that the rough heather moorland around the Aultcraggie site, was originally wooded. The excavation recovered residual Neolithic artefacts, confirming activity took place during this period with possible clearance of woodland. Hut circles and associated field systems occur singly, in pairs, or in clusters of up to eight or more across Strath Brora and the wider region. Their spatial distribution indicates that land was cleared either by small family groups or through more collective efforts to facilitate settlement and subsistence farming. If these buildings are broadly contemporary, the area was healthily populated during the middle and later Bronze Ages based on the dates of the Aultcraggie structures. Environmental analyses indicated that woodland was dominated by hazel, birch, and willow, among other species, which may have been subject to management to provide a sustainable timber resource.

The excavation concentrated on the hut circles' interiors, but the absence of faunal remains and carbonised cereals due to acid soil conditions gives limited insight into the nature of subsistence farming at the time and also into peoples' diets. While it is evident that woodland clearance occurred, whether this was primarily to cultivate crops, create pasture for livestock, or to provide timber, remains uncertain. The examples below, of more detailed landscape investigations, indicate that the relationship with woodland differed from place to place in the region but there was a general trend over time to opening up the landscape for grazing.

Axe marks were found on timber preserved in peat close to a scattering of hut circles at Loch Farlary, located at 200 m OD and 10 km south-west of Aultcraggie, near Golspie (Tipping et al. 2007).. The evidence indicates that their felling occurred during different periods, but some examples date to the middle to late Bronze Age, while others are early Iron Age in dated. The reasons for the removal of trees from the landscape remains uncertain, but they may have included collecting wood for fuel, or possibly, clearance of areas for extracting peat for fuel.

A further example of prehistoric tree felling occurred during archaeological monitoring of peat removal during the construction of the sub-station for Kilbraur Wind Farm, near Golspie in Sutherland (Matthews 2007). This resulted in the recovery of 76 tree stumps or fragments encountered at varying depths within the peat, with a notable concentration occurring at approximately 1 m below the surface. Of these, four stumps had evidence of tool marks, while five displayed signs of burning. As Bronze Age axe-marked tree stumps had previously been identified at Loch Farlary, comparative palaeoenvironmental analysis (pollen, non-pollen palynomorph, plant macrofossil, dendrochronological, and tool-mark analyses) was undertaken to establish potential connections and significance. The results revealed strong correlations with the Farlary material. Although the Kilbraur tree stumps date to the later Neolithic, evidence of Bronze Age tool marks suggested modification of them took place through activities such as peat cutting. The trees themselves were found to be long-lived, occupying a landscape that transitioned from wet woodland and damp herbaceous vegetation communities to heathland (Timpany 2010). This indicates that the landscape changes at Aultcraggie happened across the region and probably began late in the Neolithic.

In addition to the upland investigations at Loch Farlary, Reidchalmai, a lowland site within the same glen lying around 100 m OD was also examined (Tipping and McCullagh 2003; Tipping et al. 2008). This comparative study examined whether communities withdrew from upland areas in response to the climatic decline of the late Bronze Age. Both locations provided evidence for human presence and initial cultivation at the close of the Neolithic. Cultivation was also documented at both sites during the Bronze Age, although at Loch Farlary it appeared to terminate in the late Bronze Age. This cessation suggested a change toward intensified grazing rather than landscape abandonment, a pattern noted at sites such as West Glen Affric and Lairg (Tipping et al. 2008; McCullagh and Tipping 1998). By this period, woodland at Farlary was already scarce, whereas the Reidchalmai record indicates deliberate woodland management, with particular species selectively felled at different intervals. The evidence further suggests

that Reidchalmai experienced an expansion of agricultural activity during the early Iron Age. Activity at Farlary did not cease altogether but instead there was a greater emphasis on grazing, as observed at Lairg (McCullagh and Tipping 1998).

The Bronze Age

The limited investigations at Aultcraggie provided an insight into the construction and use of two of a group of four hut circles. Possibly associated with the settlement are clearance cairns and a turf and stone dyke forming part of a field system. Stone-built hut circles are broadly found across moorland Scotland, the Inner Isles and south-west Scotland. They are generally dated to the Bronze Age and Iron Age periods (Halliday 1999). There are many clusters of hut circles and field systems situated locally to Aultcraggie (Figure 23), with over a thousand of them recorded across Sutherland (see Trove Scotland and ScARF 2012 and ScARF 2021).

The two hut circles investigated at Aultcraggie were very similar in plan and both contained evidence of flint knapping and the use of granulite and quartz for tool production albeit residual Neolithic activity. The structures were built in a similar way with the walls widening towards the terminals creating a long entrance passage. Although both structures enclosed a similar internal space (Hut Circle 1 94 m² and Hut Circle 2 95 m²), the variations in construction and the use between the two buildings was notable (Figure 24). Hut Circle 1 contained a sequence of three trampled occupation layers/floor surfaces, although given the limited areas of excavation it was not determined whether the floor layers had been re-laid, repaired or replaced. A series of pits located within the building may relate to different phases of rebuilding or repairs to the structure perhaps corresponding to the refurbishment of the floor surfaces. A shallow pit containing a hearth was located towards the east side of the building (not its centre) and associated with the initial use of Hut Circle 1.

Hut Circle 2 was later in date, and possibly replaced Hut Circle 1. In contrast it may have had a second floor laid down with a trample layer sealed below it that may have accumulated during the building's construction. There was scant evidence of postholes and no sign of a

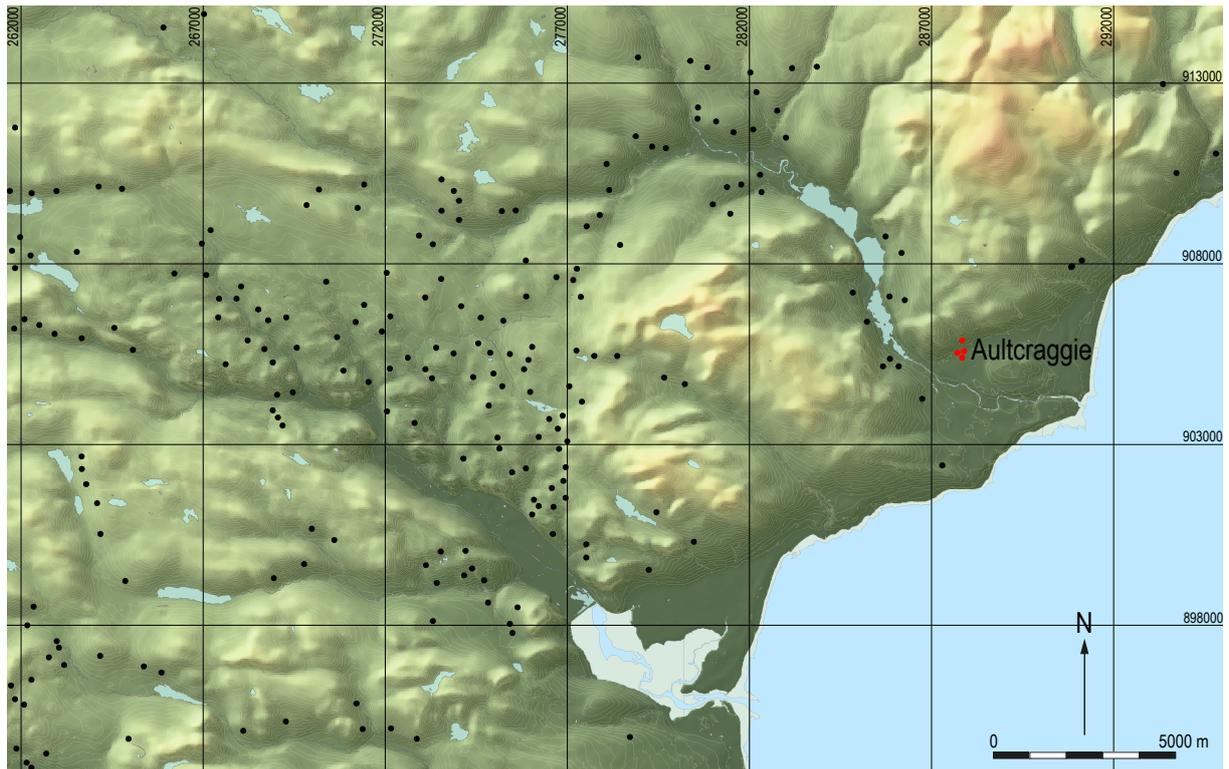


Figure 23: Distribution map showing location of hut circle sites.

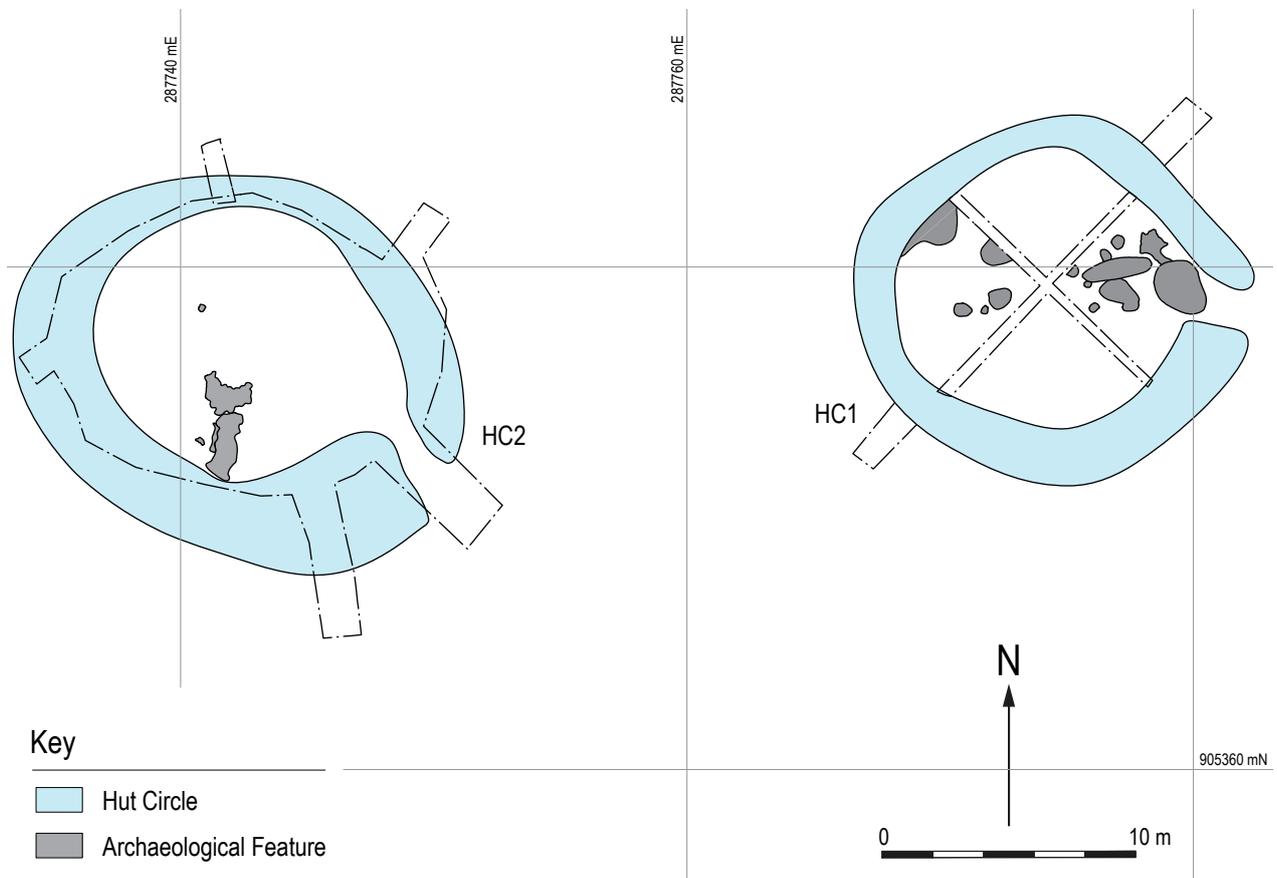


Figure 24: Plan of HC1 and HC2 showing their relationship to one another.

hearth. The building's northern arc had been built onto a natural slope which may have removed the need to build a substantial high wall, but it did reduce the useable internal space of the structure (Figures 25 and 26). This method of construction is unusual compared to the more traditional practice of terracing into the slope and using the quarried material to form a level platform onto which the hut circle is built. The short section of external facing of the south wall is indicative of an original well-constructed wall, suggesting the building was subject to later refurbishment and a more crudely constructed northern bank.

Variations in constructed were noted by Fairhurst and Taylor during their investigations of a hut-circle settlement at Kilphedir, Sutherland that, 'in addition to the hut-circles and cairns, another much rarer combination occurs in the form of hut-circles with trailing banks of stones and boulders marking out what appear to be minute fields which are devoid of the clearance cairns. These alignments are to be found in association with a rather different type of hut-circle which is more strongly constructed and tends to have a curious thickening of the wall at the entrance.' (1974, 68).

Similar variations were observed at a number of hut circles forming part of the Holyhead Mountain Hut Group or Tŷ Mawr Hut Circles at Anglesey in North Wales where large orthostats were incorporated into the inner and outer wall faces with some exhibiting the thickening of the wall at the entrance (Stone-Circles.Org.UK 2021).

The function of the stone setting in Hut Circle 2 at Aultcraggie and the putative walling offset from the centre of the building towards the south side of it is not clear. As there was no sign of internal postholes it is possible that the roof was erected and secured using a ring beam construction, with the base of any angled posts being secured by the inner perimeter of the wall. Although smaller than the buildings investigated at Aultcraggie, one of two hut circles, 80 m apart from one another at Moss Raploch in Dumfries and Galloway, was built with kerb stones with a rubble core along the outer wall face and especially along the southern arc (Condry and Ansell 1977). The wall was 1.4 m in width and enclosed an area 5.5 m in diameter. Three postholes were found inside the inner wall face suggesting a ring-beam may have augmented the construction of the roof.

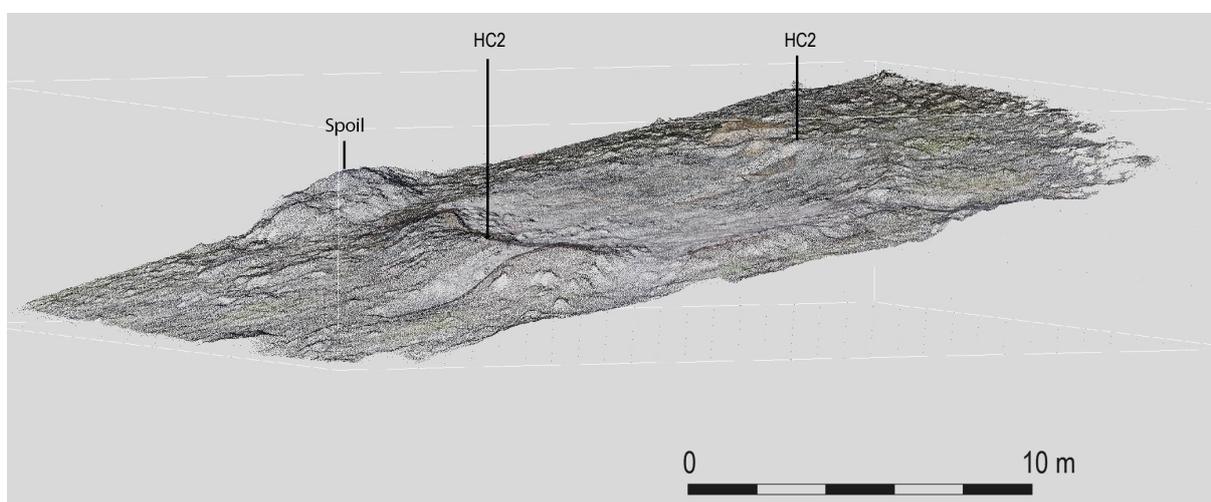


Figure 25: Terrain model oblique view of HC2, from the east, highlighting the natural slope at the north side of the building over which part of HC2 had been built.

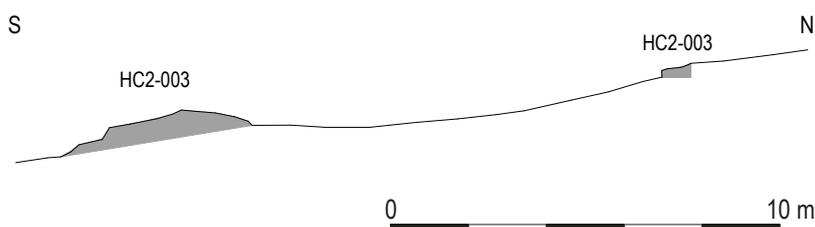


Figure 26: North to South profile across HC2.

A landscape survey carried out at Strath Suardale on the Isle of Skye involved the evaluation and recording of 31 hut circles with associated field systems, clearance cairns and boundary dykes (Birch and Wildgoose 2007 and 2009). The construction of the hut circles varied and included walls faced with orthostats with rubble or earth cores, walls constructed of turf, well-constructed rubble-built walls and walls formed from heaped up rubble forming banks. Dates from a sample of the buildings ranged from the Bronze Age to the Iron Age with a few remaining in use or being reused in the Medieval period.

Recent excavations at Dalchork Substation at Lairg in Sutherland involved the excavation of four stone built roundhouses and investigative trenches cut into a number of clearance cairns (Glew and Peteranna 2020). The roundhouses all differed in their construction. One was found with an internal diameter of 7 m and the enclosing bank was c. 2.5 m in width and was faced externally with orthostats and coursed slabs. Internally the wall was formed from coursed rubble. A hearth was present along with postholes and evidence of two phases of occupation. The second structure was enclosed by a turf-built bank with rubble facings that enclosed an area 9.2 m by 8.2 m. The building had been in use for a considerable period with evidence of resetting of posts and the insertion of new ones. A third building, the smallest had an internal diameter of 5 m enclosed by a rubble bank internally faced with stone and faced with boulders externally. Scant remains of small internal postholes were found along with a centrally positioned hearth. The fourth building, perhaps the closest in comparison to those excavated at Aultcraggie measured 12.3 m internally in diameter and was enclosed by a rubble bank with external boulder facing-stones. There was little surviving evidence for facing stones on the interior. The entrance was to the south and the roof was supported by timber posts.

Earlier work south of Lairg at Achany Glen in Sutherland recorded a number of hut circles mainly dating to the middle Bronze Age with a smaller proportion dating to the Iron Age (McCullagh and Tipping 1998). Some of these were timber buildings with ditches and gullies while others were enclosed by stone and turf

banks and others built with faced stone walls, established on land that had already been farmed during the late Neolithic and early Bronze Age. Evidence for these earlier phases of settlement had, in many cases, been obscured or disturbed by later cultivation. Prior to the investigations at Achany Glen, hut circle groups were frequently interpreted as representing long-term, continuous settlement spanning several centuries. However, palaeoenvironmental data from Achany Glen indicated continuity in land use, while excavation revealed that relatively few of the hut circles provided evidence for extended occupation.

An archaeological watching brief was conducted in 2007 during the development of the Kilbraur Windfarm, Strath Brora 7.4 km to the north-west of Aultcraggie (Matthews 2007). The programme involved among other things the installation of an earth grid surrounding the sub-station. Within this latter area, waterlogged tree remains were recovered from beneath the peat, which were subjected to detailed recording, prompted by evidence of cut marks and occasional charring observed on timber retrieved during an earlier phase of the project. No artefacts or structural remains were identified. Monitoring of peat stripping at a borrow pit led to the identification of 18 cairns and a linear bank, several of which required excavation. These features were determined to be simple field clearance cairns, associated with the nearby prehistoric hut circle settlement to the north-east (Matthews 2007).

A community-led project, the Wedigs Project, undertook targeted excavations at six sites distributed across three areas of Wester Ross, two at Achiltibuie, two near Ullapool, and two at Gairloch between 2012 and 2014 (Welti and Wildgoose 2015, 33). Each excavation was allocated a one-week period and was carried out by volunteers under the supervision of professional archaeologist Martin Wildgoose. At Loch Raa, one of the hut circles revealed three successive hearths constructed one above the other. Radiocarbon dating of the earliest hearth produced a result of 1257 ± 27 BC (early Bronze Age), while the most recent hearth was dated to 424 ± 27 BC (Iron Age). This sequence indicated intermittent occupation of the site spanning approximately eight centuries. The radiocarbon

date at Aultcraggie was obtained from the basal floor surface of three within hut circle 1, and it is plausible that occupation of this structure may have ended during the Iron Age.

Upland comparisons to those hut circles at Aultcraggie are more pertinent because of the use of local stone. However, recent work at Rosemarkie near Fortrose on the Black Isle in Ross-shire identified six timber roundhouses dating to the middle-late Bronze Age along with some background Mesolithic and Neolithic activity (Arabaolaza et al. 2025). The variations seen in round structures (hut circles/roundhouses) from lowland to upland areas and the availability of constructional materials, as well as their differing uses from the middle Bronze Age onwards, indicates there were widespread changes taking place in the landscape, in the local agricultural economies and most likely in population densities.

Conclusions

The excavation at Aultcraggie, made discoveries that span the middle and late Bronze Ages. Given that only one sample of charcoal was selected from each building it remains unclear whether the hut circles were also occupied during the Iron Age. The project contributes to our knowledge of settlement patterns in the Bronze Age of northern Scotland. A great many similar sites remain unexcavated particularly to the west and south of Aultcraggie (Figure 23), perhaps with similar concentrations of buildings to those found at Allt na Fearn, Lairg, where the settlement showed an average of one hut circle per hectare (Ashmore 2001).

Beyond the value in investigating the hut circles at Aultcraggie, and shedding some light on their construction and date, the project represents another successful community-led archaeological project by Clyne Heritage Society. The project encouraged engagement from the community, young and old, and provided valuable hands-on training opportunities for university students as they begin their careers in archaeology.

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Archive

The site archives will be lodged with the NRHE at Historic Environment Scotland, Edinburgh, and the finds will be reported to Treasure Trove Scotland.

Map Sources

1st Edition Ordnance Survey 6-inch map of Sutherland 1879, sheet xcvi.

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