Highland Archaeology Services Ltd

Bringing the Past and Future Together

Land 55m NE of Keiss Harbour House, Keiss, Wick

Watching Brief

Final Report with DSR

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Final Report with DSR

HAS Report No.	KHC20-010
Site Code	KHC20
Client	Andrew and Penny Harris
Planning Reference	19/03594/FUL
OS Grid Reference	ND 3525 6098
Date	8th March 2024
Author(s)	Lachlan McKeggie and Karen Kennedy
Approved by	Lynne and Lachlan McKeggie

Summary

A watching brief and associated work was commissioned by Mr and Mrs Harris to monitor works as part of a development at Keiss Harbor, Caithness. This was in accordance with the requirements of planning consent during preliminary groundworks for the construction of a cabin, four holiday Pods and associated services on land to the east of Keiss harbour, Keiss, Caithness. This report covers findings and post excavation analysis for work from the pods, new passing place and service runs. Further watching will be undertaken for the cabin area at a later date.

During the excavation of the pods area to the east of the site a large dump of midden material (including shell, animal bone and some artefacts) was encountered spread over the slope of the raised beach on the inland side of the site. These deposits were recorded and sampled and a portion left in situ. In addition, the footings of a dry stone wall and a stone built bank of the burn running between the road and pods area were noted and recorded. This report details the fieldwork so far and includes an addendum detailing post excavation work undertaken to better understand the midden deposits.

The post excavation revealed that both the fish, shellfish, and artefacts were typical of other sites from the Viking into the Norse period in the North of Scotland and this was confirmed by the AMS dating 899-1223cal AD. The AMS dating also demonstrated that the oldest dates were within the lower deposits showing the midden was in situ and not the spoil from excavations undertaken by Sir Tress Barry in the 19th century. Instead it is most likely that the midden relates to the structures to the north west previously thought to be 'modern' (MHG1656).

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Legislation and Policy

The common principles underlying international conventions, national legislation and local authority planning policies are that cultural heritage assets should be identified in advance of development and safeguarded where practicable; if disturbance is unavoidable appropriate recording of features and recovery of portable artefacts should take place. These have been set out in international agreements, UK and Scottish legislation, as well as national and local planning policies[1].

Professional standards maintained throughout the present project adhered to the Codes of Conduct and Approved Practice and Standards of the Chartered Institute for Archaeologists[2].

Acknowledgements

This document was written by Lachlan Mckeggie and Karen Kenedy edited by Lynne McKeggie. The project was commissioned and funded by Andrew and Penny Harris. Fieldwork was directed by Lachlan & Lynne Mckeggie. Background mapping has been reproduced by permission of the Ordnance Survey under Licence 100043217. Historic mapping is courtesy of the National Library of Scotland.

Glossary of terms:

- BGS - British Geological Survey
- DBA – Desk Based Assessment
- DES – Discovery and Excavation Scotland
- HES – Historic Environment Scotland (formally Historic Scotland)
- HET – Historic Environment Team
- HHER – Highland Historic Environment Record: Reference numbers starting MHG are HHER ID numbers and
  EHG numbers are records of archaeology work recorded on the HER
- NCAP - National Collection of Aerial Photographs
- NLS – National Library of Scotland
- RCAMS – Royal Commission on the Ancient and Historic Monuments of Scotland (now part of HES)

[1] A summary of relevant international, EU, UK and Scottish legislation and policies is available from the HAS office on request.
[2] Chartered Institute for Archaeology (CIfA) Standards and Guidelines for Archaeological Excavation.

Location

The area of proposed development (the study site) is located immediately to the NE of Keiss harbour, Keiss, bounded by the harbour complex to the SW, the marine foreshore to the SE and open agricultural land to the N and NE (Figures 1 and 2). The site is centred at Ordnance Survey National Grid Reference ND 3525 6098.

Figure 1: General site location (1km grids)

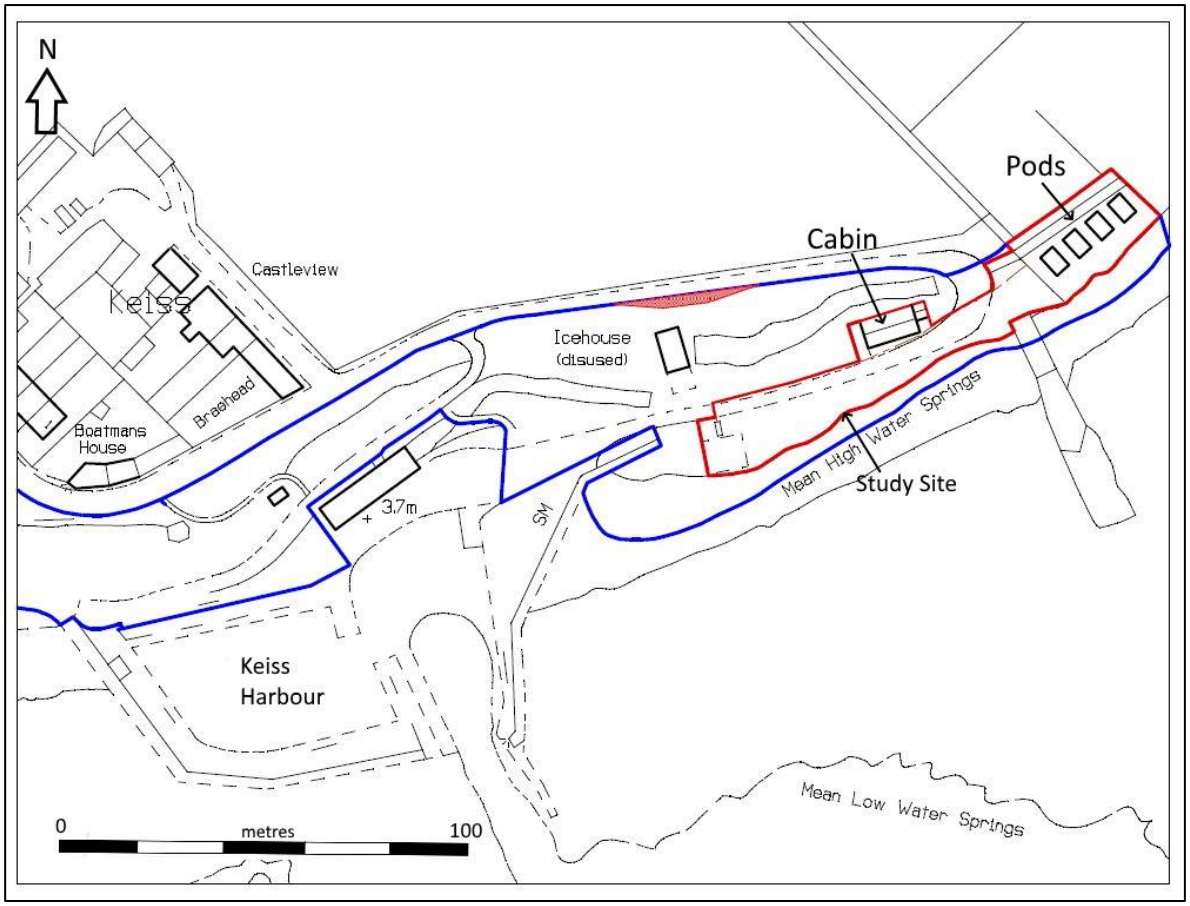


Figure 2: Proposed site layout (scale shown)

Introduction

The site has received planning consent (19/03594/FUL) for the development of a holiday cabin and four separate holiday Pods plus associated services. The consent includes a Condition that requires all preliminary ground works to be monitored by means of an archaeological watching brief in order to identify and record any heritage assets revealed during the course of preliminary development ground works.

An archaeological Desk Based Assessment (DBA) is included in this document, which sets out the character and extent of recorded heritage assets on and in the vicinity of the development area.

At the date of writing Archaeological monitoring has been undertaken in the area of the pods, the south side of the shore road, a pipe run on the north side of the shore road and the passing place to the north of the ice house (see Figure 8 below). The cabin area is to be stripped and monitored at a separate date.

The BGS for the development area states that the underlying geology is Mey Flagstone Formation - Sandstone, Siltstone and Mudstone. Sedimentary Bedrock formed approximately 383 to 393 million years ago in the Devonian Period. And that the local environment was previously dominated by rivers. While the superficial deposits are raised marine beach deposits - Gravel, Sand And Silt. The Superficial Deposits were formed up to 3 million years ago in the Quaternary Period and the local environment has and continues to be dominated by shorelines. The raised beach is evident on the ground with the slope of this forming the north boundary of the site. The ice house is also dug into this slope.

Archaeological & Historical background (DBA)

Scheduled Monuments

Two nationally important Scheduled Monuments (SM13621 and SM13623) are located within 400m of the Study Site (**Figure 7**). Both represent the remains of a Broch: substantial stone roundhouses built and occupied during the late prehistoric period known as the Iron Age (c 800 BC – 500 AD).

Keiss Broch (SM13623) is the nearer, located c 70m to the NE of the Pods site. Whitegate Broch (SM13621) is located a further 150 m to the NE.

Listed Buildings

Six Listed Buildings (LB) are recorded within 400 m of the Study Site (**Figure 7**). They are listed as follows:

- *Keiss Icehouse (LB14086)* – an early 19th century, single chambered rubble vaulted ice-house, with projecting gabled ante-chamber with centre door and a turf roof. Located c 60 m to the W of the proposed Cabin site
- *Keiss harbour and warehouse (LB14085)* – Harbour built in 1831. Small rubble walled harbour with inner stilling basin; high outer walls where the masonry is laid vertically. The warehouse was also built c 1831. A 3-storey, symmetrical 6-bay rubble warehouse built into side of slope abutting harbour. Located c 135 m to the SW of the proposed Cabin site
- *Keiss harbour bothy (LB43519)* – Built circa 1830 as a cooperage, in association with adjoining harbour development. Single storey cottage-type design with gable to harbour-front, loupin-on stone and barometer inset. All built of coursed, local rubble. Located c 180 m to the W of the proposed Cabin site
- *Keiss Village Braehead, Boatman's Cottage Braehead Cottage And Harbour Cottage (LB14084)* – Built c 1830, a 2-storey terrace 2- and 3-bay cottages following curve and slope of road. All in rubble with slate roofs.

Historic Mapping

Readily available historic mapping for the site was reviewed for the present document.

Although Kiess is depicted in General Roy's map of the mid 1700's the scale is not sufficiently large to give much detail, although no harbour is depicted. The earliest map showing the study area in any reliable detail is provided by the First Edition Ordnance Survey 25-inch map of 1873 (surveyed 1872) (Figure 3). It depicts the approximate site of the proposed holiday cabin occupied by a large building with a 'Boiler' label a little to its east. It seems his label refers to a small unroofed structure apparently built into the field boundary to the SE. Both of these structures are within the development area. The portion of the site that will contain the new holiday Pods is depicted as rough grassland that is separated from the rest of the site by a ditched boundary line. The sites of the two scheduled Brochs are labelled as the remains of '*Picts' Houses'*.

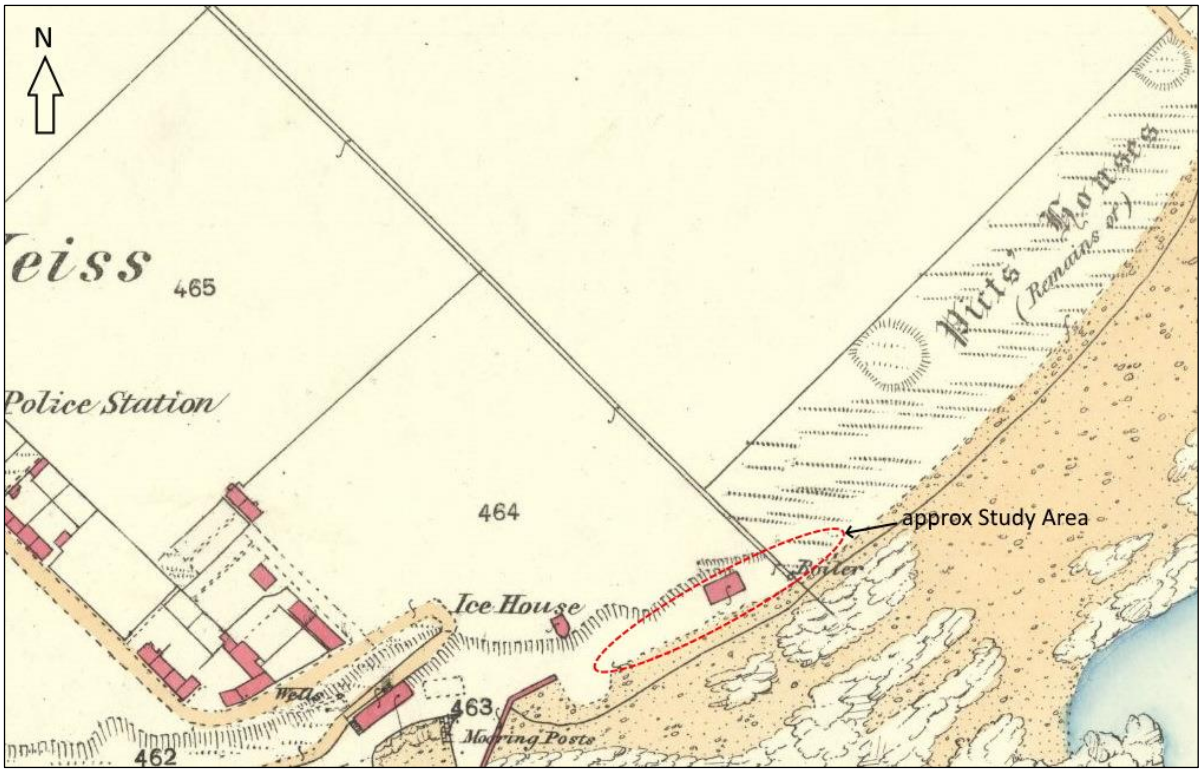


Figure 3: Detail from the 25 inch Ordnance Survey map surveyed 1872 with the approximate extent of the Study Area indicated. Not to original scale. Courtesy National Library of Scotland

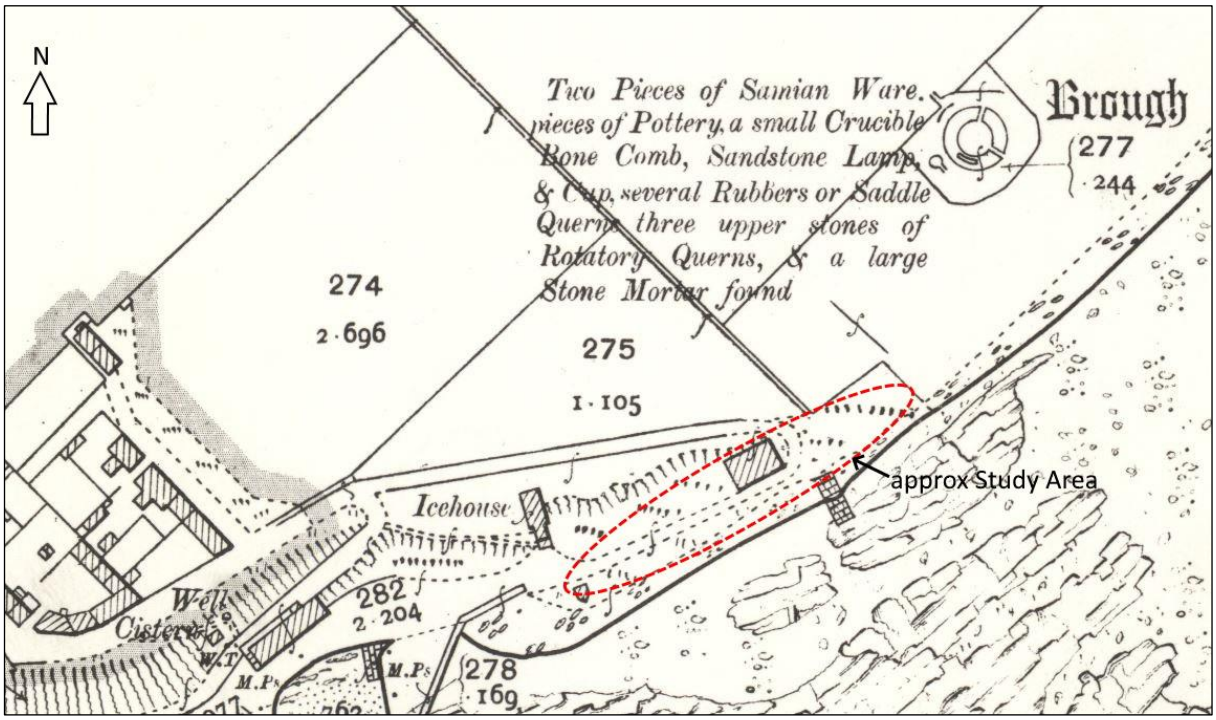


Figure 4: Detail from the Ordnance Survey 25 inch map of 1906 (Caithness XIV.9 and XIV.13) with the approximate extent of the Study area indicated. Not to original scale. Courtesy National Library of Scotland

The Ordnance Survey 25 inch map of 1906 (surveyed 1905) (Figure 4) depicts the same large building occupying the site of the proposed holiday cabin and the course of a new road or trackway that runs from W to E and enters the site immediately to the E of the building. The track then appears to link the building with the Keiss Icehouse and the harbour beyond. A stone slipway is

also shown that crosses the site boundary and extends down to the foreshore. In addition, the NE boundary of the site has been modified to separate off the portion that will contain the holiday Pods and the *Boiler* label and possible small structure has gone. Finally, the *Pictish Houses* are now both labelled as *Brough* with a list of finds shown on the map.

By the time of the c 1960 Ordnance Survey mapping (Figure 5 below) the large structure appears to have been demolished.

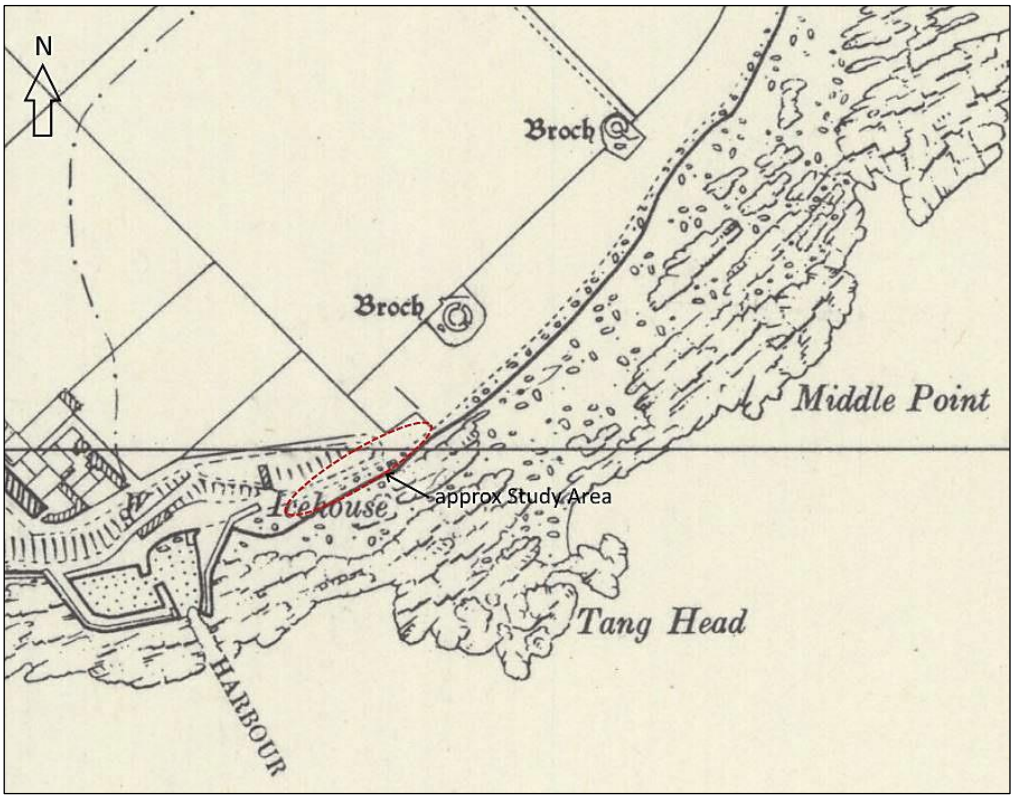


Figure 5: Extract from the 1960 Ordnance Survey map of the study area with the approximate boundary of the study site indicated. Not to original scale. Courtesy National Library of Scotland

The study area is essentially unchanged on modern mapping.

Name Book

The OS name book compiled during the survey for the first edition map (in this area 1871-73) gives some insights into the area at the time. Although the two brochs were not yet excavated and no more is stated than they are thought to be 'Pictish Houses' there is a description of the harbour:

"*A substantially built harbour, Constructed by two Piers of masonry in the form of a quadrilateral, having high parapet walls on the outer margin bending inwards at the entrance, also a small jetty from the land side forming an inner and outer basin. It accommodates a number of fishing boats there being about 16 large and nearly the same amount of small ones, belonging to fish curers & fishermen of the district, the former paying an annual rent of nearly £100. It is visited occasionally by Coasting vessels for farm produce, potatoes chiefly, Is also one of the Harbours of refuge for the N. [North] East coast. Was erected about 60 years ago at Government expense. Now the Propy [Property] of His Grace the Duke of Portland. of Langwell Berriedale &c.*"[3]

The churches and schools in Kiess are also described but aside from various rocks and outcrops nothing else close to the current site is described in the name book.

[3] OS1/7/13/55

Aerial Photography

Aerial photographic images held by the National Collection of Aerial Photographs (NCAP) were not examined for the present study.

An image taken from Google Earth in 2003 (Figure 6 below) shows a series of rectilinear features thought to be MHG1656 immediately to the N of the Pods site and the line of a path or trackway crossing the Pods site from W to E.

Figure 6: Google Earth image of the study area taken in 2003 with annotation by the writer showing features within and adjacent to the Pods site and Keiss Broch to the NE. Not to scale

Heritage Assets & Events

No modern archaeological work is recorded as having been previously undertaken within the study area.

However according to The Sir Francis Tress Barry Collection Catalogue (produced by RCAMS in 1998) an excavation of MHG1656 (structures) was undertaken in 1893 by Sir Tress Barry.[4] He is recorded as excavating Keiss Broch for the previous two years (from 1890) with a final season in 1893. As these two are within a few metres of each other it seems likely that he took interest in these buildings while excavating the broch and used a final season to investigate. The catalogue indicates two photographs and a single glass slide of the buildings exists. The contemporary excavations from the brochs include photos of artefacts as well as drawings but no such are listed

[4] RCAMS 1998

for the 'Keiss Buildings'. This comparative lack of recorded material implies less interest from Barry but it is possible some recovered finds may be located in a museum collection as material excavated by Barry seems to have been widely scattered.

A significant number of heritage assets are recorded in the environs of the study area (**Figure 7** below), which are listed in full in Table 6 (see appendix). A single HER entry (see below) may extend into the study area. The principal HER entries relevant to the archaeological setting of the Site and of particular significance for the present project include the following:

- *MHG1656* – Listed as '*A group of possibly modern conjoined structures 19m NE-SW, 20m NW-SE and 0.75m in maximum height (C E Batey 1981)'.*

- *SM13623* – Keiss Broch is located just to the NE of the study area. The scheduling is restricted to the footprint of the earthworks and an area immediately adjacent although activity associated with its construction, occupation and use is likely to have extended well beyond this modern boundary.

- *MHG48833* – The slipway is described as a '*small late C19 - early C20 slipway located to the north east of Keiss harbour*'. It is shown on early 19th century mapping of the area and could conceivably mean that small seagoing vessels (or the gear/nets they used) were brought onto the study site for storage or repair.

- *LB14086* – Keiss Icehouse was built for the storage of ice, to pack marine fish, most likely herring. The fish would have required processing after landing and barrelling for onward transport thereafter. It is possible that these activities were undertaken in the area between the slipway and the Icehouse.

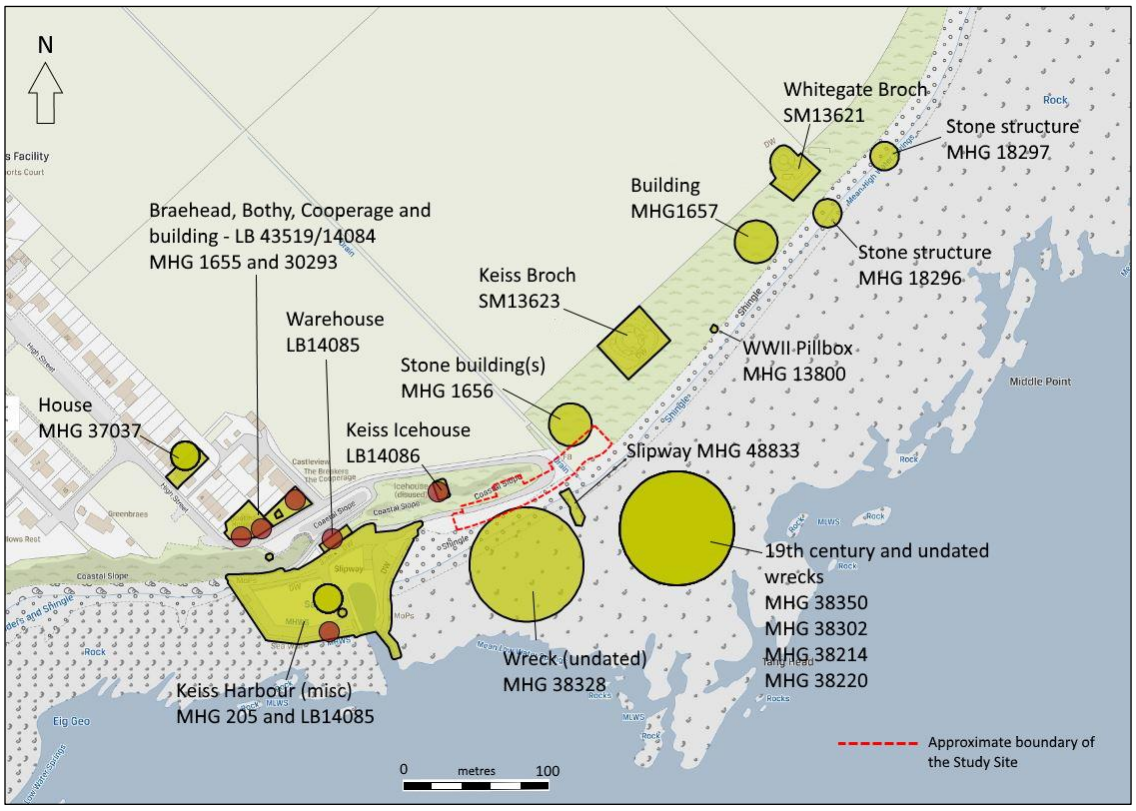


Figure 7: Scheduled Monuments and selective Listed Buildings and recorded Heritage Assets located within approximately 400m of the study site. Reproduced courtesy of Pastmap with annotation by the writer.

Statistical Accounts

Both the Old[5] (OSA) and New[6] (NSA) Statistical Accounts for the parish of Wick were reviewed for the present study.

Old Statistical Account (OSA) 1794

The compiler of the OSA, the Rev. Mr William Sutherland, mentions in passing an *'elegant mansion-house built by Sir John Sinclair at Keiss*'. The OSA does not refer either to the study area in particular or any antiquities in that area.

New Statistical Account (NSA) 1845

The compiler of the NSA, the Rev. Charles Thompson, mentions in passing that Keiss Bay is also called 'Reiss Bay' and that a small harbour has now been built in Keiss.

Finally, the Rev. Thompson notes with some certainty that, in the county as a whole, '*Maniacs are very rare'* but *'idiots and fatuous persons are remarkably common*'.

Documentary Research - Conclusions

The cartographic and documentary sources for the study area, combined with an appreciation of its topographic setting, allow the following principal observations:

- The Study Site is situated in a belt of the coastal margin that contains significant archaeological structures and features which attest to intense settlement-related activity during the later prehistoric period, in particular the Scottish Iron Age (c 800BC – 500AD). The importance and intensity of this settlement related activity is illustrated by the extant remains of Keiss Broch and Whitegate Broch, both Scheduled Monuments located just to the NE of the study site.

- The Study Site lies directly adjacent to a recorded heritage asset (MHG1656), this was excavated in 1893 but the findings are not readily available. These buildings are not shown on the earliest cartographic depiction of the area surveyed 1872 (Figure 4). The remains almost certainly therefore relate to a building and activity that was abandoned some time before 1873, whose origin remains of unknown date.

- Buried archaeological features and deposits associated with the activity recorded as MGH1656 may extend into the area of the proposed Pods.

- The area of the proposed holiday cabin was formerly occupied by a large building, which is depicted on the OS mapping surveyed in 1872 and demolished after 1907. The construction date of the building is not known.

- The extreme northern end of the stone slipway shown on the 1906 mapping could extend into the Study Site.

- The site abuts a raised beach terrace of probable Pleistocene date. Similar post-glacial terraces have produced important evidence for human activity during the Mesolithic period (c 9000 to 5000 BC), in particular middens of marine foodstuffs and lithic artefacts.

[5] Wick, County of Caithness, OSA, Vol X, 1794. Rev. Mr William Sutherland
[6] Wick, County of Caithness, NSA. Vol XV, 1845. Rev. Charles Thompson

On the basis of the evidence provided by the documentary sources, combined with an appreciation of its natural and archaeological setting, it was concluded that the Study Site had moderate to high potential for the survival of significant buried archaeological structures, deposits and finds of later prehistoric to later post medieval date.

The fieldwork

Aims and Objectives

The principal aims of the fieldwork stage of the project were to:

- Establish the presence or absence of significant buried archaeological deposits within the study area and, if present, to determine their character, extent, date and archaeological significance and to record them to professional standards, in line with current legislation and policy.

- Minimise any possible delay or cost to the development by anticipating archaeological requirements as far as possible, timetabling and integrating archaeological recording work with the project, and dealing with any issues arising quickly and efficiently.

Methodology

An archaeological watching brief has, to date, been undertaken in all areas of ground breaking across the site. This has been undertaken in three phases. The first covering the Pods area between the 30th of November and the 2nd of December 2020 the second on the 8th to the 9th of December 2020 covering the new passing place, further work in the pods area and the deep excavation for the retaining wall on the seashore. Finally, the new service run and areas a, b and c were watched on the 4th and 5th of May 2021.

Excavation in the pods area included de turfing the whole area. Removing topsoil from the lower or SE side of the site and cutting back the slope on the NW side. During the de turfing walls (002) and (005) were noted and recorded. As the cutting back took place midden (003) was noted. The topsoil over the midden was removed by machine and two slots excavated to the required depth for the development and sections recorded. Slot A was dug by hand and Slot B by machine. Sections were recorded from both slots. Once recorded the remaining midden material was removed by machine under supervision up to a new path line (see Figure 14). This left an area of midden up to at least 1m deep and 2m wide that has now been covered by the new retaining wall and path. Above the path a further 2.5 to 3m was left as only de turfed and it seems likely further midden material was left in situ here, although this was never exposed. Any finds noted during the removal of the midden were retained for further analysis. Material from Slot A was wet sieved to recover further evidence and samples were taken of all identified layers within (see sample register in appendix).

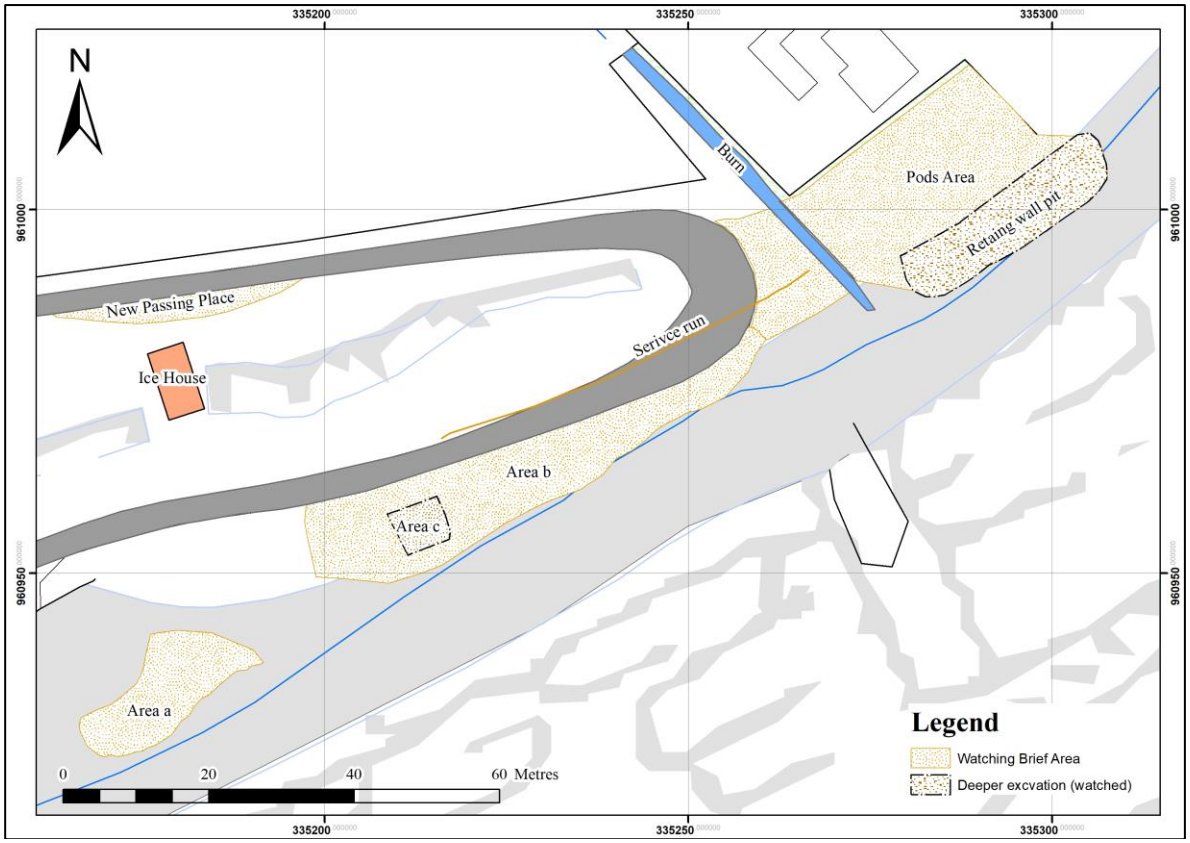


Figure 8: Plan showing watching brief areas.

Description of Recorded Archaeology

Most areas of the site watched so far including the new passing place, Area a & b, the deeper excavation Area C, the retaining wall pit and service run trench contained only topsoil and modern dumped material. Only the Pods area contained archaeological remains. These include the footings of two dry stone walls (002) and (005) as well as a modern rubbish pit (004), a retaining wall and a large area of mixed shell, animal bone and soil interpreted as a midden (003) (see Figure 9). These will be described in more detail below.

Walls (002) & (005)

These two walls were noted towards the north corner of the pods area and form a right angle with each other (see Figure 9 & Figure 10). Wall (002) survives in a better state than (005) and appears to tie in with a surviving wall running along part of the NW site boundary between (002) and the burn. (005) runs along the top of a slope down to the SE, it is more damaged but appears on the surface to continue beyond the NE site boundary and into the field beyond. Both these walls survived as only a single course of larger local stone laid directly onto the topsoil. (002) was clearly dry stone double skin construction and although it is less clear it appears (005) was the same.

Whilst it appears that (002) overlies or is abutted by (005) the fact that these features only survive a single course high makes the phasing of these walls tricky. (002) appears to have originally continued to the SE and it seems likely that this is the wall shown on the 2nd edition map running down to the beach. This would therefore have been built between 1872 and 1905. The date of (005) is less clear. Both overlay midden (003). Wall (005) was entirely removed while the upper (NW) part of (002) remains in situ.

Figure 9: Plan showing features identified during watching brief in Pods area (scale shown).

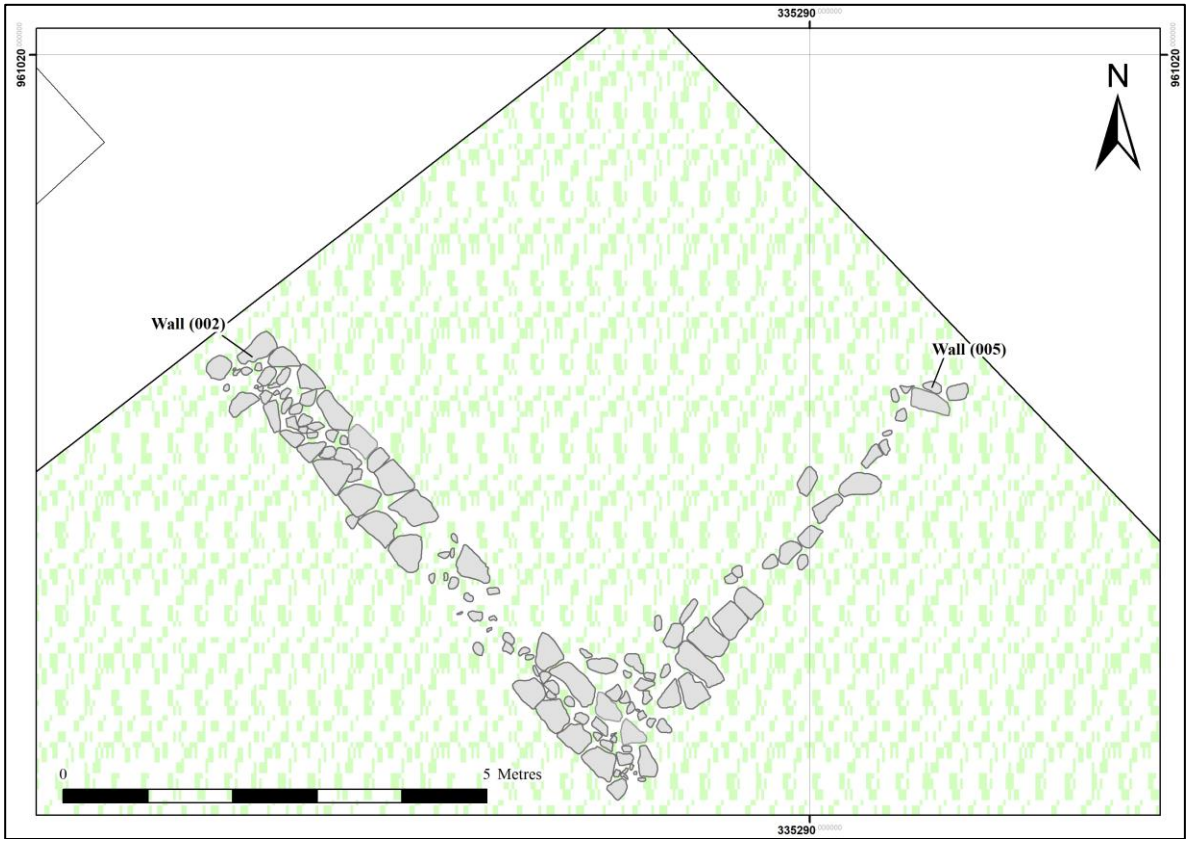


Figure 10: Plan showing walls (002) and (005) (scale shown)

Figure 11: Wall (002) showing tie in with NE boundary (1m scales)

Modern pit (004)

A small pit (004) was noted following the removal of the turf on the shore side of the pods area (see Figure 9). This was found to contain modern material including barbed wire, glass, iron and eyes for a shoelace. It was not recorded further.

Burn retaining Wall (006)

During clearing around the burn that flows across the site (see Figure 9) a retaining wall (006) was noted built along the NE bank. This wall was constructed from rough dressed stone on slate bases sitting on probable mixed natural (007). It survived as two courses + slate base and appeared to extend beyond the NW edge of site. No such wall was exposed on the opposite bank. This wall was not excavated and left in situ.

Figure 12: Retaining wall (006) facing N (1m scales)

Midden (003)

Around 1.5m NE of the burn in the top third of the pods area a large spread of silty mixed shell, bone, ash and soil was encountered. The context number (003) was used to denote all parts of the midden. This spread formed the slope of the raised beach in this part of the site and was exposed for around 30m parallel to the shore. It also appeared to run beyond the NE site edge. Around 6m of width was exposed in the centre of the site narrowing at the NE and SW. The top 2-3m of the site was however only de-turfed and it is likely that more material was concealed beneath the topsoil (see Figure 14). The new path line was left as a higher step of material, so the two slots were dug up to, but not through, this edge.

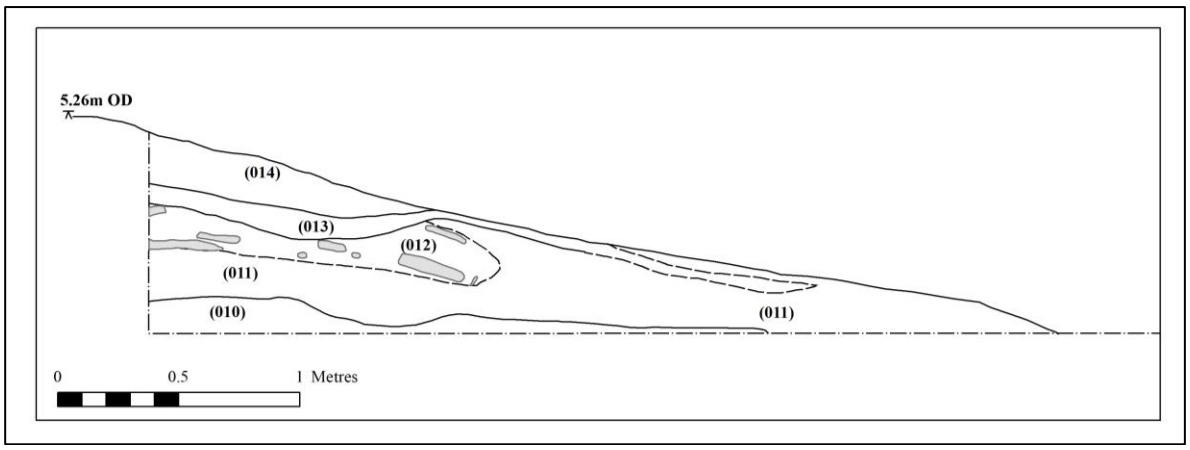


Figure 13: SW facing section of Slot A

The two slots dug into the midden exposed at least eight distinct layers of apparently dumped material.

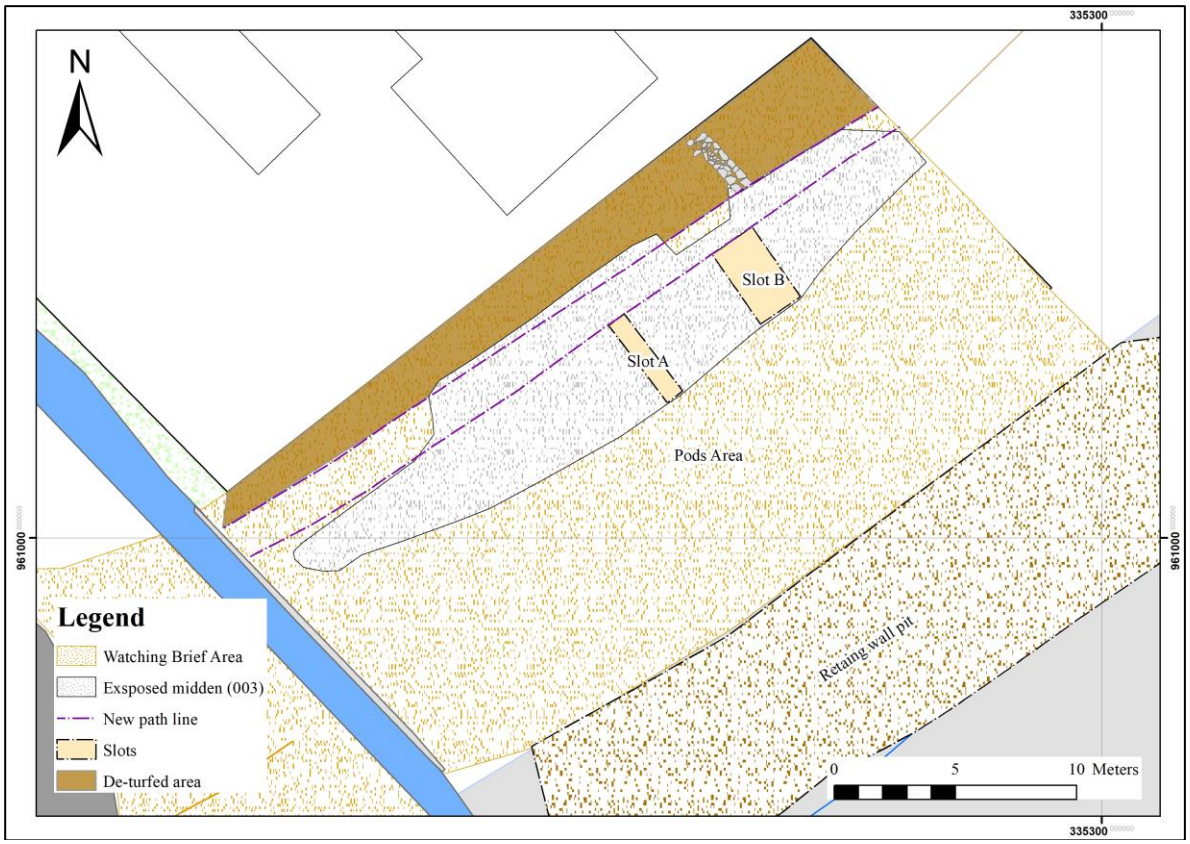


Figure 14: Plan showing midden (003) together with path and unexcavated de-turfed area.

Slot A

Slot A was 80cm wide and 4m long excavated by hand though the widest part of the exposed midden. Within it five contexts were identified. The deepest of these (010) was an orange brown silty deposit with much shell. It also produced finds including what is thought to be a pig tusk, another animal tooth and bone fragments (find 5). Directly above this deposit (011) was excavated. (011) was the thickest layer at around 30cm deep in places. It was a dark brown black with charcoal flecks and some shell. Higher again a construction of slab like stones was noted in a similar matrix (012). Above (012) deposit (013) was a much thinner layer at 5-10cm thick. (013) was a dark black brown silty deposit with charcoal flecks and much shell including mussel and others. Finally at the

top of the sequences deposit (014) was up to 20cm deep, a dark black brown silty deposit with charcoal flecks and few small stones.

Figure 15: Slot A NE facing section post excavation.

During the excavation of slot A a proportion of the material was wet sieved and a number of finds were recovered both in this manner and during digging (see finds below). Samples were also taken from all noted deposits within the slot.

Slot B

Slot B was 2m wide and 3.5m long cut into the NE part of the midden (003). This was excavated by machine and cleaned by hand before the SE facing section was recorded. Four contexts were noted in this section. The deepest (015) which was only clipped was thought to be natural rounded beach stones with some of the overlying material filtered in. The layer above (016) contained less stone, a black silt with much shell, grey ash and charcoal patches. (016) was also substantial at around 42cm thick. Above this layer (017) was found to be a grey silt with charcoal and orange patches and stone. Some shell was also noted in this layer but not nearly as much as in (016). Finally context (018) at the top of the sequence was a dark loam topsoil with some stones with modern ceramics so was not part of the midden.

Figure 16: Post excavation Slot B (2m and 1m scales)

A number of items were recovered from Slot B including bone and an iron nail (find 7) (see finds below).

Summary Of Specialist Reports

Finds

The bone pin found at Keiss is found is of a long lived type and it's fineness would suggest that it was used as a pin for clothing or hair rather than as a pointer or awl. The cobble tool's pronounced facet smoothed by abrasion, suggest that it was used for grinding and was probably utilised for food processing, though like many cobble tools its exact function remains opaque. The three iron objects recovered from the sites long lived and can be found at sites dating from the Iron Age to the Medieval period. The clench bolt (a nail and rove) is commonly used in the construction of boats but can also be found in doors, coffins, carts and other timber framed objects and structures. The nail is a common find on sites but the punch is much less common and the square section is unusual suggesting this was where it was held by the blacksmith's tongs. The outlier in the finds is the Mesolithic Flint core which may have been collected as a curio. Although much of these finds are long lived, together the assemblage is consistent with those found at Norse Sites in the north of Scotland.

Figure 17: Bone Tool

Figure 18: Cobble Tool

Figure 19: Nail and Rove

Figure 20: Mesolithic Flint Core

Animal Bone

The animal bone assemblage although small is consistent with assemblages throughout Scotland from a wide range of periods with a dominance of domestic animals, particularly Cattle. The Neonatal cattle bone found at the site is interesting as this is consistent with other Norse sites and suggest a dairy economy.

Figure 21: Selection of animal and fish bone recovered from site

Fish and Shellfish

The fish and shellfish recovered from the site show a focus on large cod family fish, periwinkles and limpets. This is typical of midden deposits from the late Norse period. Deposits from earlier periods would usually contain a greater variety in species and post-medieval periods would have been expected to contain Herring.

Archaeobotanical

The main charcoal type found in the midden deposits was a heather type with traces of hazel and willow and smaller traces of birch. Small quantities of oats and barley were present and other cereal grains were present but were too poorly preserved to be further identifiable. The charcoal is likely to have been available locally as they would have grown in heathland or scrubland environments, rather than mature deciduous woodland. A few fragments of carbonised seaweed were also identified which may have been burned to use as fertiliser but could also represent accidental burning as the site is very close to the shore. The presence of oats is consistent with a Medieval or later date.

The carbonised midden material from Slot A and Slot B was very similar, although birch charcoal was only identified from Slot A. The charcoal types are not indicative of any particular time period, but the presence of oats suggests a Medieval or later date for this midden material.

Dating

Four samples of charcoal from the shell midden were submitted to BRAMS for AMS radiocarbon determinations. Figures are given from 95.4% probability range.

1. **BRAMS 6120 –** Charcoal taken from the sample recovered from the lowest exposed context of midden in slot A (010). It has a date range from c 899 -1035calAD.

2. **BRAMS 6121** – Charcoal taken from Slot A. Context (014). Recovered from the highest exposed layer of the midden in Slot A. The date range for this context is 1031 – 1159calAD.

3. **BRAMS 6122 -** Sample taken from Slot B. Context (017) Recovered from the topmost deposit identified within the midden. It has a date range of 1046 – 1223calAD.

4. **BRAMS 6123** - Sample taken from Slot B. Context (015). Recovered from the deepest layer of the midden and has a date range of 900 – 1039calAD.

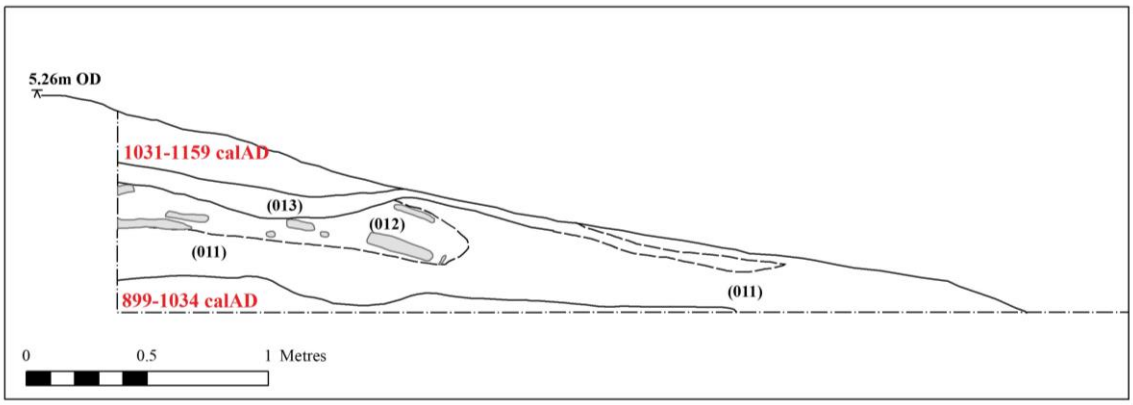


Figure 22: Profile of slot A showing date range from AMS dating

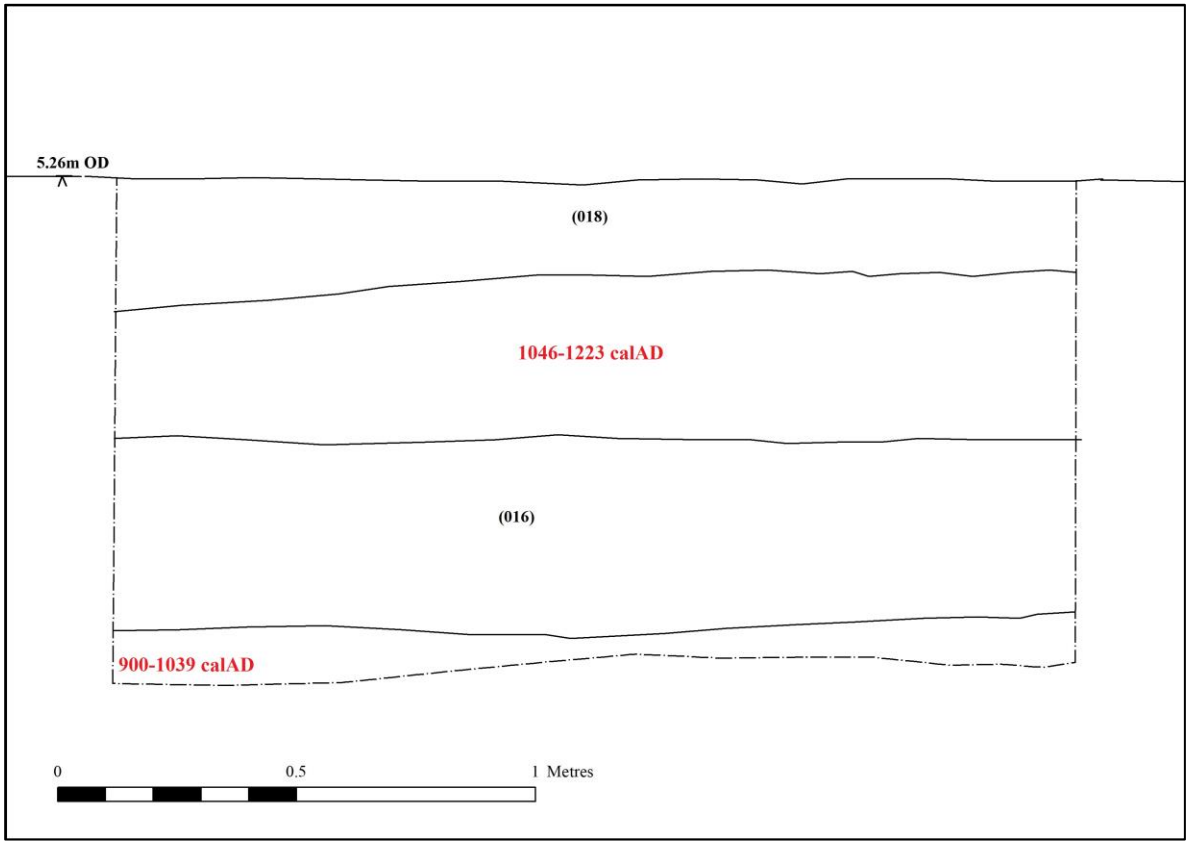


Figure 23: Section from slot B showing date range from AMS dating

The dates in both Slot A and Slot B demonstrate that the earliest dates are within the lowest deposits, thus confirming that this is an in situ midden dating broadly from the Viking to late Norse period, eliminating the possibility that the midden was redeposited from the excavation of the nearby structures (MHG1656).

Literature Review

Relevant documentary sources and potential parallel sites have been reviewed in order to provide context and insight into the findings at Keiss.

According to Anna Ritchie the Vikings Age in Scotland was between AD 780 and 1100[7]and the Norse period follows this until 1300.[8] The dates for the midden at Keiss fall largely within the Viking period, although two of the outlier dates fall within the later Norse period.

Although there are a number of historical sources which provide a few dates and the names and events of a few famous Vikings and placename evidence, most of the evidence we have of the Vikings are through archaeological excavations. Historical sources include the annals written by the monasteries provide a chronological framework for Scotland, particularly the 'Annals of Ulster' which is contemporary with the events taking place. The main source of literary evidence comes from the Icelandic Sagas, in particular the Orkneyinga Saga. These can provide us with the impression of political life in the Eleventh and Twelfth centuries in the Norse world but may hark back to past Viking life when raiding was commonplace.[9]

[7] Ritchie, 1993, p30
[8] Ritchie,1993 p106
[9] Ritchie, 1993, p30

Figure 24: Sites discussed in literature review

A number of rescue excavations have taken place along the coast of Caithness, in the vicinity of the site at Keiss. One of the largest of these was an excavation undertaken on a Norse midden site was at Freswick Links, situated approximately 7km north of the development area. Prior to excavation an environmental survey took place in 1979 whilst excavations and survey were taking place in Freswick Castle. This was undertaken to greater understand the extent of the middens, erosion and to collect artefacts and ecofactual material. These auger and phosphate surveys showed that the size of the settlement was greater than previously believed. The Late Norse horizons of the midden are largely intact and well preserved. The work undertaken by Curle, Childe and, Morris and Batey all indicate that the Norse settlement was located to the centre of the Links with domestic and other activities focussed in this area. The auger survey indicated that middens are restricted to the seaward side of the Links and accumulated between the settlement buildings and the sea. Since most of the debris within the deposits came from the beach and shoreline (fire-cracked stones, shells and seaweed) or the sea itself (fish), this would seem to indicate that activities related to fishing were likely to have taken place in these locations rather than being dumped here from somewhere else.[10] Batey argued in her initial report that the fish remains indicated that commercial fishing was taking place but Jones on analysis of the remains felt that this was not the case and that it was entirely feasible that the fish remains were the result of local consumption.[11]

As part of Highland Archaeology Week an evaluation was carried out over features which were eroding from the sand dunes at the rear of Dunnet Bay, Caithness. This is situated approximately 16km north west of Keiss. The site occupants practice mixed agriculture with animal bones representing cattle, sheep and possibly pig. The midden deposits include marine shells and fish bones, which like Freswick, suggest exploitation of the shore and the sea. Published post excavation

[10] Morris, Batey and Rackham, 1995, p268-269
[11] Barrett, J H, 1995

reports have proved elusive but artefacts include an antler comb which is a type found in the 12th to 14th centuries AD. The second artefact was a bone pin which is a type which date to the 8th century which indicates that there has been activity on the site since at least pre-Viking to late Norse periods.[12]

Roberts Haven is another midden site approximately 12km north north east of the development area. The wheel thrown pottery from two of the contexts provide a tentative 13th or 14th century (late Norse) date for the basal layers of the lower midden. Like other middens excavated fish dominates the assemblage of the areas excavated. Articulated bones represent 10% of this weight. The remaining fish are isolated bones of which some were burned, crushed or cut. Preliminary examination suggests that cod, ling and saithe are the most common species. Mammal and bird bone represent only a small amount of the deposit. The mammal bone being largely small fragments, many of which were burnt.[13] The large quantities of cranial and appendicular elements of the cod family indicate that fish processing was taking place onsite.[14]

Large assemblages of fish remains have been recovered from several Norse sites in Northern Scotland, such as those mentioned above. It has been suggested that these may be evidence of commercial fish-processing. At St Boniface on Orkney there is the only remaining above ground evidence of an early fish-processing station. This is unusual in that this ashy mound in which the bones were found has been interpreted as remains of fish liver oil production. The ash being a result of firing cauldrons in which the fish livers were boiled and the oil removed. Fish liver oil was used for lighting, as a lubricant and for other domestic purposes.[15]

A five year study was undertaken as part of Strathnaver Province Archaeology Project. This included excavations at Borralie in north west Sutherland. Two bow-sided buildings were excavated one of which underlay later 18th century buildings. Deep midden deposits containing fish and animal bones were also uncovered, as well as some course pottery. It is believed that this may date to the Norse period but reports with full results are still awaited.[16]
There is a shift from inshore fishing to deep sea fishing between the late Iron Age/Pictish period and the Viking period. At Buckquoy, it was noted that large individuals of species such cod, ling, gurnard and saith or pollack, are largely only present in deeper waters and dominate the Viking phases. It has been argued that the type and size of fish found at Viking/Norse sites are the result of commercial fishing, but Barrett argues that similar types of fish have been found in the Mesolithic site of Morton, Fife which is unlikely to be the result of exporting fish on a commercial scale during this period.[17]

The presence of neonatal cattle in the midden assemblage at Kiess is interesting as it suggests that in addition to fishing and fish preservation, the economy may have focussed on intensive dairy production. This is also the case the Quoygrew and some other sites with contemporary midden material[18].

These middens are often associated with nearby structures and settlements such at Freswick, usually being located between the structure and the shore. It is likely that the excavated midden at Kiess is associated with the structures located to the north which were previously discounted as post-medieval by Colleen Batey. [19]

[12] Pollard, 1996
[13] Barrett, J H, 1992
[14] Barrett, J H, 1997
[15] Lowe, C, 1998
[16] Lelong, O and Gazin-Schwartz, A, 2006
[17] Barrett, J H, 1995
[18] Harland, J, 2022
[19] Batey, C E, 1981

Viking/Norse settlements are often located at or near late Iron Age/Pictish sites such as the Brough of Birsay, a small tidal island off the north-west coast of Mainland, Orkney. Here the Norse structures are located to the south east of the of the Pictish structures. Further late Iron Age sites became occupied by the Norse such as Pool on Sanday and Skaill, both on Orkney. Hunter has suggested that rather than being an aggressive takeover of the lands instead the Iron Age people moved away from the settlements leaving them available for takeover by the new Norse settlers.[20]

Overall, then, Kiess seems to fit very well into the general (although somewhat sparse) picture of Viking and Norse settlements in the north of Scotland. It follows the pattern of reused land after Iron Age and possibly British use. The location close to the sea seems typical and the type and nature of the midden remains seem fairly normal. The radiocarbon dates are of course a vital component of this interpretation, but even without them factors like the fish species and shell types point to this interpretation. The only slight off-note to this, is the building/s that the waste appears to have come from. This odd complex does not quite fit with our current understanding of Viking or Norse buildings being an odd and fussy shape with varying wall thicknesses and internal divisions. This may warrant further investigation but there is no doubt that the midden apparently associated with these structures is Viking/Norse and fairly typical of that period.

Discussion & Conclusions

Whilst much of the area excavated to date across the study site has revealed few features or cultural material, the north east end of the site did contain various features and objects of interest. The footings of two walls were discovered just beneath the turf, one of which is likely to have been included in the 1872 map. However it is the midden revealed agonised the raised beech in the north east of the site that contained the most significant material and finds.

The six artefacts recovered included a cobble tool, an iron craft working implement, structural iron objects, and a fine bone pin. Although the assemblage is small it is in keeping with other Viking / Norse Sites. The early Mesolithic flint core was probably brought to the site as a curio many millennia after its initial use.

Again, although the animal bone assemblage is small, it is fairly typical for Scottish sites from a wide range of dates with a dominance of domestic mammals, in particular Cattle. The fish and shellfish from the site focussed on larger cod family fish, limpets and periwinkles which are typical of midden deposits from the Norse period. Material from an earlier date would have had a greater diversity of fish species with a greater focus on inshore and coastal fishing, whereas anything post-medieval in date would be more likely to have contained herring.

The AMS dating results from the material in both the excavated slots clearly demonstrate that the midden is in situ with the earliest dates at the base of the deposit and the latest dates in the higher up layers. This disproves the theory that the midden represents the spoil from Sir Tress Barry's excavations in 1893. Instead, the midden is more likely to be midden relating to the structures to the immediate northwest of the study site (MHG1656), of which only turf-covered footings survive.

The results from AMS dating, the fish and shellfish analysis and the artefacts from the site all demonstrate that this site is undoubtedly Viking/Norse in nature and is therefore an important addition to a limited corpus of sites of this type on the mainland in the North of Scotland.

Viking to Late Norse activity is known from very few sites in the North of Scotland, including Robertshaven, Freswick, and Dunnet (discussed above). Those with dated associated structural

[20] Hunter, J R, 2003

remains are rarer still, meaning that the results from Keiss Harbour have regional significance and further work on these structures would provide valuable additional knowledge to Viking/Norse studies.

Addendums

SPECIALIST REPORTS

Artefact Report by Leanne Demay and Fraser Hunter, with lithic identification by Hugo Anderson-Whymark

Summary

This small assemblage of six artefacts was retrieved during an archaeological watching brief on land to the east of Keiss Harbour. Though small, the assemblage comprises a range of artefacts, including a cobble tool, an iron craft working implement, structural iron objects, and a fine bone pin. All finds were recovered from a series of midden deposits (C14-dated to 11th/12th century AD) spread over the slope of a raised beach adjacent to the remains of a complex of structures approximately 70m southwest of Keiss Broch. An early Mesolithic flint core may have been brought to the site as a curio many millennia after its initial use.

Catalogue

Bone pin

SF 012. An intact, finely finished and polished bone pin with splayed head. Splayed head formed by the unmodified proximal articular head of a fibula. Oval-sectioned shank tapers gently, curving slightly along length following the natural shape of the bone, towards a tip slightly worn through use. In good condition with some evidence of erosion along one edge approximately halfway up the shank. A horizontal knife mark is visible near the head along one side below the joint. L: 64mm; W: 8mm at widest; D: 5mm (head), 1mm (tip). Context 003. Slot A.

Cobble tool

SF 009. Grinder/pestle. Elongated smooth oval cobble with grinding facet at the tip concentrated on one side, suggesting it had been used at an angle. Its elongated shape and use-wear suggest it was used as a pestle. Several fine scratches on the same alignment, visible on one face near the widest end probably occurred post-deposition. L: 109mm; W: 38mm at widest; D: 28mm at widest. Mass 194g. Context 003. Slot A.

Flint core (by Hugo Anderson-Whymark, National Museums Scotland)

SF 010. Beach cobble of mid-grey flint, probably of local origin, that has been regularly worked as an opposed-platform blade core. The platforms are acutely angled and were each established by a single flake removal; blades up to 46mm long and 11mm wide were removed by direct percussion from both ends. The core shows no reason for abandonment, such as flaking errors or flaws in the raw material. It exhibits a heavy white corticated surface, except for a later flake removal on one platform. The entire surface of the core is heavily abraded with rounded edges: the condition is consistent with beach rolling. The reduction strategy is indicative of a Mesolithic date and the size of the removals is most characteristic of the earlier Mesolithic. L: 46mm, W: 35mm, D: 36mm. Mass 58.2g. Context 003. Slot A.

Iron

SF 006. Nail fragment. Square-sectioned shank with a slightly domed square head. The straight shank is fractured at the tip. Remaining L: 89mm; W: head 21mm, shank 9mm. Mass 40.3g. Context 011. Slot A.

SF 011. Clench bolt, intact. Oval head approximately 22mm at widest and square rove 26mm wide. The slightly twisted/distorted bar is approximately 23mm in length and 6mm wide. Mass 34g. Context 003. Slot A.

SF 013. Punch. Square or rectangular sectioned with head burred through hammering. The shank tapers sharply approximately 88mm towards the tip. Tip burred through use. L: 113mm; W: 9mm. Mass 56g. Context 003. Slot B.

Discussion

The bone pin (SF 012) is a widespread and long-lived type, utilising the natural form of the bone with minimal modification. The fineness of the finish suggests it was used as a pin, rather than a point or awl (see Foxon 1991, 194; 224; Hallén 1994, 215), for clothing or hair.

X-radiography clarified the identifications of the three iron objects SF 011, SF 006 and SF 013. The clench bolt (SF 011) consists of two separate components, a nail and a rove, and was used to join timbers which overlap or are cut diagonally to fit together. Traditionally associated with boat building, clench bolts were also used in the construction of doors, carts, coffins and other timber-framed objects and structures (Goodall 2011, 164; Zori 2007). Nails like SF006 are ubiquitous finds on medieval excavations, but fine tools like the punch (SF 013) are less commonly noted, highlighting the importance of X-radiography for identification. The square section is unusual for a hand tool and suggests it was intended to be held with blacksmith's tongs during hot working (Goodall 2011, 10, 16-17), providing a rare glimpse of metalworking craft at the site. The iron objects are long-lived types, found in Iron Age to medieval assemblages.

Only one cobble tool (SF 009) was recovered. It has a pronounced facet smoothed by abrasion, suggesting it was used for grinding, the elongated shape of the stone lending itself to use as a pestle. It was probably utilised for food processing, though like many cobble tools its exact function remains opaque.

The flint core (SF 010) is a marked chronological outlier in this assemblage and raises interesting questions. It is extremely abraded and waterworn, suggesting it may have been collected from the foreshore as a curio. There are plentiful instances of prehistoric flint being collected and curated at later sites because they embodied myth and the supernatural (e.g. Chittock 2019, 80; Knight et al, 2019). There is a precedent for residual Mesolithic material in considerably later settlement middens in the vicinity, for example Keiss Road Broch yielded numerous objects of Mesolithic to Neolithic date, and Freswick Bay similar material was recovered (MacKie 2007, 472-476). The inhabitants may have found these objects thought-provoking, presenting a possible instance of 'archaeology' discovered in the past (see Knight et al. 2019).

Evidence for Late Norse settlement in Caithness remains sparse (see Heald and Barber 2015, 131-135). Initial Viking to Late Norse activity known from only a few coastal sites, including Robertshaven, Freswick, and Dunnet (*ibid.*). Those with dated associated structural remains are rarer still, giving the results from Keiss Harbour regional significance.

Overall, the assemblage from Keiss Harbour is consistent with the 11th-12th century radiocarbon dates; parallels can be found in other Late Norse sites (see Sharples 2020, 367; 425). The

assemblage is small, but important for understanding the nature of Late Norse settlement in Caithness and the domestic and craftworking activities which were taking place at the site.

Archaeobotanical report by Dr Susan Ramsay

Introduction

The following archaeobotanical report details the analysis and interpretation of carbonised botanical remains recovered from samples taken during archaeological mitigation work in advance of the construction of holiday pods and services to the east of Keiss Harbour, Keiss, Caithness. The archaeological work was carried out by Highland Archaeology Services on behalf of Mr and Mrs Harris. The excavations revealed a large dump of midden material spread over the slope of the raised beach on the inland side of the site. The midden material was thought to relate to known structures to the northwest that were excavated in the 1890s. It is therefore possible that this midden material is spoil from these earlier excavations.

Methodology

Sample Processing

A programme of bulk sampling was undertaken in order to examine the carbonised archaeobotanical remains from Keiss Harbour. In total, eight bulk samples were analysed for the presence of botanical remains. The bulk samples were processed by flotation by Donna Young on behalf of Highland Archaeology Services and the unsorted flots and sorted retents given to the author for analysis.

Macrofossil Analysis

Dried flots and sorted retents were examined using a binocular microscope at variable magnifications of x4 - x45. For each sample, estimation of the total volume of carbonised material >4mm was made and all charcoal >4mm was identified. All carbonised cereal grains and seeds were identified and any other plant macrofossil remains were noted.

Reference was made to Schweingruber (1990) and Cappers *et al* (2006) to aid identifications and vascular plant nomenclature follows Stace (1997).

Results & Discussion

The midden was excavated using two slots: Slot A and Slot B. Table 1 details the material selected from each sample for potential AMS carbon dating and full results of this analysis are shown in Table 2.

Slot A was excavated through the widest part of the midden. Contexts (010), (011), (012), (013) and (014) were examined, with layer (010) being the lowest deposit and layer (014) being the uppermost deposit. All contexts produced small amounts of charcoal and cereal grains, with few significant differences between the individual carbonised assemblages. The main charcoal type present was heather type, with traces of hazel and willow in layer (011) and traces of birch in layers (012), (013) and (014). Small quantities of carbonised oats (or cf oats) and barley (or cf barley) were present in all contexts apart from (013). All contexts contained small quantities of indeterminate cereal grains that were too poorly preserved to be further identifiable. The charcoal types are likely to have been locally available as they would have grown in heathland or scrubland environments, rather than indicating the presence of mature deciduous woodland. In addition, a few fragments of carbonised seaweed were also identified. This may have been burned to use as fertiliser but could also just represent accidental burning since the site is very close to the seashore.

Slot B was cut into the NE part of the midden. The lowermost layer (015), which was thought to be mainly natural rounded beach stone, produced traces of heather type charcoal, oats and indeterminate cereal grains. This was overlain by a substantial midden layer (016), which produced traces of heather type and Scots pine type charcoal, with small quantities of carbonised oats, barley and indeterminate

cereal. Above this was a less stony layer (017), which also produced traces of heather type charcoal, oats, cf barley and indeterminate cereals.

The carbonised midden material from Slot A and Slot B was very similar, although birch charcoal was only identified from Slot A. The charcoal types are not indicative of any particular time period, but the presence of oats suggests a Medieval or later date for this midden material.

Table 1: AMS potential

Context	Sample	AMS potential
010	**001**	Avena spp (x5) (0.02g)
011	**005**	Salix sp (0.02g) Avena spp (x6) (0.03g)
012	**004**	Betula sp (0.02g) Avena spp (x5) (0.02g)
013	**003**	Betula sp (0.26g) Betula sp (0.04g)
014	**002**	Betula sp (0.08g) Avena spp (x6) (0.02g)
015	**009**	Avena spp (x4) (0.02g)
016	**008**	Avena spp (x5) (0.02g)
017	**007**	Avena spp (x6) (0.02g)

Table 2: Botanical Results

	Slot	Slot A					Slot B		
	Context	010	011	012	013	014	015	016	017
	Sample	001	005	004	003	002	009	008	007
	Description	Deepest buried midden deposit	Midden material above (010)	Midden material as (011)	Midden material	Uppermost midden material	Natural stones mixed with overlying midden material	Midden material	Midden material
Volume of charcoal >4 mm		<<2.5ml	2.5ml	<2.5ml	2.5ml	5ml	<2.5ml	<2.5ml	<2.5ml
Charcoal									
Betula spp	Birch	-	-	1 (0.02g)	2 (0.30g)	3 (0.13g)	-	-	-
Corylus cf avellana	Hazel	-	1 (0.02g)	-	-	-	-	-	-
Ericales	heather type	1 (0.01g)	6 (0.09g)	17 (0.12g)	13 (0.13g)	-	2 (0.03g)	9 (0.18g)	10 (0.13g)
Pinus sylvestris type	Scots pine type	-	-	-	-	-	-	1 (<0.01g)	-
Salix spp	Willow	-	4 (0.04g)	-	-	-	-	-	-
Cereals (carbonised									
Avena spp	Oats	5	6	5	-	-	4	5	6
cf Avena spp	cf oats	-	2	-	-	6	-	3	4
Hordeum vulgare sl	barley	-	1	-	-	-	-	2	-
cf Hordeum vulgare sl	cf barley	2	1	2	-	5	-	2	2
Cereal indet	indet cereal	4	3	3	14	16	3	2	9
Small Poaceae	small grass	-	-	-	-	-	-	3	-
Misc (carbonised)									
Bone	bone	2 (0.01g)	2 (0.63g)	8 (0.23g)	31 (0.54g)	22 (0.97g)	4 (0.34g)	2 (6.55g)	

Clinker?	clinker?	10ml (3.45g)	30ml (12/04g)	20ml (10.42g)	30ml (11.15g)	25ml (11.66g)	5ml (1.70g)	10ml (4.20g)	30ml (15.91g)
Fucoid seaweed	seaweed	-	5 (0.03g)	2 (0.02g)	-	-	-	-	-

Animal Bone (mammal and bird) assessment report By Dr Julie E M Cussans

Introduction

As small assemblage of mammal and bird bone recovered during a watching brief at Keiss Harbour Pods, Wick is assessed and described. The possible origin of the deposits – antiquarian spoil heap, or original midden deposit – is discussed.

Method

The entire animal bone assemblage was scanned one context/finds group at a time and the results recorded on a bone scan pro-forma in MS Excel. The pro-forma took into account observations on bone condition including general preservation, colour, abrasion, fresh breaks, burning (charred and calcined) and gnawing. Bone identifications were made using the authors own reference collection and with the aid of reference manuals (e.g. Schmid 1972, Pales & Lambert 1971 a & b, Pales & Garcia 1981 a & b, Hillson 1992, Cohen & Serjeantson 1996). Mammal bones were quantified by taxa where possible or, where this was not possible, by size category, where large indicates cattle, red deer or horse sized, medium is sheep/goat, pig or dog sized and small mammal is cat or hare sized. The presence of birds, and other small fauna could also be noted; fish are reported on separately (see Harland, this volume). For the identified mammal taxa, the dominance of particular body parts was noted as was the presence of butchery, ageable mandibles and teeth, unfused epiphyses, measurable bones and those displaying pathologies or abnormalities. The presence of such features was noted in a semi-quantitative manner (none, few, some, many). Further to this, notes were made on any particular points of interest. Full data are stored in the site archive.

Results

A small quantity of mammal and bird bone was recovered from midden deposit (003), some of which was more specifically assigned to identified layers/lenses within the overall deposit, see **Table 3** for details. Bone preservation was largely recorded as good or ok on a five-point scale ranging from very poor through to excellent; two of the contexts were recorded as having poor preservation (**Table 3**). Bone colour was largely recorded as variable, for each of the contexts, which would tend to support the theory that the deposit was an antiquarian spoil heap, as such colour variation would suggest mixing of bone fragments from different original deposits. Low levels of abrasion were noted for the majority of the assemblage with only slightly higher levels of abrasion noted for contexts (012) and (014). Small quantities of charred and calcined bone were recovered from the sieved samples and these were generally small unidentifiable fragments. Canid (dog) gnawing was only observed on a small quantity of bones and was present in finds numbers 4, 7 and 8; no rodent gnawing was present.

Table 3: Summary of mammal and bird bone preservation and quantification for Keiss Harbour Pods

Finds No.	Sample No.	Context	Slot	Pres.	Cattle	Sheep/Goat	Pig	Dog	Seal	Large mammal	Medium mammal	Bird	Total
1	-	3		good	8	1	2		3	9	1		24
3	-	3	A	ok	2	2				2	3		9
4	-	3	A	good	6	1				9	8	1	25

5	-	10	A	ok	2		1			1			4
7	-	3	B	good	1					3			4
8	-	3		good	5		1			11	1	1	19
	1	10		ok	1					1	4		6
	2	14		poor						1	15		16
	3	13		ok				1		2	13		16
	4	12		ok	2						3		5
	5	11		ok							1		1
	7	17		good	1						2		3
	8	16		ok	1					1	10		12
	9	15		poor							5		5
				Totals	**29**	**4**	**4**	**1**	**3**	**40**	**66**	**2**	**149**

In total 149 bone fragments were recorded in the mammal and bird bone assemblage, a large portion of which were very small fragments from the sieved samples, the majority of which were thought likely to belong to medium (sheep or pig sized) terrestrial mammal, but could not by any further identified. A further, relatively large, portion of the assemblage was made up of bone fragments that could only be identified as large (cattle or horse sized) terrestrial mammal, these were largely rib, vertebra and long bone shaft fragments, that could not be assigned with certainty to a particular species; however, in all likelihood the majority of these will have belonged to cattle. Of the identified taxa, cattle were by far the most numerous, with sheep/goat and pig being represented by far fewer elements.; a single dog bone was also identified. The only wild mammal present was seal, represented by three elements from Find 1, (003), a scapula, an ulna and a vertebra, all of which belonged to young/juvenile animals. No butchery marks were observed on the seal bones. Two bird bones were present. One was a coracoid from a goose (*Anser* sp.), most likely greylag or domestic goose and the other was a tarsometatarsus of a large goose-sized bird, that is not goose and has yet to be identified. No butchery marks were identified on either of these bones.

Dog was represented by a maxilla (skull fragment) of a young animal, from Sample <003>, (013). The bone was small, unfused and contained only deciduous premolars, none of which appeared particularly worn. Pig remains were present in a number of the find groups (Table 1) and indicated the presence of both mature and immature individuals. The presence of a male pig was attested to by the occurrence of a large canine tooth (or tusk), this was however not large enough to indicate the presence of wild boar. No butchery was noted on any of the pig bones present. Sheep/goat was also present in a number of the find groups (Table 1) and included some ageable teeth and mandibles. Both adult and immature animals were indicated as present. No butchery was noted on any of the sheep/goat bones.

Cattle were the most numerous of the identified taxa and were present in the majority of the contexts, although were most numerous in the hand collected material. A mix of body parts were present including, head, limb and foot elements. Butchery marks were common and were largely noted as heavy blade chops, although some smaller knife cuts were also present. Heavy blade chopping of cattle bones is fairly common on Scottish sites from the Iron Age onwards (ScARF 2012). Cattle of a variety of ages were present, but neonate and juvenile animals were particularly well represented; an older animal was represented by a heavily worn incisor. High levels of cattle neonate mortality have been interpreted as a sign of dairying at a number of sites and can be seen in the Scottish island sites from the Neolithic period onwards (Mulville *et al*. 2005). It should however be noted that high levels of infant mortality, may have several other causal factors and it is impossible to determine specific economic strategy from such a small assemblage. Of particular

interest in the cattle assemblage was a neonate distal tibia diaphysis and its associated unfused epiphysis from Sample 1 (010). The fact that these two pieces of the same bone have been found in relatively close association with each other likely indicates limited movement of the deposit since its original deposition. This however, is somewhat contrary to the evidence from colour variation mentioned above.

Summary

Although small, the assemblage is fairly typical for Scottish sites of a range of dates with a dominance of domestic mammals, particularly cattle and the likely opportunistic exploitation of birds and sea mammals. The question of whether the material represents an antiquarian spoil heap or the original deposition of domestic midden is interesting, with some elements indicating a low level of disturbance or re-deposition and other lines of evidence (i.e. bone colour variation) indicating some level of disturbance and movement of material. On balance, from the evidence seen here, it seems more likely that the material is redeposited and represents a spoil heap, rather than an original deposition. However, as it appears likely that all of the material would be associated with a single cluster of buildings (MHG1656) the assemblage is still of interest.

Fish Bone and Shell Report by Dr J Harland

Introduction

Excavations along a stretch of coast at Keiss Harbour, Caithness, produced a small assemblage of fish bones and marine shells. The material is not yet dated. During excavation a large spread of midden was noted, and was extensively sampled and sieved. A few fish were also given small finds numbers. Bone and shell has been approximately quantified, species have been noted, and, for the fish, note was also made of fish sizes and element patterning.

This assessment provides a statement about which species were being used when, what fishing grounds may have been used, and how the shoreline was being exploited.

Methods

All bags of fish and marine shells were quickly scanned and a note was made of the following:

- Species
    - Fish were ranked by species and size using 'a few – some – most – all'
    - Total numbers of identifiable heads and vertebrae were noted for fish
    - Shells were counted by minimum numbers of non-repeating elements, e.g. limpet apexes
- Element patterning at a broad level
- Potential for metrical analysis
- Time required for full analysis
- Any burning or other modifications

Results

Preservation and taphonomic alterations
The fish and shells displayed fairly typical preservation from northern Scotland, with moderately fragmentation and a dull surface texture. Some sites will sand-based soils are better preserved, while some are worse. Fish bones were fragmented, with neural and haemal spines missing from most vertebrae, and the more fragile cranial elements were fragmented. Some shells were whole, but were lacking the lustre of fresh shells throughout all contexts. Periwinkles tended to be better preserved than limpets because of their robust and compact shape.

Most of the contexts contained small numbers of burnt fragments of fish bone, and occasionally burnt shell was noted. Bones were both calcined and charred, showing a variety of fire temperatures. One fish bone from (003) had mineralised concretions on it.

Species
The fish and marine shells were typical for assemblages from the Viking Age, Late Norse or later medieval period from northern Scotland: dominated by large cod and related species, with some smaller saithe, and with copious quantities of limpets and periwinkles (see Tables 1 and 2).

The fish species found were cod, saithe and some fragments that could only be identified as saithe or pollack. These can be found throughout all time periods in Scotland's archaeological story, but the complete lack of any other species indicates a focused marine fishery, without any contribution by local freshwater streams for salmon, trout or eel. The cod ranged in size from 30-50cm total length to over 100cm total length, with most being in the 80 to 100cm total length range; these were found throughout all contexts, aside from (010), which had no fish, and (011), which only had a few

burnt and unidentifiable fish fragments. These cod would all have been caught at sea using boats and hook-and-line or long line technologies. Only a couple of large saithe or pollack were noted and these could have been caught in similar waters with the same methods. Smaller saithe of less than 30cm total length were found in (016) and (017) only, indicating some inshore or coast-based fishing for these juveniles took place only at that time.

Herring are notable for their absence, despite the recent importance of the herring industry to the area. Herring remains can be found in copious quantities in medieval urban areas, and in the Western Isles, but they are rare in Orkney even at 18th/19th century sites which are contemporary with the herring boom.

Limpets are typically thought of as bait for fishing, while the periwinkles were probably eaten directly, or used as bait; both are common finds on rocky shorelines. Limpets can be eaten, albeit with little calorific value, and in the historic period they were seen as a famine food. They are often found in conjunction with larger cod family fish at the fish middens typical of northern Scotland. Context (010) produced the most shell: mostly limpets, some periwinkles, and single finds of dog whelk, flat periwinkle, and a large unidentified bivalve fragment. Some variation can be seen: (106) had almost twice as many periwinkles as limpets, while (107) has far more limpets than periwinkles. A good size and shape range was noted for the shells, showing the full range of the intertidal zone was exploited from lowest water to the upper shore.

A few crustacean fragments were noted in (013).

Butchery and fish preservation
Although this is a small assemblage, it was possible to note that all parts of the fish were observed in most contexts, so it's likely these were being eaten locally. However, butchery does indicate there may have been some local preservation taking place. Contexts (016) and (017) both displayed large cod appendicular and vertebral elements that were butchered: a caudal vertebra with a transverse knife mark and a chopped supracleithrum. Both of these elements can show butchery marks when preserved using traditional air-drying methods, and we know this preservation method was widely used in Caithness and the Northern Isles during the 11th to 13th centuries (e.g. observed at Quoygrew, Earl's Bu, St. Boniface and Tuquoy). At other sites, this preserved fish was being eaten locally, and also used to pay rents, renders and tithes, and to exchange for imports (Barrett *et al.* 2011, Harland 2006, Harland and Barrett 2012). Here, the assemblage is too small to detect slight differences in import or export alongside fresh fish consumption.

Summary

The small assemblage from Keiss focuses on larger cod family fish, limpets and periwinkles, suggesting that this material came from typical midden deposits of the Late Norse period, and most likely dating to the 11-13th centuries. These have been found because of coastal erosion at many sites in Caithness and the Northern Isles, and what was excavated here may be the final remains of what was once an extensive deposit – one that may have been disturbed or redeposited at some point, as suggested by the excavators. Material of earlier date would be expected to show a greater diversity of fish species and more focus on inshore and coastal fishing, while anything of post-medieval date would be more likely to have herring.

The presence of neonatal cattle in the mammal assemblage is interesting, and could be further suggestive that a 11-13th century date is correct: at Quoygrew, and at some other sites with contemporary midden material, neonatal cattle are present in high quantities and show an economy focussing on intensive dairy production alongside fishing and fish preservation (Critch, Harland and Barrett 2018).

Potential for further analysis

There would be some potential to fully quantify all of the remains, to measure a few of the fish remains, and some of the shells. However, this assemblage is not large and little more information would be obtained even if a full analysis and tight dating becomes possible. However, if considerably more midden was excavated full analysis would then be recommended.

Table 4: Fish Summary

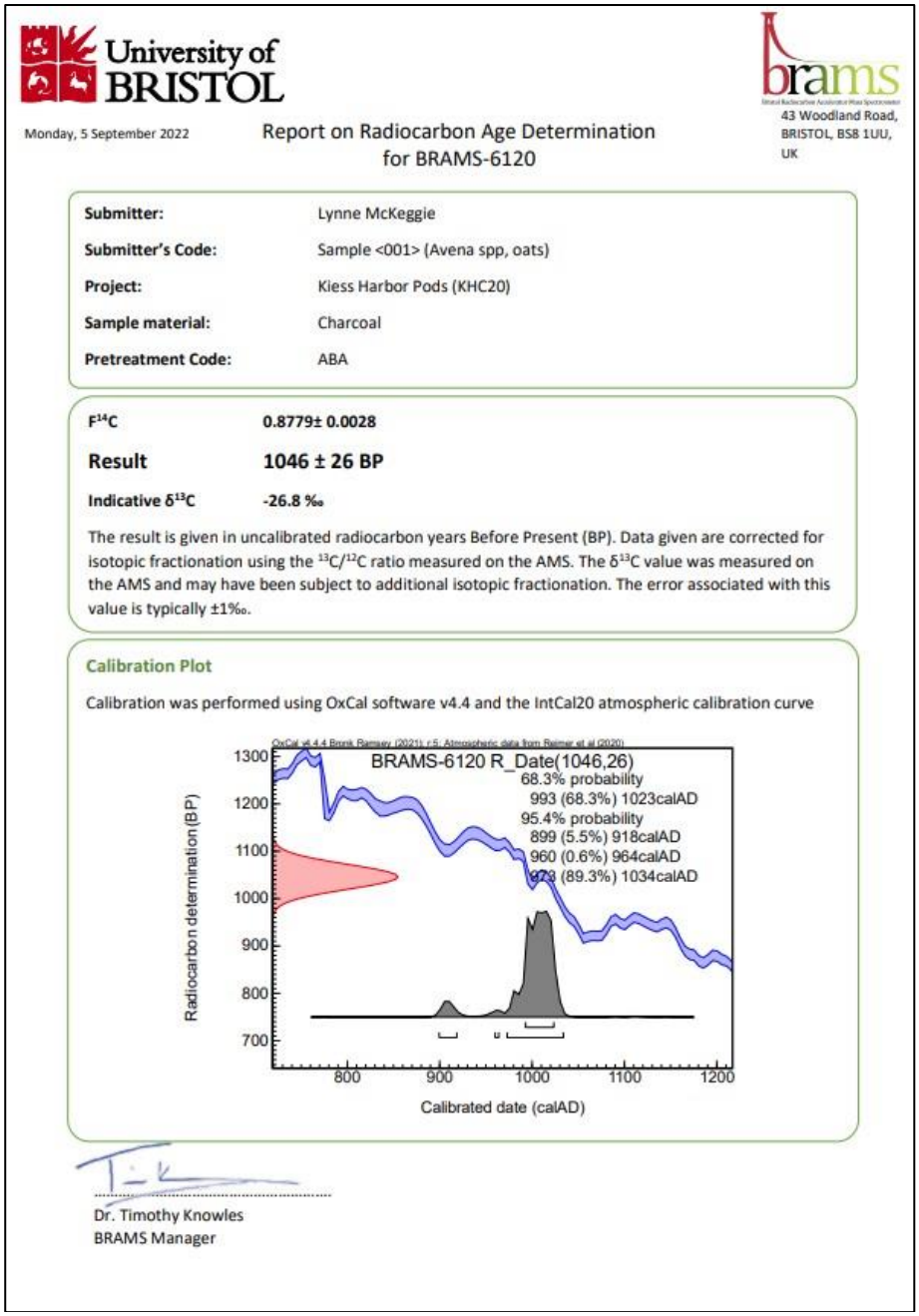
Context ()	Sample <>	Time to fully id	Cranial/ appendicular element count	Vertebrae count	Saithe <30cm	Saithe 30-50cm	Saithe/ pollack >80cm	Cod 30-50cm	Cod 50-80cm	Cod 80-100cm	Cod >100	Burnt/ calcined	Notes
003	triangle 1	10	2	2						most	one av1		
003	triangle 3	10	4						one	most			
003	triangle 4	5	4							most	one supracleithrum		mineralised concretion on cod ceratohyal
003	triangle 4 slot A	2									all, but unidentified		
003	triangle 8	5	2						cod c. 50cm TL cleithrum with small knife marks on lateral	one			
010	001												no fish
011	005	2										a few	
012	004	15	1	1				most			a few but unidentified		
013	003	45	16	16			one		a few	most	a few	a few	a few crustacean
014	002	30	9	11		a few	one		a few	most, including cranial and appendicular, and vertebrae		a few	
015	009	5		1						an av3		a few	
016	008	20	4	4	most				one	a few, including a cv1 butchered in transverse and a ?chopped tiny cleithra fragment		a few	
017	007	20	7	5	a few					most, cv1, cv2, supracleithrum chopped to remove dorsal portion, and 2 cleithra frags		a few	looks like classic fish midden

Table 5: Marine Shell Summary

Context	Sample <>	Time to id	Potential for measuring	Limpets min count	Periwinkles min count	Burning	Notes
010	001	30		146	73		1 dog whelk, 1 flat periwinkle, 1 crustacean, 1 fragment of a very large and thick bivalve with smooth edges
011	005	2	no	present	present		
012	004	15	some	2	4		
013	003	20	a few, but highly fragmented	present	74		wide size range for periwinkles

Context	Sample <>	Time to id	Potential for measuring	Limpets min count	Periwinkles min count	Burning	Notes
014	002	5	no, highly fragmented	present	6		
015	009	20	some	6	42	a little	wide size range for periwinkles
016	008	45	yes	54	96		
017	007	10	yes	9	1		good completeness. Limpet shape varies from flatter to more conical

AMS Dating by BRAMS (University of Bristol AMS Laboratory)



University of BRISTOL

brams

Monday, 5 September 2022

Report on Radiocarbon Age Determination for BRAMS-6120

43 Woodland Road, BRISTOL, BS8 1UU, UK

Submitter:	Lynne McKeggie
Submitter's Code:	Sample <001> (Avena spp, oats)
Project:	Kiess Harbor Pods (KHC20)
Sample material:	Charcoal
Pretreatment Code:	ABA

$F^{14}C$	**0.8779± 0.0028**
Result	**1046 ± 26 BP**
Indicative $\delta^{13}C$	**-26.8 ‰**

The result is given in uncalibrated radiocarbon years Before Present (BP). Data given are corrected for isotopic fractionation using the $^{13}C/^{12}C$ ratio measured on the AMS. The $\delta^{13}C$ value was measured on the AMS and may have been subject to additional isotopic fractionation. The error associated with this value is typically ±1‰.

Calibration Plot

Calibration was performed using OxCal software v4.4 and the IntCal20 atmospheric calibration curve

Dr. Timothy Knowles
BRAMS Manager

Figure 25: AMS radiocarbon determination for sample <001>

University of BRISTOL

brams
43 Woodland Road,
BRISTOL, BS8 1UU,
UK

Monday, 5 September 2022

Report on Radiocarbon Age Determination for BRAMS-6121

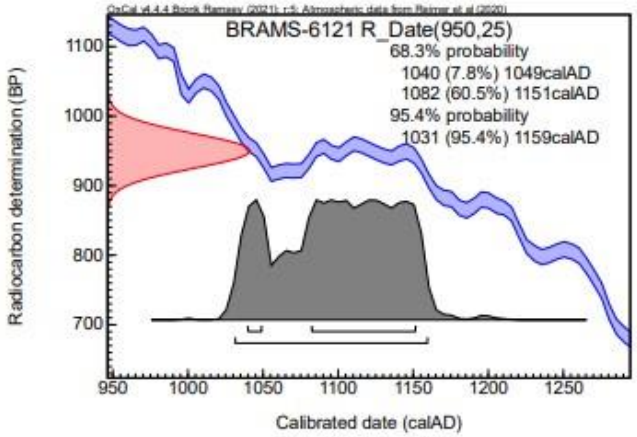
Submitter:	Lynne McKeggie
Submitter's Code:	Sample <002> (cf Avena spp, cf oats)
Project:	Kiess Harbor Pods (KHC20)
Sample material:	Charcoal
Pretreatment Code:	ABA

$F^{14}C$	**0.8884± 0.0028**
Result	**950 ± 25 BP**
Indicative $\delta^{13}C$	**-25.6 ‰**

The result is given in uncalibrated radiocarbon years Before Present (BP). Data given are corrected for isotopic fractionation using the $^{13}C/^{12}C$ ratio measured on the AMS. The $\delta^{13}C$ value was measured on the AMS and may have been subject to additional isotopic fractionation. The error associated with this value is typically ±1‰.

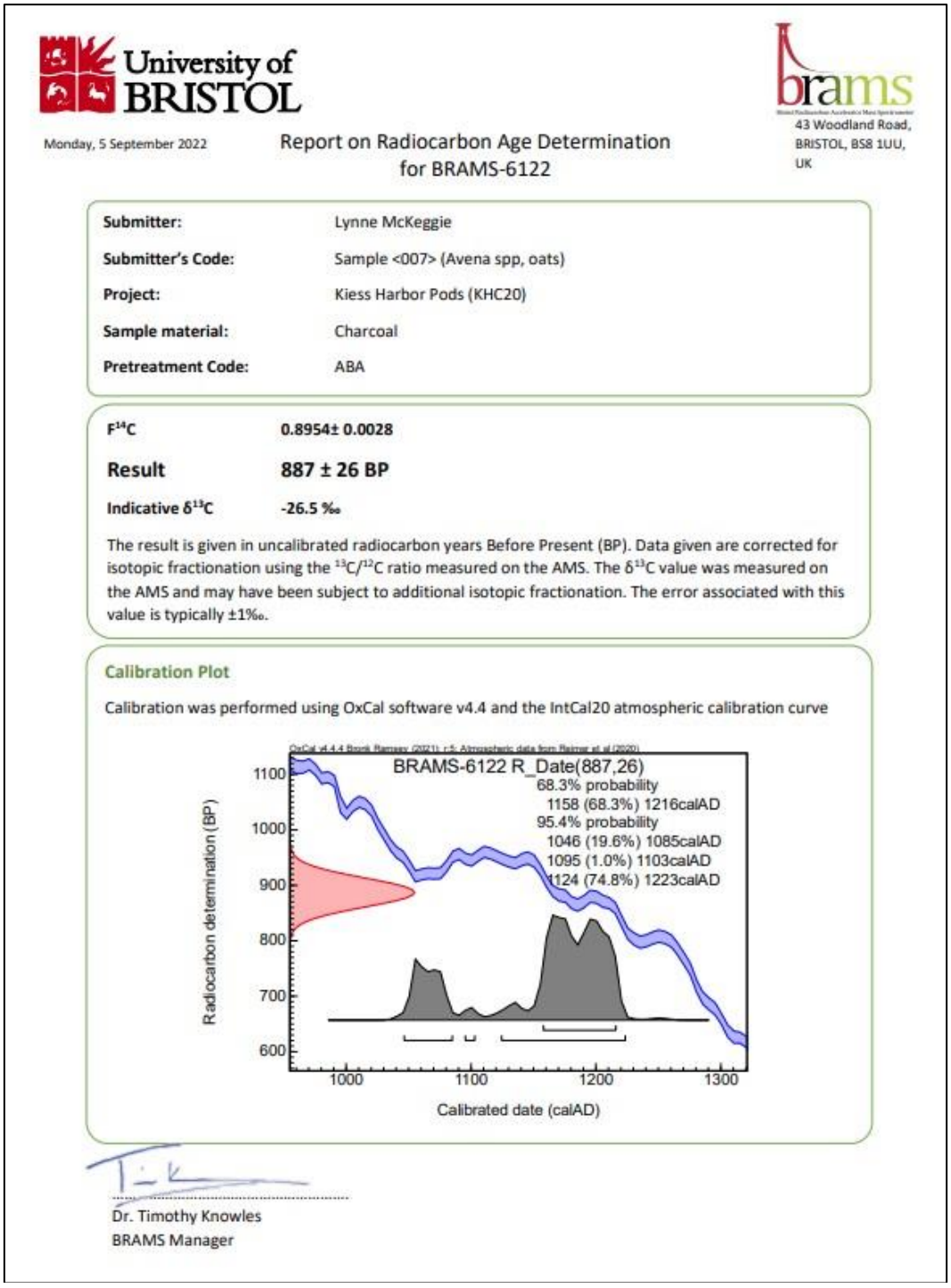
Calibration Plot

Calibration was performed using OxCal software v4.4 and the IntCal20 atmospheric calibration curve



Dr. Timothy Knowles
BRAMS Manager

Figure 26: AMS radiocarbon determination for sample <002>



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Monday, 5 September 2022

Report on Radiocarbon Age Determination for BRAMS-6122

Submitter:	Lynne McKeggie
Submitter's Code:	Sample <007> (Avena spp, oats)
Project:	Kiess Harbor Pods (KHC20)
Sample material:	Charcoal
Pretreatment Code:	ABA

$F^{14}C$	**0.8954± 0.0028**
Result	**887 ± 26 BP**
Indicative $\delta^{13}C$	**-26.5 ‰**

The result is given in uncalibrated radiocarbon years Before Present (BP). Data given are corrected for isotopic fractionation using the $^{13}C/^{12}C$ ratio measured on the AMS. The $\delta^{13}C$ value was measured on the AMS and may have been subject to additional isotopic fractionation. The error associated with this value is typically ±1‰.

Calibration Plot

Calibration was performed using OxCal software v4.4 and the IntCal20 atmospheric calibration curve

Dr. Timothy Knowles
BRAMS Manager

Figure 27: AMS radiocarbon determination for sample <007>

4

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Monday, 5 September 2022

Report on Radiocarbon Age Determination
for BRAMS-6123

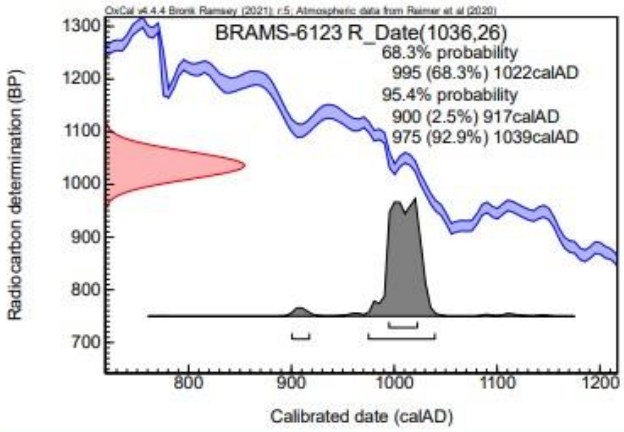
Submitter:	Lynne McKeggie
Submitter's Code:	Sample <009> (Avena spp, oats)
Project:	Kiess Harbor Pods (KHC20)
Sample material:	Charcoal
Pretreatment Code:	ABA

$F^{14}C$	**0.8790± 0.0028**
Result	**1036 ± 26 BP**
Indicative $\delta^{13}C$	**-26.5 ‰**

The result is given in uncalibrated radiocarbon years Before Present (BP). Data given are corrected for isotopic fractionation using the $^{13}C/^{12}C$ ratio measured on the AMS. The $\delta^{13}C$ value was measured on the AMS and may have been subject to additional isotopic fractionation. The error associated with this value is typically ±1‰.

Calibration Plot

Calibration was performed using OxCal software v4.4 and the IntCal20 atmospheric calibration curve



Dr. Timothy Knowles
BRAMS Manager

Figure 28: AMS radiocarbon determination for sample <009>

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Archive

The site archive currently comprises digital data including site registers, photographs and GIS shapefiles, as well as drawings in physical (permatrace) and digital (jpeg) formats. 7 artefacts have been retrieved to date, and several bags of ecofactual material, including bone and samples.

Following completion of the project, artefacts will be submitted to the Scottish Treasure Trove Unit. Both the physical and digital archive will be deposited with Historic Environment Scotland in accordance with their written guidance and HAS policy. Sample residues will be disposed of.

Figure 29: Keiss Icehouse

Appendices

Table 6: DBA sites

Dataset	Dataset UID	Name	OS NGR	Classification
HERHIGHL	MHG30293	Keiss Harbour, Bothy	-	COOPERAGE
HERHIGHL	MHG205	Keiss Harbour	-	HARBOUR
HERHIGHL	MHG46397	Site Of Type 24 Pillbox, Braehead, Keiss	-	PILLBOX (TYPE FW3/24)
HERHIGHL	MHG1659	Keiss Broch	-	BROCH
HERHIGHL	MHG38214	Beharlichkite: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG1656	Building, Keiss	-	BUILDING
HERHIGHL	MHG50680	Minerva: Keiss Harbour, North Sea	-	WRECK
HERHIGHL	MHG38350	Try Again: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG50683	Lady Of The Lake: Keiss Harbour, North Sea	-	WRECK
HERHIGHL	MHG50682	Emily: Keiss Harbour, North Sea	-	WRECK
HERHIGHL	MHG46438	Sisters: Keiss Harbour, North Sea	-	WRECK
HERHIGHL	MHG20371	Bollard, Keiss Harbour	-	BOLLARD
HERHIGHL	MHG1644	Warehouse, Keiss Harbour	-	WAREHOUSE
HERHIGHL	MHG50681	Kintail: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG50678	Young Cornelius: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG47537	Tiskebackskil: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG37037	Keiss, 6-7 High Street	-	HOUSE

Dataset	Dataset UID	Name	OS NGR	Classification
HERHIGHL	MHG38328	Caithnesshire: Keiss Harbour, North Sea	-	WRECK
HERHIGHL	MHG204	Icehouse, Keiss Harbour	-	ICEHOUSE
HERHIGHL	MHG13800	Second World War Pillbox, Keiss	-	PILLBOX (TYPE FW3/24)
HERHIGHL	MHG49190	Warrior: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG50679	Empress Eugenie: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG1657	Building, Keiss	-	BUILDING
HERHIGHL	MHG1645	Broch - Whitegate	-	BROCH
HERHIGHL	MHG18296	Whitegate	-	STRUCTURE
HERHIGHL	MHG38220	Lady Robert Williams: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG38302	Au Revoir: Keiss, Sinclair'S Bay, North Sea	-	WRECK
HERHIGHL	MHG48833	Slipway, Keiss	-	SLIPWAY
HERHIGHL	MHG18297	Whitegate	-	STRUCTURE
HSLB	HBNUM: //portal.historicenvironment.scot/designation/LB14084 (Entity: LB14084)	Keiss Village Braehead, Boatman'S Cottage Braehead Cottage And Harbour Cottage	ND 35039 60943	Listed Building
HSLB	HBNUM: //portal.historicenvironment.scot/designation/LB14084 (Entity: LB14084)	Keiss Village Braehead, Boatman'S Cottage Braehead Cottage And Harbour Cottage	ND 35053 60949	Listed Building
HSLB	HBNUM: //portal.historicenvironment.scot/designation/LB43519 (Entity: LB43519)	Keiss Harbour Bothy	ND 35077 60969	Listed Building
HSLB	HBNUM: //portal.historicenvironment.scot/designation/LB14085 (Entity: LB14085)	Keiss Harbour And Warehouse	ND 35101 60877	Listed Building

Dataset	Dataset UID	Name	OS NGR	Classification
HSLB	HBNUM: //portal.historicenvironment.scot/designation/LB14085 (Entity: LB14085)	Keiss Harbour And Warehouse	ND 35103 60942	Listed Building
HSLB	HBNUM: //portal.historicenvironment.scot/designation/LB14086 (Entity: LB14086)	Keiss Harbour Ice-House	ND 35177 60975	Listed Building
HERHIGHL	MHG36508	Keiss Harbour, Cooperage	-	COOPERAGE
HERHIGHL	MHG1655	Keiss Harbour, Braehead	-	HOUSE

Table 7: Context register

Context No.	Trench	Length (m)	Width (m)	Depth (m)	Type (Cut, Fill, Deposit, surface)	Description (include before/after/matrix)	Interpretation
1	pods	33	17		Deposit	Dark brown black soil rich with roots and many rounded stones	Topsoil
2	pods	6 (surviving)	0.7-0.8		Structure	Double skin wall apparently only surviving as single course in corner of plot. Stones are mainly rounded and slim flat stones. With gaps in some places. Section surviving running NW/SE tied into existing wall at top of slope then breaks but would have originally continued downhill. Two stones clear on NW/ SE section while NE/SW section appears to survive as only one stone. Beneath the stone is more dark brown black topsoil	Dry stone wall footings
3	pods				Deposit	Grey brown silty deposit with small black patches some stone, shell animal and fish bone. Taken as general context for all material from midden not stratified	Midden

Context No.	Trench	Length (m)	Width (m)	Depth (m)	Type (Cut, Fill, Deposit, surface)	Description (include before/after/matrix)	Interpretation
4	pods	2	1.5	NA	Fill	Grey brown fill just visible at full depth of excavation in pods area. Fill contains loose packed modern material including barbed wire, glass iron, eyes for a shoe lace. This was cut into topsoil (001)	Modern rubbish pit
5	pods	6 (on site)	0.8 (max)		Structure	Rough footings of wall running ENE/WSW off edge of site not tied into 002. Appears as single course with gaps and only downhill side appears to survive	Wall footings
6	pods	16.6 (across site)	0.5?	0.55 (max)	Structure	Retaining wall on NE side of burn constructed of rough dressed stone on slate bases sitting on possible mixed natural (007). Survives as two courses + slate base. Appears to extend beyond NW edge of site. No such revealed on opposite bank	Retaining wall
7	Pods	NA	NA	NA	Deposit	Mixed stone and grey silt revealed in base of burn below (006). About 1m below surrounding ground surface. Stones are rounded and silt contains grit including shell fragments	Possible natural
8	Passing Place	NA	NA	0.4	Deposit	Dark brown black silty topsoil rich with roots and rotted organic matter. Topped by grassy turf and with few rounded stones. Also contained patch of probable ground shell in front of ice house. Shell was entirely within topsoil a second patch of sand also noted almost on the surface a little to the E close to road. Sand contained aluminium drinks cans	Topsoil with some dumped material
9	Passing Place	NA	NA	NA	Deposit	Gray brown silty deposit rich with stones directly beneath topsoil (008) in passing place trench. Only just showing though in a few deeper spots	Mixed natural and silt
10	pods (slot A)	-	-	0.15 (exposed)	Deposit	Orange brown silty deposit with much shell at lowest exposed level in midden.	Deepest buried midden deposit

Context No.	Trench	Length (m)	Width (m)	Depth (m)	Type (Cut, Fill, Deposit, surface)	Description (include before/after/matrix)	Interpretation
11	pods (slot A)	-	-	0.35 (max)	Deposit	Noted in Slot A dark brown black with charcoal flecks and some shell. Above 10 in sequence	Midden material
12	pods (slot A)	-	-	0.2 (max)	Deposit	As 11 but with rounded stones of differing sizes including some small slabs. Do not appear to be laid but concentrated in this area	Midden material
13	pods (slot A)	-	-	0.12 (max)	Deposit	Dark black brown silty deposit with charcoal flecks and much shell in band in midden	Midden material
14	pods (slot A)	-	-	0.22 (max)	Deposit	Dark black brown silty deposit with charcoal flecks and few small stones. noted as uppermost layer in midden slot A	Midden material
15	pods (slot B)	-	-	0.11 (exposed)	Deposit	Large rounded stones with black brown silt	Natural stones mixed with overlying midden material
16	pods (slot B)	-	-	0.42	Deposit	Black silt with much shell some stone and grey ash and charcoal patches	Midden material
17	pods (slot B)	-	-	0.35	Deposit	Grey silt with charcoal patches, stone and some orange patches	Midden material
18	pods (slot B)	-	-	0.3	Deposit	Black topsoil with modern ceramics	Topsoil

Table 8: Finds register

Find No.	Trench	Context	Material	Description	Number of items
1	pods	3	bone	Stray bone from midden across area. Animal (possibly sheep) and fish. bag 1: 8 items. 7 bone, 1 tooth, includes mandible, metapodial, rib, two vertbra. Buchery evident on one vertebra bag 2: 21 items. Including fish (5) and mammal bone (15) and a tooth.	29

Find No.	Trench	Context	Material	Description	Number of items
				Includes mandible, scapula, pelvis, vertebra and phalange. Butchery evident on some.	
2	Pods	1	ceramic	White fabric and glazed sherd of plate or shallow bowl. With two glaze stamps. On inside 'Pleasant View Hospital' on outside 'Vitrified, [J]ohn Maddock & Sons Ltd Made in England'	1
3	Pods	3 (slot A)	bone	Finds from sieving. Including Mammal (7) and fish (14) bone 3 teeth. All bones are small or fragments.	24
4	Pods	3 (slot A)	bone	Finds from digging slot A. 22 mammal bones (some with evident butchery) + 12 fish bones	34
5	Pods	10 (slot A)	bone	Finds from slot A including tusk. Three mammal bone frags possibly rib, tooth and pig tusk	5
6	Pods	11 (slot A)	iron	Sturdy iron nail corroded with adhering material	1
7	pods	3 (slot B)	bone	Bones found during excavation and cleaning of Slot B. 8 Mammal bones including at least 1 with butchery marks.	8
8	Pods	3	bone	Bones recovered during machine clearing of lower midden. 23 mammal bones including a mandible and part of a skull, 2 burned bone fragments, 1 bird bone, 3 fish bone, 1 part of a tooth. Mammal bone includes butchery marks on some	28
9	Pods	3 (slot A)	stone	Stone pecker, clear evidence of pecking damage on each end. Found during sieving on site.	1
10	Pods	3 (slot A)	stone	Flint core, appears well worn and with renewing cortex? Found during excavation.	1
11	Pods	3 (slot A)	iron	Iron rivet with one end square and the other circular, heavily corroded but shape evident. Found during excavation	1
12	Pods	3 (slot A)	bone	Bone pin, approx 6cm long, 1cm wide at widest end. Some polish.	1
13	pods	3 (slot B)	iron	Iron nail with square head, found during excavation	1

Table 9: Sample register

Sample No.	Trench	Context	Description
1	Pods	10	Sample from lowest exposed context of midden from Slot A during excavation
2	Pods	14	Sample from midden
3	Pods	13	Sample from midden
4	Pods	12	Sample from midden
5	Pods	11	Sample from midden
6	Pods	10	Sample from midden
7	Pods	17	Sample from midden (Slot B)
8	Pods	16	Sample from midden (Slot B)
9	Pods	15	Sample from midden (Slot B)

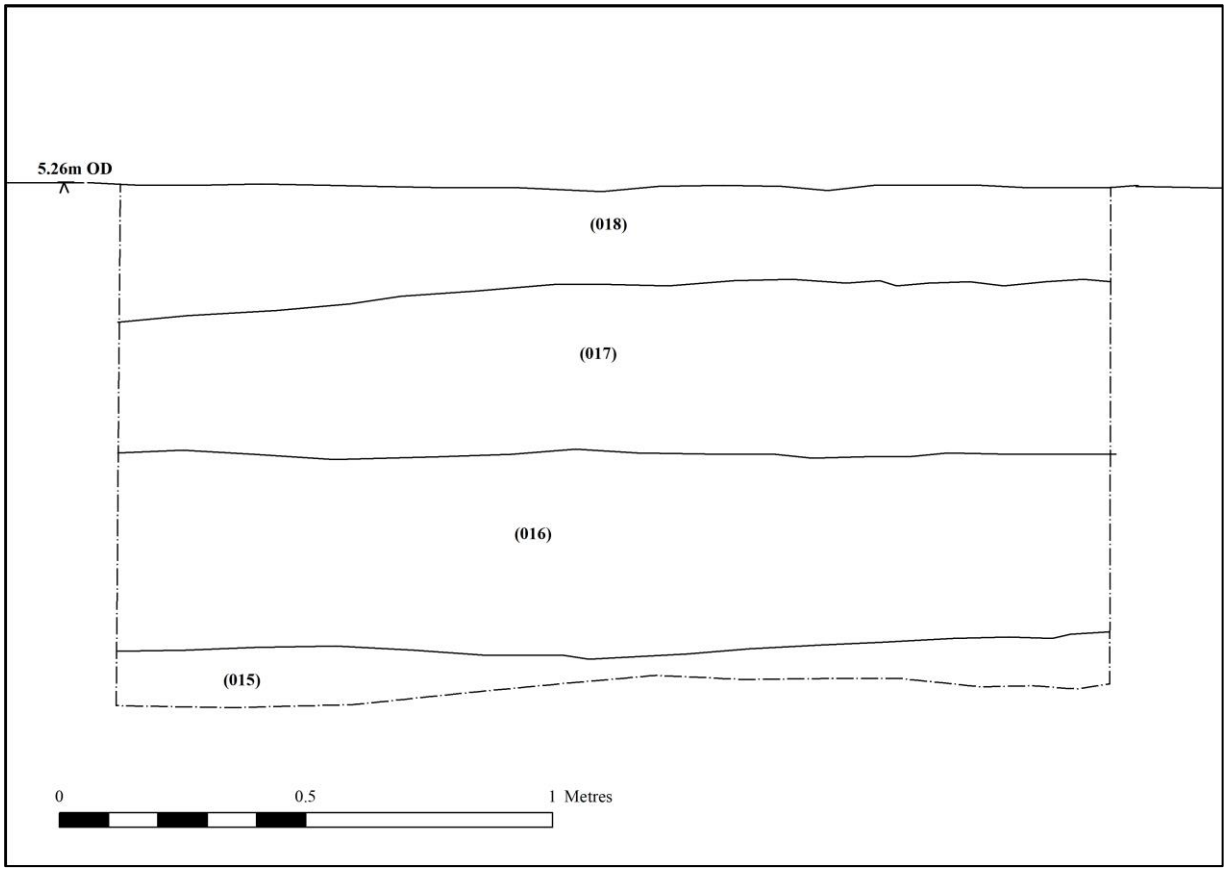

Figure 30:SE facing section drawing slot B

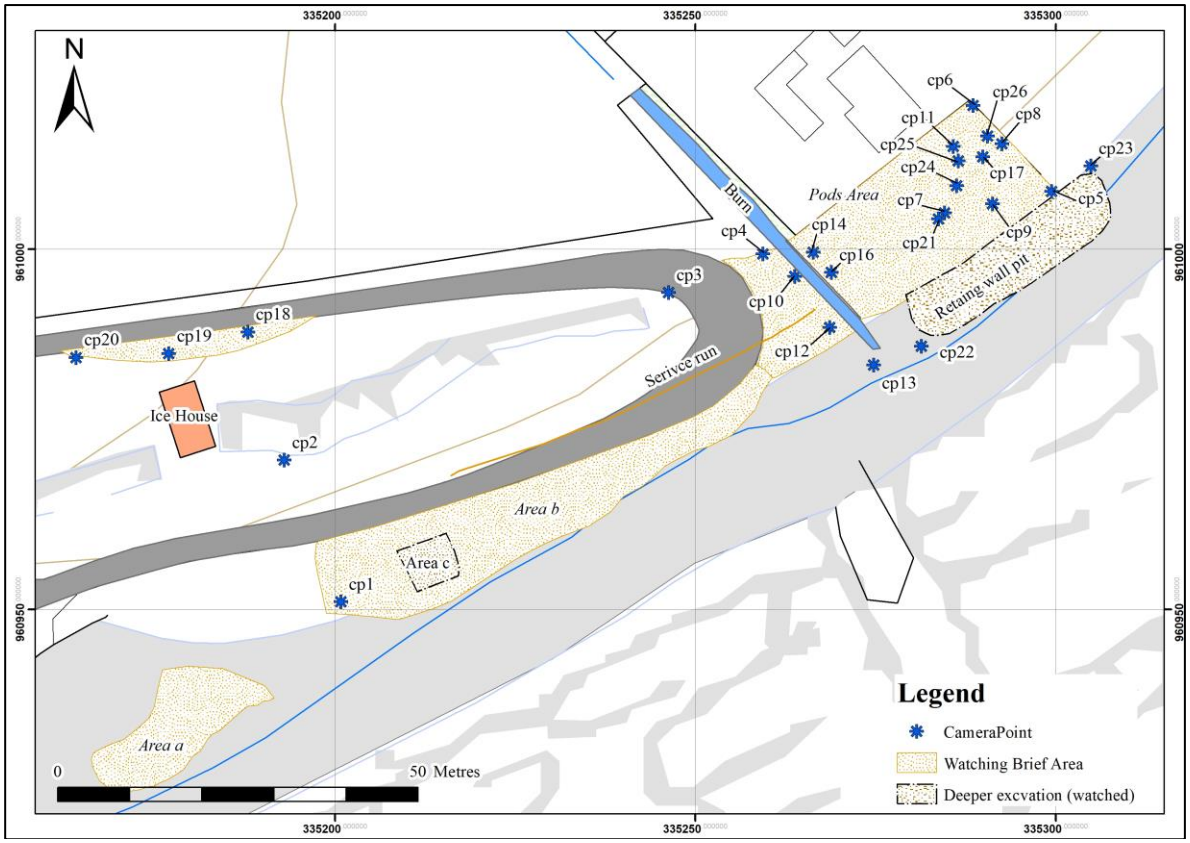

Figure 31: Camera Point locations (scale shown)