



HISTORIC  
ENVIRONMENT  
SCOTLAND

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ALBA

Property in Care (PIC) ID: PIC301

Designations: Scheduled Monument (SM90195)

Taken into State care: 1954 (Guardianship)

Last Reviewed: 2020

## STATEMENT OF SIGNIFICANCE

# KNAP OF HOWAR



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# HISTORIC ENVIRONMENT SCOTLAND STATEMENT OF SIGNIFICANCE

## KNAP OF HOWAR

### CONTENTS

<b>1</b>	<b>SUMMARY</b>	<b>2</b>
1.1	Introduction	2
1.2	Statement of significance	3
<b>2</b>	<b>ASSESSMENT OF VALUES</b>	<b>3</b>
2.1	Background	3
2.11	Guardianship	8
2.12	Designation	9
2.2	Evidential values	9
2.21	Physical Fabric	10
2.22	Evidence of archaeological excavation and post- excavation	11
2.23	Potential	12
2.3	Historical values	12
2.31	Early Neolithic settlement and farming	13
2.32	Early Neolithic beliefs	13
2.33	Early Neolithic society	14
2.34	Antiquarian and archaeological study	15
2.4	Architectural and artistic values	17
2.41	Architectural values	17
2.42	Artistic values	18
2.5	Landscape and aesthetic values	19
2.6	Natural heritage values	19
2.7	Contemporary/use values	20
<b>3</b>	<b>MAJOR GAPS IN UNDERSTANDING</b>	<b>20</b>
<b>4</b>	<b>ASSOCIATED PROPERTIES</b>	<b>21</b>
<b>5</b>	<b>KEYWORDS</b>	<b>22</b>
	<b>BIBLIOGRAPHY</b>	<b>22</b>
	<b>APPENDICES</b>	
	Appendix 1: Timeline	26

# I. SUMMARY

## 1.1 Introduction

The Knap of Howar<sup>1</sup> is an exceptionally well-preserved Early Neolithic settlement situated on the west coast of the island of Papa Westray, in Orkney. The principal components of the site are the remains of two upstanding drystone structures, known as House 1 and House 2. An important assemblage of artefacts is associated with the site and forms a significant part of its interest<sup>2</sup>.

The settlement was exposed by winter storms in 1928/9 and was subsequently excavated and cleared out in the 1930s<sup>3</sup>. It was re-excavated to modern standards in the 1970s<sup>4</sup> and a range of material and finds were radiocarbon dated. This allowed the site to be identified as being of Early Neolithic date, belonging to the late fourth millennium BC<sup>5</sup>. The buildings were constructed and occupied at some point between about 3500-3000 cal BC<sup>6 7</sup>.

It is likely that the human usage of the site predates the construction of the stone houses as these overlie earlier midden deposits. Similarly, Mesolithic tools detected within the flint assemblage from Knap of Howar are suggestive of earlier activity in the area<sup>8</sup>. The occupation of the houses is contemporary with the use of the nearby stalled tomb at Holm of Papa Westray North<sup>9</sup>.

The Knap of Howar was taken into State Guardianship in 1954; minor consolidation works were undertaken, and a sea wall was constructed to protect the site from coastal erosion. Further consolidation works were undertaken following the 1970s excavation and the site was presented for public display. It was designated as a scheduled monument in 1994<sup>10</sup>.

The site is open all year as an unstaffed property in care and is free to visit. It is signposted from the road and is accessed, on foot, across farmland. There are currently two interpretation panels providing information for visitors.

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<sup>1</sup> Alternative spelling: Knap of Hower

<sup>2</sup> The finds are held within the collections of Orkney Museum, and the National Museum of Scotland – the catalogue for which can be searched at: [www.nms.ac.uk/explore-our-collections/search-our-collections/](http://www.nms.ac.uk/explore-our-collections/search-our-collections/)

<sup>3</sup> Traill and Kirkness, 1937

<sup>4</sup> Ritchie, 1984

<sup>5</sup> The ‘fourth millennium BC’ encompasses the years 4000BC-3001BC.

<sup>6</sup> For more detail on site dating, see Griffiths 2016

<sup>7</sup> Throughout the text, the ‘cal’ prefix indicates that the dates discussed are the result of radiocarbon calibration, i.e. they have been converted to calendar years and a correction has been applied, allowing for the variation of <sup>14</sup>C in the atmosphere over time.

<sup>8</sup> Wickham-Jones, 1990

<sup>9</sup> See Canmore ID 3243: <https://canmore.org.uk/site/3243/papa-westray-holm-of-papa-westray-north>

<sup>10</sup> Ref: SM90195. Accessible at:

<http://portal.historicenvironment.scot/designation/SM90195>

## 1.2 Statement of Significance

Knap of Howar is of outstanding national importance as the best preserved and most complete example of an Early Neolithic stone house known in Scotland (and possibly in north-west Europe).

Archaeological study of the site has provided much evidence of life in the Early Neolithic. There is evidence that the inhabitants kept cattle, sheep and pigs, and cultivated barley and possibly wheat. They also utilised wild resources, including fish, sea birds and shellfish. The artefact assemblage contains round-based pottery, including Unstan Ware, and a range of bone and stone tools. The artefacts all appear to be of local manufacture. The bullet points below set out some of the key aspects of the significance of Knap of Howar:

- It is the most complete example of an Early Neolithic stone settlement yet discovered in Scotland.
- It is one of very few dated Early Neolithic stone settlements in Orkney.
- This site demonstrates links with stalled tombs both in its architecture and use of round-based Unstan Ware pottery.
- The excavation of this site yielded a wealth of information about Early Neolithic settlement, farming, beliefs and society.
- The site was occupied at the same time that the nearby stalled cairn at Holm of Papa Westray North was in use.
- This site has shaped and informed research into the Early Neolithic period in Orkney and Scotland.
- This site is a significant heritage asset which draws visitors to Papa Westray.
- This site retains a high level of archaeological potential.

## 2. ASSESSMENT OF VALUES

### 2.1 Background

The settlement was exposed by winter storms in 1928/9 and was subsequently explored during the early 1930's by the landowner William Traill and his associate, William Kirkness. They partially cleared out the interiors of two well-preserved sub-rectangular<sup>11</sup> drystone buildings set side-by-side and connected by a passage. But without other comparable examples known at this date, they incorrectly interpreted these remains as belonging to the Iron Age period<sup>12</sup>. Dr Anna Ritchie later re-excavated the site in the 1970s in preparation for minor consolidation works, recovering material which confirmed that the site was in fact Early Neolithic.

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<sup>11</sup> I.e. rectangles with rounded corners and edges. <sup>12</sup> Traill and Kirkness, 1937

<sup>13</sup> For a freely accessible, interactive model of the site, see: <https://sketchfab.com/3d-models/knap-of-howar-papa-westray-orkney-31272a4f900a4c20a52a96cf5ba144ea>

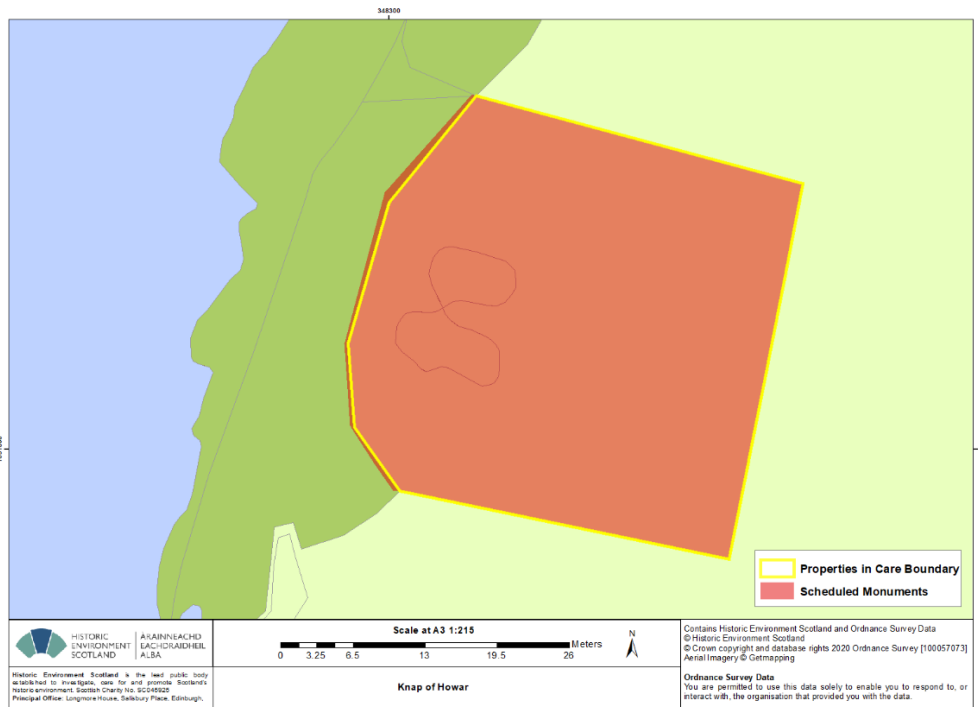


Figure 1: Knap of Howar: Scheduled Area and Property in Care boundary, for illustrative purposes only. <sup>13</sup>

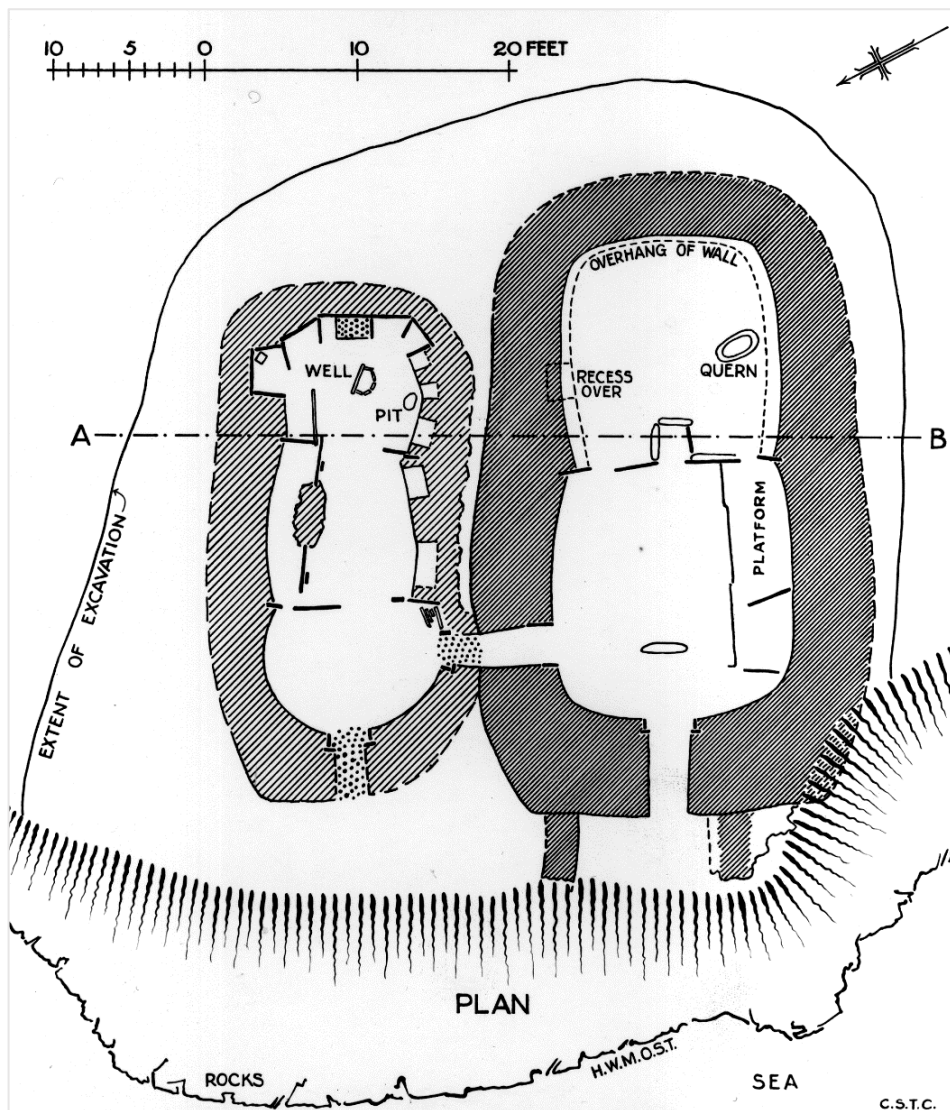


Figure 2: Site plan from Traill and Kirkness excavations, with House 1 on right of image, and House 2 on left. © Crown Copyright: HES.

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 Principal Office: Longmore House, Salisbury Place, Edinburgh EH9 1SH

From the establishment of its late fourth millennium BC date by Ritchie, until very recently<sup>13</sup>, Knap of Howar was the only settlement of this period in Orkney to have been comprehensively investigated, documented and radiocarbon dated.

The findings from this site became part of a generalised understanding of Early Neolithic settlement in Orkney. The isolated location of this site, for example, and apparent self-sufficiency, suggested that early settlement was dispersed, and society was 'segmented'<sup>14</sup>.

Commonalities in stalled architecture and in the use of Unstan Ware pottery, meanwhile, provided a link between the Knap of Howar houses and Orkney-Cromarty chambered cairns<sup>15</sup>.

Until recently these characteristics defined our understanding of the Early Neolithic period in Orkney. By contrast, the Late Neolithic period, as exemplified by the equally well-preserved settlement at **Skara Brae**<sup>16</sup>, was seen to be characterised by nucleated settlement, the use of Grooved Ware pottery, links to Maeshowe-type chambered cairns and the emergence of local elites<sup>17</sup>.

Latterly, new work has revealed the existence of several more Early Neolithic settlements elsewhere in Orkney. Amongst these, some timber structures are now recognised as being earlier in date than the Knap of Howar type of stone-built stalled houses<sup>18</sup>. It is possible that an early timber phase of building also exists at Knap of Howar. Confirmation of this would substantially benefit our understanding of the origins and development of this site, but nonetheless it is the stone phase with its exceptional preservation which makes this site so significant.

While no longer to be regarded as the type-site for *a//* Early Neolithic settlement in Orkney, Knap of Howar remains the best-preserved representative. It is also amongst the oldest known examples of the stone-built stalled houses, which began to appear around 3300 cal BC. Comparable examples are now known on Mainland at Knowes of Troty, Smerquoy phase 1 and Stonehall Meadow and also at Green on Eday and Braes of Ha'Breck on Wyre<sup>19</sup>.

In Summary, the excavation at Knap of Howar revealed two main periods of activity. Period I comprised a spread of midden. Period II saw the construction of Houses 1 and 2, and the accumulation of an upper layer of midden.

The Period I midden covered an area of some 500m<sup>2</sup>. The division between the lower midden and an upper layer, upon which the stone structures were built, was largely arbitrary, but the lower layer was judged to be 0.4m deep, on average, and to have a relatively level surface. The lower midden may have been levelled off in preparation for the construction of the stone houses and perhaps also to provide additional material for packing into its wall cores. An area of stone paving was

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<sup>13</sup> Richards & Jones eds., 2016, 4- 15

<sup>14</sup> Renfrew, 1979, 217- 20

<sup>15</sup> Ritchie, 1984, 58

<sup>16</sup> Throughout the text, site names in **bold** are managed by Historic Environment Scotland and are publicly accessible. Access information can be found at: [www.historicenvironment.scot/visit-a-place/](http://www.historicenvironment.scot/visit-a-place/)

<sup>17</sup> Renfrew, op cit

<sup>18</sup> Griffiths, 2016, 298, Bayliss et al 2017, 1182 - 84

<sup>19</sup> Griffiths, 2016, 290 - 1

identified at the base of the lower midden, outside and to the southwest of House 1. This included an upright stone and two grooves where upright stones had been removed. The function of this was unclear and no further evidence of structural remains of this period were found. It has more recently been suggested that the lower midden phase may have been associated with a timber building<sup>20</sup>.

The artefact assemblage from Period I was not distinguished from that of Period II other than that it yielded more pottery, with slightly more diversity of form and decoration. The pottery assemblage included sherds from nine Unstan-type vessels and several sherds showing some affinity with Grooved Ware<sup>21</sup>. A total of 35 bone and stone artefacts were also recovered, including a stone axe, a whalebone spatula, whalebone and antler hammers or mace heads, four distinctive stone borers and a quantity of worked and unworked flint and chert.

Period II encapsulates the construction of House 1 and House 2, all activity associated with the occupation of the buildings and the development of external midden spreads.



*Figure 3: House 1 interior during 1929/30s excavations, looking west toward coast. © Crown Copyright: HES.*

House 1 is the larger and best-preserved of the buildings and is thought to have been constructed first. It is rectilinear in plan, with rounded corners both inside and out (Figures 2 and 3). It measures 10m by 5m internally. The walls are 1.5m wide on average, and of double-faced stone construction, with a core of anthropic

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<sup>20</sup> Richards & Jones, 2016, 5

<sup>21</sup> Henshall, 1983, 73



soil, which may be derived from the Period I midden<sup>22</sup>. They survive to a maximum height of 1.6m. An external doorway at the west end opens into a 1.7m long, lintelled and paved passage leading into the interior. The building is divided internally into two rooms by divisions formed from upright slabs. Each division is comprised of a set of two stones, with a post hole between. This is thought to have held a timber support for corbelling extending from the wall head or for the roof. The outer room is paved and contains a low stone bench or platform set against the south wall. The floor deposits were largely removed during the antiquarian investigations. A 1.5m long, paved passage in the north wall of the outer room of House 1 leads into the outer room of House 2.

The inner room of House 1 contained a shallow hearth, set in a depression. There is a small recess or cupboard in the north wall. A post hole found in the centre of the floor may have held a timber roof support. A series of linear grooves found cut into the floor suggest that it had also once contained furniture or fittings, possibly including a bench, which had been removed during the use of the building. The floor is unpaved and a thin layer of floor deposit survived. A large trough quern was found on the floor.

House 2 is smaller and lies to the north of House 1; it is thought to be of slightly later date. It is of free-standing construction and abuts the wall of House 1 only in the area of the interconnecting passage (see Figure 2). It is rectilinear in plan, with rounded corners, and measures 7.5m by 3m internally. The walls are, on average, 0.9m wide and survive to a height of 1.26m. It is divided by upright slabs into three rooms. The outer room contains two doorways- one leading to the exterior and one leading into House 1 via a paved passage. Both entrances were blocked up during the occupation of the settlement, indicating that House 2 went out of use before House 1.

The interior of House 2 is divided by pairs of upright slabs to form three rooms. The innermost room contains recesses set into the wall. The middle room contained two successive hearths. The earliest was paved with slabs and surrounded by a stone kerb; it measured 0.7m by 0.65m. The later hearth was set in a shallow depression and measured 0.9m in diameter. This room also contained a low bench, set against the north wall. At a lower level, several empty slots may represent an earlier phase of this feature. The innermost room contained five 'cupboards', three shelves or recesses, and two pits (Figure 4). The floor deposits in this building were less disturbed by antiquarian investigations than those in House 1.

The finds from Period II comprised of 56 bone and stone artefacts, including bone awls and points, scapula 'knives', a whalebone 'knife' together with two stone borers and three distinctive grinding stones. The pottery was generally comparable to that of Period I, albeit with some more elaborate rim forms and evidence of flat bases. The inner room in House 1 yielded a concentration of flint. Though they are sometimes interpreted as a house and a smaller workshop, it is likely that both structures were used for more than one function<sup>23</sup>.

It is thought that both houses were probably roofed with a combination of stone corbelling rising from the wall head, and a timber-framed roof supported by

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<sup>22</sup> Ritchie, 1983, 45

<sup>23</sup> Ritchie, 1984, 42

timber posts and the internal upright stone divisions. The roofs are likely to have had a covering of thatch or turf. The buildings appear to have been abandoned prior to becoming filled up with sand.

Two sets of radiocarbon dates have been published for the site. The first, which used samples of mixed animal bone<sup>24</sup> has been superseded by the second set which were based on single entity samples of known species<sup>25</sup>. These suggest that activity took place on the site in the latter half of the fourth millennium cal BC, with Period II ascribed to the period from the 33rd century onward.



*Figure 4: East end of House 2 during excavation in 1929/30s, with pits, shelves and recesses visible. © Crown Copyright: HES.*

## 2.11 Guardianship

Following Traill and Kirkness' investigations in the 1930s, the site was left open. The stonework began to degrade and the owner, Mr. Traill, reported the collapse of a wall and offered the State Guardianship of the site. The Commissioner of Works declined Traill's offer, citing the cost of other commitments. An Architect's Report was produced. Following the death of William Traill, negotiations were opened with Thomas Traill. A site inspection was undertaken, and it was reported that the site had not suffered any damage since 1936. The principle of Guardianship was completed, and an access route was defined. Minor

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<sup>24</sup> Ritchie 1984

<sup>25</sup> Sheridan and Higham, 2006, 202- 4. See too discussion in Griffiths 2016.

consolidation works were undertaken and a sea wall was constructed to protect the site from coastal erosion. The deed of Guardianship was completed in 1954.

The fabric of the buildings gradually deteriorated over the years. In 1973 the Department of the Environment initiated a programme of consolidation and re-excavation work. This had two aims: to obtain cultural and chronological information, and to prepare the buildings for public display. A further season of excavation was undertaken in 1975.

## 2.12 Designation

The site was designated as a scheduled monument under the title 'Knap of Howar, houses' on 6th June 1994. The present scheduled area measures 33m north-south by 40m and lies within a fenced enclosure, bounded to the seaward side by a modern seawall (Figures 1 and 5). It includes the houses and a surrounding area in which deposits associated with the construction and use of the houses may be expected to survive. The scheduled monument reference is SM90195.



*Figure 5: Oblique aerial view of Knap of Howar, taken from the south-south-west in 2009. Fenced enclosure and modern seawall visible. © Crown Copyright: HES.*

## 2.2 Evidential values

The physical remains at archaeological sites such as Knap of Howar, provide the only evidence available to us to understand prehistoric culture and society. The excellent condition in which the Knap of Howar buildings survive, in combination

with the extreme rarity of settlements of such early date, make it both nationally and internationally significant.

The key evidential values at Knap of Howar are:

- The physical fabric and the setting. The houses are exceptionally well preserved and contain original internal fixtures.
- In their method of construction, the buildings manifest the exceptional stonemasonry and building skills which also feature in the Early Neolithic chambered tombs in Orkney.
- The site is only partially excavated. There is potential that further archaeological work would recover more information on earlier periods of settlement.
- The work undertaken by Ritchie et al<sup>26</sup> was of a high quality and provides a solid foundation upon which to base new research and/or fieldwork.

## 2.21 Physical fabric

The Knap of Howar structures are the only known domestic buildings of this period in Scotland (and potentially north-west Europe) to have survived, with only minor consolidation, as substantial upstanding remains. The walls stand to roof height (1.6m) and are complete. The doorways and the corridor conjoining the buildings are intact. Several artefacts associated with the original occupation of the building (e.g. quern stones) remain in situ. The buildings contain many original fixtures, such as internal divisions, recesses, hearths and benches. This makes it possible to appreciate the use of interior space. The thick walls, low roof and narrow doorways convey a sense of shelter from the elements. Overall, the completeness and detail of the buildings project a strong impression, and provide an immersive experience for the modern visitor<sup>27</sup>.

The recognition of the early date of this site formed the basis for Early Neolithic studies in Orkney. While understandings have expanded and become more nuanced with subsequent work on other sites, Knap of Howar - because of its preservation and the integrity of its assemblages - remains the type-site to which all new discoveries are referenced, and to which less complete examples can be compared.

The division of internal space into a linear compartmental form by means of sets of upright stones is found both in Knap of Howar type 'stalled' houses and in Orkney-Cromarty stalled cairns. It has been suggested that house design influenced tomb design<sup>28</sup>, the tombs, in effect, representing 'houses of the dead'<sup>29</sup>. The more recent discovery of early timber houses has prompted an

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<sup>26</sup> 1983

<sup>27</sup> Edmonds, 2019, 117 -119

<sup>28</sup> Ritchie, 1984, 58, Hodder 1984

<sup>29</sup> Ritchie 1995, 44

alternative reading, in which stalled houses are instead construed as a conscious replication of tomb architecture<sup>30</sup>.

Our understanding of the relationship between houses and tombs presently rests on a small number of dated sites and an often partial understanding of individual site histories. There is potential at this site to undertake further dating and to refine the existing site chronology. This would enable a better understanding of the development of domestic and funerary architecture in the Early Neolithic period in Orkney.

In their method of construction, the buildings at Knap of Howar physically demonstrate chronological and functional relationships. This is seen in the manner in which House 1 is built over an earlier midden, and contains some of this material within its wall cores; how House 2 has been appended to House 1; that both buildings have their own independent doorways; that the passage between the houses was designed to be closed off from inside House 2; how both buildings have undergone changes to their internal layout; how House 2 went out of use first and was blocked up, and how both buildings were abandoned and subsequently were engulfed in sand.

## 2.21 Evidence of archaeological excavation and post-excavation research

The exploratory work undertaken by Traill and Kirkness, although not documented to a modern standard, was important for revealing the existence of and excellent preservation of the Knap of Howar buildings.

Work by Ritchie recovered detailed information on structural phasing, the site economy, material culture and the use of the buildings, in addition to providing a chronological foundation for the site.

The examination of the recovered artefact assemblages identified the first use of Unstan Ware on a domestic site, and brought two new stone tool types to light (now known as 'Knap of Howar grinder' and 'Knap of Howar borer')<sup>31</sup>. Many of the tools were associated with leatherworking. Both the pottery and tools are thought to have been manufactured locally; the assemblage contained no exotic materials or objects. Research on the osteological remains indicated the use of wild resources and possibly of offshore fishing. Small amounts of barley grain and wheat pollen provided evidence of cultivation. Cattle and sheep were kept in roughly equal numbers, together with a few pigs. The cattle were large, and 50% had died within their first year; possibly, it is suggested, to supply skins. The sheep were of a non-wool bearing, primitive Soay type.

These insights have significantly shaped our understanding of life in the Early Neolithic in Orkney (and Scotland). The good condition of the recovered

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<sup>30</sup> Richards and Jones, 2016, 40

<sup>31</sup> [www.orkneystonetools.org.uk/themes/sites/settlements/knap-howar](http://www.orkneystonetools.org.uk/themes/sites/settlements/knap-howar) (where 3D models of many artefacts recovered from Knap of Howar can be examined in detail)

assemblages here contrasts with that of many other Early Neolithic sites, which have suffered as the result of plough damage and acidic soil conditions.

The findings of excavation and research at this site have been complemented by the investigation of the stalled tomb at Holm of Papa Westray North<sup>32</sup>.

Radiocarbon dates from this site indicate that it overlaps chronologically with Knap of Howar<sup>33</sup>.

## 2.23 Potential

The excavation found evidence of extensive anthropic deposits beneath and surrounding the buildings. These deposits cover an area of some 500m<sup>2</sup> and do not appear to have been disturbed since antiquity. There is potential here for the discovery of external features, farming remains and activity areas contemporary with the buildings and for the recovery of further artefacts and environmental material. There is also potential for the discovery of earlier buildings, both of timber and of stone within this area.

A survey of the wider landscape may reveal new information about contemporary activity in the wider area. A survey of the coastline identified several exposures in the immediate vicinity which contained deposits of an archaeological nature<sup>34</sup>.

Research could examine the nature of coastal change during and after the occupation of this settlement, and the causes and effects of sand accumulation in this area. Attention could be directed to the various sand blow events which are represented as lenses within the external middens and beneath the walls of the buildings. It may be possible to study and date these events using optically stimulated luminescence (OSL) techniques.

The recovered assemblages hold potential for further analysis. For example, further radiocarbon dates could be obtained, and Bayesian modelling could be undertaken. Genetic and isotope analyses could be undertaken on the animal remains to determine their origins and heritage, particularly in view of the recent identification of aurochs at Links of Noltland on the neighbouring island of Westray.

## 2.3 Historical values

The key historical value of Knap of Howar lies in its ability to demonstrate past ways of life and society, specifically related to Early Neolithic farming and settlement. Until recently, this site was almost the sole source of information about settlements of this period in Orkney but with additional sites being identified and investigated throughout the archipelago, the body of knowledge

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<sup>32</sup> Ritchie, 2009

<sup>33</sup> Schulting and Richards in Ritchie, 2009, 73

<sup>34</sup> Moore and Wilson, 1998, sites PWT 53 & 54, pp 317-8

has increased. This, in turn, has stimulated a reappraisal, leading, in turn, to a more nuanced understanding of this site.

Knap of Howar can demonstrate the following themes particularly strongly:

- Early Neolithic settlement and farming
- Early Neolithic beliefs
- Early Neolithic society
- Antiquarian and archaeological study

### **2.31 Early Neolithic settlement and farming**

The well preserved buildings at Knap of Howar were home to a small Early Neolithic farming community. The buildings and the artefacts and deposits found within them provide insights into the daily lives of the inhabitants, of their living arrangements, material culture, farming regime, craft activities, diet, access to resources and local environment.

The evidence suggests that the inhabitants possessed all of the key elements of the ‘Neolithic farming package’- in the form of domesticated cattle, sheep and pigs, cereal grain and pottery. They were self-sufficient and supplemented their diet with wild resources.

With new sites being discovered and investigated, it is now possible to compare the evidence from this site with sites in other parts of Orkney. This provides a broader appreciation of the range of settlements in use during this period, and allows for provisional assessment of the similarities and differences present.

### **2.32 Early Neolithic beliefs**

The similarity in architectural design and construction of the Knap of Howar buildings to Orkney-Cromarty stalled tombs may reveal something of Early Neolithic beliefs. If the tombs are seen to symbolically mirror or reference domestic settlements, it might be assumed that the intention was to provide a familiar setting in which to place the dead, in effect creating a house for the ancestors.

If, as has more recently been proposed, however, the tombs existed before the emergence of stone houses, the purpose may have been altogether different. Under this scenario, stalled stone houses are seen to appear at a specific point in time and in response to changes in social organisation from a kin-based society to broader social units within the setting of the ‘household’. Here, house architecture is seen to purposefully reference the architecture of the stalled tombs<sup>35</sup>.

The chronology of stalled tombs and stalled house design is currently too limited to determine which, if either, came first, and therefore what the nature of the beliefs enshrined within them may have been. There are indications that some

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<sup>35</sup> Richards and Jones, 2016, 40

Orcadian timber buildings may also exhibit stalled features<sup>36</sup>, and it remains possible that the design predates building in stone.

Two incidences of possible ‘special depositions’ were found in association with the Knap of Howar houses. A pit close to the hearth in House 1 contained a small, almost complete oval cup, covered with a sherd from another pot. A similar feature was also found in House 2.

The arrangement of recesses in the rear wall of House 2 is reminiscent of the ‘dresser’/‘alter’ features which are a common feature of Late Neolithic houses, usually positioned at the rear of the interior. While nothing of interest was found in association with the recesses here, it is possible that they held a similar position to dressers and were associated with religious/spiritual beliefs.

The scarping of earlier midden spreads, in preparation for the construction of the buildings, and also the use of earlier midden material to form the core of the walls, may have had emblematic as well as a pragmatic aspects, creating connections between the different phases of occupation.

Certain objects, including the polished stone axe and whalebone and antler hammers or mace heads, may have had symbolic value.

The access arrangements within the buildings, for example the manner in which the interconnecting door could be closed off from within House 2, is likely to have been purposeful and possibly associated with beliefs arising from the activities undertaken in each house. Equally, the blocking of the doorways to House 2 marking the abandonment of that building is likely to have meaningful.

### 2.33 Early Neolithic society

Knap of Howar, on the basis of its size, apparent isolation and associated material culture, has been interpreted as the abode of a self-sufficient, farming family household<sup>37</sup>. The linking of this settlement with the diminutive stalled tomb at Holm of Papa Westray North<sup>38</sup> further emphasised the small-scale nature of this social grouping.

Being almost the only representative of this period until very recently, this site has come to characterise social organisation in the Early Neolithic period in Orkney. These dispersed, small-scale units formed a ‘segmented society’ which was set in contrast to the larger nucleated settlements of the Late Neolithic, which was associated with the emergence of local elites<sup>39</sup>.

With hindsight, Knap of Howar may neither have been quite so isolated nor as typical of the period as was once thought. The presence of fertile soils and rich maritime resources are likely to have made this an attractive place for settlement. Very little exploratory work has yet been undertaken in the wider area, and the recognition of timber- and turf-walled buildings of an early date in other locations

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<sup>36</sup> Gee, 2017, 130

<sup>37</sup> Ritchie, 1983, 58-9

<sup>38</sup> Ritchie, 2009, xix

<sup>39</sup> Renfrew, 1979, 214-8



holds out the possibility that there may be further settlement within the hinterland, which is not so readily visible now. There are, for example, several coastal exposures containing anthropic deposits recorded nearby, which hold potential here<sup>40</sup>.

The lack of exotic materials amongst the finds assemblages need not be read as evidence of utter self-sufficiency, since communication and exchange networks may have been effected on a more local basis. In terms of architecture, technology, and the production and use of a range of pottery styles, for example, Knap of Howar would not appear to have been isolated nor obviously impoverished. The exchange of cattle and other domestic animals may also have formed part of the husbandry management regime.

The evidence for the development of this site suggests that the size of the social unit represented by such a household was liable to change, and that such change could be accommodated by the addition or subtraction of living space.

The discreet position of this settlement in the landscape suggests that display and visibility was not the major concern, which may indicate a less competitive society than that implied by the large and often monumental settlements of the Late Neolithic. Perhaps the choice of location here was more predicated by proximity to farmland or, in view of the use of maritime resources, to the sea.

In contrast to the interpretation provided for the emergence of stone houses elsewhere at this period in Orkney<sup>41</sup>, there is nothing to suggest that the Knap of Howar settlement was built to accommodate a more communal household or that external 'horizontal' relationships had begun to replace 'vertical' kinship here as the social unit of organisation.

### 2.34 Antiquarian and archaeological study

The presence of ancient remains at Knap of Howar is indicated in the place name; the name is derived from Old Norse *howe* or 'mound' and *knapp-r*, 'knob' or 'cap'<sup>42</sup>. Midden deposits associated with the site had already begun to erode before the site was formally investigated. The land owner, William Traill, was a Fellow of the Society of Antiquaries and his interest in Orcadian archaeology was further stimulated by Childe's excavations at **Skara Brae** in the 1920s. With his associate, William Kirkness, also a keen Orcadian antiquarian, Traill began a series of explorations of the site following the exposure of the structures as the result of a sand blow during the winter of 1928- 29. Their work was largely concerned with the removal of some 2.5m of windblown sand from within and around the structures (Figure 6). Thereafter they followed the walls of the building in order to uncover the interiors. They removed floor deposits within House 1, but left much of the floor of House 2 intact. Site recording, although perfunctory, included a large number of photographs taken during the progress of the work together with a 16mm silent film documenting the findings at the end of excavation. This was shown to the Society of Antiquaries and a copy was provided to the BBC

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<sup>40</sup> Moore and Wilson, *op cit*

<sup>41</sup> Richards & Jones, 2016

<sup>42</sup> Ritchie 1984, 40

Archives. This was the earliest archaeological film footage recorded in Scotland and captures the site as it appeared when first uncovered and before it was consolidated. A report on the work was published in 1937 and a selection of artefacts were donated to National Museums of Scotland<sup>43</sup>.



*Figure 6: General view from north of 1929/30s excavations, with House 2 in foreground. Depth of windblown sand visible to rear of image. © Crown Copyright: HES.*

Traill set an important precedent in recognising the great antiquity and importance of these remains, in publishing his report and in working to safeguard them for future generations. This enlightened attitude came at a time when the drive for agricultural improvement saw the largescale destruction and removal of archaeological remains from farmland in Orkney and beyond. By proposing the site for Guardianship, Traill's initiative eventually resulted in the consolidation and public display of this site and, with it, preserved for the island an invaluable heritage asset.

Dr Anna Ritchie, in her excavation at Knap of Howar, undertook the first systematic and scientific study of an Early Neolithic settlement in Orkney. Despite working to a limited brief (which specifically excluded total excavation<sup>44</sup>), this programme of work successfully established a chronology for the site. The recovery of molluscs, bird, fish and animal bone and the collection of soil samples

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<sup>43</sup> The NMS catalogue can be searched at: <https://www.nms.ac.uk/explore-our-collections/search-our-collections/>

<sup>44</sup> Ritchie, 1983, 59

yielded a large amount of new information about agriculture and the environmental setting, and of the cultural affinities of the inhabitants. The analysis of the pottery<sup>45</sup> identified Unstan Ware in a domestic context for the first time, and also revealed the use of other round-based pottery wares and Grooved Ware correlates. Radiocarbon dating indicated that the site was of fourth millennium BC date. The publication of this work remains a landmark in Orkney archaeology. A further programme of radiocarbon dating was undertaken by Dr Ritchie using single entity samples from known species<sup>46</sup>. The finding indicated activity in the latter part of the fourth millennium BC.

## 2.4 Architectural and artistic values

The architecture, design and artistic value of Knap of Howar is particularly significant because of the excellent condition in which the buildings survive, and because the findings of Ritchie's excavation have provided a detailed record of the construction and use of the buildings and of their development over time.

The key aspects of Knap of Howar's design values are:

- This site preserves structural elements which do not survive elsewhere.
- Key elements of the design are largely intact.
- Many interior fittings are intact.
- The sequence illustrates the expansion and then contraction of the settlement up to its final abandonment.
- The ability to discern different activities taking place within the building.
- The association of the settlement with Unstan Ware.
- The comparisons in design to that of the Orkney-Cromarty stalled cairns.

### 2.41 Architectural value

Knap of Howar is the best preserved and most complete example of an Early Neolithic stone house in Scotland (and possibly in NW Europe).

The original form and layout are preserved, and the buildings survive to roof height. Architectural details survive in good condition; the doorway and entrance passage to House 1 is complete and retains part of its roofing. The doorway to House 2 and the interconnecting passage are also well preserved. In both buildings, there are notched jambs on the doorway that connects the house to the outside world, presumably for securing the door with a small crossbar. Inside the buildings, the upright slab divisions which partition the buildings into different rooms or zones survive in situ. The walls contain recesses and shelves, floors are partially paved and the remains of hearths, stone benches and fittings survive.

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<sup>45</sup> Henshall, 1983, 59-74

<sup>46</sup> Sheridan & Higham, 2006

Archaeological excavation has revealed the presence of slots in the floor, indicating the position of an earlier phase of internal features. Pits have been identified in the floor which would have contained roof-supporting timbers and this level of detail makes it possible to reconstruct the roofing schema.

Overall, the design demonstrates careful planning, forethought and skilful construction. The ground was partially scarped of earlier midden deposits in readiness for the construction of the houses. The walls were built such that the stones of the inner face were placed on boulder clay while the outer wall face was laid onto a step cut into the midden. The doorways and entrance passages were furnished with sill stones, upright checks and jambs, the design of which must have been planned in advance and executed in sequence with the construction of the walls. Overall, the scale of built-in detail demonstrates sophistication of design and a mastery of stone masonry.

The reuse of earlier midden in the wall cores may be both a pragmatic design choice and a symbolic gesture, creating a direct link between the phases of settlement.

The preservation of doorway details makes it possible to reconstruct the access arrangements within the building. The interconnecting passage between the houses was 'controlled' from the House 2 side. Later on, the external door of House 2 and of the interconnecting passage were blocked up before House 1 went out of use.

The interior use of space in these houses is comparable to that of the Orkney-Cromarty stalled cairns. In both, an elongated space is laterally subdivided into compartments or stalls by means of paired upright slab partitions. This design, which is more rigidly expressed in the tombs, is here modified to accommodate a range of other features required of a house: hearths, recesses, benches, larger floor areas etc. The uncertainty surrounding the origin and chronologies of these types of sites currently precludes any definitive discussion of which, if either, came first<sup>47</sup>. The identification of timber buildings<sup>48</sup> and of stone buildings outwith Orkney but of a similar plan<sup>49</sup> may point towards a common antecedent.

The built-in recesses and shelves which line the rear wall of House 2 may foreshadow the dressers/alters of Late Neolithic houses.

## 2.42 Artistic values

The artistic values in evidence at Knap of Howar include the symmetry evident in the architectural design, and in the clean lines created through the skilful arrangement of masonry.

The pottery, which comprises a range of wares, includes a variety of decoration and of forms.

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<sup>47</sup> Whittle, 2018, 117 but *contra* Richards and Jones, 2016, 40

<sup>48</sup> e.g. Gee, 2017, 130

<sup>49</sup> e.g. Eilean Domhnuill Phase 1, North Uist, Armit, 1996, 50-1

Several artefacts exhibit artistic values, notably the antler and whalebone hammers and the polished stone axe.

The large quern stone set on the floor of House 1 has a line of pecking around its girth, which may have been decorative in intent.

It is possible that further decoration may yet be identified on the stonework at Knap of Howar, just as has occurred on a number of other sites with dedicated research and the application of imaging techniques.

## 2.5 Landscape and aesthetic values

The Knap of Howar houses now stand on the coast edge and are protected by a modern seawall. This is not the setting in which they were constructed however. Then, the coastline lay further away. What is now the *island* of Papa Westray may have been connected to a larger landmass which probably included the neighbouring islands of Westray and Holm of Papa Westray, together with land now lost to the sea. The evidence suggests that, at the time of occupation, there was a more extensive sandy shore nearby, with a larger and more active dune system and fresh water pools in the vicinity<sup>50</sup>. The record for this environmental shift is preserved within the middens and sand blow events documented at Knap of Howar. This is one chapter in the record of a continuous story of coastal inundation and environmental change which continues up to the present day.

In its modern setting, the settlement appears exposed, isolated and vulnerable to coastal erosion. It lies in modern pastureland and forms a visible feature in the landscape. When it was occupied, the settlement was probably far less visible, being surrounded by midden heaps and hidden by sand dunes.

As has been noted above, the apparent isolation of this site may be misleading. There may have been other settlements and built features in the hinterland which have either been erased over time or which survive only below the modern topsoil.

## 2.6 Natural heritage values

Knap of Howar sits in gently undulating pastureland which has been continuously farmed since the mid fourth millennium BC. The coastline has been in retreat at least since the time of the first settlers. The sandy shorelines and coastal dunes of the Neolithic period have long since been lost to rising sea levels and erosion, leaving behind a legacy of fertile, calcareous soils around the coastal margins. The coastline continues to erode, and a modern seawall has been erected to protect the site from damage. The site and its environs support maritime vegetation and lichens. The drystone walls offer shelter for small mammals, invertebrates and birds in this treeless, exposed landscape.

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<sup>50</sup> Evens and Vaughan, in Ritchie 1983

The bedrock geology of the area is of Upper Stromness Flagstone formation, with superficial deposits of blown sand<sup>51</sup>.

## 2.7 Contemporary/use values

The site is open all year as an unstaffed property in care and is free to visit. It is signposted from the road and is accessed across farmland. There are two interpretation panels providing information for visitors.

The name is derived from Old Norse *howe* or 'mound' and *knapp-r*, 'knob' or 'cap'<sup>52</sup>. The inference here is that it was apparent to those who named it that it had been a place of ancient habitation.

While annual visitor numbers are not recorded, it is estimated that 1,500 people visited Knap of Howar between 2019/2020. The site forms the premier visitor attraction on Papa Westray and is very well promoted in local tourism literature and on social media. It forms the highlight of island tours and also a key destination for independent travellers and for educational and school visits. Knap of Howar is also highly valued locally: it represents an important heritage resource which contributes to the island economy but also, in so evocatively recalling the lives of early resourceful inhabitants, has a resonance for the modern community on this small, remote island.

The quality of preservation, and secluded location of the site combine to provide an immersive experience. The visitor may enter the houses and explore them at leisure, often without the presence of other visitors (this opportunity is frequently mentioned as a highlight of the site on online reviewing platforms such as Tripadvisor<sup>53</sup>). Once inside, the modern world retreats. Looking through the doorway and out to sea, the shelter which these houses offer from the elements is readily appreciated. For many visitors this creates a strong spiritual and emotional response, and which connects strongly with the past.

## 3. MAJOR GAPS IN UNDERSTANDING

- The radiocarbon dating for the site could be reviewed and refined. There are significant gaps, such as House 1, which has not yet been radiocarbon dated. The floor deposits from the interior of this building were largely removed during the antiquarian investigation, but it may be possible to recover additional material for dating from contemporary external deposits and/or from the fabric of the building. Ideally, this important site should be

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<sup>51</sup> British Geological Survey GeoIndex, accessible at:  
<http://mapapps2.bgs.ac.uk/geoindex/home.html>

<sup>52</sup> Ritchie 1984, 40

<sup>53</sup> Comments regularly note the contrast with heritage sites on Orkney Mainland, which tend to receive far greater visitor numbers. Accessible at:  
[www.tripadvisor.co.uk/Attraction\\_Review-g551785-d6771012-Reviews-The\\_Knap\\_O\\_Howar-Papa\\_Westray\\_Orkney\\_Islands\\_Scotland.html](http://www.tripadvisor.co.uk/Attraction_Review-g551785-d6771012-Reviews-The_Knap_O_Howar-Papa_Westray_Orkney_Islands_Scotland.html)

more comprehensively radiocarbon dated and Bayesian analysis should be undertaken.

- The origin of the midden which underlies the houses is not known but is assumed to derive from an earlier phase of settlement in the nearby area. No trace of this early settlement has yet been identified, although there is potential for the remains of either a stone or timber structure to survive within the 0.4m or so depth of midden which is known to exist below the present ground surface.
- An area of paving associated with uprights found outside House 1 is not well understood. It may represent part of an external yard or an external building. These remains were not removed during excavation and it should therefore be possible to return to investigate them in more detail.
- The origin of the Mesolithic flint found amongst the assemblage is not known. It is possible that further artefacts of this type may survive in the wider area and that research could address this question.
- The archaeology of the wider hinterland has not been investigated in any detail. It is not known if any contemporary sites exist nearby or what earlier and later prehistoric activity took place in this area.
- The development of analytical techniques, such as genetic and isotope testing, offer new opportunities to investigate the origins of the domestic animals and, for example, to compare herd make up with that of other settlements, such as **Links of Noltland**, Westray. It was suggested that the cattle and sheep found at Knap of Howar were of primitive type; genetic testing may identify aurochs and aurochs-hybrids, if these are represented in the assemblages.
- More detailed research could be undertaken to determine the nature and chronology of prehistoric sea level change and to investigate the timing, cause and effects of major sand blow events. This may also provide information about why this and other sites were eventually abandoned.

#### 4. ASSOCIATED PROPERTIES

- Three cairns (all designated scheduled monuments) are located on the Holm of Papa Westray. At the north end of the islet a stalled cairn (SM2198) was excavated in the 1980s by Dr Anna Ritchie (2009). A second chambered cairn lies to the south west of Ramni Geo (SM6424); this has not been excavated but is also thought to be a stalled cairn. Both of these cairns are likely to overlap in date with the Knap of Howar settlement. Of slightly later date, the chambered tomb of **Holm of Papa Westray South** is designated (SM90163), in Guardianship, and publicly accessible. Although cleared in the mid-19th century, this site has not been scientifically excavated.
- Elsewhere on Orkney, guardianship sites of probable similar date include tombs at **Midhowe** on Rousay and **Unstan** on Mainland. There are

settlement sites with remains of comparable and possibly earlier date at **Links of Noltland** on Westray, and settlement of later date at **Skara Brae**, Mainland.

- There is an undesignated, excavated tomb of comparable date at Point of Cott, Westray and of probable later date at Pierowall Quarry, Westray.
- There are undesignated, excavated settlement sites of comparable date at Green on Eday, Braes of Ha'Breck on Wyre, at Pool on Sanday and several more within the Cuween- Wideford area of Mainland, although none are of these are visible or on public display.

## 5. KEYWORDS

Knap of Howar, Papa Westray, Early Neolithic, Stalled houses, Orkney-Cromarty stalled cairns, Unstan Ware, Orkney, Coastal Erosion, Drystone, Midden.

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## Further Resources

Canmore ID: 2848

Site Number: HY45SE 1

NGR: HY 4830 5180

A number of early images of the site are available to view within Orkney Archive, Kirkwall, and the Kelp Store craft and heritage centre on Papa Westray.

A 3D digital model of the site can be explored at: <https://sketchfab.com/3d-models/knap-of-howar-papa-westray-orkney-31272a4f900a4c20a52a96cf5ba144ea>

For discussion (and 3d models) of the stone tools recovered from Knap of Howar and other Neolithic sites in Orkney, see: <https://orkneystonetools.org.uk>

# APPENDICES

## APPENDIX I: TIMELINE

### Mesolithic

Mesolithic tools within the flint assemblage recovered from Knap of Howar, suggests early activity within the area.

### Early Neolithic

Pre-3500BC Early midden deposits spread over an area of c.500m<sup>2</sup> indicates human usage of the site, predating the construction of the stone houses. (Period I)

c.3500 – c.3000 BC Construction and occupation of structures (House 1 slightly earlier than House 2) and accumulation of an upper layer of midden (Period II). House 2 apparently went out of use first and was blocked up. Both buildings were abandoned and subsequently engulfed in sand.

### Modern

AD 1928-29 Site exposed by winter storms.

1930s Excavations by Traill and Kirkness.

1954 Site enters State care. Preparation for public access includes minor consolidation works and construction of sea wall.

1970s Re-excavated to modern standards by Anna Ritchie. Early Neolithic date established.

1994 Site designated as Scheduled Monument.