

# Settlement under the sand

## *new Viking discoveries in Orkney*

**T**he Bay of Skail is best-known as the location of Skara Brae, Orkney's best-preserved Neolithic village, and part of the Orkney World Heritage Area. With houses upstanding to their full wall-height and stone furniture intact inside, it has rightly claimed its place as Scotland's most evocative prehistoric settlement. These ancient sandstone flag-built buildings once lay under a large sandy mound that was opened up by the combined effects of wind, sea, and rain in the Great Storm of 1850.

Today, even Skara Brae's 1930s protective concrete sea-wall looks vulnerable. The sea is a persistent antagonist, and a selective revealer of secrets. The power of the ocean exposes and destroys fragile traces of the past; but by releasing vast quantities of mobile sediment to be carried

At the Bay of Skail, on Orkney's West Mainland, a massive Norse longhouse lay lost to memory, beneath a deep blanket of windblown sand – until it was re-discovered and excavated by Oxford University archaeologists. **David Griffiths and Jane Harrison** report on the life and death of a major Viking settlement.

**ABOVE RIGHT** Aerial view of the excavations. The longhouse lies east-west across the main trench with its western end in the small trench on the right (see plan on p.16).

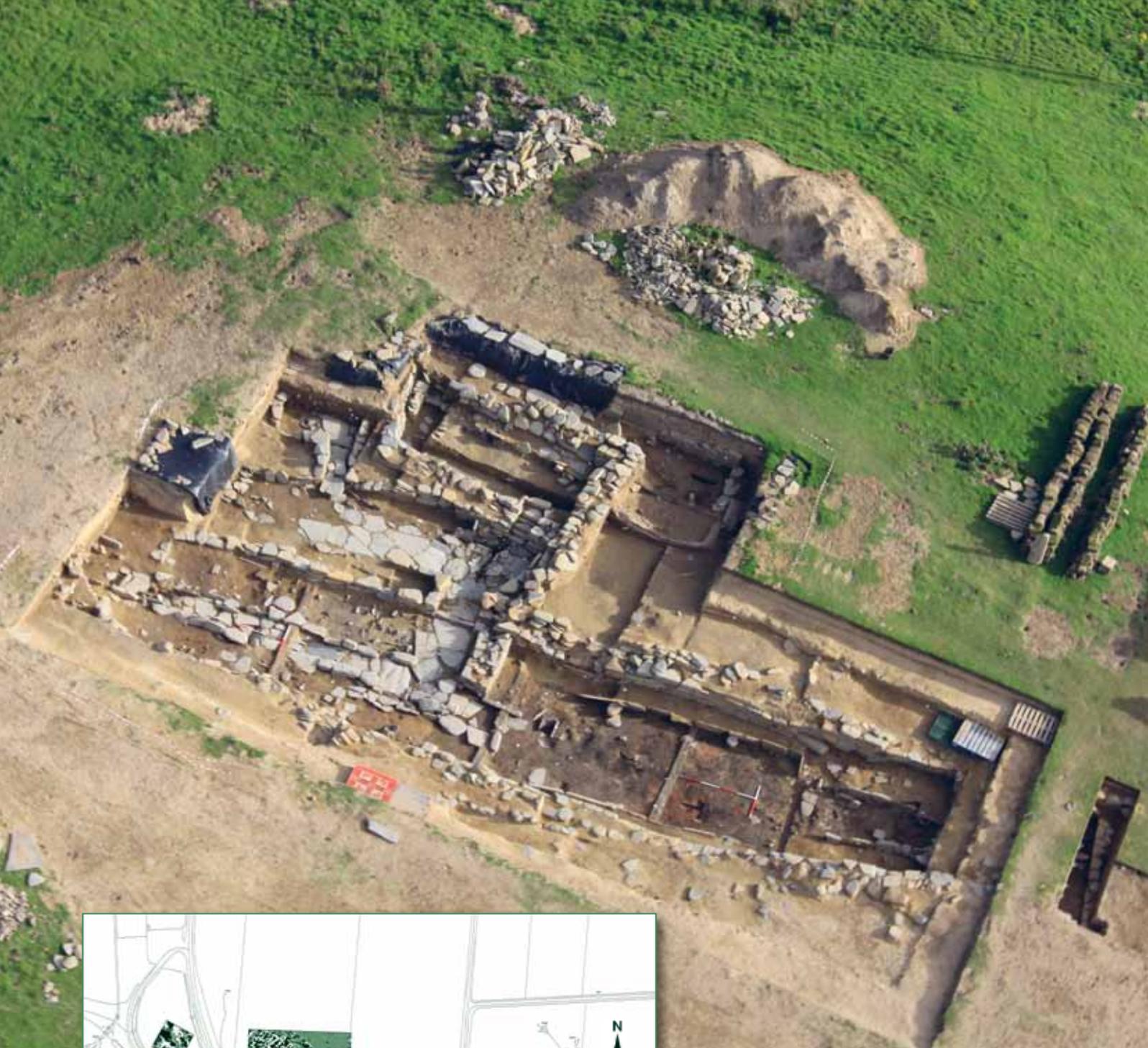
away by storms, it can also cover up and stifle them. The landscape around the bay is dominated by wind-blown sand, which is now largely grassed-over to form what, in the Gaelic-speaking Hebrides, is called a *machair*. In 1989 a prehistoric rock-cut cist grave was found under 5m (16ft) of sand during quarrying in the bay's hinterland. How many other ancient or Medieval sites lie under the sand dunes? And can we detect these using geophysical or remote-sensing techniques?

### The Birsay-Skail Landscape Project

Beginning in 2003, with support from Orkney Islands Council and Historic Scotland, we began

PHOTO: David Griffiths



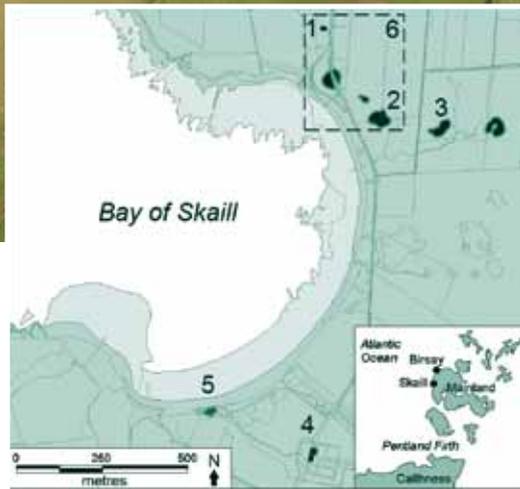


ABOVE Geophysical survey of the mound sites.

the Birsay-Skaill Landscape Archaeology Project to answer this question. Our aim was to use geophysical techniques, coupled with targeted excavation, to investigate the coastal hinterlands of three bays on Orkney's West Mainland, characterised by 'soft' erosive sandy landforms: Birsay, Marwick (CA 234), and Skaill. These bays have famous excavated sites exposed by sea erosion, but little more was then known of their surrounding landscape contexts. So, the project aimed to find out more by looking wider as well as deeper.

At the southern side of the perfect semicircle that forms the Bay of Skaill, Skara Brae has benefited from a World Heritage-sponsored

PHOTO: Orkney College



- |                    |                            |
|--------------------|----------------------------|
| 1. St Peter's Kirk | 4. Skail House             |
| 2. Snusgar Mound   | 5. Skara Brae              |
| 3. East Mound      | 6. Area of Hoard Discovery |

MAP: Crown Copyright/database right 2011

**ABOVE** Map of the Bay of Skail (inset, Orkney) showing mound sites (shaded) across the northern side of bay.

programme of geophysics undertaken by Orkney College, so we concentrated our work on the comparatively little-studied northern side of the bay, with its low-lying grassy links and the small, white early 19th-century parish church (or kirk) of St Peter, standing on a more ancient church site, possibly dating back to Viking – or even Pictish – times.

The north side of the bay is ringed with several large sandy mounds, none of which had previously been investigated. Limited contemporary records indicate that one of these (the furthest west, nearest the sea) produced buildings and burials when the road was straightened and cut through it in the 1930s. Snusgar, another large mound on the inland side of this road, is the



**TOP** Aerial view of the Bay of Skail (with north at the bottom), showing the excavation site to the left, St Peter's Kirk to the right, and the Mound of Snusgar in the centre.

**ABOVE** A small part of the Skail Hoard of more than 100 items, the largest Viking hoard yet found in Scotland.

only one to bear a name: Old Norse in origin, it may link *Snus* or *Snoos* ('prominent') with *garðr* ('dwelling' or 'enclosure'). The name Snusgar was first recorded in the 18th century, when some stone walling was visible in the side of the mound, a feature that was then rather fancifully described as the 'Castle' of Snusgar.

Somewhere around here, in March 1858, the Skail Hoard, a stunning Viking treasure of silver ornaments and coins deposited c.AD 950–970, was found by a boy who was out kelping (gathering seaweed). He placed an iron hook in a rabbit burrow and unexpectedly brought out a piece of



‘white metal’. Word got around and many more people found pieces of silver from the hoard in the sandy burrows over the next few weeks – much of it subsequently collected by the antiquary George Petrie, and now in the National Museum of Scotland. The hoard’s precise location was not recorded, but we were intrigued to find out more about the contemporary landscape and political context surrounding this exceptional discovery.

## Geophysical survey

Walk-over surveys revealed that three more large mounds lie on either side of Snusgar, making five in all. These are arrayed along a freshwater burn, or stream. Geophysics has confirmed that the mounds stand out strongly as clusters of magnetic ‘noise’ against a ‘quiet’ background. The effects of the blanketing wind-blown sand and superimposed layers within the mounds mean that it is difficult to get a full picture of their internal structures and deposits using conventional gradiometry, so we have also experimented with resistivity, ground penetrating radar, and electromagnetic conductivity (EM) survey to try to achieve deeper and more three-dimensional results. Several relatively small-scale excavations were undertaken in short summer seasons, beginning in 2004, to test what was producing the geophysical signals, and to extract dating and environmental evidence.

Snusgar mound itself was our first target, and we discovered that a large structure with 1.5m thick double-faced walls (now very fragmentary and robbed-out) had once existed on top, and also that the structure of the mound itself was composed of a series of layers of midden (organic debris) and ash, contained by flat spreads of stone. The midden layers were deliberately laid down, apparently to stabilise surfaces and improve

the productivity of the soil. Their pinkish-grey deposits contained numerous Viking-period finds of bone pins, comb fragments, blue/grey soapstone known as steatite, worked stone, and iron objects. Radiocarbon dating of carbonised grain by SUERC shows these layers were created relatively rapidly in the period AD 900 to 1050. A cormorant bone from a layer much lower down inside the mound produced a calibrated date of AD 700, perhaps disappointing those in our team who hoped the core of mound might produce Iron Age or Neolithic evidence. This possibility is not altogether ruled out, as we only dug a deep excavation trench in one quadrant.

## Opening up the East Mound

Another large sandy mound lies 100m inland along the Burn to the east of Snusgar. It does not have a local name, so we simply called it the ‘East Mound’, which we now rather regret as yet another probable settlement mound has now been identified yet further to the east! A small trench was dug in 2005 to test the source of the geophysical signals. A large rabbit-warren erosion scar in the western face revealed little of obvious archaeological interest, and our initial hopes were not high. After a few days of digging nothing but undifferentiated brown-stained sand, we nearly closed down the trench, but we decided to carry on to the end of the week.

The next morning, diggers Andrew Ferrero and Chris Hornig came across large flat stones. These subsequently proved to be the top of an intact drystone wall, the lower courses of which carried on down into the deep sand. Within days, the corner of a remarkably well-preserved building had been exposed, with fine vertical stone slabs, or orthostats, forming partitions inside, accompanied by midden layers rich in Viking finds. ➔

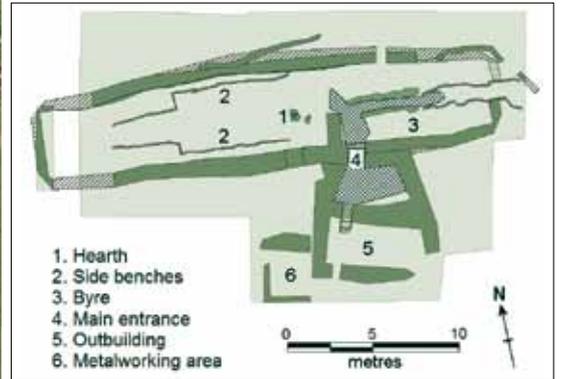
**ABOVE LEFT** Snusgar excavations in 2006. The depth of overlying sand complicates the excavation process, because the trench sides have to be elaborately stepped to avoid section collapses.

**ABOVE** Midden layers under excavation in 2006.



**ABOVE** The longhouse excavations in 2010.

**ABOVE RIGHT** Plan of the longhouse.



DRAWING: Mike Athanson

Further exposures in 2006–2008 showed that this building was rectangular, measuring 5.8m by 2.8m, and formed the latest of a series of construction phases. It was too small to be a dwelling in its own right, and we suspected it was probably an outbuilding to something larger that still lay deep under the sand.

A larger wall with a wide stone-flagged entrance was exposed in 2007 to the north of the small building, and which seemed to be of significantly more impressive build. In 2008, we opened a larger area beyond this wall and entrance, and were rewarded with a coherent, if as yet partial, view of what we were convinced was the middle section of a large longhouse, orientated east-west, and deeply buried by up to 2m of sand. Finally, in 2010, we confirmed this by exposing almost the whole extent of the longhouse, and locating both of its end walls. We now know it is 26.3m long, 4.9m wide internally at its widest point, with bow-sided walls trending inwards towards its ends – a classic

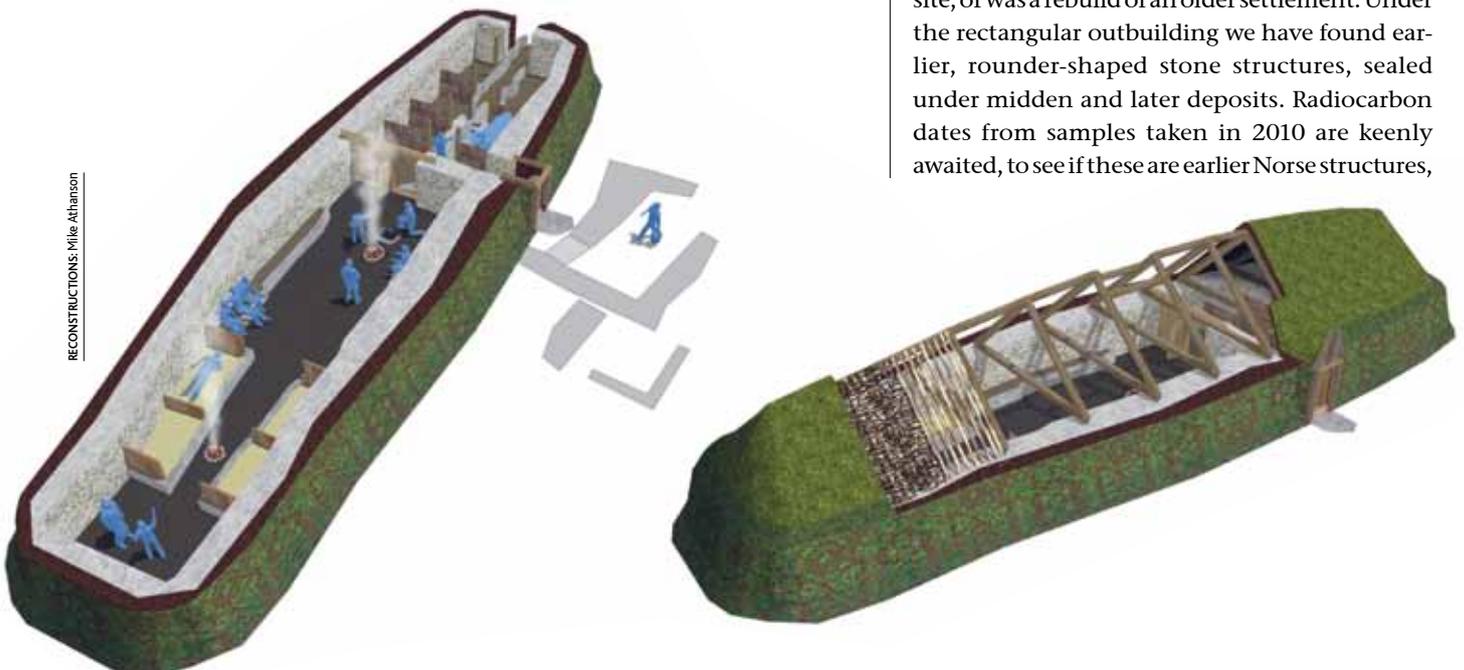
Viking longhouse shape comparable to examples from Pool on Sanday (Orkney), Jarlshof (Shetland) and further afield in Norway and Iceland.

### A classic Viking longhouse

The longhouse has strongly built stone walls which (protected by the overlying sand) still stand to their full height of 1.5m in places, upon which the now-vanished wooden rafters needed to support a capacious turf-covered roof would have rested. The finest masonry faces inwards in the domestic/dwelling area, and the walls were lined with side benches formed by upright stone slabs. The longhouse was constructed in at least three phases, beginning with a simple bow-sided structure with narrow side benches and a central hearth, which was later extended to the east and finally to the west.

We have yet fully to solve the question of whether this building was constructed on a new site, or was a rebuild of an older settlement. Under the rectangular outbuilding we have found earlier, rounder-shaped stone structures, sealed under midden and later deposits. Radiocarbon dates from samples taken in 2010 are keenly awaited, to see if these are earlier Norse structures,

**BELOW** A computer-generated reconstruction of the longhouse.



RECONSTRUCTIONS: Mike Athanson

or even Pictish or Iron Age ones, pre-dating the Viking arrival in Orkney.

In the longhouse interior, we were able to discern the difference between the animal end, or byre, in the east, and the domestic area in the west. The byre has a central stone passageway with drains beneath it. As the overlying sand came off the beaten earth occupation surfaces, animal hoof-prints were clearly visible. The stone kerbs on the central passageway have several sockets cut for supporting timber uprights.

Coming through an entrance in the east end, the central passageway turns left (south) in the centre of the building, via the large flagged entrance, to connect to the outbuildings via an incredibly well-preserved flight of six stone steps. At the central turn of the passageway, beside a stub wall marking the major internal division in the building, is the internal entrance into the domestic area – its circular door socket was found on a flat slab exactly where it should be.

The side benches in the central domestic part of the building are relatively narrow, but where it was later extended westwards by 7.9m, wider side benches were installed. Interestingly, rather than a single central long hearth in this part of the building, we found a series of small hearths; one had also been used for metal-working and



**TOP** The byre end of the longhouse, with its central passageway and drain.

**TOP RIGHT** Animal hoofprints in the beaten earth floor.

**ABOVE** The remarkably well-preserved flight of stone steps.

**ABOVE RIGHT** The door socket.

was accompanied by a slab-lined storage box-pit.

Three of the largest, flattest, stones in the wall facing inwards above the side-benches have scratch marks on them. One of these is clearly a tally-mark: nine vertical strikes and one across, making ten (tally marks of this kind are visible alongside the famous Viking runic inscriptions inside the chambered tomb of Maes Howe, seven miles away). The other two marked stones are more complicated, and may represent several over-writings.

## The Death of the Fin King

The renowned Orkney folk-tale specialist Tom Muir held a folk-telling evening at the Skail longhouse in August 2010. One of the traditional Orkney tales he told, from his published collection *The Mermaid Bride*, was first written down by the folklorist George Marwick over a century ago. A fearful sea monster, the Fin King, was heroically slain on the shore of the Bay of Skail by a local boy, Johnnie Brass, and its remains heaped into a cairn of stones called the 'Castle of Snoosgarth'. Johnny was betrothed to a local girl, and the wedding took place in the Kirk at Skail during a terrible storm. They held a dance outside on the hill at the back of the bay, and the people danced so hard that 'between them and the gale there was hardly a grain of sand left on the hill, and the sand blew and completely buried a house called The Fan'. Could this be an intriguing (if undated) reflection of archaeological reality?



**ABOVE** The fearful Fin King.

IMAGE: Tom Muir

## The economy of the settlement

The floors are a complex layering of ash, charcoal, and organic deposits, rich in finds and environmental evidence. These have been extensively sampled but, from the earlier work in both Snusgar and East Mound, we already know quite a lot about the economy of the settlement. It seems to have been a large farm complex, perhaps encompassing several residences, exploiting both terrestrial and marine resources. Cattle, sheep, and horse bones are well-represented, which is perhaps unsurprising; but dog, seal, whale, and red deer bones were also found. There seems to have been a consistent form of seabird exploitation, as a series of similarly-fractured gannet humeri have been found. Gadids (fish of the cod family) dominate the fishbone assemblage, although not exclusively, and the site is awash with limpet and periwinkle shells.

The archaeobotanical evidence includes substantial and well-preserved quantities of carbonised grain – mainly barley, but also flax and oats. Burnt seaweed is found alongside hazel, willow, turf, and peat as fuel, with the



short-lived woods concentrated as charcoal in a walled metalworking area on the south-western periphery of the building complex. This consists of four bowl-hearths surrounded by beaten clay floor layers, with deposits thick with burnt and vitrified waste. These included significant quantities of vitrified ferrous slag and hammerscale, with a small crucible and a blob of silver indicating non-ferrous metalworking as well. A series of fine whetstones from the site add to evidence for specialist craft.

The occupation layers and middens produced a large assemblage of iron objects, including keys, nails, and rivets (many probably manufactured here), as well as numerous bone pins, worked whalebone plaques, combs, and spindle whorls. Copper-alloy brooches (one wrapped in a damp textile deposit) and other copper dress fastenings echo the styles of the Viking world. Most impressive amongst these is a complete, undamaged Hiberno-Norse ringed pin, of the crutch-headed type, dated to the 11th century. A black glass linen smoother, found in the longhouse, is a type of object often found in female Viking graves in Scotland such as that at Ballinaby, Islay. Beads of blue glass and amber have also been found, one of which may be a North European or Scandinavian type of strikingly earlier date than most of the other finds – possibly an heirloom, originally dating to the 6th century AD.

**CLOCKWISE FROM TOP**

One of three marked stones; metalworking hearths; bone pins; comb; part of a small crucible; successive floor layers.



**ABOVE** Two of the glazed pottery sherds found scattered across the site.

**Pottery and carbon dates**

The inhabitants of the settlement used steatite, a soapstone mined in Shetland and Norway, for most of their domestic needs. But they were not entirely aceramic: grey gritty pottery was also in use here, as was a curious and unusual brownish-orange glazed ware with red and yellow decorative dots. Many sherds of this type were found across the excavated area, often in immediately post-occupation layers, but overall they need not add up to more than one shattered vessel. Several eminent pottery specialists have now looked at these, and a thin section sample has been taken. Probably originating in the Low Countries, this pottery has been tentatively dated on typological grounds to the late 12th or early 13th centuries AD. This raises a conundrum for us, given that the layers it was found in have produced somewhat earlier radiocarbon dates. Nobody so far has been ready to commit themselves to a precise attribution, or a clear start-date, for this pottery type, so investigation and debate continue.

Twenty-three radiocarbon dates taken from the 2007 and 2008 seasons (those from 2010 are pending) show a consistent clustering around AD 1000, which seems to have been the hey-day of the longhouse. Occupation may have begun around AD 900, and continued until around AD

1200, by which time the walls may have acted as a (probably roofless) animal fold. An OSL (optically-stimulated luminescence) date taken from the sandy overburden shows that the building had been filled and largely covered by clean wind-blown sand by the 15th century. We do not know who lived here, or where they were buried. No inhumations have been found at this site, although the nearby kirk was probably used as a burial ground in the early Christian period. The only human remains found inside the longhouse consisted of a perfect white milk tooth, discarded a millennium ago by an unnamed child.

### A deserted early Medieval settlement?

Returning to the bigger landscape picture, the few bungalows dotted around the shore of the Bay of Skaill are fairly modern. The older working farmhouses, with characteristic Medieval Norse names such as 'Stove', lie well back from the sea, clustered on higher ground to the north and east.

Why did generations of local farming families tend to avoid living near the sea in Medieval and post-Medieval times, when the bay hinterland had clearly been important in the Viking period and in prehistory? A clue to this lies in past climate change. The climate historian Hubert Lamb recorded a series of disastrous storms and fluctuations in sea level during the transition from the 'Medieval Warm Period' to the 'Little Ice Age' between the 14th and 16th centuries AD. These led to sand inundations around the British and north European coasts. When the sand invaded settlements and strangled the fertility of their land, people simply moved away to higher ground away from the shore. This effect has been noted by Niall Sharples and Mike Parker-Pearson on South Uist in the Outer Hebrides, as settlement shifted from the *machair* to the Blacklands, leaving large Norse farmsteads, like Bornais, as abandoned remnants of a former prosperity, marked only by the presence of deserted settlement mounds in the sandy waste.

The name Skaill comes from *skáli*, Old Norse for a feasting or drinking hall. Many such names exist across Viking Scotland, and they represent centres of power linked with formal hospitality and tax-gathering functions. Most were farms associated with church sites. St Peter's Kirk stands isolated, like a church from a classic deserted Medieval village. Could our longhouse be the lost Skáli of Skaill?



**CLOCKWISE FROM TOP** Vessel sherds made from steatite (soapstone); the 11th-century Norse ringed pin; the linen smoother made of black glass; a bead of blue glass.

**RIGHT** The team, seated on the longhouse side benches in August 2010.

There are good reasons for thinking so, but on present evidence we cannot know this for certain. The majestic pile of Skaill House, the lairdly residence overlooking Skara Brae on the south side of the bay, seems to offer an obvious alternative candidate for the name, and an early centre of power. However, the building only dates back to the 17th century, although an earlier Christian burial ground was found beside it, and a splendid runic inscription was found nearby. Could there have been two centres of power at the bay in earlier times? Quite possibly, as there are separate Medieval townships on either side, and each presumably had its own head farm. The hoard, the large size of the buildings we have discovered, and the prominence of their location, all suggest that the largely empty sandy waste on the north side of the bay represented a far more important central place around AD 1000 than it did 1,000 years later. 



#### FURTHER INFORMATION

Project website: [www.conted.ox.ac.uk/research/projects/birsay-skaill](http://www.conted.ox.ac.uk/research/projects/birsay-skaill)

*The Mermaid Bride and Other Orkney Folk Tales*, told by Tom Muir and illustrated by Brice Wilson, Kirkwall, The Orcadian Ltd (1998)

*Vikings in Scotland: an archaeological survey*, by James Graham-Campbell and Colleen E Batey, Edinburgh University Press (1998).