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**North Sea  
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How seafaring changed  
the tides of history



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Stunning Saxon finds  
from the same field





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**ON THE COVER** Rock chick: known as the Orkney Venus or Westray Wife, this figurine is one of the most celebrated finds from the Links of Noltland.

CREDIT: Historic Scotland

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# WELCOME

Orkney could be an open-air archaeology museum. Sites such as Skara Brae fire the imagination with their spectacular preservation. Yet while many of the archipelago's big-name sites were dug in the first half of the 20th century, fieldwork has not rested on its laurels. Today, Orkney plays a lead role in attempts to tease out our prehistoric past. In this issue we celebrate the latest discoveries.

Britain is studded with major Neolithic monuments, but opportunities to pry into the first farmers' home life remain rare. Now excavations at the Links of Noltland have revealed a near-complete Neolithic house, where a seemingly innocuous blocked doorway revealed a unique hidden shrine, and a new side to prehistoric life.

In 1901 the Reverend Goodfellow delved into a low mound at the Cairns, reportedly exposing a souterrain. The 1960s brought further reports of a subterranean structure in the same field. A project seeking to establish exactly what was discovered has struck unexpected archaeological riches, including a massive broch-like monument.

To what extent has the sea shaped island life? Following the story from the inundation of Doggerland through to the arrival of the Vikings, we examine how the North Sea served as a conduit for ideas and exotica, as well as an arena where personal prowess could be proved.

The sea is also damaging numerous sites on Rousay. A multinational team is racing against time to learn what they can before these monuments are lost forever – and overturning some long-held theories along the way.

Finally, see p. 42 for all the latest on the Current Archaeology conference. It would be great to see you there!



*Matt*

## Our contributors this month



### SANDS OF TIME

#### HAZEL MOORE

Hazel is a partner in EASE Archaeology with a particular interest in the archaeology of Orkney and Shetland, where she has conducted numerous field projects over the last 25 years. She lives in Orkney with her family.



### THE CAIRNS

#### MARTIN CARRUTHERS

Martin is a lecturer at Orkney College, University of the Highlands and Islands. He is course leader for the Masters in Archaeological Practice and director of the Windwick Landscape Project. Interests include later prehistory, field archaeology, and souterrains.



### ROUSAY

#### STEVE DOCKRILL

Steve is a Senior Lecturer in Archaeology at the University of Bradford. His research centres on the archaeology of the Northern Isles, and he is an active member of the North Atlantic Biocultural Organisation (NABO).

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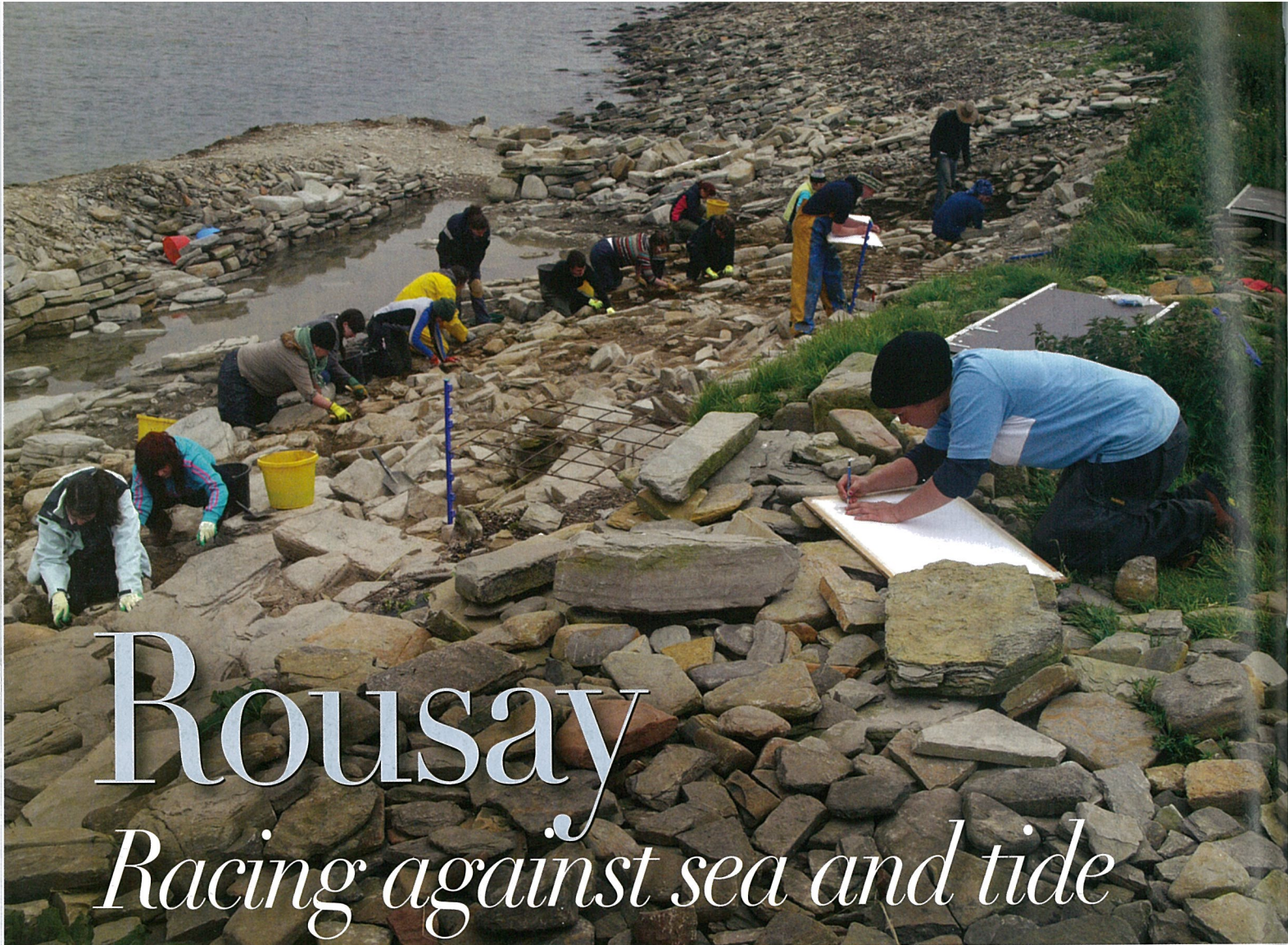
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# Rousay

## *Racing against sea and tide*

The breathtaking monuments on Rousay, Orkney, have made an internationally celebrated contribution to archaeology. Now, with marine erosion increasingly threatening the island's coastal heritage, a team has been put together to investigate sites in danger of being lost forever. Steve Dockrill and Julie Bond explain how this work is overturning long-held beliefs.

**L**ying directly north of the Orkney mainland, Rousay is the fifth largest island in the archipelago. Awarded Site of Special Scientific Interest status in recognition of its outstanding natural habitats, Rousay is also renowned for its archaeological wealth. Yet parts of this unique heritage are being lost, with coastal erosion damaging numerous sites.

During the first half of the 20th century, Rousay was at the heart of some of the most influential archaeological work to be undertaken in Orkney, with the impact of its results felt far beyond the archipelago. Excavation of the Neolithic

**ABOVE** Students from Bradford, William Paterson, and New York (CUNY) universities fight against time and tide in 2012 to reveal the full extent of an enigmatic circular structure revealed in the previous year.

settlement at Rinyo in the 1930s and 1940s, for example, enabled Gordon Childe to demonstrate that Skara Brae belonged to the same period.

Rousay is most famous, though, for its chambered cairns. A number of these were also excavated in the 1930s, including the impressive stalled cairn at Midhowe. Just a stone's throw away, the Midhowe Broch generated perhaps the best-published excavation of that decade. Founded on the northern shore of the Eynhallow Sound – the channel separating Rousay from the mainland – the broch is one of 11 lining this watercourse. The Midhowe Broch is also the central structure of the three that lie



within 500m of each other, providing a conspicuous cluster of high-status sites.

Later research by Colin Renfrew on Rousay trialled modelling techniques borrowed from geography, applying them to tomb distribution and agricultural land. Revolutionising understanding of the Neolithic landscape, this heralded the 'New Archaeology' of the 1960s and 1970s. Contemporary excavations at Westness also demonstrated Rousay's suitability to tease out the pivotal period when the Iron Age 'Pictish' way of life was extinguished by Viking settlers. The cemetery there was populated by several generations of Picts, before becoming home to Viking-style burials.

## Island struggle

Since 2009 our programme of fieldwork, the Orkney Gateway to the Atlantic Project, has built on this pioneering research by attempting to answer some of the questions it posed and, crucially, targeting coastal sites that are falling victim to sea-level rise. To achieve this, an international team has been assembled, comprising staff and students from the University of Bradford, Orkney College (UHI), City University New York (CUNY), and William Paterson University, New Jersey. Both a joint research programme and an International Field School, the project has brought students from all over the USA, including native New Yorkers, to Rousay to train in field archaeology, work alongside British students, and experience life in a small island community. Many of these students have also worked on sister projects tackling coastal sites in Iceland and Barbuda, providing a unique insight into different archaeological responses to the challenge of erosion around the world.

Investigating monuments at risk of imminent destruction is allowing us to develop a clearer understanding of how the island developed from the arrival of the first Neolithic farmers, through the choices made by Middle Iron Age broch builders when it came to shaping their inherited monumental landscape, and down to the later settlement of Scandinavian peoples. Indeed, cultural change brought on by contact and migration, particularly during the period of Norse settlement of the Isles, is a key research strand. The goal is not just to examine



**ABOVE** The imposing entrance to the broch tower at Midhowe, on the northern shore of the Eynhallow Sound. Excavated between 1930 and 1933, it is now curated by Historic Scotland as a monument open to visitors.

how earlier islanders shaped their environment, but also to understand how the environment shaped them. Detecting human adaptation and response to climatic change is an essential element of this.

In many ways Rousay provides the perfect laboratory for this study. An island system such as this is subject to greater stresses due to its northerly and maritime position, which imposes a shorter crop-growing season. This should magnify the effects of climatic and environmental change. Overall, this work provides an important island-based counterweight to research currently under way at sites such as the Ness of Brodgar in the Neolithic World Heritage zone on the Orkney mainland (see CA 241).

This article will take a brief look at three of the sites the project has investigated along the northern coast of the Eynhallow Sound. They reveal the project's scope in terms of both monument type and period, as well as the urgency of acting now to study these sites – and test the accuracy of long-held assumptions – before they are lost forever.

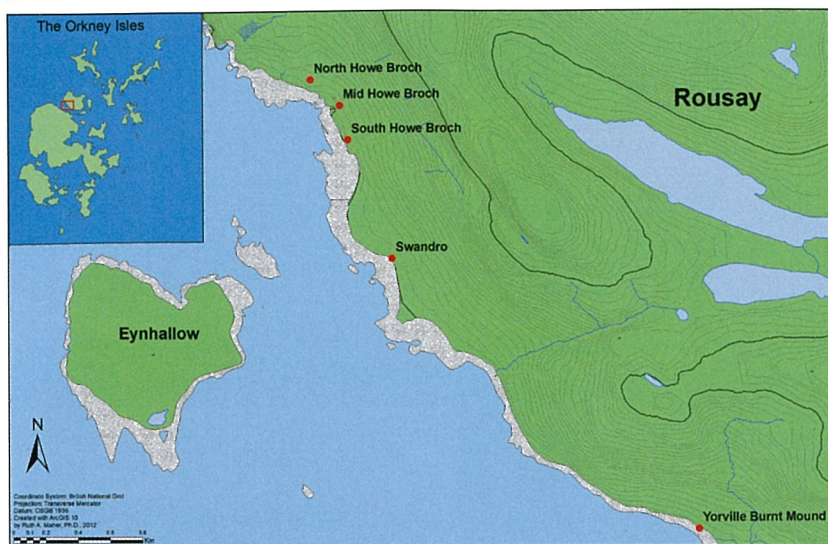
## Circular argument

One of our project's most surprising discoveries came from the Knowe of Swandro. This prominent mound lies directly behind a boulder beach on the Bay of Swandro. Rich in archaeology, the famous Norse settlement site and cemetery known as Westness, excavated by the Norwegian archaeologist Sigrid Kaland in the 1970s, lies on the bay's eastern flank. ➔



**BELOW** A New York student gets a taste for Orcadian archaeology, courtesy of the International Field School.





Described by the Royal Commission on the Ancient and Historical Monuments of Scotland in 1946 as 'the much disturbed remains of a stony mound', the Knowe of Swandro preserves clear evidence of a buried stone structure. At its summit, a crescent-shaped ridge faces out to sea. Seemingly the remnants of a curving wall, it surrounds an area where large tumbled stones are visible in the grass. This ruined masonry has traditionally been assumed to be the remains of a broch. Ordnance Survey records indicate the mound was investigated at some point in the past, but sadly there is no published record. Perhaps it was opportunistically trenched during Radford's 1950s or 1960s investigation of the nearby Westness Norse houses.

As well as the fallen masonry in the grass, a couple of oddly shaped stones were just visible among the pebbles on the beach below the eroding mound. Investigated by the project, these ultimately proved to be the key to revealing the true nature of this enigmatic knowe. Initial excavation swiftly revealed that the stones were upright and *in situ*, forming

**ABOVE** Location map showing the location of Swandro, South Howe, and the Yorville Burnt Mound. All three lie on the northern bank of the Eynhallow Sound.

part of a prehistoric building lying at the modern high-tide mark, and partly buried by the boulder beach. Although the tops of the stones have been worn and battered by the waves, the beach did provide some protection for the underlying archaeological deposits.

Animal bone and pottery hinted at Iron Age activity, which would neatly dovetail with the presence of a broch. Initial clearance of the beach material swiftly revealed the remains of a modest Iron Age building, its dating confirmed by an AMS radiocarbon date of 25 BC-AD 130 (95% confidence) for carbonised barley from a midden that had accumulated on the flagged floor in one of the structure's compartments.

Work in 2011 also revealed how the site was being eroded. The sea was gouging terraces into the mound, with their scars being masked by a sheen of beach material. These terraces were formed by the greater resistance of buried structures to the waves, combined with the



**MAIN IMAGE** The mound of Swandro viewed from the north-east – that is, the landward side, facing the sea. It is visible as a slight rise with a figure standing at the apex. The lighter cut grass below indicates the position of a Norse longhouse, which survives today as a slight earthwork.

**ABOVE RIGHT** Excavation in 2011 of the overlying marine deposits on the boulder beach below revealed truncated archaeology comprising flag floors, stone settings, walling, and ash-rich midden.





**ABOVE** The partial remains of an Iron Age building uncovered on the beach. Represented by flagging and upright stone settings, the rubble in the foreground forms a lower terrace eroded by the sea. This contains a mixture of *in situ* archaeology such as the underlying hearth – visible as a dark red discoloration – and re-deposited marine material.

lessening power of the sea higher up the beach. Consequently, walking from the low-tide zone to the eroding cliff at Swandro is quite literally stepping through time. Areas near the low-tide mark – the earliest features – have suffered far more than those close to the high-tide mark, which formed rather later.

The only way to investigate this extensive spread of deposits was to shift a massive quantity of beach material, ranging all the way from small pebbles to boulders. Faced with this Sisyphean task, the student excavators responded with grit, good grace, and enthusiasm. Once cleaned, the archaeology under the boulder beach more than repaid their labours, proving to extend significantly in both directions along the coastline. Sampling seawards even revealed midden material surviving under the sand at the low-tide mark.

By now it was clear that the Iron Age building detected in 2010 had been truncated by marine erosion. A hearth pre-dating the structure was located, but sadly attempts to date it archaeo-magnetically resulted in a wide date range – somewhere between 590 BC and AD 680 (95% confidence) – due to it falling at an awkward point on the calibration curve. It is hoped that samples from a further hearth sealing this one will clarify matters.

Elsewhere on the beach, surface clearance revealed the remains of a substantial outer wall forming the arc of a large circular building. Fitting neatly with the crescent-shaped ridge on top of the mound, everything pointed to this being the outer wall of our broch. But it was not. Thorough investigation of the wall in 2012, and the clearance

of yet more boulders, unexpectedly revealed multiple concentric outer wall-faces. Each of these wall arcs was backed by a stone and midden core. To everyone's surprise, the monument proved to be a closer parallel for a Neolithic chambered tomb than a broch. A wall running eastwards from the outer ring appears to be an outwork leading into an entrance passage. Later Iron Age buildings were cut into this major monument, sealing its top.

Despite being battered by both the sea and a constantly mobile boulder beach, this probable chambered cairn is intact. It has massive archaeological potential. Bone from the Iron Age middens and those between the concentric cairn walls survives well, even in areas truncated by the sea. This means that the chances of *in situ* human remains within the tomb are high. At a time when re-evaluation of existing tomb assemblages is challenging long-held interpretations of funerary rites, this site offers a unique opportunity to excavate, using modern methods and techniques, a tomb that in a few years' time will be completely lost to the Atlantic.

## Scorched earth

Erosion some 2.5km along the coast at Yorville has exposed rather more modest, but still intriguing, archaeological remains. Here a band up to 2m thick, formed by layers of ash overlain by burnt stones, can be traced for over 12m under a cliff of deep agricultural soil. Tumbled ➔

**BELOW** The excavation revealed that the structure is not, as previously assumed, an Iron Age broch. Instead it is formed by a series of concentric outer wall-faces that resemble a Neolithic chambered cairn. The severely eroded seaward edge contrasts to the survival higher up the beach.







**LEFT** This bird's-eye view of the presumed Neolithic chambered cairn was taken by Lindsay Kemp, using a camera mounted on a kite. The concentric series of wall-faces are clearly visible, with the substantial outwork wall running off on the right-hand side. The overlying archaeology surviving against the section at the top of the photograph is Iron Age in date.

topsoil revealed an area of larger, unburnt stones and an associated structure. Unfortunately, the depth of topsoil only allowed minimal investigation, but the cliff section was cleaned, recorded, and sampled.

The mound is a classic example of a Bronze Age burnt mound. These ambiguous features, created from waste stone used to heat water, have been variously interpreted as ovens, saunas, and even microbreweries (see CA 256). The Yorville example originally lay within an area of boggy land, with buried peat preserved either side of the mound. Both sides of the rising layers of burnt stones were covered with

**BELOW** The burnt mound at Yorville was constructed on a natural rise in the underlying glacial till and geology. The bands of ash and burnt stone are clearly visible. An area of paving stretching out towards the beach was excavated by CUNY students, as well as fragments of walling truncated by the wave action.

a layer of ashy midden material containing charred plant remains, which indicate peaty turf was used as fuel.

Clearing fallen rubble and topsoil revealed fragments of walling and an area of paving that leads down towards the beach. Cleaning these features showed that waves had slammed into the stones with such force that modern debris had been forced into the gaps between them. No definite evidence of a water tank – a staple feature of such mounds – was found. The presence of a spring emerging by the paving, however, suggests that it was constructed to provide either access to fresh water or as a firm, non-muddy base for a water-filled hollow.







## South Howe mound

Coastal erosion directly south-east of the famous Midhowe chambered cairn is exposing extensive remains of a fascinating multiperiod settlement. Perched on a rock cliff, the site centres on the severed remains of a chunk of broch-like walling, while the summit of the mound is crowned by the deserted ruin of a post-Medieval farm. The area of actively eroding archaeology extends for at least 70m, taking in both features that lie directly west of the broch wall and an area of later Medieval or post-Medieval settlement to the east.

The broch wall still stands up to 2.5m high and was left *in situ* for safety. In CA 274, Tanja Romankiewicz wondered whether the South Howe broch wall was built as a solid core, or provided with an internal passageway that was swiftly walled up to counter the load-bearing limitations of the local stone, as occurred at neighbouring Midhowe. While the inner faces of outer and inner walls are suggested at South Howe, the area between them is packed with stone to form a solid core. There is no evidence as strong as that at Midhowe to suggest that this is later infilling. For now it seems more likely that the wall had a solid core from the start, but excavation is needed to confirm or dispute this.

Turf and slippage was removed to reveal the broch's outer face. This exposed the remains of a broken lintel stub projecting from the walling, indicating that the western side of the broch entrance passage survives just inland of the severed walling.

The interior of the broch was sealed by midden containing 19th-century pottery. This probably originated from the farm of Brough at the summit of the mound. Whether it represents collapse into this erosion scar from deposits originally dumped at the top of

**ABOVE LEFT** The core of the broch wall still stands 2.5m high at South Howe. This, together with the surviving western face of the entrance passage, forms the apex of the eroded mound.

**ABOVE RIGHT** The process of cleaning threatened areas of exposed archaeology adjacent to the broch involved erecting scaffolding platforms.

**BELOW** Medieval and post-Medieval settlement to the south-east of the broch was partly exposed by the sea. Here, the cleaned-up cliff-faces reveal a complicated sequence of walling.



the mound, or deliberate 19th-century infill of the earlier hollow is unclear. Either way it graphically illustrates how prehistory and recent history can sit cheek by jowl on these multiperiod sites.

With limited time available to record this extensive site, the team focused their resources on examining those deposits sealed by the broch's outer wall-face and those that butted up against it. After initial cleaning, the section was cut back and stepped for safety. The team had to work from scaffolding platforms erected against the cliff-face or on a step cut back approximately 0.5m from the cliff edge onto the bedrock. This approach allowed the earliest layers of human activity above the natural geology to be investigated.

Of particular interest was a dark brown layer containing 'shillet' – that is, small, platy stones – sealed by both the wall core and its face. A similar layer was encountered during our excavations at Old Scatness broch on Shetland, where we interpreted it as dressing debris from the masonry. Both the broch and the haphazard traces of an extramural settlement immediately to its west were constructed on a level, scalped platform.

In places this cut through the underlying glacial boulder clay and down to the bedrock, which strongly suggests that the early activity across the zone is near contemporary. A quantity of sheep bone, some of it still articulated, sealed fragments of an early layer of paving. Belonging to the primary phase of the site, the sheep bone returned a calibrated C14 date of AD 1-210 (at 95% confidence). The dating evidence is, in general, consistent with an Iron Age date for the site.

A second area of eroding coastline lay south-west of the broch and also contained a series of walls. These were constructed in a style that strongly suggests they represent a later, probably Medieval or post-Medieval phase of



settlement. Excavation confirmed that middens laid down during the later phase of occupation here dated to the 17th and 19th centuries. The nature of the marine erosion meant that these could be investigated using conventional horizontal excavation. These late midden sequences are of great value, as this period has rarely been sampled on other Orcadian sites and will grant us an insight into island life in the post-Medieval period.

Lower-level deposits and those near the rock-cut cliff were explored using the same techniques deployed in the area around the broch walls. Cleaning the eroded cliff-face revealed a cluster of six truncated walls. Only seen in cross-section, they make a powerful statement about the complex sequence of refurbishment and modification that took place here. The earliest activity in this central area was represented by a flagged floor surface and a chunk of wall that had been built on a levelling layer laid over the natural boulder clay.

To the east another group of structures was centred on the corner of a rectangular building. The earliest feature here was a wall that had been built against the south-eastern edge of a layer of large, carefully laid tabular stones. Possibly a foundation course, these tabular stones were in turn sealed by a flagged floor surface. A further sequence of levelling material and paving survived above it.

## Turning the tide

The two stretches of eroding coastline at South Howe provide an opportunity to investigate and record two very different stratigraphic sequences.

### ACKNOWLEDGEMENTS

We would like to thank Orkney Islands Council for their grant support, together with the University of Bradford, Orkney College of the University of the Highlands and Islands, and ORCA for the loan of equipment.

**BELOW** The team of 2012 say thank you to the Orkney Archaeological Society for a welcome present of jam doughnuts!

Yet while the two zones of archaeological remains are separated by both time and space, with the Medieval and post-Medieval buildings spreading beyond the confines of the mound, they may well be related. A slight shift in the settlement site to the side of the original mound occurs on other multiperiod settlement mounds containing brochs, including Old Scatness and Jarlshof in southern Shetland. At both of these sites the Norse settlement is adjacent to the Iron Age settlement mound. A similar situation may also have occurred at Swandro.

It is hoped that this brief summary of some of the project highlights demonstrates how this programme of work is not only saving archaeological data before it is lost to the sea, but also providing an increased understanding of the richness and complexity of Rousay's past. Shedding new light on the history of sea-level change in Orkney is also of very real value to attempts to understand how climate fluctuation could re-mould the island once more. The work is increasing the islanders' awareness of their unique heritage and provides training for the next generation of international archaeologists. @

### FURTHER INFORMATION

The Orkney Gateway to the Atlantic Project is led by Steve Dockrill and Julie Bond from the University of Bradford with Jane Downes, Julie Gibson, and Ingrid Mainland from Orkney College, together with Ruth Maher (originally from CUNY and now William Paterson University), Robert Friel, and Zoe Outram (University of Bradford). The project is a recognised field school of both the North Atlantic Biocultural Organisation (NABO; [www.nabohome.org](http://www.nabohome.org)) and the Global Human Ecodynamics Alliance (GHEA; [www.gheahome.org](http://www.gheahome.org)).

