

# Orkney Archaeology Review 2016

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Total Station Epiphany (James Moore at The Cairns) – (c) Rik Hammond 2014  
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**The Cairns Season 2015 - Martin Carruthers**

**Yesnaby Art & Archaeology Research Project**

**Investigating Middens at the Ness of Brodgar - Dr Lisa-Marie Shillito**

**Prospecting for Orkney's Maritime Heritage - Paul Sharman**

**A Stratigraphic, Palaeoecological & Dendro-chronological Investigation of a Prehistoric Oak 'Plank' - Dr Scott Timpany, Dr Anne Crone, Dr Derek Hamilton**



**Orkney Archaeology Society**

Scottish Charity Number SC030611

## Editorial

Each year, fantastic archaeology takes place in Orkney. From almost every key period of humanity's occupation of Britain, Orkney has a story to tell and it is a fascinating story.

In recent years, the dig at the Ness of Brodgar shows Orkney to be at the centre of Neolithic Britain. The work of Orkney Research Centre for Archaeology (ORCA) Marine is telling us much about Orkney's maritime past including the two World Wars of the 20th Century when the British Fleet was harboured here and almost every era in between.

Orkney Archaeology Society has decided to produce an Annual Review to highlight some of this great work. The 2016 publication is a modest preview of what we hope to do in the future and we would very much appreciate any feedback on how we can improve and ideas for future issues. Please send your comments to [mbrsec@orkneyarchaeologysociety.org.uk](mailto:mbrsec@orkneyarchaeologysociety.org.uk)

Most of the money that OAS raises goes in grants to support archaeology in Orkney.

When we asked a number of people who are part of these projects that we funded to write about aspects of their work, we were not sure what we would get back. But what we have received are these five fascinating essays that show the diversity of work being done here. We hope you enjoy reading these articles as much as we have.

It only remains to thank everyone who has contributed to the Review, including Rik Hammond who has provided the pictures for the front and back cover.

If you join OAS, not only do you get a copy of the Review for free you will also be supporting the work of archaeology in Orkney. Details about the work of the Society and how to join are on our website.

### Orkney Archaeology Society

[www.orkneyarchaeologysociety.org.uk](http://www.orkneyarchaeologysociety.org.uk)

**OAS Committee and Review Editorial Board:** Martin Carruthers (chair), Caz Mamwell (vice-chair and webmaster), Hayley Green (secretary and social media), Elizabeth Corsie (treasurer), George Vickers (membership and review), Anne Mitchell (events), Ingrid Mainland (events), Annabel Eltome (Ness shop), Beth Murray (student representative), Mark Newton, Christine Northage and Lisa-Marie Shillito.

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# The Cairns Season 2015

## Martin Carruthers

University of the Highlands and Islands Archaeology Institute

Excavations continued during the summer of 2015 at the Cairns, Windwick Bay, South Ronaldsay, as part of on-going research into the Orcadian Iron Age.

One aim was to enhance our understanding of the monumental broch building (Structure A), possessing an overall diameter of some 22m, that makes up a large part of the archaeological mound at the Cairns and, in particular, to assess the preservation and potential quality of any surviving floor deposits and occupation material within it. Therefore, this season the deposits on the north-eastern interior of the broch were sampled in a more substantial manner than before. A series of rough flagged surfaces were encountered similar to those seen in previous seasons further to the south. Beneath and to the west of the flags carbon rich soils and rough stone slab bases indicated occupation materials late in the life of the broch.

From one of the soil samples of this deposit we recovered a fragment of a tiny, but beautiful, glass bead of a translucent greenish-blue and opaque yellow polychrome design. Indeed, the colour scheme of the bead is very typical colouring for Roman bangles it looks likely it was made by recycling a fragment of one of those. This is our first

real instance of Roman objects from inside the broch and I suspect we'll eventually uncover quite a bit more evidence for the nature of the interaction of Iron Age Orcadians with the Roman province.

I should add that at this stage we wouldn't yet know about this bead in the occupation deposits if it were not for the generous grant that was forthcoming from the OAS to support a programme of wet-sieving the soil samples from the excavation. This and other information from the wet-sieving allows us to tailor and target our attention in the forthcoming season this summer. It really illustrates, for me, the importance of the work of the OAS.







Beneath the occupation deposits that yielded the glass bead a thick orange coloured clay layer indicated a beaten earth floor, and beneath this deposit lay more black organic-rich soil. Beneath this yet more sterile clay appeared to indicate an earlier laid floor surface, this time a saddle quern and quern rubber were found to have been placed on edge within the clay in a likely 'structured deposit'. It therefore appears that there is a succession of well-preserved formally laid-out floors and occupation deposits within the broch, at least in this northern sector, and this holds out great potential for assessing the uses of the broch from its beginning to the end. The entire suite of deposits was sampled on a grid and will hopefully provide substantial volumes of environmental information and attest to the types of activities underway inside the broch through time. This information will be supplemented during the forthcoming field season when more of the interior of the broch will be excavated.

One surprise discovery inside the broch, at this stage in the excavations at least, was a very well-preserved underground structure in the northern interior and very close to the inner wall-face. The structure is essentially of the 'well'-type and has a set of some half a dozen stairs leading down to a partly rock-cut, partly finely coursed and corbelled chamber, some 2 metres beneath the presently reached surface of the broch. Initial tests suggest that there is upwards of a metre depth of deposits in the base of this structure. The discovery of the 'well' is particularly welcome since one of the major aims of the project is to investigate the role and history of Iron Age subterranean structures and this feature will be fully excavated in future seasons.



*Floor deposits inside the broch*

In the northern extension trench (Trench M) work continued with the investigation of the large curvilinear feature that has been previously identified in geophysical survey and is thought to represent a large enclosure ditch surrounding the broch and settlement. The ditch was indeed located and, though found only c.1.2m deep in this section, it was found to be very broad, and, indeed, it extended beyond the boundary of the extension trench. A network of drains was found to sinuously cut through the boulder clay at the base of the ditch/gulley. In several places where capping stones appear to have been lifted





off in antiquity there were several edge-set quern rubbers reused and placed in the sides of the drain gully forming its sidewalls.

In the western part of Trench M, a series of building remains and features relating to activity after the ditch had been filled-in were also investigated. The area was found to be as rich as the previous field season in evidence for metalworking. Around 30 fragments of well-preserved clay moulds were discovered and represent the debris from casting projecting ring-headed pins, rings and possibly penannular brooches. These were accompanied by metalwork itself including; broken bronze pins, and strips and a large bronze ring. Overall, over the last two seasons a total, in excess of 60 metalworking moulds, have been recovered from this area of the site. Only two other Scottish Iron Age period sites have yielded this volume of moulds. One is Old Scatness broch in Shetland, and the other is Traprain Law, in East Lothian, Scotland's largest hillfort.



*One of the bronze-working moulds*

I anticipate that more moulds will emerge this coming season. Importantly, crucible fragments and numerous pieces of slag and other residues and waste products, as well as a large clay furnace feature itself, were also found to suggest actual *in situ* metalworking was taking place in this corner of the site. The entire suite of materials is heavily indicative of a well-preserved and rare window on to bronze working during the Middle Iron Age, which will continue to be a focus for excavation next season.



*A bronze ring emerging from the metalworking area of Trench M*

Excavation also continued to define the stratigraphic relationships between the souterrain, Structure F located outside the western wall of the broch, and adjacent and overlying features. The entrance passage of the souterrain passage was found to extend further than previously thought and appears to make use of an older small circular building or cell composed of well-built uprights slabs, or orthostats. The souterrain will be the scene of full excavation this season.

Work also continued on the post-broch suite of buildings and activity areas in the western area of the main trench known as the Structure B area, which dates to the later Iron Age and Pictish period. This is a complex multi-phased arrangement of rectilinear and cellular wall lines that represent the remains of two main buildings.



There were many features of interest to emerge from the B area last season, including some very nice artefactual material, not least several gaming counters. One of which was a very finely carved conical shale or jet gaming piece.

A very interesting discovery was the excavation of a well-preserved set of articulated Red Deer remains. These were found to partially underlie one of the hearths in this area and may represent a foundation deposit made during the initial stages of this phase of the use of the main building in the Structure B area. We have an archaeology student writing her dissertation on this deposit at the moment and she has already discerned that the deer was a juvenile and that there were two main portions of the animal's carcass laid out on the old floor of the building, each of which is represented by a major length of backbone and a few other associated bone fragments. These two portions were laid out still articulated, and therefore, at least partially, still held together by flesh, and/or sinew, but in a position relative to each other that is not the natural one. They were twisted around to face opposite directions, as it were. Intriguingly, the animal remains were then, presumably quite quickly, sealed by the construction of a new hearth, and a roughly flagged floor.

These placements of the deer appears to represent a foundation deposit for the new stage of life in the Structure B building, or a decommissioning deposit for the previous stage, or perhaps both!

Overall, last season our understanding of the site was greatly enhanced on a number of different levels and at different points along its chronology. The broch itself is coming into sharper focus in terms of its life span and uses and we will no doubt learn even more this coming season. The after-life of the broch is also becoming clearer in some ways and more intriguing in others, but such is the research process.

I cannot wait to get started again this summer. We'll be on site between the 13th of June and the 8th of July. A special tour of the site is arranged for OAS members at 10.00am on Friday the 1st of July (if you are not yet a member, a good enough reason to join by itself). Expressions of interest in volunteering to excavate are very welcome.





# Investigating Middens at the Ness of Brodgar, Dr Lisa-Marie Shillito

School of History, Classics and Archaeology, Newcastle University

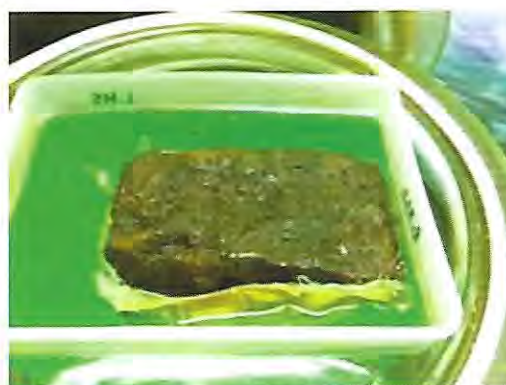
My interests in middens can be traced right back to the beginnings of my archaeological career. Initially I studied geography, and I have always been interested in the relationships between people and their environment. I went on my first excavation in 2003, on a prehistoric shell midden in Fiji. From a geographer's perspective, I was interested in what the midden could tell us about the changing environment and the impacts of humans, through examining the changing types of shell species from the earlier through to the later deposits. I realised that my passion lay at the intersection of geography and archaeology, and have been a 'geoarchaeologist' ever since.

As a Masters and PhD student I continued to work on middens, this time at the Neolithic settlement of Çatalhöyük in Turkey. These ancient rubbish heaps contain a wealth of cultural and environmental information, and I have been fascinated with understanding these deposits, and figuring out ways to best extract information from them. One frustrating thing about studying middens is that they are often very complex, and traditional archaeological tools can miss a world of information that is hidden from the naked eye. At Çatalhöyük, where much of the middens are made up of ash and organic material, I developed a method of 'microarchaeology' to investigate the invisible archaeological record. Deposits of ash appear simply as grey and white powder in the field, but under the microscope are highly variable, and the types of fuels that were being burnt can be identified. Wood ash for



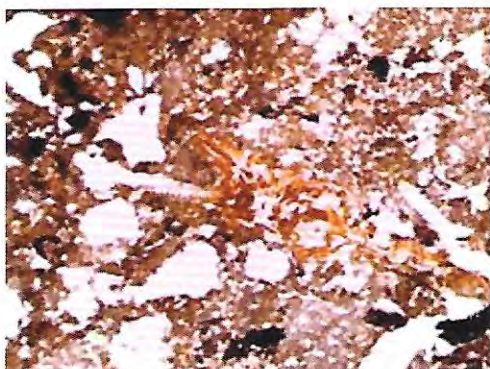
*Aerial view of the main excavation area.  
Image by Hugo Anderson-Whymark*

example looks very different to ash from burning animal dung, or reeds and grasses. The chemistry of these materials is also quite different. By combining the microscope with the laboratory, I was able to detect a wide range of materials used for fuel and other activities.



*Micromorphology block being impregnated  
with resin. Image by Julie Boreham,  
Earthslides.com*

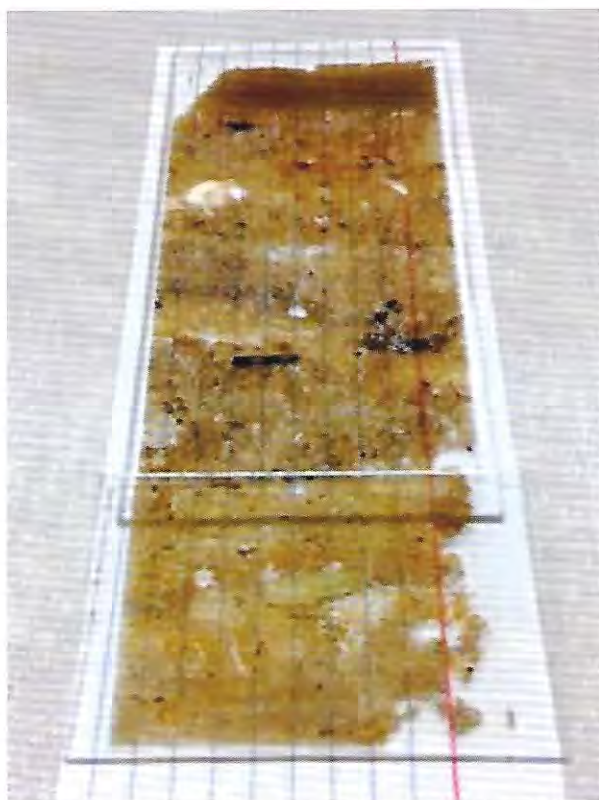




Zooming in under the microscope – tiny fragments of ash (grey areas) bone (orange material) and mixed charred/organic debris (brown and black areas).



Set of blocks ready for transport. Taking these through airport security raised some eyebrows. Luckily they are used to archaeologists in Kirkwall!



Finished thin section slide prepared by Julie Boreham, earthslides.com

One of these chemical methods is called GC/MS, or gas-chromatography mass spectrometry. This is a technique that chemists use to separate out complex mixtures of organic materials and identify them. You may be wondering how all of this led me to Orkney – the fact is that archaeological chemists are relatively rare (though the specialism is becoming more common). When I finished my PhD at Çatalhöyük, I took up a research post with the 'Feeding Stonehenge' project, applying my expertise in chemistry to identify food residues preserved in Grooved Ware pottery from Durrington Walls.

Having focused on the Near Eastern Neolithic for the best part of a decade, where standing buildings thousands of year old are fairly common, I had assumed that the Neolithic of Britain was a bit dull in comparison! But as I became involved with Stonehenge and Durrington Walls I realised that there were some very interesting things going on in the past closer to home. Whilst working on Stonehenge, I got chatting with Professor Mark Edmonds about my midden interests, and he mentioned that the best middens in the UK were to be found at the Ness of Brodgar. I decided to go and visit in 2013, and I can honestly say that I was awe-struck by the Ness, and the rest of





Orkney. Here is a landscape where archaeology is abundant, and not just the monumental structures, but the houses as well. The level of preservation is something that you simply do not find elsewhere in the UK, and I became very excited at the chance for me to use the methods I developed in the Near East to understand the people of Neolithic Britain, and their environments. The landscape of Orkney is obviously incredibly different to that of central Anatolia, but the people were doing remarkably similar things with their rubbish. The middens at both sites are enormous, often as big as or bigger than the buildings that they are adjacent to. Why were people disposing of their rubbish in this way? Did they even see it as rubbish or is there something else going on? Can we look at the composition of these middens to investigate what resources people were using and how this changed over time? How did this relate to environmental change?



*Marking out areas to take samples through the trench T midden*

Funded by generous grants from OAS the Society of Antiquaries of Scotland, I have begun a programme of pilot work at the Ness, to test the feasibility of the methods. A major aim of the pilot study is to investigate the types of materials that were being exploited for fuel, by looking at layered ash deposits from middens.

A detailed assessment of the formation processes of the middens will also be conducted, to help understand the activities that produced them. Results so far indicate a complex picture of formation processes, with a series of successive 'dumping' events of ashes and organic rich materials. Burnt peat residues can be seen along with charcoal and burnt bone, with some tantalising differences between the samples. Next year my aim is to complete the analysis of the micromorphology samples, and to expand the analysis to include a wider range of complementary methods to help us understand these deposits further.



To find out more:

Archaeological Research in Progress conference 2015: Microarchaeology at the Ness of Brodgar

<https://www.youtube.com/watch?v=oEwn4KBpRxo>

Castles and Coprolites (my research blog)  
<http://www.castlesandcoprolites.blogspot.co.uk>



# Yesnaby Art & Archaeology Research Project

[www.yaarp.org.uk](http://www.yaarp.org.uk)



Led by the University of the Highlands & Islands Archaeology Institute, the Yesnaby Art & Archaeology Research Project (YAARP) is a multi-year, interdisciplinary art and archaeology research project - developed and co-directed by the Archaeology Institute's Dr James Moore and Orkney-based visual artist Rik Hammond - focusing on the landscape, archaeology and history of the township of Yesnaby on the west coast of the Orkney Mainland.

Employing a range of equipment and techniques - including GPS recording, GIS

mapping, geophysical survey, walking, photography, video, drawing and archival research, plus phenomenological and psychogeographic approaches - the project aims to develop creative and collaborative ways to experience, record, visualise and interpret Yesnaby and its human history, in addition to providing members of the project team with new skills and creative tactics to think about landscape.



Yesnaby - Aerial photograph by James Moore - 2009 (left)

Members of the team setting up the Trimble GPS prior to gradiometer survey, July 2015 (top right)

GPS Tracks (detail) - July 2015 Yesnaby: Roundadee, Fields I & II, Peerie Hill, East Bigging & Billia Field (top right)





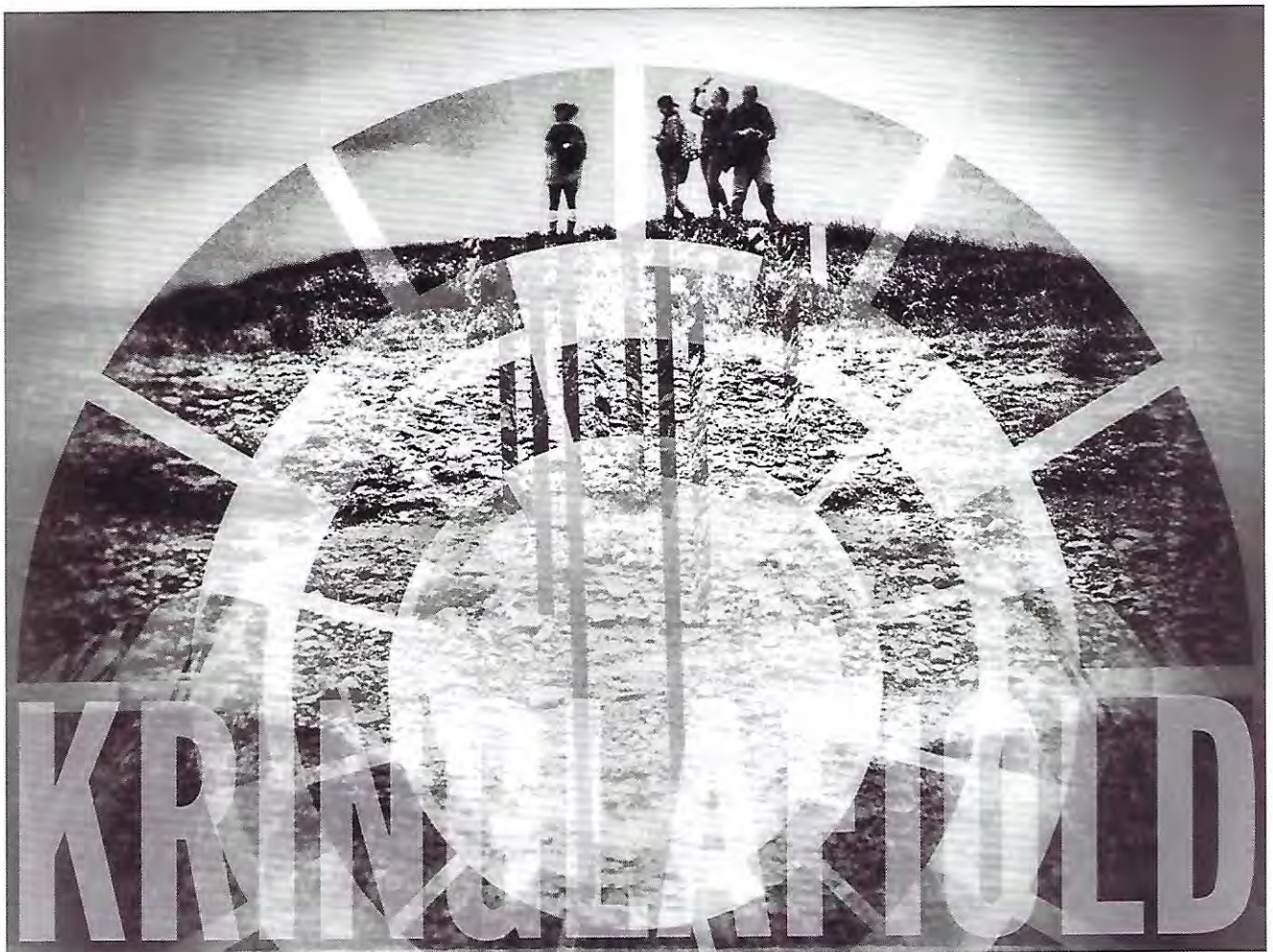




The first season of fieldwork took place over two weeks in July 2015, with a team of nine - building on the ongoing collaborations between Rik and James, which began at the 2011 Ness of Brodgar archaeological excavations, towards the end of James' PhD research and during Rik's artist residency in 2011/12 focusing on The Heart of Neolithic Orkney World Heritage Site (as part of the 'Symbols in a Landscape' project, a partnership between the Pier Arts Centre in Stromness, the University of the Highlands & Islands

Archaeology Institute and Historic Environment Scotland, supported by the Scotland's Islands initiative).

The Yesnaby Art & Archaeology Research Project has been supported by Orkney Archaeology Society, the University of the Highlands & Islands Archaeology Institute and Orkney Islands Council's Culture Fund. Further information about their ongoing research, plus details of this year's fieldwork, can be found on their Facebook Page at [www.yaarp.org.uk](http://www.yaarp.org.uk) and on Twitter by following @YAARP\_Orkney.







Kringlafield - July 2015  
GPS tracked fieldwork  
team walk to Kringlafield  
summit (left)

YAARP 2015 Fieldwork:  
Holly & Sorcha conducting  
geophysical survey - with  
bubbles - July 2015 and  
Peerie Hill (top)

Yesnaby - Aerial  
photography by James  
Moore – 2009 (right)





# Ness of Brodgar Excavations 2016



## Guided Tours

**Monday to Friday 11am, 1pm and 3 pm**  
**Saturdays and Sundays 11am and 3pm**  
**6th July—24th August**

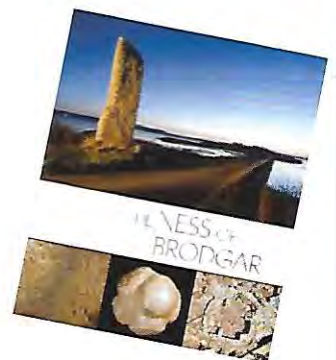
Visit the archaeological excavations of this amazing Neolithic complex in the Heart of Neolithic Orkney World Heritage Site

## Ness Guide

A guidebook is now available - please buy a copy & support the dig.

The guide has been written by archaeologists working on the Dig and is a great introduction. Copies are available at the OAS Shop open during the Ness Dig or from the website of the Ness of Brodgar Trust:

[www.nessofbrodgar.co.uk/shop](http://www.nessofbrodgar.co.uk/shop)





# Prospecting for Orkney's Maritime Heritage, Paul Sharman

ORCA Marine, University of the Highlands and Islands Archaeology Institute

## Introduction

We are all aware that Orkney is often perceived as remote or peripheral to our modern, more urban-centric society, even though it has rich pastureland, teeming seas, marine energy and excellent natural harbours, from small sheltered bays to Scapa Flow, the largest natural harbour in Europe at 125 square miles / 325 square kilometres.

Orkney is especially well-placed for maritime routes from Scandinavia and the Baltic that wish to avoid the Channel, and head into the Atlantic. These were:

- The routes between Norse Scandinavia and the earldom of Orkney and the Norse territories and kingdoms of the Western Isles, Ireland and Isle of Man;
- Trade networks such as the stockfish trade of NW Europe, trading with the Hanseatic League and
- The massive herring fishery that took place around the coastline of the North Sea.

In the 19th and especially the 20th centuries, the strategic importance of Orkney and Scapa Flow was recognised, becoming the naval base for the British Grand and Home Fleets in World Wars I and II, to control the North Sea and the northern route from Europe to the Atlantic.

## Orkney's Maritime Heritage

Maritime activity has been the key to the human occupation of the islands of Orkney since they were first settled. However, with a few notable exceptions,



*Pier (© ORCA)*

the material remains of earlier maritime activity have not received so much attention from archaeologists working in Orkney even though they are central to the cultural heritage of the islands. This is partly due to the fact that more evidence survives from the 18th to the 20th centuries than for earlier periods. For example, we have only one possible Norse boat house identified in Orkney, excavated in Rousay by Sigrid Kaland in the 1970s. We have late post-medieval boat houses - where are the rest from the Norse and medieval periods? Research such as that of Anne Allen and Doreen Waugh has examined what should be there, but not identified any new remains on the ground.

Maritime remains have been noted more often in the last twenty years, for example: in coastal surveys by EASE Archaeology 1997-1999 and by Ted Pollard, ORCA's marine archaeologist 2012-14:



- In the ongoing early prehistoric work of the Rising Tides project led by Richard Bates and Caroline Wickham Jones
- In current harbour and landing place work by Julie Gibson, Orkney County Archaeologist
- In various pieces of work by ORCA and other colleagues based in the UHI Archaeology Institute and
- By members of Orkney's maritime and diving communities.

### **Prospecting for Orkney's Early Harbours, Landing Places and Maritime Infrastructure**

Being coastal and in many cases situated directly on the foreshore and in shallow water, maritime sites, structures and artefacts are most vulnerable to erosion. Much information dating before the modern period has probably already been lost to the sea. Therefore there is an urgent need for research, survey and fieldwork to help prevent further loss of information. Loss of information isn't only of physical remains, but of shared maritime knowledge as our society and the way we earn a living changes. Research into our past maritime and coastal environment and societies is an important element in understanding how societies worked with and adapted to the sea. This may hold lessons for how to adapt to current climate change.

This current project builds on work and discussions by Ted Pollard when ORCA's Marine Archaeologist, Kevin Heath, the late Bobby Forbes, myself and Julie Gibson, along with other colleagues based in the UHI Archaeology Institute such as Annalisa Christie and Mark Littlewood.

We've initiated a Project to identify Orkney's early harbours, landing places and maritime infrastructure, taking a holistic approach that incorporates Westerdahl's definition of the maritime landscape. Using a multi-disciplinary

methodology we aim to identify physical evidence of our maritime past. The Project is initially a collaboration between ORCA Marine and SULA Diving, but intends to expand the network of people involved to include other academics and local community interest groups, to ensure as wide a variety of outcomes as possible.

The methods we have used and propose to use include targeted walkover, diver and marine geophysical surveys, historical, place name, ethnographic and cartographic research, and the analysis of currents and tides along with community knowledge to identify where landings are or were possible.

### **Types of evidence**

As far as we know, Orkney has always had a rich array of maritime *activities* such as fishing, waterborne trade, transport and communication. Physical remains should survive both on land and underwater, on the coast and even further inland (navigation beacons, for example, often lay hundreds of metres inland in prominent locations, so as to be visible from the sea).

Evidence of Norse, Mediaeval and early post-Mediaeval maritime activity should comprise, as in later times, sites and structures such as boat building sites, harbours, landing places, boat nousts, shelters or houses, wharfs, slipways, jetties, blockages and harbour defences, fish traps, salt pans, causeways, flood defences and sea walls built for reclamation, ballast sites, anchorages, jettison sites, navigation beacons and portages. That is in addition to artefacts such as boats, shipwrecks and fishing equipment, and ecofacts such as exploited marine resources like shellfish, fish, sea mammals and seaweed. Evidence also includes seascape and landscape knowledge, ethnographic data and oral history, historical documents, place names, maps and charts.





And we do have lots of this evidence – some of it just needs drawing together, while some of it needs discovering through further research and fieldwork.

### Millburn Bay

So - the Project intends to initiate a programme of marine and onshore survey fieldwork to record early maritime sites, structures and artefacts in Orkney. The recording of material remains, along with the use of historical, place-name, ethnographic, cartographic and marine geophysical survey data sources, will help to preserve some of Orkney's maritime cultural heritage.

But where to start? Orkney has 70 islands and skerries, hundreds and hundreds of kilometres of coastline. Our initial way of filtering was simply by identifying sheltered bays that have a good chance for the survival of subsea remains, are mentioned in historical documents and/or have archaeological evidence already identified along the shore.

There are many good candidates, all with historical references, especially in the *Orkneyinga Saga*. However our decision of where to start was triggered not so much by the Sagas, but by my colleague Kevin Heath's reports of mounds in Millburn Bay, Gairsay - the only accessible and sheltered bay on the island and the most likely place for ships to be anchored or take refuge and, possibly, sink or be abandoned. Funding was short and this looked like a manageable size for initial fieldwork, in a sheltered south-facing bay.

The historical background clinched it. The *Orkneyinga Saga*, written in the early 13th century, records that Gairsay was the residence of notable Norse chieftains, such as Olaf Hrolfsson (*Orkneyinga Saga*, chapter 56), and in the 12th century was the location of the great hall of the 'Old

School Viking' chieftain, Svein Asleifsson, where he feasted his 80 strong retinue (who must also have had boats). He is recorded as farming Gairsay, using it as a base from which to conduct 'viking-cruises' to the Hebrides and Ireland (*Orkneyinga Saga*, chapter 105). He captured two English ships c 1171, which yielded a large amount of cloth, and he sailed back to Gairsay with the ships and goods, having the cloth sewn onto the sails to make a great show. Plunder included wine and English mead, unloaded at Gairsay and used for feasting Earl Harald.

Gairsay's useful location, and an island inhabited by a number of families requiring seaborne links with the rest of Orkney to fulfil their needs, has meant that maritime activity (at different scales) has continued here to the present day. This extract of Murdoch Mackenzie's 1750 chart shows Langskaill on Gairsay, a safe anchorage in Millburn Bay, and a beacon or navigation aid on top of the hill.



©Orkney Library and Archives. Reproduced with kind permission.

Despite the sheltered nature of Millburn Bay, we had to postpone fieldwork several times in the summer of 2015, due to



strong southerly winds preventing diving in shallow waters. We had an onshore and a diving survey team working at the same time, and conducted three days' fieldwork.

Onshore, we ORCA members and volunteers undertook a shoreline and intertidal walkover survey around part of the bay. The maritime features we noted included two piers, a possible boat shed or storehouse (likely 19th century) and a large noust.

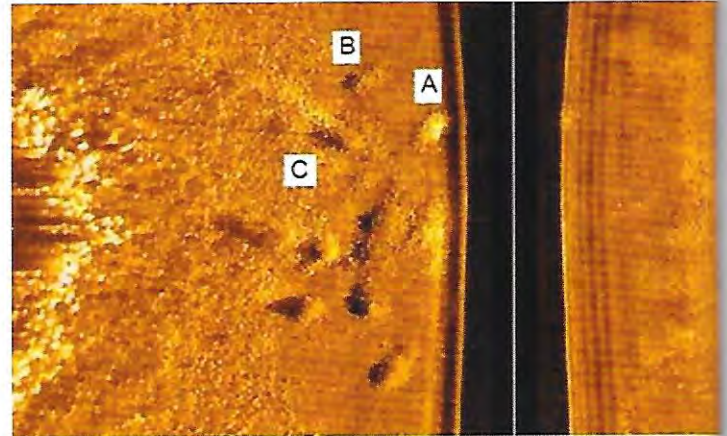


Store house (© ORCA)



Boat noust (© ORCA)

Kevin Heath conducted two sidescan sonar surveys in the bay, the first of a small area clearly showing mounds, which we interpreted as ballast. They are so neat that we wondered if they could be ballast from boats that had sunk, with the bottom of the hulls surviving below them.



Sidescan sonar survey by Kevin Heath, SULA Diving

The diving survey involved experienced marine archaeologists and divers led by Dr Annalisa Christie, then ORCA's marine archaeologist, and Kevin Heath with the SULA Diving team along with diving volunteers. The team used swimline surveys and circular search patterns, also an underwater metal detector which found various items, but nothing of any great age.



Diving Survey (© ORCA)

The sidescan features proved to be stone mounds 3-6m long, 2-3m wide and 0.5-1m high. Samples of the cobbles were taken





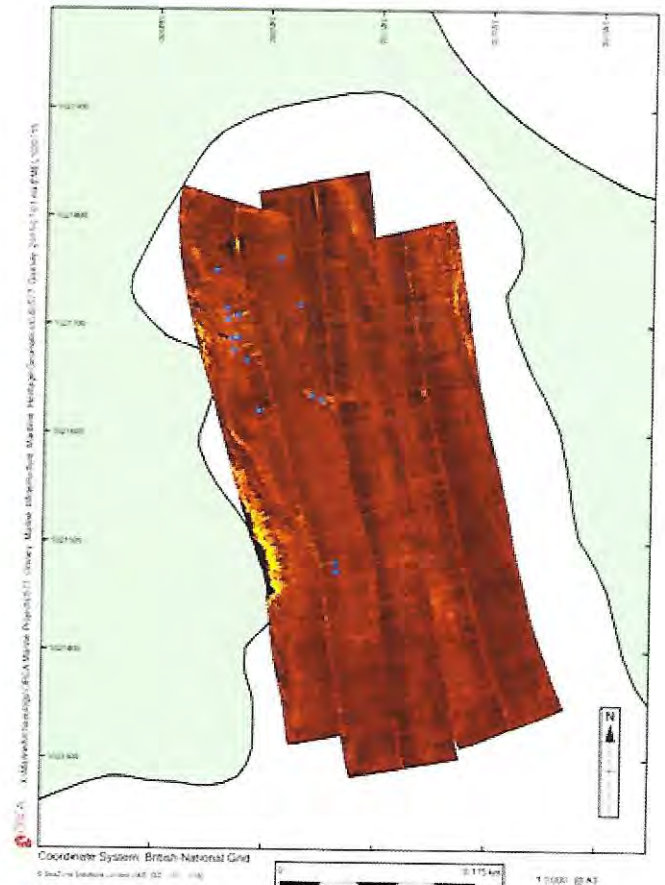
from each mound, for geological study which may identify origin – immediately local, Orkney, or perhaps from further afield. Although initially thought to be ballast mounds, perhaps over the hull of a sunken vessel, the size of the mounds doesn't seem to indicate sunken vessels or a single de-ballasting episode.



Ballast mound (© ORCA & SULA Diving)

A more extensive survey by Kevin Heath indicates the location of the mounds and other targets (as blue dots) and the inner line of piles seem to show a linear pattern running parallel to the shore. The mounds themselves are not adjacent to a section of shoreline conducive for pulling vessels up to. One possible interpretation is that they represent the foundations of a jetty or quay, facilitating the offloading of ships whatever the state of the tide.

Brit Solli's work in Romsdal, Norway, has discovered the wooden foundations of a medieval jetty with a similar configuration. Her report (2014) also refers to the work of various eminent archaeologists that shows that jetties in medieval Oslo and Bergen were founded on timber caissons filled with stones. After the timber has decayed, the collapse of the stone filling could well resemble our heaps of stone.



Sidescan sonar survey (© ORCA & SULA Diving)

### The Future - so what next?

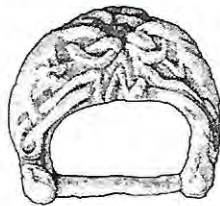
Clearly we need to do more detailed survey and fieldwork, if the landowners are willing. It is our intention, funding and permissions allowing, to archaeologically investigate two of the mounds this summer to cast further light on this. We hope that the project will expand to other areas in Orkney. We will be focusing to begin with on natural harbours with sediments (good for preservation) and places where boats and landfall events are recorded in the Norse sagas, especially the Orkneyinga Saga and other historic documents. The fieldwork will involve outreach training and volunteer and community inclusion. It is hoped that the Project will use the extraordinary resource that is local knowledge – when it comes to tides and currents and landing small boats. Coastal and maritime communities have expertise that is second to none.



The data gathered will be of interest to Orkney, helping to preserve some of our heritage, of academic interest, perhaps looking at harbours and landing places in terms of different scales and networks, and will contribute to our knowledge of how people react and interact with the sea

through time. Evidence of the resilience of maritime communities in the past could be used to reflect on current issues on coping with climate change, on adaptation and resilience strategies for our modern needs.

## Acknowledgements



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ORKNEY ISLANDS COUNCIL



Orkney Library and Archives

Andy MacGill, Cliff Bichan

Bobby Forbes,

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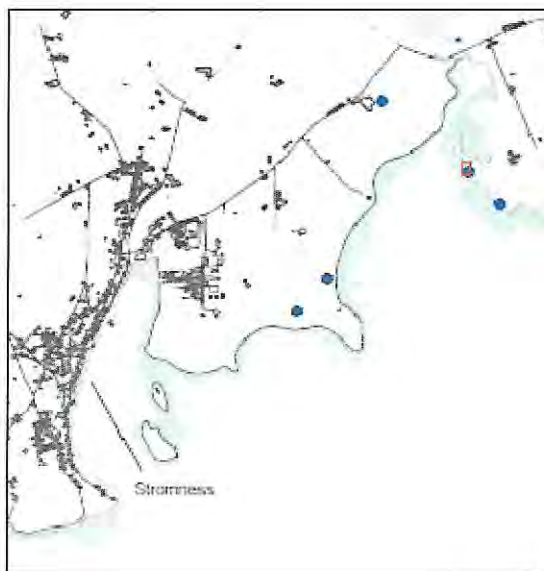
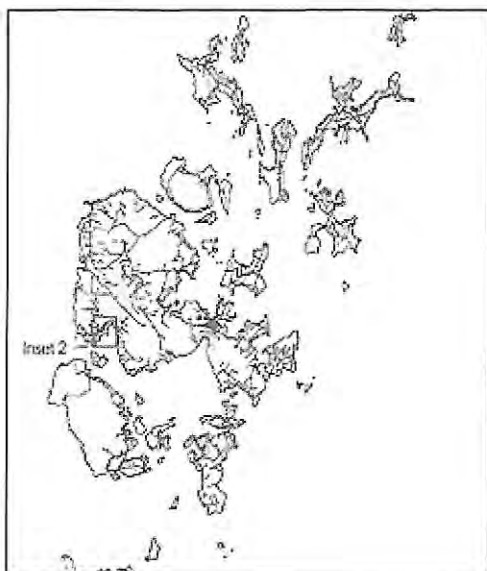
## A Stratigraphic, Palaeoecological & Dendro-chronological Investigation of a Prehistoric Oak 'Plank'

Dr Scott Timpany, Dr Anne Crone, Dr Derek Hamilton

Of the Archaeology Institute UHI, AOC Archaeology Group, and SUERC (Scottish Universities Environmental Research Centre) Radiocarbon Laboratory, respectively

In 2013 a substantial oak 'plank' was discovered stratified within intertidal peats in the Bay of Ireland, Stenness, Orkney (see right). Initial inspection of the 'plank' indicated that it represented a radially-split timber, which tapered at its northern end and potentially as result of being worked. Previous radiocarbon dates from intertidal peats on Orkney have produced ages of Mesolithic to Neolithic date of between 4800-3000 cal BC.

A radiocarbon date from the top of the peat within which the oak timber was embedded was funded by the Orkney Archaeology Society and provided a date of 4488-4356 cal BC (GU-32174; 5594±29 BP) indicating a Late Mesolithic date for the timber; making this the first waterlogged oak object of Mesolithic date to be found on Orkney. It is of particular relevance given pollen data has been unable to confirm the presence of indigenous oak on the islands in the Mesolithic.







*The plank*

oak remains in Scotland an exact felling date could not be gained. A wiggle-match date was achieved through radiocarbon dating wood from 5 individual rings chosen from the dendrochronology and provided a felling date of 4410-4325 cal BC (below). The date confirming that the

oak trunk was felled right at the end of the Late Mesolithic period.

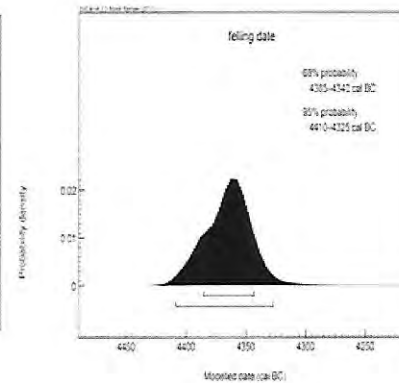
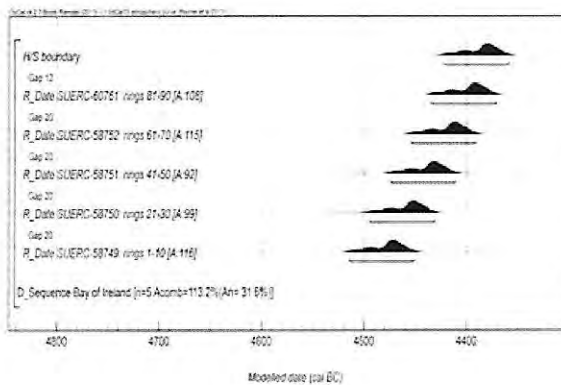
Given the importance of the find both as an archaeological object and ecologically, Historic Environment Scotland funded work to excavate and record the timber (above, photograph courtesy of John Barber) together with a dendrochronological (studying the rings in the tree) and wiggle-match radiocarbon dating programme in order to gain an exact date for when the oak was felled. Excavation and dendrochronology revealed the timber was tangentially split but there was little in the way of tool marks.

The presence of submerged tree remains of willow carr-woodland (see below), coupled with pollen information from the intertidal peats indicates the oak trunk was placed in an area of reed swamp at the fringe of the woodland. Pollen also indicates oak was not growing locally.

The reason for the deliberate felling and placing of the oak timber within this reedswamp and willow-carr woodland is unknown. However, it does provide the first tangible evidence of human-environmental interaction during the Late Mesolithic period in Orkney.

The 3.5m long oak was found to be approximately 101 years of age when it was felled but given the paucity of such

The reason for the deliberate felling and placing of the oak timber within this reedswamp and willow-carr woodland is unknown. However, it does provide the first tangible evidence of human-environmental interaction during the Late Mesolithic period in Orkney.











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