

ORKNEY COASTAL SURVEY 1999

Sanday & North Ronaldsay

Hazel Moore &
Graeme Wilson
EASE Archaeology

with contributions by
Alan Stapf, Arkensol

**Commissioned by
ORKNEY ARCHAEOLOGICAL TRUST**

**Funded By
HISTORIC SCOTLAND**



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North Ronaldsay



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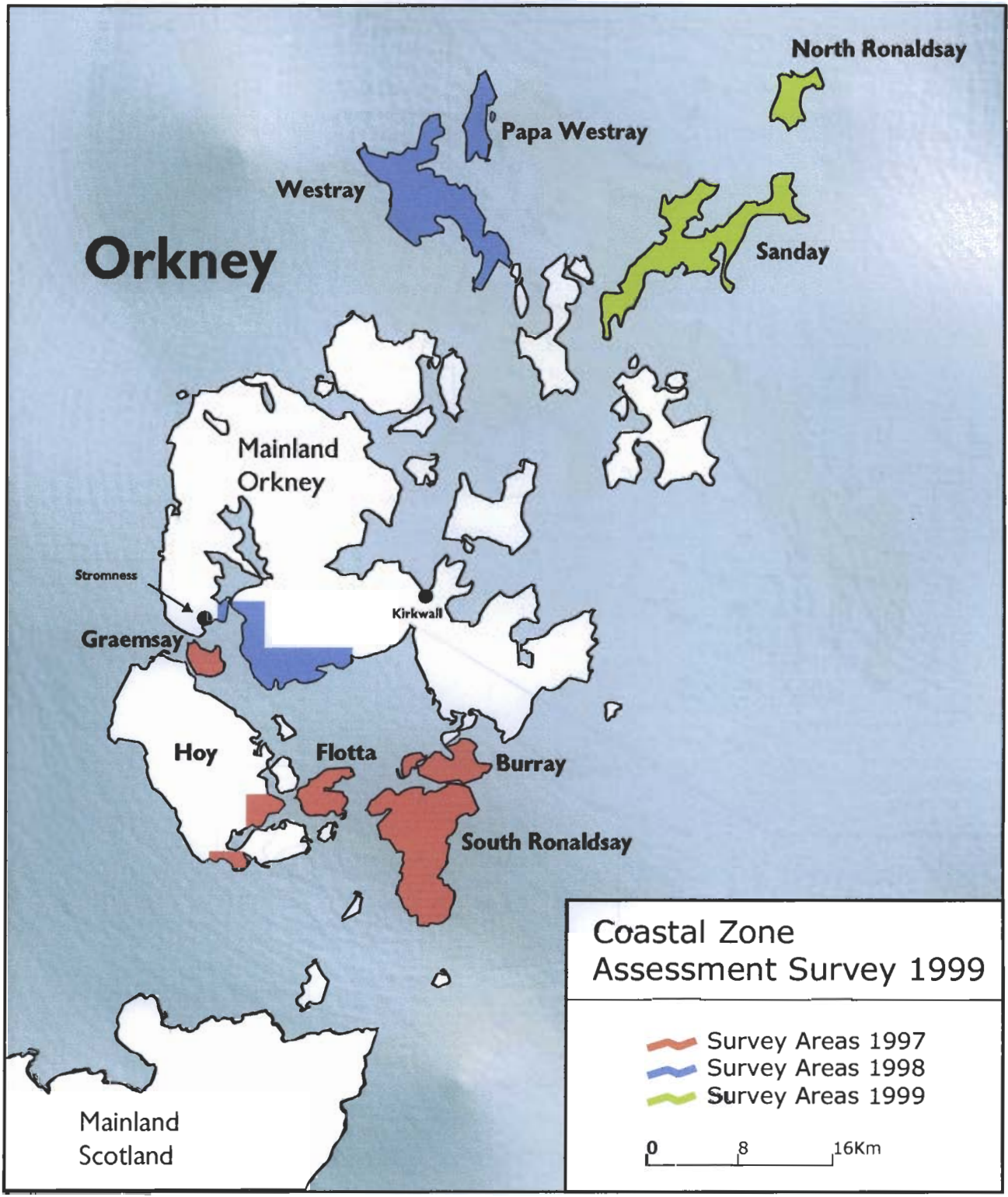
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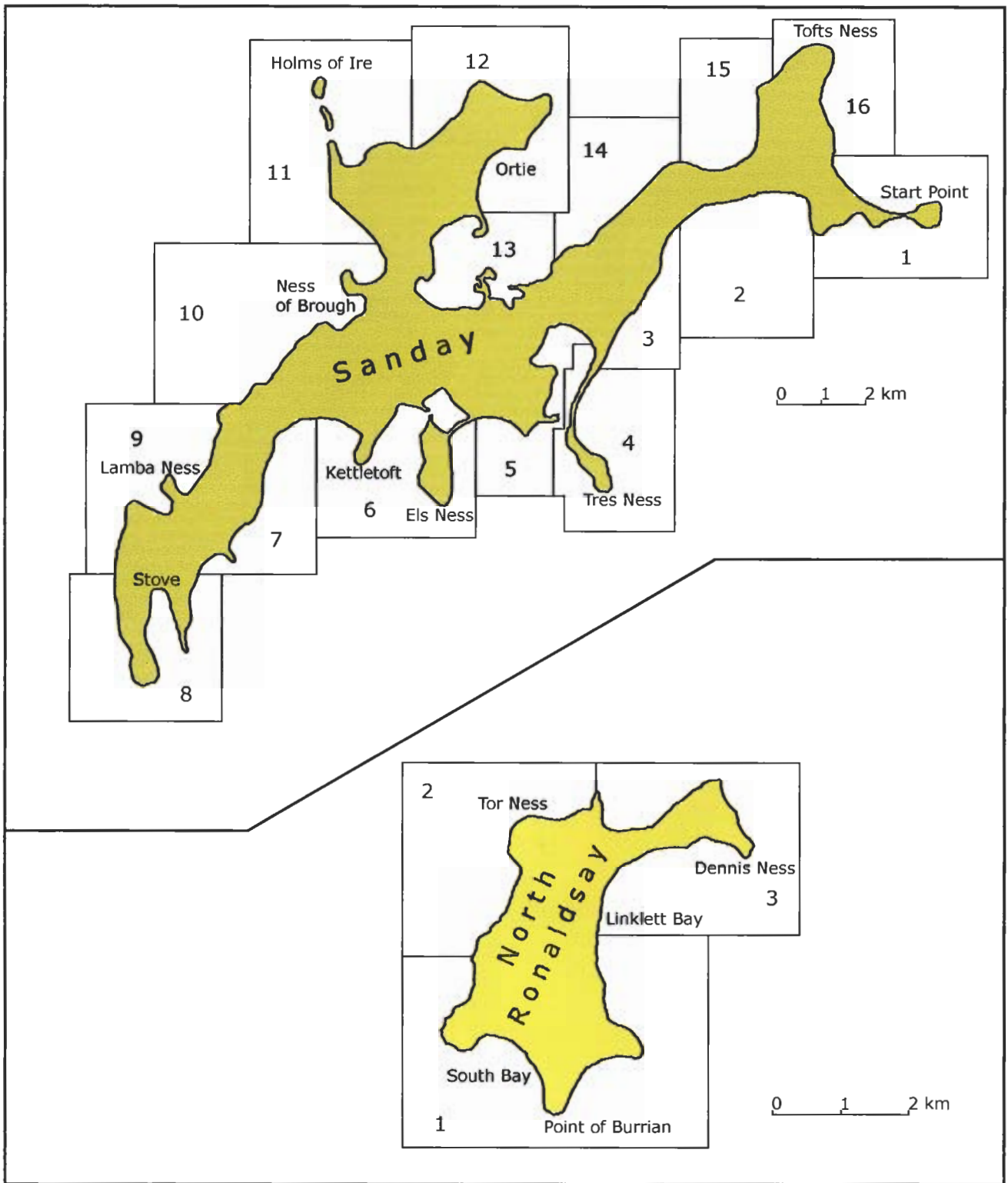
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Contents

Introduction	1
The Survey Areas	4
The Survey and Report: Built Heritage & Archaeology	8
The Survey and Report: Hinterland Geology, Coastal Geomorphology and Erosion Class	11
Discussion	13
The Coastal Archaeology of Sanday	13
The Coastal Archaeology of North Ronaldsay	20
Sanday Geology, Geomorphology and Erosion (Alan Stapf)	25
Built Heritage & Archaeology Recommendations	27
The Maps	
Sanday (maps 1-16)	49
Sanday Site Descriptions	177
Sanday Site Summary Spreadsheet	309
North Ronaldsay (maps 1-3)	327
North Ronaldsay Site Descriptions	351
North Ronaldsay Site Summary Spreadsheet	385
Glossary	389
Bibliography	394





Introduction

This report documents the findings of a coastal zone assessment survey carried out on the islands of Sanday and North Ronaldsay in 1999. It forms the final part of a three year programme of coastal assessment in Orkney (see map for locations of other areas). The aims of the programme are to gather specific data on the archaeological resource and on the actual and potential risks to its survival. The results, together with those provided from similar programmes of work being undertaken throughout Scotland, will go forward to inform future management strategies. All parts of this work were grant funded by Historic Scotland through Orkney Archaeological Trust.

The archaeological survey was carried out by Hazel Moore and Graeme Wilson, EASE Archaeology; Alan Stapf, ARKENSOL, conducted a complementary survey of the coastal geology, hinterland geomorphology and erosion on Sanday.

This report follows the format and specifications set down in Archaeology Procedure Paper 4: Coastal Zone Assessment Survey, Historic Scotland (1996).

The Survey

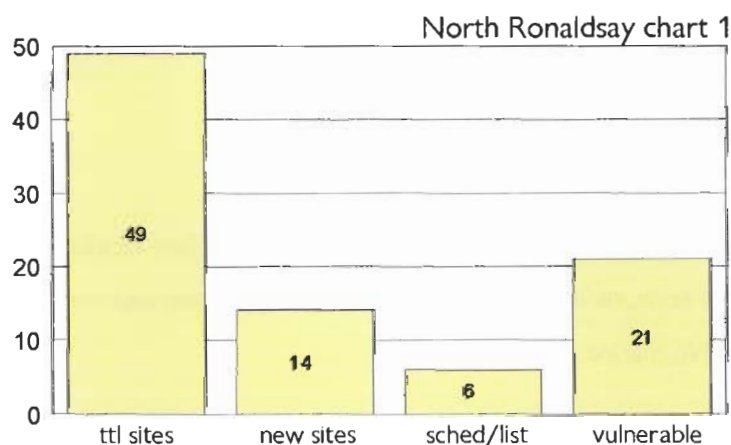
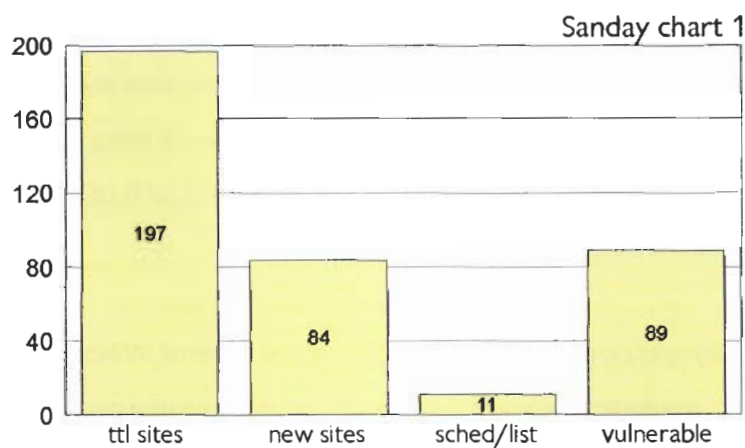
The survey area covered the islands of Sanday and North Ronaldsay (see location map). Investigation was limited to the coastal zone, defined as a 50-100m wide strip of land adjacent to the coast edge, including the foreshore. No marine survey was undertaken.

The area covered by this survey takes in the entire length of the coastline indicated on the location map. The actual distance covered on the ground varies according to the scale of map used for measuring (see Ashmore, 1993). At a scale of 1:25,000 the combined length of the Sanday and North Ronaldsay coastlines is estimated to be 138km, with Sanday at 119km and North Ronaldsay at 19km. At a scale of 1:10,000, the combined distance is estimated to be in the region of 150km.

Background

A desk-based review of the known sites and monuments indicated that 148 sites had previously been recorded in the survey area: 113 of these are **located on Sanday** and 35 on North Ronaldsay. Of these, 17 are protected as scheduled ancient monuments or as listed buildings. 11 protected sites are located on Sanday and 6 on North Ronaldsay.

Where possible, each known site was visited in the field and re-examined. In a very few cases it was either not possible to locate a known site or to inspect a site. In this instance, the site description provided within this report is taken directly from the NMR or SMR record cards. Such sites are labelled 'not seen' or 'not located', as appropriate.



Conditions

Most of the survey area in Sanday is low-lying and under cultivation and therefore relatively accessible by foot. In the case of North Ronaldsay, access to the hinterland was occasionally hampered by the sheep dyke. In general, the vegetation cover on both islands is low and did not impede site visibility.

The survey was carried out during August - September 1999 and the weather conditions generally varied from good to fair. One exception to this good weather was on North Ronaldsay, when the weather conditions were very poor. Due to time constraints, the work was continued, but it was not possible to make a photographic record at all of the sites.

Aims

The aim of the survey was to characterise the built heritage and archaeology of the coastal zone. To achieve this, all previously known sites were revisited and assessed for change. New sites were also located, identified and recorded. Site vulnerability to erosion was assessed. Sites of all types and periods within the coastal zone were investigated.

This survey was limited in scope; its purpose was to rapidly locate and assess all sites within the coastal zone. While not exhaustive, the data collected should, however, be sufficient to generally characterise each of the sites identified and to facilitate its re-location by others in the future.

A survey of the geology and geomorphology of the coastal zone was carried out simultaneously with the archaeological survey. This part of the work was designed to characterise the natural background of the survey area. The data gathered at this stage will provide a benchmark from which to assess future coastal change and to predict the possible effect this may have on the archaeology and built heritage. The Sanday survey was carried out by Alan Stapf while the North Ronaldsay survey was carried out by Hazel Moore and Graeme Wilson, with advice from Alan Stapf.

Methodology

The entire coastline of the survey area was walked over and was inspected from both the hinterland and foreshore, where possible. On occasion, especially on rough and hilly ground where visibility was impaired, it proved necessary to conduct the survey using transects set at regular intervals and perpendicular to the coast.

The field record consisted of a card system. Each site was given a unique identifier made up of an area code and a unique number (e.g. SY65 = Sanday, site 65). Some of the field records have been separated into more than one entry for the purposes of the report, while others have been amalgamated.

The dimensions and characteristics of each site were recorded and a measured sketch plan and photographic record was made. Measurements were calculated with a tape for smaller sites, while the dimensions of larger sites were estimated by systematically pacing out the area. Directions were found using a compass. The sites were located onto a 1:25,000 OS Pathfinder base map, measured, where possible, from fixed features such as field boundaries.

The Survey Areas

Sanday Background

Sanday is the largest of the Northern Isles of Orkney, measuring 21 km from north to south. The population is currently numbers around 500 inhabitants, the majority of whom are engaged in agriculture or fishing. The main conurbations on the island are located at Kettletoft and Lady Village. The island is served by regular air and ferry connections to Kirkwall, some 40 miles away.

Sanday Geomorphology (Alan Stapf)

Sanday lies to the north west of Mainland Orkney with Stronsay to the west and North Ronaldsay to the north. The topography is fairly flat to the east, moderate slopes at most, and a small ridge of hills to the west side of the island. These hills include the highest point, The Ward, at 65 m OD.

Most of the land is under agricultural use although a small proportion of this is not cultivable and down to rough grazing due to vegetated sand dune areas or low lying and wet. Beef and sheep are the main agricultural enterprises with perhaps up to 20% of the cultivable land utilised for arable crops. Good stocking rates are possible as many of the soils are freely draining.

Most soils to the east and centre of the island are sandy skeletal soils or freely draining podzol. There are more poorly draining gley and peaty soils present to the west side. The coastal hinterland is generally dominated by the freely draining skeletal soils, other than in the extreme west. Vegetated dune areas are mostly found around the coastal edge on the south and eastern side of the island. An extensive dune area covers the hinterland beneath The Ward, to the south west of the island.

Sanday Built Heritage and Archaeology

The wealth of archaeological remains on Sanday and the frequently remarkable state of their preservation has long been appreciated. The 1842 New Statistical Account records the locations of numerous sites and also documents a number of early archaeological investigations. Antiquarians and historians such as Marwick, Petrie and Farrer wrote of their own excavations on the island in the 19th and early 20th centuries, as well as documenting the findings of others.

The first systematic survey of the archaeological remains of Sanday was carried out by the Royal Commission in the 1920's. The results were published in 1946 as the 'Twelfth Report with an Inventory of the Ancient Monuments of Orkney and Shetland'.

In the 1950's Prof. V. G. Childe' carried out largescale excavations at Quoyness on behalf of the Ministry of Works. This most spectacular chambered cairn had previously been ransacked by antiquarians, Farrer and Petrie, on the mistaken assumption that it was a broch. The published results provided considerable new insights into the construction and use of chambered cairns. Following excavation, the structure was consolidated and opened to the public. Unlike other areas in Orkney, largescale publically-funded excavation and site consolidation was limited on Sanday and, for all its archaeological richness, Quoyness remains the only publicly presented archaeological site on the island.

Periodic archaeological survey carried out by Ordnance Survey provided updates for existing records, and made a number of new site discoveries. In the 1970's, however, a major new survey of the island was carried out by Dr. R G Lamb for RCAHMS. The results presented as an inventory of sites incorporated previous records but importantly included new fieldwork identifications and reappraisals. A number of sites were identified for the first time and the importance of previously unregarded remains, such as treb dykes, was brought to the fore. In the wake of this work, the realisation that many important sites on Sanday were at risk from coastal erosion provided the impetus for major excavations.

The largest of these was conducted by a team from Bradford University at the extensive multi-period settlement at Pool (Hunter 1985, 1987, 1988, 1990). Work continued throughout the 1980's and was extended to examine funerary and settlement remains at Tofts Ness (Dockrill, 1985, 1986, Hunter and Dockrill, 1990). The results of these programmes of work is awaited and will undoubtedly radically alter our understanding of the archaeology of Sanday and Orkney.

Smaller scale assessment and salvage excavation was carried out at the Neolithic settlement site at Stove Bay (Bond et al 1995, Morrison, 1995) and at the Iron Age/Pictish funerary complex at Hermisgarth (Downes and Morris, 1997). New topographic surveys have been carried out at both Tofts Ness (Dockrill, 1985, 1986) and at Els Ness (Downes, 1998). In addition, some work has been carried out on the composition of farm mounds (Bertelson and Lamb, 1993, Davidson, 1994) and several eroding or threatened potential burial sites have been assessed (Downes, 1998).

During the winter of 1991 excavation commenced on a Viking boat burial at Scar. The boat contained the remains of a man, woman and a child, along with grave goods. Exposed through coastal erosion, the site was identified during a programme of coastal monitoring instigated and carried out through the offices of the Orkney Archaeologist. This rare discovery provides important new insights into the Scandinavian heritage of the island (Owen and Dalland, 1999). More recently, in the late 1990's an

assessment was carried out at Brough of Styes in association with Channel 4's Time Team television programme. This work investigated another site with Viking associations, but the results indicate that most of the remains are actually of prehistoric date (Bond, Dockrill, Owen and Gibson, forthcoming).

North Ronaldsay Background

North Ronaldsay is the most northerly and remote island of the Orcadian archipelago. It measures some 4.3 km from north to south and about 1.9 km from east to west. Modern settlement is focused on the road network and is concentrated around Holland, Hooking and Ancum. While farming is the main livelihood on the island, tourism and fishing are also important sources of income. There are regular air and ferry connections with Kirkwall. The island is perhaps best known for its seaweed-eating sheep, which live almost permanently on the shore, and for the drystone Sheep Dyke, which extends around the entire island to keep the sheep out of the fields.

North Ronaldsay Geomorphology

This is a low-lying island; at its highest point at Holland on the west side of the island, it reaches just 23m OD. In general, however, it does not rise above 10m OD. The land is mostly flat but it rises to the north at Tor Ness and at the south at Hollandstoun. The coastline can be roughly divided into three areas: the north coast (including Dennis Ness) which is dominated by storm beaches; the south and east coasts with their dune systems and; the west coast, which is defined by a rock platform and visible drift deposits.

The underlying geology is Rousay flags; a considerable area of which is covered by windblown sand (Mykura 1976, 116). These sand deposits are not immediately apparent, except around the southern and eastern sides of the island where there are dunes.

There are large storm beaches at the northern tip of Dennis Ness and at Dennis Head. The former appears to be advancing landward while the latter is apparently stable. There are other, more minor, storm beaches on the island, notably on the north coast between Tor Ness and Easting. There is some degree of cobble cover over most of the upper foreshore. The west coast of the island is edged with an extensive rock platform.

Coastal erosion on North Ronaldsay has two main causes: the action of the sea and poaching of the land surface by sheep. The relegation of such large numbers of animals to the coastal zone has had a highly detrimental effect upon the condition of the land. In some areas, sheep represent the sole or main agent

of erosion, caused by overgrazing and trampling. In other areas the sheep are exacerbating erosion initiated by other causes, such as wind or wave action. The effects of the sheep are most noticeable around the southernmost tip of North Ronaldsay at Strom Ness. Here the sheep dyke is very close to the coast edge and being thus corralled, the degree of erosion caused by the herds are that much greater. There are extensive areas of coastline which have been stripped bare of all vegetation through overgrazing which are now very vulnerable to desiccation and removal by wind, sea or animal poaching.

North Ronaldsay Built Heritage and Archaeology

North Ronaldsay, although a small island with limited natural resources, is rich in the remains of the past. This was recognised by the local lairds, the Traills of Holland, who were responsible for a number of excavations in the 19th C. At Brae of Stennabreck and Howmae Brae well-preserved and unusual structures of prehistoric/early historic date were uncovered. Excavations at the Broch of Burrian revealed secondary 'Pictish' occupation and evidence of Christian inhabitants. Fortunately, the results of these excavations were reported, albeit in summary, in a series of articles and the substantial finds assemblages recovered from the sites were donated to the NMS. Later on, in the 1970's, the Broch of Burrian excavations were reassessed by MacGregor, and the large assemblage of worked bone was re-evaluated.

The first systematic survey of archaeological remains on the island was carried out in the 1920's by the Royal Commission and published in 1946 as the 'Twelfth Report with an Inventory of the Ancient Monuments of Orkney and Shetland'. Further field survey was carried out by Raymond Lamb for RCAHMS and published as an updated inventory in 1980. This report recorded the threat and effects of coastal erosion on the archaeological resource. Since then, very little new archaeological work has been carried out and assessment at a few sites is now critically overdue.

The Survey and Report: Built Heritage & Archaeology

This report is the product of both field survey and desk-based research. The body of the report was produced by EASE Archaeological Consultants. The gazetteers which accompany the Hinterland Geology & Coastal Geomorphology and Erosion Class maps, along with other (marked) contributions to the text are by Alan Stapf, Arkensol. The following notes explain the terminology and shorthand descriptions used throughout the report.

Gazetteer Entries

The gazetteer entries comprise a set of characteristics for each site. The categories are as follows:

<u>CATEGORY</u>	<u>EXAMPLE</u>
Site Code (NMR Number)	SY62 (HY63NE1)
Grid Reference	HY 6766 3779
Place name	Quoyness
Site type	Chambered Cairn
Date (approximate)	4th-3rd millennium BC
Condition	Good
Recommendations	Monitor

Site Description Entries

Site Code: Each site has been given a unique reference code for the purposes of this survey. The two letters which begin each code refer to the survey area: SY- Sanday.

Site Type: While the categories of site types was not restricted (i.e. types were not selected from a predetermined list), efforts were made to standardise the labels given for this report. For example, ruinous buildings of 18th/20th C date which could be positively identified were divided into categories such as dwelling houses, mills, or outbuildings; where their use was not apparent, they were labelled as 'structures'. The use of 'croft' and 'farmstead' and 'smallholding' has been avoided where possible, since it was often not apparent whether the 'structure' was associated with a parcel of land.

Prehistoric sites, and mounds in particular, are frequently difficult to date and characterise from the visible remains. The identification of mounds as chambered cairns, burial mounds or more recent refuse or farm mounds, for example, was made on the basis of previously recorded information, or where this was not available, the most probable explanation of the visible remains.

Date Ranges: The date ranges set out for various site types within this report are based on comparison with similar sites in the area which have already been dated or characterised. These ranges represent a general consensus; it must be noted that there is much debate about the date ranges of specific sites (such as brochs, for example). It is also likely that there are many local variations which provide exceptions to the rule. The date ranges used are as follows:

- 4th-3rd millennium BC
- 3rd-1st millennium BC
- 1st millennium BC-1st millennium AD
- 10th century AD-14th century AD
- 14th century AD- 18th century AD
- 18th century AD- 20th century AD

Condition: The condition of each site entry was assessed under the following criteria:

Good: This label was applied where a site exhibited either high potential or had sufficient visible elements surviving to properly characterise it. An archaeological site was considered to be in 'good' condition where it was undisturbed or only slightly disturbed and retained obvious archaeological potential. Further work at such sites could reasonable be expected to provide information regarding date, nature, extent and complexity. Buildings (especially the large category of 18th/20th C structures) were considered 'good' where there were multiple site elements represented and survived in a reasonable enough condition to provide information regarding their construction, development and use.

Fair: This label was applied to sites considered to have some potential or where limited elements remained and the site could be generally characterised. Archaeological sites of this type were generally somewhat disturbed but retained some potential; a sufficient part of the site remains that it could be more fully characterised via excavation. Standing buildings were considered 'fair' when, although ruinous or disturbed, sufficient of the site remained that it could be generally characterised.

Poor: Sites described as 'poor' have visible elements which are very disturbed and offer little potential for further characterisation. This assumption was made on the basis of the evidence available at the time of this survey and it must be noted that, without recourse to full assessment, the true potential of many sites can only be estimated.

Recommendations: Three types of action have been recommended:

Survey: This has been used as a general term covering all forms of further archaeological investigation or site protection. It includes topographical survey, section recording, trial trenching and open area excavation.

Monitor: This is recommended either to keep a site of known potential under surveillance or to check for new exposures on sites currently considered to be of low or unknown potential. This will entail regular site inspections and include cross-checking of known information against new exposures and should be carried out by an archaeologist.

Nil: No action has been recommended where a site is not immediately vulnerable to change, or is of very low potential.

The Survey and Report: Hinterland Geology, Coastal Geomorphology and Erosion Class

Hinterland Geology and Coastal Geomorphology: Gazetteer Entries

The gazetteer entries comprise a set of characteristics for each coastal unit. The categories are as follows:

<u>CATEGORY</u>	<u>EXAMPLE</u>
Label - Place name	1 Gerra Taing
Grid Reference (to centre of area)	HY 759 435
Length of Unit	0.8 km
Foreshore Type	Rock platform.
Coast Edge Type	Coast edge is <5m.
Hinterland Type	The drift/rock interface is generally visible
Description	The rock platform has up to 30% cobble cover...

Erosion Class: Gazetteer Entries

The gazetteer entries comprise a set of characteristics for each coastal unit. The categories are as follows:

<u>CATEGORY</u>	<u>EXAMPLE</u>
Label - Place name	3 East Ayre
Grid Reference (to centre of area)	HY 739 439
Length of Unit	0.31 km
Erosion Class at time of visit	Accreting to Stable
Description	A small area where there is evidence of...

Erosion Classes

The following definitions have been used:

Eroding: Where more than 70% of the coastline is actively eroding.

Eroding to Stable: Where there is both active erosion and stable areas, with 30-70% of either one.

Stable: A section which is more than 70% stable. Usually any erosion is limited and local; any variation is specified in the accompanying text.

Accreting to Stable: Where there are both accreting and stable areas, with 30-70% of either one

Accreting: A section with accretion over more than 70% of its length.

Accreting/Eroding: There are both accreting and eroding processes taking place and may vary from 20% to 80% of each process. The erosion and accretion may not be arranged in a linear fashion along the coastline; there may be erosion of the coastal edge and deposition of sands along the foreshore.