



Isles of Scilly Historic Environment Research Framework

Resource Assessment and Research Agenda



Historic Environment Projects



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Report author(s)	Charles Johns (ed)
Checked by	Andrew Young
Approved by	Dave Hooley

Historic Environment, Cornwall Council
Kennall Building, Old County Hall, Station Road, Truro, Cornwall, TR1 3AY
tel (01872) 323603 fax (01872) 323811 E-mail hes@cornwall.gov.uk
www.cornwall.gov.uk

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Within Historic Environment, Cornwall Council, the Project Manager was Charles Johns, Jane Powning produced the distribution maps and Bryn Tapper, Pete Dudley and Francis Shepherd produced the sea-level rise maps.

The views and recommendations expressed in this report are those of Historic Environment Projects and are presented in good faith on the basis of professional judgement and on information currently available.

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Cover illustration

Bant's Carn entrance grave, St Mary's, Isles of Scilly (photo: Cornwall Council)

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Abbreviations

AONB	Area of Outstanding Natural Beauty
Bcd	Below Chart Datum
CEP	Coastal Erosion Project 1989-93
CIOS	Council of the Isles of Scilly
CISMAS	Cornwall and Isles of Scilly Maritime Archaeological Society
CRO	Cornwall County Record Office
EH	English Heritage
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
ICS	Institute of Cornish Studies
IMAG	Islands Maritime Archaeological Group
IOSM	Isles of Scilly Museum
IOSWT	Isles of Scilly Wildlife Trust
LBAPW	Late Bronze Age Plainware
MBA	Middle Bronze Age
MHWS	Mean High Water Springs
NGR	National Grid Reference
OS	Ordnance Survey
OSL	Optically Stimulated Luminescence dating
PJG	Plain Jar Group
PRN	Primary Record Number in Cornwall HER
RCM	Royal Cornwall Museum, Truro
RCHME	Royal Commission on the Historical Monuments (England)
RIC	Royal Institution of Cornwall
SHERF	Scilly Historic Environment Research Framework
SSSI	Site of Special Scientific Interest
SWARF	South West Archaeological Research Framework
SWD	South West Decorated (Ware)

Contributors to the project

Individuals

John Allan, Exeter Archaeology	Daniel Miles, English Heritage
Alex Bayliss, English Heritage	Steve Mills, Cardiff University
Eric Berry, historic buildings consultant	Jacqui Mulville, Cardiff University
Eleanor Breen, Council of the Isles of Scilly	Amelia Pannett, Cadw
Allan Brodie, English Heritage	Marta Perez, Plymouth University
Sarnia Butcher, consultant	Robert Platts, consultant
Kevin Camidge, maritime archaeologist	Henrietta Quinnell, consultant
Dan Charman, University of Exeter	Paul Rainbird, consultant
Ian Dennis, Cardiff University	Helen Roberts, Aberystwyth University
Ralph Fyfe, Plymouth University	Gary Robinson, Bangor University
Duncan Garrow, Liverpool University	Niall Sharples, Cardiff University
Tom Greeves, consultant	Katharine Sawyer, archaeologist
Charles Johns, Cornwall Council	Robert Scaife, University of Southampton
Andy Jones, Cornwall Council	Fraser Sturt, University of Southampton
Trevor Kirk, Isles of Scilly AONB Unit	Michael Tangye, consultant
Graeme Kirkham, Cornwall Council	Bryn Tapper, Cornwall Council
Rachel Leung, Cotswold Archaeology	Sean R Taylor, Cornwall Council
Jane Marley, Royal Cornwall Museum	Charles Thomas, consultant
Peter Marshall, English Heritage	Carl Thorpe, Cornwall Council
Amanda Martin, Isles of Scilly Museum	Sue Watts, consultant

Organisations

Cornwall Archaeological Society	Isles of Scilly Museum
Council for British Archaeology, South West	Royal Cornwall Museum
English Heritage	

Resource Assessment Seminar

The following attended the seminar in Exeter on 10 December 2011: Allan Brodie, John Allan, Kevin Camidge, Tom Greeves, Philip Hygate, Stephen Jackson, Charles Johns, Nick Johnson, Andy Jones, Phil Markham, Henrietta Quinnell, Trevor Kirk, Graeme Kirkham, Jane Marley, Amanda Martin, Phil McMahon, Paul Rainbird, Katharine Sawyer, Elizabeth Stanbrook, Sean Taylor, Sue Watts

Project Advisory Group

Eleanor Breen, Council of the Isles of Scilly	Phil McMahon, English Heritage
Alyson Cooper, Cornwall Council	Jane Marley, Royal Cornwall Museum
Charles Johns, Cornwall Council	Caradoc Peters, CBA SW
Nicholas Johnson	Trevor Kirk, Isles of Scilly AONB Unit

1 Executive summary

This report presents the results of the first two stages of the Scilly Historic Environment Research Framework (SHERF), the Resource Assessment and Research Agenda. SHERF was funded by English Heritage with contributions from the Isles of Scilly AONB Unit, the Council of the Isles of Scilly and the Duchy of Cornwall and has as its aim the provision of a structure in which to make decisions about future historic environment research. It is part of an English Heritage initiative to prepare a series of research frameworks for the whole country.

The Resource Assessment is a comprehensive overview of the Islands from the Palaeolithic to the present day, which aims to provide an accessible and up-to-date review of the current state of knowledge about the historic environment. It also aims to define the character of the resource and to act as a reference to inform decisions on the future of that resource. The Research Agenda highlights the major gaps in our knowledge and also areas where Scilly's historic environment has the potential to contribute to national and international research questions.

In order to make SHERF as comprehensive as possible the work was carried out by a large number of people with research interests in Scilly. The reports originated from a smaller number who prepared draft documents for each period. The membership of these period groups was drawn from all sectors of the archaeological community in order to get as wide a view of the issues as possible. The draft documents were posted on the website of the Council of the Isles of Scilly and details circulated, with the intention of including all those working, researching or just interested in the archaeology of the Islands. As part of the process a seminar was held to discuss the Resource Assessment and the Research Agenda, which provided a forum for discussion that contributed greatly to the quality of the final document. The final stage of the project, the Research Strategy, will be developed in a similar way and published separately.

Situated some 45km south-west of Land's End, Scilly is a unique environment of exceptional quality, with the relationship between the land and sea providing a very strong and distinctive cultural identity. The Islands in their current form are a result of past marine transgressions which flooded early sites. They are therefore a valuable laboratory for studying continuous sea-level rises within an historical context. Scilly's situation as the westernmost anchorage and the first/last landfall of the south-western approaches has shaped the Islands socially, economically and culturally and also the nature of their archaeological record. This record holds significance in its own right, as well as playing a part in nationally and internationally significant stories of colonisation, travel, trade and conflict.

In spite of its small size – equivalent to a single mainland parish - Scilly is noted for the richness and variety of its historic environment, with over 80 Bronze Age entrance graves and many other prehistoric monuments, including settlement sites and field systems. The Islands' distinctive Iron Age cist burial tradition includes the Bryher sword and mirror burial, a discovery of international importance for the study of the development of Insular Celtic art. The enigmatic Roman shrine on the little island of Nornour produced a huge array of brooches and the largest collection of Roman coins in Cornwall and Scilly. During the early medieval period the Islands were home to several ecclesiastical hermitages and in the medieval period rule was divided between the monks of Tavistock priory on Treco and the lay lords on St Mary's with their castle at Old Town. St Mary's Garrison, which developed around Star Castle built in 1593-4, has been described as probably the most impressive work of its kind extant in England because of the state of preservation and complexity of its early fortifications.

Research into the historic environment is not static but it is hoped that this report provides an overall snapshot of our understanding of Scilly's historic environment at the beginning of the second decade of the twenty-first century and will provide a focus and catalyst for future research.

2 Introduction to the Project and the Islands

Charles Johns with contributions from John Allan, Eleanor Breen, Allan Brodie, Andy M Jones, Trevor Kirk, Amanda Martin, Jane Marley, Peter Marshall, Jacqui Mulville, Paul Rainbird, Katharine Sawyer, Fraser Sturt and Anna Tyacke.

2.1 Introduction to the Project

2.1.1 Project background

Following the circulation of the draft version of the South West Archaeological Research Framework (SWARF) in 2007, representatives of the Planning and Development Department of the Council of the Isles of Scilly (CIOS) and the Historic Environment Service, Cornwall County Council (now Historic Environment, Cornwall Council - HE), met to discuss the prospect that the South West region's research framework could act as a catalyst for the production of a research framework for the historic environment of Scilly.

Subsequent discussions with English Heritage (EH) confirmed the need for a specific research agenda for Scilly because the resourcing of historical environment fieldwork and the management of historic environment resources on the Islands can only be effectively achieved if the special circumstances of the islands are taken into account. While it is fully acknowledged that Scilly is part of the South West region, the Islands also enjoy historical, cultural and social links with the wider world, including northern France, Wales and Ireland. The proposed research framework would take full account of the historical and geographical context of the Islands, yet would also serve the additional function of identifying island-specific research priorities that can drive forward historic environment fieldwork, research and management on Scilly.

These discussions resulted in an initial draft project outline (Kirk 2009) which was developed into a detailed MoRPHE-compliant project design for the preparation of the research framework (Johns 2009). The Scilly Historic Environment Research Framework (SHERF) was subsequently commissioned by English Heritage through the Historic Environment Enabling Programme (HEEP) in October 2010.

2.1.2 Aims and objectives

The overall aim of the project was to define a research framework for the historic environment of Scilly. The research framework recognises the diversity of the historic environment and among the aspects covered are maritime archaeology and infrastructure, historic buildings and palaeoecology. The project has sought to involve the local and wider research community in this process so that there is a sense of community ownership of the research framework.

2.1.3 Methodology

The preparation of the research framework is a partnership between English Heritage, the Council of the Isles of Scilly, the Duchy of Cornwall, Historic Environment, Cornwall Council, and the local and wider research community. The methodology follows the three-stage procedure outlined in *Frameworks for our Past* (English Heritage 1996) and used in the production of many regional research frameworks, including SWARF (Webster (ed) 2008):

1. *Resource Assessment* The current state of knowledge of Scilly's historic environment was assessed through review of published and unpublished sources (including 'grey literature'), Historic Environment Record (HER) and National Monument Record (NMR) resources, museum archives and information held by local interest groups and members of the public.
2. *Research Agenda*: Identification of a) gaps in the current state of knowledge, b) the potential of the historic environment resource, and c) key research themes and aims.

3. *Research Strategy*: Production of a list of research priorities for the islands (this will be a separate follow-on project).

The project adopted a primarily chronological approach, from early prehistory to the modern period. However, careful attention was paid to transitional periods (e.g. hunter-gatherer to farmer, medieval to post-medieval), including those transitions that fall within traditional chronological phases (e.g. early to late Neolithic).

Cross-cutting themes were also addressed, either embedded within chronological overviews or as separate thematic reviews. Examples of thematic reviews include the coastal, intertidal and marine historic environment and maritime infrastructure, palaeoenvironments, the island landscape, historic landscape and seascape characterisation, trade and industry, and historic buildings and architecture. Formulation of the Resource Assessment and Research Agenda involved three areas of work:

Consultation: The Resource Assessment and Research Agenda were informed by a programme of consultation and feedback. The project aimed to be as inclusive as possible of all parties with an interest in the historic environment of Scilly, including curatorial and field archaeologists, historic buildings researchers, architectural historians, university academics, English Heritage, museum staff, amateur archaeologists and local interest groups. The project manager sought to identify, inform and involve stakeholders. The draft Resource Assessment was circulated via the Council of the Isles of Scilly website and discussed at a seminar held in Exeter on 10 December 2011.

Data Collection: Compilation of the Resource Assessment and to a certain extent also the Research Agenda involved review of published and unpublished sources, HER and NMR data, museum archives, the work and advice of period/thematic experts and information from other interested parties. Researchers and consultants were invited to make voluntary or part-voluntary written contributions in order to encourage a sense of ownership of the research framework (contributors are listed at the beginning of the report and individuals contributing to the various topics are noted at the beginning of each section).

Synthesis: The project results were synthesized and posted on the internet at each stage of the project development (assessment, agenda and strategy). Reports reflect the chronological framework of the project design, with cross-cutting themes woven throughout the discussion.

2.1.4 Note on radiocarbon dates in this report

Radiocarbon determinations for Scilly in this report have all been recalibrated from previously published data using OxCal 4.1 and calibrated using the maximum intercept method rather than the probability method. Previous modelling of dates has not been used and all are expressed at the full 95.4% confidence level, rather than to the period to which the date may be weighted (for example, at 89%). This means that calibrated dates in the tables may vary significantly from those in the publications where they first appeared.

The radiocarbon tables in the text include all the determinations which are currently available (AMS and radiometric) for Scilly. The list forms a useful corpus of dated material. All dates are useful, even a bulked sample of unidentified charcoal provides a useful *terminus post quem* for its context, but the taphonomy of some samples may be open to interpretation. Dating of bulked samples is no longer commonly undertaken because of the prevalence of AMS machines and the dearth of radiometric labs.

The list also includes some determinations which have standard deviations of ± 100 upwards. These are still valuable because they are accurate but not precise; the size of error is irrelevant when chronological modelling is employed.

2.2 Introduction to the Islands

The Scillonian archipelago of approximately 200 islands, islets and rocks situated 45km (28 miles) south-west of Land's End (Fig 2.1) is a unique environment of exceptional quality, with the relationship between the land and sea providing a very strong and distinctive cultural identity.

Today only five islands are inhabited: St Mary's and the 'off-islands' of St Agnes, Bryher, St Martin's and Tresco. Smaller islands that were inhabited in historical times include St Helen's, Samson and Tean.

The archipelago contains wide expanses of shallow subtidal and intertidal environment flooded by rising relative sea level during the Holocene. It has long been known that the islands in their current form are a result of past sea-level rises that flooded early sites. It is therefore a valuable microcosm for studying continuous sea-level rises within an historical context as well as for research and recording important sites that will be lost, and investigating how past populations adapted to their shifting shores.

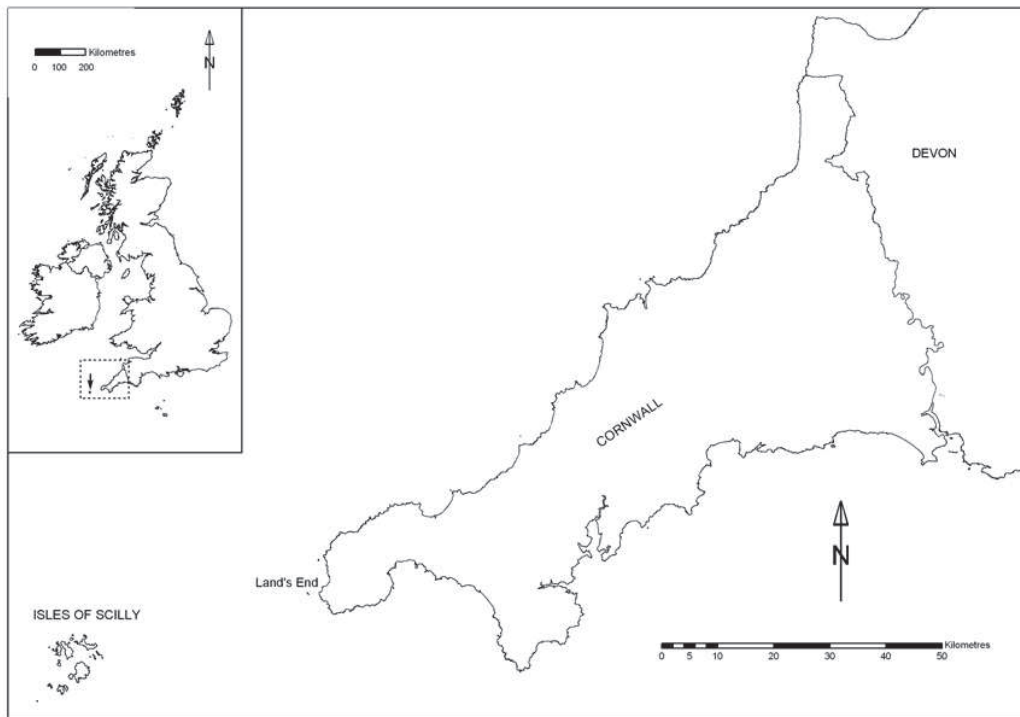


Fig 2.1 Location map – the Isles of Scilly

2.2.1 Geology

The Isles of Scilly are situated at the merging of the Western Approaches and the English and Bristol Channels. The area forms part of the wide continental shelf to the south and west of England. The rocks at seabed are resistant, metamorphosed, Palaeozoic sediments locally intruded by mainly granitic igneous bodies such as Scilly and the Seven Stones reef (Evans 1990, 1).

Scilly is a geologically-defined topographic feature, an incised and partly submerged cupola forming the western tail of the ridge of exposed granite bosses running along the spine of the south-western peninsula (Dartmoor, Bodmin Moor, St Austell, Carnmenellis and Land's End), the visible part of the single, large Cornubian batholith which intruded into Devonian and Carboniferous stratas some 225 million years ago as a result of the Variscan orogeny. The single rock type has resulted in a uniform morphology in the archipelago, the detailed form of which is controlled by crystalline

variation within the granite, fault patterns and variation in exposure to wave energy (*ibid*, 20-8).

The underlying granite is covered on lower hillslopes and valley floors by weathered periglacial head, dark yellowish-brown stony clay known locally as *ram*, which supports soils suitable for cultivation and pasture.

2.2.2 Topography

Scilly was originally a single, large, oval-shaped island. The erosion and partial submergence by the sea has resulted in the formation of the archipelago with individual islands varying greatly in size and in the height at which they rise above the sea. While the smallest islands of the Western Rocks and Eastern Isles are little more than rocky projections, the five largest islands are much larger in size, covering a total area of 1422 ha (Fig 2.2) (Land Use Consultants 1996, 5).

Bryher	126ha
St Agnes	148ha
St Martin's	222ha
St Mary's	629ha
Tresco	297ha

Fig 2.2 Areas of the five largest islands (Land Use Consultants 1996)

Although rarely rising more than 30m above sea level, there is a remarkable variety and diversity both within and between the individual islands. Each island has a distinctive topography and configuration varying from the gently undulating interior of St Mary's, which rises to the highest point on the Islands at 48m OD at Telegraph Hill, to the series of hills, hollows and valleys that make up Bryher. These in turn contrast with the east-west granite spine of St Martin's and the rounded, flat-topped island of St Agnes. The islands also differ according to the degree of exposure they receive. The outer sides of the island group, that is the north and west coast of Bryher, the north coast of Tresco and St Martin's, and the south-facing coast of St Mary's and St Agnes are generally much harsher with a rugged, rocky coastline exposed to the full force of the Atlantic. By contrast the coastline fronting the interior sea is more sheltered and includes broad, gently shelving sandy beaches and coves (*ibid*, 5).

Extensive intertidal flats, bars and shallow subtidal areas cover much of the inner region of the archipelago; most of the subtidal areas between Tresco, St Mary's and St Martin's are no more than 5m below chart datum (bcd). Broad, fairly shallow sounds radiate outwards from the central areas; e.g. St Mary's Roads, a sound between Tresco and St Mary's and extending to the south-west, which varies between 5m bcd (at the north-eastern end) to 150.25m bcd (off Annet to the south-west) (Evans 1990, 9).

There is only one true example of a freshwater stream on Scilly, on St Mary's. This is fed by a spring which rises at Holy Vale and flows within a shallow valley towards Higher Moors and Porth Hellick Pool. However maritime and freshwater pools occur on most of the islands (Land Use Consultants 1996, 5).

Bryher

Bryher has more varied topography than any of the other islands; its name is derived from the Cornish place-name element *bre* meaning 'hill' and the plural suffix *yer* (Padel 1988, 60) The island is essentially composed of a series of small rounded granite hills (Watch Hill, Timmy's Hill, Gweal Hill, Heathy Hill and Samson Hill) which rise to heights of between 33m and 42m above the intervening valley pastures which run east-west across the island. The exposed headland heath of Shipman Head Down, with its wind-pruned vegetation of maritime grassland and waved heath, extends to the north of the island (Land Use Consultants 1996, 89).

The wilder northern and western sides of the island are open and exposed to the Atlantic while the east coast is sheltered and separated from Tresco by narrow sandy flats (*ibid*, 89).

Granite with weathered periglacial head cloaking the lower slopes of the valley floors provides a suitable soil for cultivation and pasture. On the western side of the island blown sand creates a low-lying area of sand dunes and dune pasture between the Hell Bay Hotel and Great Rushy Bay. Otherwise it is a harsh rocky granite coastline (*ibid*, 89).

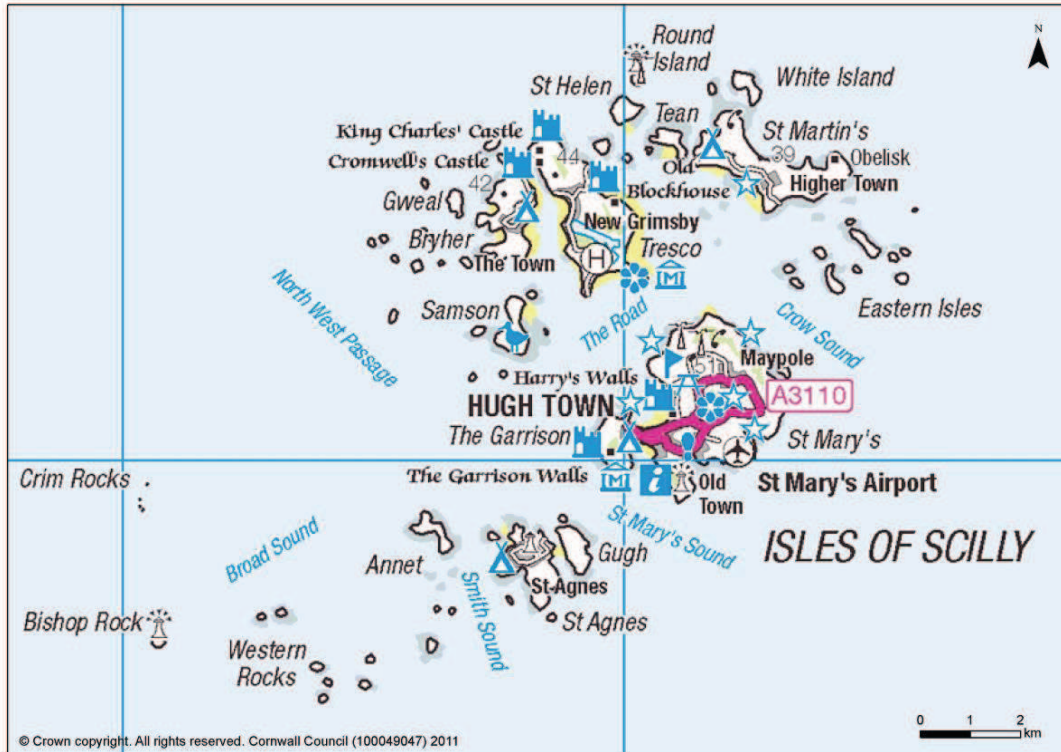


Fig 2.3 The Isles of Scilly

St Agnes

St Agnes is physically similar to the uninhabited western islands – small, round and relatively flat with a rocky coastline. It rises to a maximum height of just above 25m in the centre of the island. The cultivated northern part of the island contrasts with Wingletang Down, the low-lying southern headland where the granite outcrops rising above the heather have been weathered into distinctive tors. The island of Gugh is attached to the eastern side of St Agnes by a sandy *tombolo* which is uncovered at low tide (Land Use Consultants 1996, 91).

St Martin's

St Martin's comprises a long ridge of granite which forms a central spine running east-west along the centre of the island at about 30-40mOD. To the north of the ridge an exposed windswept plateau bears the full brunt of the Atlantic weather, while to the north-east the heath covered granite headland of Chapel Down juts out into the Atlantic. To the south of the central spine the land slopes gently down in a series of bowls and hollows to the low-lying sandy fields fronting the shallow interior sea (Land Use Consultants 1996, 89).

Blown sand cloaks much of the central granite ridge, creating the bracken-covered area known as the Plains. On the edges of the island the sand accumulates in sheltered bays

– St Martin’s Bay on the north coast (sheltered by White Island) and Higher Town Bay (Par Beach) and the Neck of the Pool on the south coast. These long white sandy bays are one of St Martin’s outstanding features (*ibid*).

St Mary’s

St Mary’s is the largest of the islands measuring approximately 4km long by 2.8km wide. A relatively flat island, its most dramatic features are the rock formations at Penninnis, the southern headland. Rising from a low rocky coastline, the interior of the island is gently undulating and includes the rounded plateau hills at Halangy Down, the golf course and the airport (Salakee Down), narrow wooded valleys at Watermill and Holy Vale, and the wider low-lying area of Higher Moors and Lower Moors. The interior of St Mary’s is more isolated from the extreme influence of the sea when compared to some of the off islands (*cf* Land Use Consultants 1996, 95).

St Mary’s is almost entirely granite, with small areas of blown sand accumulating at the Bar, Porth Hellick, Old Town Bay and the coast around St Mary’s Pool creating a small sandy bays in an otherwise rocky coastline. The fortified headland of the Garrison at the south west of the island is linked to the rest of St Mary’s by a sandy isthmus at Hugh Town (*ibid*).

Tresco

Tresco essentially comprises three low rounded hills separated by broad valleys. In the north Castle Down rises to a height of 44m OD and forms an exposed headland. In the centre of the island Middle Down forms a wide hill, rising to a height of just over 30m OD, while the smaller Abbey Hill lies to the south. The granite hills are separated by gentle valleys. The settlements of Old Grimsby, Dolphin Town and New Grimsby lie within the sheltered valley between Castle Down and Middle Down while the broad lateral valley containing Great Pool divides Middle Down from Abbey Hill. The subtropical Tresco Abbey Gardens shelter in the lee of Abbey Hill. The southern part of the island between Appletree Bay and Pentle Bay comprises a flat, low-lying area of blown sand which includes an extensive dune system (Land Use Consultants 1996, 97).

2.3 History of local government in the Islands

Shortly after the Norman Conquest the Islands became the property of the Crown of England and from 1141 part of the Earldom, then after 1337, the Duchy of Cornwall. From the twelfth century the administration of Scilly was divided, with Tavistock Abbey presiding over the northern part, centred at St Nicholas Priory on Tresco, while the de Wika family of Week St Mary in north Cornwall and later the Blanchminsters, also from north Cornwall, were proprietors of what are now St Mary’s and St Agnes. The Blanchminsters were followed by a succession of lay lords (Land Use Consultants 1996, 23).

Tavistock Abbey’s interest in the islands had dwindled by the Reformation and in 1547 Thomas Seymour, Lord Admiral of England, acquired the whole of Scilly. Two years later Seymour was accused of plotting against Edward VI and using the islands as a base for piracy. His execution marked the beginning of the Godolphin connection with Scilly; initially appointed as Captains of the Isles, in 1570 Elizabeth I granted Francis Godolphin a 38-year lease in return for an annual rent of £20. The Godolphins and their successors (the Osbornes, Dukes of Leeds), who ruled in Scilly almost continuously until 1831 when the Islands returned to the direct control of the Duchy, ran the Islands’ affairs through His Grace’s Council, popularly known as the Council of Twelve. The Islands were administered essentially as a single estate (Land Use Consultants 1996, 24; Bennett *et al* 1991).

When the Duke of Leeds decided not to renew the lease of Scilly an administrative vacuum was created which was filled from 1832 by the establishment of the Select Vestry, which, with the Magistrates Court, administered the Islands’ affairs until 1891 (Matthews 1960, 214; Bennett *et al* 1991).

In 1834 Augustus Smith (1804-72), a member of an old Hertfordshire family, became Lord Proprietor of the Islands. His autocratic rule largely dominated the Select Vestry and Magistrates Court (Matthews 1960, 214).

The Local Government Act 1888 allowed the Local Government Board to establish in the Isles of Scilly 'councils and other local authorities separate from those of the county of Cornwall... for the application to the islands of any act touching local government.' In August 1890 a Local Government Board Provisional Order Act was passed by which Scilly was constituted into a County Council area and suitable machinery for the direction of public affairs was set up. Accordingly, in 1891 the Council of the Isles of Scilly was formed as a *sui generis* unitary authority, outside the administrative county of Cornwall (Matthews 1960, 236; Gill 1975, 64).

2.4 Tenure

The Duchy of Cornwall owns the freehold of most of the land and nearly a third of the residential buildings on the Islands. The Isles of Scilly Wildlife Trust (IOSWT) cares for the rough ground that make up 60% of the landmass of Scilly and includes all of the uninhabited islands, islets and rocks and most of the coastal fringes on the inhabited islands of St Mary's, St Agnes, Bryher and St Martin's and rents these lands from the Duchy for one daffodil a year on a 99-year lease which began in 1986 (Fig 2.4). The island of Tresco is leased from the Duchy by the Dorrien-Smith family, the heirs of Augustus Smith.

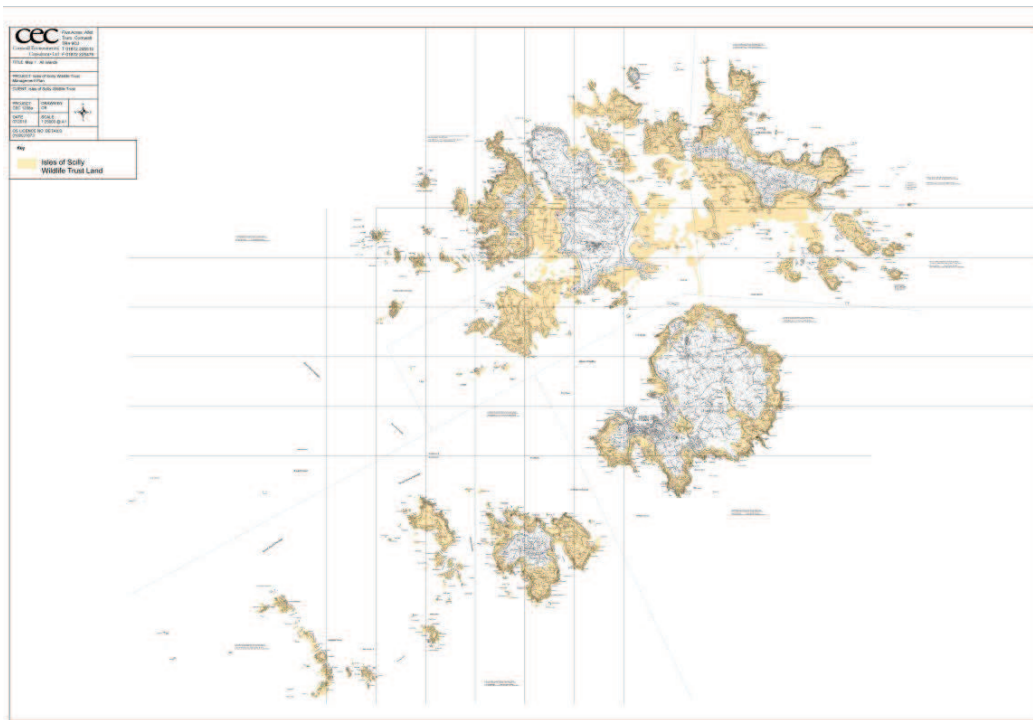


Fig 2.4 Map of the Isles of Scilly Wildlife Trust's holding (Cornwall Environmental Consultants)

2.5 Past and present work in Scilly

2.5.1 Antiquarians and archaeologists

The study of the historic environment of Scilly was pioneered by the famous antiquarian William Borlase, vicar of Ludgvan parish near Penzance, who visited Scilly in 1752 and identified and classified various entrance graves, menhirs and ancient field walls

(Borlase 1753; 1756). He carried out the earliest recorded excavation in Scilly when he opened two entrance graves on Buzza Hill, St Mary's (Borlase 1756; 1769). Only 12 excavations are recorded between then and 1929, all but one of which were entrance graves or cists. It is very probable that many more of these monuments were dug into in a less systematic way and the findings not recorded for posterity.

Considerable archaeological detail was also recorded by the Revd John Troutbeck, chaplain in Scilly between 1780 and 1796 (Troutbeck c 1794). Augustus Smith, Lord Proprietor of the Islands from 1834 to 1872, was interested in Scilly's ancient past as well as its present state and in 1862 he opened a cist barrow on North Hill, Samson (Smith 1863). In 1899 George Bonsor, a retired Cornish engineer and antiquarian, residing in Spain, arrived in Scilly and spent three years investigating the archaeology of the Islands (Hencken 1932; Ashbee 1981).

Some of the earliest archaeological photographs in Britain were taken by the Scillonian photographer Alexander Gibson (1857-1944). His pictures and those of his son, James, form a valuable record of the ancient monuments of Scilly. The family also collected a large number of antiquities which were exhibited in their private museum in Hugh Town until the 1960s.

In 1926 OGS Crawford, Archaeology Officer to the Ordnance Survey, visited Scilly and observed the intertidal stone walls on Samson Flats and examined many entrance graves and cists (Crawford 1927; 1928). Between 1923 and 1927 and from 1930 to 1936 Alec Gray, an amateur archaeologist from Cornwall, lived in the Islands and recorded numerous stone structures and old land surfaces exposed by cliff erosion (Gray 1972). He was assisted in his work by local enthusiast Joe Treneary of Telegraph Hill, St Mary's. Gray's work at Halangy Porth in 1929 (*ibid*) marked the beginning of 30 years of more intensive excavation in Scilly, which was no longer totally preoccupied with Bronze Age funerary monuments.

The first comprehensive account of Scillonian archaeology was published in 1932 by Hugh O'Neill Hencken. His work concentrated on entrance graves. He numbered those he identified, island by island, and tabulated their dimensions. Stuart Piggott came to Scilly in 1937 (Piggott 1941) and five years later, during World War II, WF Grimes made a brief visit to St Mary's to excavate an entrance grave on Salakee Down prior to the extension of the airfield by the Ministry of Defence (Grimes 1960). Glyn Daniel incorporated the results of fieldwork in Scilly in 1936 and 1946 into *Prehistoric Chamber Tombs of England and Wales*; he renumbered and made additions to Hencken's list of entrance graves (Daniel 1950).

During the immediate post-war years, the Revd HA Lewis pursued his interest in archaeology while chaplain of St Martin's (Lewis 1948) and his discoveries led to Bryan O'Neil, Chief Inspector of Ancient Monuments for the Ministry of Works (MoW) making his first visit to Scilly in 1947. Accompanied by his wife, Helen, he returned yearly until his death in 1954. During this period he wrote the Ministry's official guide to the ancient monuments of Scilly (O'Neil 1961). In the 1940s and 1950s the O'Neils carried out a total of 34 excavations in Scilly and these are listed by Beagrie (1989). Most were entrance graves or early settlement sites on St Martin's, but they also included Giant's Castle on St Mary's and King Charles' Castle on Tresco. In 1953-4 Helen O'Neil excavated the ecclesiastical complex on St. Helen's (O'Neil 1964). Equally important was Charles Thomas' excavation of an Early Medieval chapel and cemetery at East Porth, Tean in 1956 (Thomas 1960b; 1985, 183-5).

Paul Ashbee first came to Scilly at the request of Bryan O'Neil, to excavate the cist-grave cemetery at Porthcressa, St Mary's for the MoW (Ashbee 1954; 1979). He continued the study of entrance graves, introducing his own numbering system (Ashbee 1963). He also investigated the courtyard house settlement at Halangy Down (Ashbee 1955; 1996). In 1974 he published *Ancient Scilly*, an account of the early archaeology of the Islands, the culmination of his work over the previous 25 years.

A variety of other individuals and institutions carried out archaeological work in Scilly during the second half of the twentieth century. From the 1950s to the 1970s Andrew Saunders, then Chief Inspector of Ancient Monuments, made frequent visits to the Islands. In 1954 he and Trevor Miles undertook a trial excavation at King Charles' Castle, Tresco (Miles and Saunders 1971); the assemblage of ceramics recovered from that site is still the single most informative collection from the period in Scilly. Dorothy Dudley, Sarnia Butcher, David Neal and John Evans carried out excavations under the auspices of the MoW at Poynter's Garden, St Mary's (Dudley 1960), Nornour (Dudley 1967; Butcher 1978 and 2000-1), Little Bay, St Martin's (Neal 1983), East Porth, Samson (Neal, forthcoming) and Bar Point, St Mary's (Evans 1984). In 1978 Howard Mason from Cardiff University excavated a post-medieval building on Samson (Mason 1984). Since 1963, Michael Tangye, an amateur archaeologist from Redruth, has holidayed in Scilly and recorded its archaeology. In 1978, as part of its map revision, the Ordnance Survey carried out a systematic archaeological survey of every island (Quinnell 2009-10)

In the 1970s extensive survey work was carried out by Charles Thomas, notably of early settlement and field system remains (Thomas 1975; 1978; 1985; Fowler and Thomas 1979). In the late 1970s and early 1980s he superintended several important projects in Scilly, including Vivien Russell's checklist of archaeological sites (Russell 1980), the initial compilation of a Sites and Monuments Register (1984-5) and an excavation index for Scilly compiled for the RCHME in 1987/88. In 1985 he published *Exploration of a Drowned Landscape* which illustrates his wide-ranging knowledge of Scillonian archaeology and history (Thomas 1985).

Trenching in advance of cable laying for the off-islands Electrification Project was observed and recorded on St Martin's, Tresco, Bryher and St Agnes during 1985 under the supervision of Jeanette Ratcliffe for the Institute of Cornish Studies (ICS); the results of the project were presented in *Lighting up the past in Scilly* (Ratcliffe 1991).

Jeanette Ratcliffe subsequently became a field officer with the Cornwall Archaeological Unit (CAU), with special responsibility for projects in the Isles of Scilly. In 1988, with a team including Cathy Parkes, Carl Thorpe and Andy Waters, she carried out a benchmark project for English Heritage to assess the archaeological resource of the Islands, resulting in a management plan for Scilly (Ratcliffe 1989).

Emerging from the recommendations of this report was the Coastal Erosion Project (CEP), a five-year rolling programme of coastal monitoring, small-scale excavation and recording and environmental sampling, funded by English Heritage and implemented by CAU (in conjunction with the Ancient Monuments Laboratory and Bristol University) between 1989 and 1993. The CEP culminated in the publication of *The Early Environment of Scilly* (Ratcliffe and Straker 1996).

Much of the archaeological fieldwork undertaken in Scilly during the 1990s was associated with coast protection schemes or cable laying. The former included recording cliff-exposed Bronze Age remains at Porth Killier on St Agnes in 1996 (Ratcliffe *et al*, forthcoming) and sampling peat deposits at Old Town Bay, St Mary's (Ratcliffe and Straker 1998). During British Telecom trenching on St Martin's in 1992 an Early Christian grave and medieval midden were discovered at Lower Town (Ratcliffe 1997).

In 1995 Gill Arbery was appointed as Field Monument Warden and Conservation Officer for Scilly, a post jointly funded by English Heritage and the Council of the Isles of Scilly. Gill did much valuable work in Scheduled Monument management and planning advice before she left in 2004. Her successor Eleanor Breen was in post as Assistant Planning Officer (Conservation) and Historic Environment Field Advisor between 2007 and 2011.

The discovery and excavation of the Bryher sword and mirror cist burial in 1999 is arguably the most important archaeological event in the Islands during the last 25 years. A fragment of long bone from the burial was radiocarbon dated to 200-45 cal BC. The metalwork typology narrows this range to the first half of the first century BC,

indicating that Bryher is the earliest known British decorated bronze mirror, with important implications for the study of insular Celtic art in Britain (Johns 2002-3).

Much development-led work was undertaken in the first decade of the twenty-first century, mostly small scale interventions by various archaeological contractors. A watching brief during the construction of a new playing field at Dolphin Town, Tresco, in 2003 revealed remains of a Middle Bronze Age settlement (Taylor and Johns 2009-10) and a Late Bronze Age settlement was investigated in 2009/10 at a new affordable housing development at Higher Town Farm on St Agnes (Taylor and Johns, forthcoming). Detailed evaluation on the site of the new Five Islands School Base at Carn Gwaval, St Mary's did not reveal any archaeological remains other than removed post-medieval field boundaries (Johns *et al* 2010). Similarly watching briefs during the refurbishments of the off-island quays in 2007 were largely unproductive except for the discovery of two nested Early Bronze Age vessels on the site of the contractor's compound near Porth Conger, St Agnes (Johns and Sawyer 2008; Wessex Archaeology 2008a; Johns and Quinnell, forthcoming).

There has been continuing interest in Scilly by academic researchers. Fieldwork and research has been undertaken by Trevor Kirk (Kirk 2004), Mary Ann Owoc of Mercyhurst College, Pennsylvania (Owoc *et al* 2003), and Eleanor Breen (Breen 2005 and 2008). Gary Robinson drew together and reconsidered existing archaeological data for his PhD thesis (Robinson 2007). Katharine Sawyer is currently studying for a PhD on the setting and function of the Bronze Age chambered cairns and cists of Scilly.

Since 2005, three seasons of fieldwork have been carried out by the ongoing 'Islands in a Common Sea' project directed by Charles Johns and Jacqui Mulville of Cardiff University, including recording the cliff-exposed Bronze Age cairn at Pendrathen, St Mary's (Johns and Mulville 2011), evaluation of the site of Knackyboy Cairn (Mulville *et al* 2007), and archaeological investigation and building recording of the post-medieval buildings on Samson and Tean (Johns *et al* 2007; Johns *et al*, forthcoming a and b).

Detailed survey of the intertidal stone walls and other features on Samson Flats was carried out by the Cornwall and Isles of Scilly Maritime Archaeological Society (CISMAS) in 2009 and 2010 (Camidge *et al* 2010a). A survey of field boundaries on Bryher, St Agnes, St Martin's, St Mary's and Tresco has recently been carried out by HE Projects (Kirkham *et al* 2011). The majority of sites and monuments in Scilly still do not have large-scale measured plans or surveys.

In September 2013 some small scale excavation is proposed at Old Quay, St Martin's, as part of the 'Neolithic Stepping Stones' project, to improve understanding of the processes through which Neolithic practices came to Britain from the European mainland around 4000 BC (Garrow and Sturt 2009).

2.5.2 Geophysical survey

Geophysical surveys have been carried out as part of evaluations at Dolphin Row Cottages, Tresco (Shiel 1999), and Dolphin Town, Tresco (Gater 1999), and during 'Islands in a Common Sea' fieldwork at Pendrathen and Lunnon and Normandy Farms, St Mary's, in 2005 (Young, in Johns and Mulville 2011). In 2007, as part of the same project, geophysical surveys were carried out at East Porth, Tean and the cricket pitch on St Agnes (Young, in Johns *et al*, forthcoming). Geophysical survey was also carried out in advance of the new Five Islands School Base development at Carn Gwaval, St Mary's (Sabin and Donaldson 2010).

Maritime geophysical survey and prospection for submerged peat deposits were carried out during the Lyonesse Project (Camidge *et al* 2010b; Charman *et al* 2011). A geophysical survey of St Mary's harbour was carried out by Wessex Archaeology in 2004 (Wessex Archaeology 2004).

2.5.3 Environmental studies

Pollen studies carried out since the 1960s have produced valuable information regarding the past vegetation and environmental history of Scilly. Analysis of peat samples from the two major wetlands of Higher and Lower Moors, St. Mary's, has provided a general background vegetational history for the Islands (Scaife 1984). Radiocarbon determinations from Higher Moors made it possible to broadly date the vegetational changes represented in pollen diagrams. During the sixth millennium BC woodland of mainly oak, birch and hazel predominated. Partial woodland clearance, accompanied by cereal cultivation, occurred during the Bronze Age, but was followed by a phase of localised woodland rejuvenation. By the Early to Middle Iron Age, however, this cover had virtually disappeared.

Pollen results reflecting very localised vegetation and environmental change have been obtained from palaeosoils buried beneath blown sand. Dimpleby's work at Innisidgen produced the first direct evidence of deciduous forest cover on St Mary's, together with evidence of early agricultural activities (Dimpleby *et al* 1981). Soil pollen analyses at Nornour (Greig and Keeley 1978), Halangy Down (Dimpleby *et al* 1981) and Bar Point (Balaam 1981) reflect the open conditions and more intensive agriculture which prevailed during the Iron Age.

Some work has been carried out on buried soils themselves, for example at Nornour (Greig and Keeley 1978; Keeley 1978), Little Bay (Keeley 1983), Samson (Keeley AML Report 1975a), Bar Point (Macphail 1981) and Hillside Farm, Bryher (Heathcote 2000).

The 1989-93 Coastal Erosion Project assessed the palaeoenvironmental potential of 14 early coastal sites. The key environmental gain from the cliff-face sites was the establishment of a range of crops for Scilly for the Bronze Age and Iron Age. These included naked and hulled barley, emmer wheat and celtic bean and other plants such as fat hen, knotgrass, black bindweed and chickweed (*ibid*).

Radiocarbon dating and palaeoenvironmental analysis of two peat layers below the surface of the beach at Old Town, St Mary's, indicated that between the Iron Age and early medieval periods the site was an area of shallow freshwater surrounded by a largely open landscape, with arable fields and pasture bordering wetland. Following an episode of sand encroachment, the upper 'peat' began forming within a similar environment some time during the tenth to twelfth centuries AD (Ratcliffe and Straker 1998).

In 2006 Rob Scaife carried out analysis of a 'spot' pollen sample from a soil underlying the eroded Bronze Age round cairn exposed in the cliff face at Pendrathen, St Mary's. This showed that the cairn was built on grassland or pasture within a region of hazel scrub woodland, indicating for the first time in Scilly the apparent effects of immediate post-woodland clearance and establishment of grassland, possibly pasture, and also the consequent expansion of hazel woodland (Scaife, in Johns and Mulville 2011).

The Lyonesse Project, a three-year project funded by English Heritage to study the evolution of the coastal and marine environment of Scilly, was carried out between 2009 and 2012 by HE Projects and a team of specialists from English Heritage's Scientific Dating team, the Universities of Aberystwyth, Cardiff, Exeter and Plymouth, with local marine archaeologists and enthusiasts from CISMAS and the Islands Maritime Archaeology Group (IMAG) (Charman *et al* 2012). The project involved geophysical survey of submerged peat deposits, assessment, survey and sampling on intertidal peat deposits, palaeoenvironmental analysis, radiocarbon dating and optically stimulated luminescence (OSL) dating.

2.5.4 Osteological faunal remains

Animal bone preservation is usually poor in Scilly because of the acidity of the soil at the time of deposition, and it is only in large middens that such remains are found. From 1960 Dr Frank Turk studied the sub-fossil fauna of the islands, and identified bones from various excavated sites: Nornour (Turk 1967; 1971; 1978), Tean (Turk

1968), Samson (Turk 1973), May's Hill, St Martin's (Turk 1983), Porth Killier, St Agnes, a midden at Periglis, the unexcavated settlement at Dial Rocks and a site north east of Higher Town, St Agnes (Turk 1968, 1984). In 1984 he published a catalogue of all the species recorded in the Archaeo-Zoology of Cornwall and Scilly up to that date. This includes remains identified at Halangy Porth (Gray 1972), Samson (Mason and Hayton 1977) and Little Bay (Locker 1983).

Existing knowledge and new bone evidence – for example, the addition of seven new fish and ten new birds to the list of species identified for Bronze Age Scilly - was summarised by Ratcliffe and Straker (1996).

Since 1996 assemblages of faunal remains have been recovered from Porth Killier (Locker in Johns *et al*, forthcoming); Hillside Farm, Bryher (Ingrem, in Johns 2002-3); and Higher Town, St Agnes (Ingrem, in Taylor and Johns, forthcoming).

2.5.5 Submergence studies

It is not difficult to imagine the two hundred or so islands, islets and rocks of Scilly as part of one large island that has become gradually submerged. At low tide, extensive sand flats are exposed on the inner-facing shores of the northern part of Scilly, making it easy to visualise former plains fringed by low granite hills and sand dunes. Bryher, Tresco and Samson are still joined at low astronomical tide (LAT), and the water is so shallow between the islands that a drop in sea level of less than 10m would re-unite all except St Agnes and Annet (Ratcliffe and Straker 1997, 74-5). Submerged stone remains (such as field walls, hut circles and cist graves) have been documented since Dr Borlase in the mid-eighteenth century, but it is only in recent years that intertidal 'peat' deposits have been recognised (Ratcliffe and Straker 1997, 64).

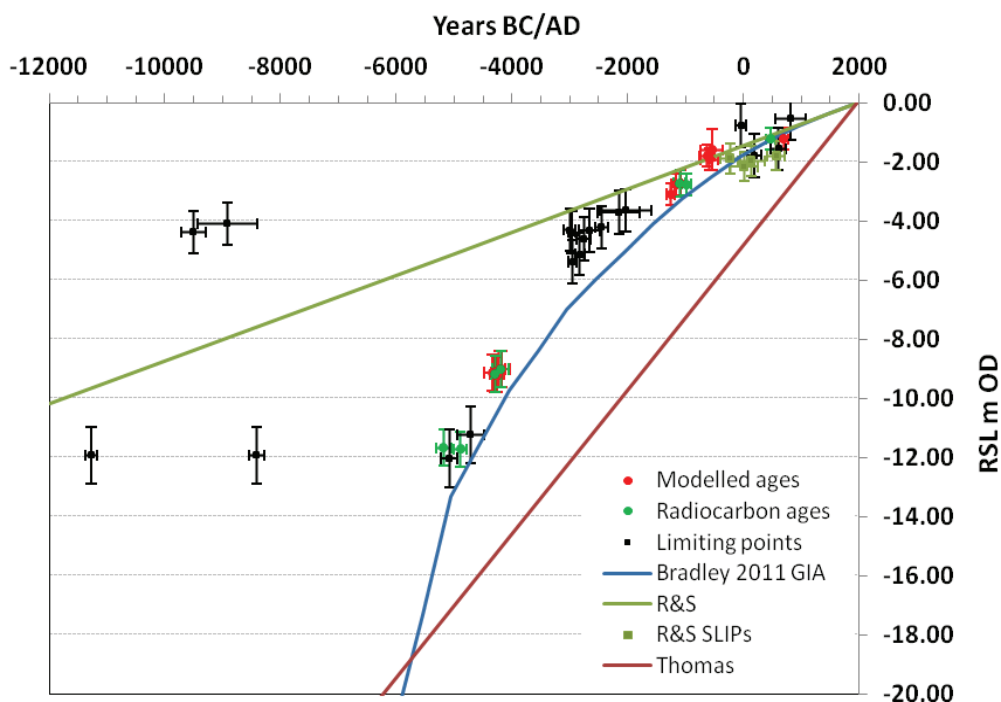


Fig 2.5 All sea-level data from Scilly, showing all limiting index points (max. and min. depths from freshwater peats) and multiple index points from some profiles based on both radiocarbon and modelled age estimates, sometimes from the same samples. Error bars show total error in palaeo-elevation estimates and 2σ age ranges. Continuous lines are the sea-level curves of Thomas (1985), Ratcliffe and Straker (1996) and as derived from Bradley (2011) (from Charman *et al* 2012)

There have been two contrasting models for ancient sea-level rise in Scilly. The first, published by Charles Thomas in 1985, was based on a study of contours and

settlements, supported by coastal place-name evidence, and suggested that Scilly was a single island until about the fifth century AD; it would have continued to form a visible single entity at low tide until as late as the eleventh century, the final separation perhaps not occurring until the early sixteenth century. The second model resulted from analysis of radiocarbon dates and corresponding levels from intertidal peat deposits sampled during the Coastal Erosion Project and indicated a less dramatic sea-level rise so that the islands could have been separated at high water from c 1000BC (Ratcliffe and Straker 1996; 1997).

Modelling of the results from the Lyonesse Project now demonstrate that the present pattern of islands was largely formed by the end of the Early Bronze Age but with a much more extensive intertidal zone than today (Charman *et al* 2012).

2.5.6 Maritime

The National Heritage Act of 2002, which extended English Heritage's remit into the marine zone, and the discovery of the stern carving from HMS *Colossus* brought maritime archaeology to the fore (Stevens 2007). The Time Team visited the islands to record the lifting of the carving in 2002.

There are now two local maritime archaeology groups, the Cornwall and Isles of Scilly Maritime Archaeology Society (CISMAS) and the Islands Maritime Group (IMAG), and other independent divers. Maritime projects have included ongoing trials on HMS *Colossus* (e.g. Camidge 2005; 2009), work on the *Firebrand* by Bristol University and the discovery of the Wheel Wreck by IMAG which has been designated under the Protection of Wrecks Act 2003. Wessex Archaeology has carried out designated and undesignated site assessments of a number of wrecks for English Heritage (Wessex Archaeology 2005; 2006a; 2007).

2.5.7 Unpublished fieldwork

This includes George Bonsor's notes on his work in Scilly between 1899 and 1902, fieldwork carried out over many years by Charles Thomas and Michael Tangye (although their valuable field notes, sketches and photographs made a valuable contribution to the compilation of the SMR), and Bryan O'Neil's archive (although this provided a major source of information for the 1987/1988 Excavation Index).

Key sites for which publication is outstanding include the 1956/60 excavations at East Porth, Tean (Thomas 1960b), the 1971 excavation at East Porth, Samson (Neal, forthcoming), the 1971 excavation at Bar Point, St Mary's (Butcher and Johns, forthcoming) and the results of the 1996 Coast Protection Scheme recording at Porth Killier, St Agnes (Ratcliffe *et al*, forthcoming).

2.6 Sources

2.6.1 Published sources

A considerable amount has been written on the archaeology and history of Scilly. Much archaeological detail is included in eighteenth- and nineteenth-century accounts of the islands (Leland (in Chope 1918); Heath 1750; Borlase 1756; Troutbeck 1796; Woodley 1822; Whitfield 1852; Maybee 1883). The 1651 Parliamentary Survey is also very useful (Pounds (ed) 1984). During the twentieth century three books were published which deal specifically with the archaeology of Scilly (Hencken 1932; Ashbee 1974; Thomas 1985), plus a report on the archaeological resource and recommendations for its management (Ratcliffe 1989) and the *Early Environment of Scilly* (Ratcliffe and Straker 1996). More recently, Gary Robinson's PhD thesis on the prehistoric island landscape of Scilly was published in 2007. Other books document the general history of the Islands (e.g. Matthews 1960; Mumford 1967; Gill 1975; Bowley 1980). References to Scillonian archaeology are also contained in archaeological books covering a wider geographical area than Scilly (e.g. Daniel 1950; Piggott 1954; Pearce 1978; Bell 1984; Todd 1987; etc).

Numerous articles on various aspects of the historic environment of Scilly have been published in the journals of local and national societies. The results of most early excavations in Scilly are found in the pages of the *Antiquaries' Journal*, the *Archaeological Journal*, and the *Proceedings of the West Cornwall Field Club*. Since the founding of the Cornwall Archaeological Society in 1962, most excavation reports have been published in its journal, *Cornish Archaeology*, with a few appearing in *Cornish Studies*, the journal of the Institute of Cornish Studies. *The Scillonian*, the quarterly magazine for the Isles of Scilly, frequently contains articles on historical and archaeological subjects.

The Isles of Scilly Museum publishes an occasional series of booklets including a checklist of archaeological sites (Russell 1980), a guide to the buildings of Scilly (Laws 1980) and a study of the kelp industry (Over 1987).

Earlier guide books for the archaeological remains in Scilly include O'Neil (1949) and Over (1974). The first edition of the popular booklet *Scilly's Archaeological Heritage*, which provides a succinct chronological overview of the islands' archaeology and history and a gazetteer of sites to visit, was published in 1992 (Ratcliffe 1992). A fully revised edition with colour illustrations was published in 2003 (Ratcliffe and Johns 2003). A number of archaeological and historical walks leaflets have also been produced.

Many books have been published on the maritime history of Scilly (Morris 1969 and 1979; Larn 1993; 1999; Larn and Larn 1995; McBride and Larn 1999; Stevens 2007; 2008; 2009; etc).

Important recent publications are Rosemary Parslow's study of Scillonian flora (Parslow 2007), and English Heritage's new book on the military defences of Scilly (Bowden and Brodie 2011).

Recent development-led work is reported in 'grey literature' reports produced by various organisations, copies of which are provided to the HER.

2.6.2 Cartographic sources

The earliest map of the islands, entitled 'Les Sorlinges' and possibly surveyed by Captain John Davies, dates from the late sixteenth century. It gives an impression of where people were living but not in sufficient detail to identify many individual buildings (Fig 2.6). One of the Isles of Scilly Museum publications is a guide to the scarcer maps and books of Scilly (Isles of Scilly Museum 1974).

There are also a number of maps of the Garrison drawn for military purposes that show Hugh Town, including, for instance, Christian Lilly's survey of 1715

Unlike tithe maps on the mainland, the tithe maps for Scilly do not have field boundaries because of the monopolistic landownership of Scilly's two main islands. They do show clusters of buildings that depict in a sketchy fashion the main locations for settlement. Between 1829 and 1831 George and Edward Driver carried out a rental survey of the islands for the Duchy of Cornwall and listed all the holdings, tenements and occupiers. The originals are held in the archives at Tresco Abbey. There are reduced photographic copies in the archives of the Duchy of Cornwall Office in London of four Driver Bros manuscript maps covering (1) St Agnes, Annet, Gugh, St Martin's and White Island; (2) Bryher, Tresco, Gweal, St Helen's, etc; (3) St Mary's; and (4) Samson, Tean and the Eastern Isles.

Today Ordnance Survey maps are available through Geographical Information Systems (GIS), as well as on paper and for the Isles of Scilly English Heritage's WebGIS system provides access to the 1891 1:10,560 OS map, the 1908 1:2,500 OS map, and the 1909 1:10,560 OS map.

collection and its archive, as well as some folders of drawings of the properties it manages on the islands

2.7 Historic Environment designations

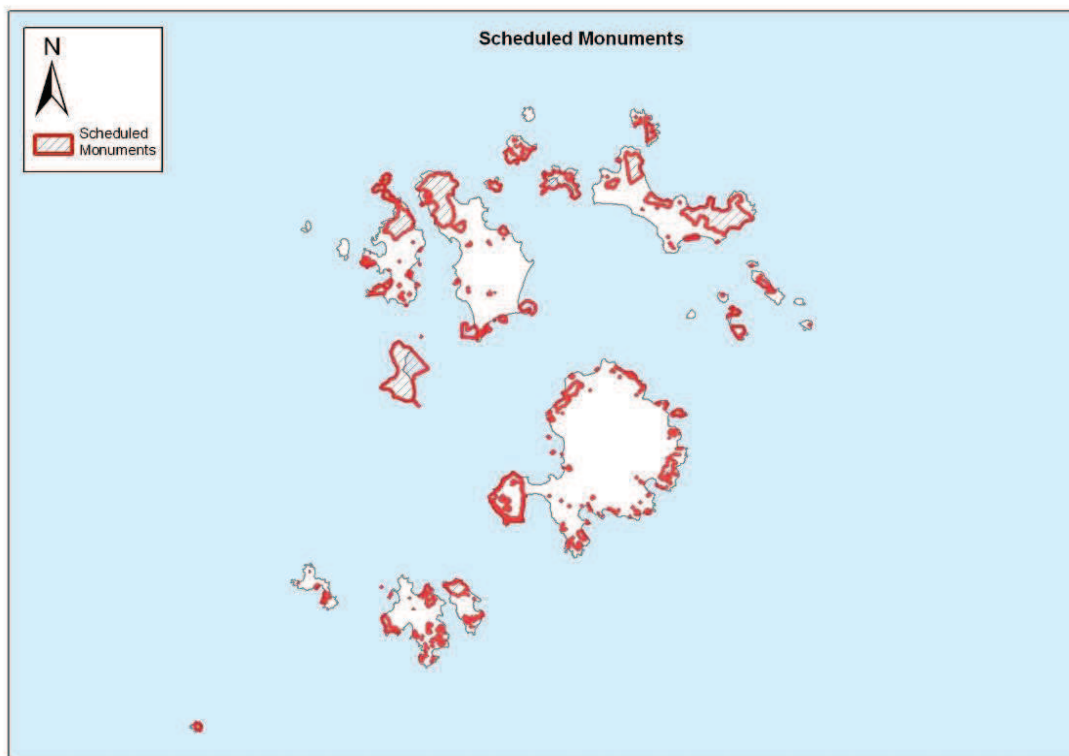


Fig 2.7 Distribution of Scheduled Monuments in the Isles of Scilly

2.7.1 World Heritage Sites

Scilly does not contain any World Heritage sites.

2.7.2 Scheduled Monuments

The Isles of Scilly contain 238 Scheduled Monuments (Fig 2.7), which represents 3.4% of the total in South-West England (as at July 2004). However at 10.23 per km² the islands have by far the highest density, its nearest contender being Plymouth with 0.76 per km², while Cornwall has 0.38 per km² (Webster (ed) 2008, tables 1.1 and 1.2).

2.7.3 English Heritage Guardianship sites

English Heritage has eight unstaffed properties in guardianship located on the Isles of Scilly, three of which are prehistoric and five military in date.

1. Garrison Walls, St. Mary's

Garrison Walls is the largest property on the islands, and currently provides a hub for the interpretation of the other military English Heritage properties on the Islands.

2. Harry's Walls, St. Mary's

Harry's Walls is an unfinished artillery fort built above St Mary's Pool in 1552-3. It has been argued that building work stopped due to a lack of money, or because it was realised that the fort was not in the best position for defence, but neither of these explanations is satisfactory. Its location and state of completion are a real enigma.

3. Bant's Carn Burial Chamber and Halangy Down Ancient Village, St. Mary's

Halangy Down is a Romano-British settlement dating from about cal AD 200 BC, which continued in use until the end of the Roman period. It consists of one large courtyard house and several smaller houses, 11 buildings in total. Excavations at the site in the 1970s produced many artefacts and revealed details of the house structures and way of life (Ashbee 1996).

Directly upslope from the village is Bant's Carn, a Bronze Age entrance grave. It was excavated in 1900 by the antiquarian George Bonsor who found the remains of four cremations at the back of the chamber together with sherds of Bronze Age pottery.

4. Innisidgen Lower and Upper Burial Chambers, St. Mary's

Two Scillonian entrance graves dating to the Bronze Age; although the lower chamber is in a poor state of repair, the upper was restored in the 1970s and is one of the best preserved entrance graves on the Islands. A prehistoric field system survives further up the hillside to the north which may be associated with the chambers.

5. Porth Hellick Down Burial Chamber, St. Mary's

Porth Hellick chamber, the 'Giant's Grave', is a large Bronze Age entrance grave. It is the best preserved of seven Scillonian entrance graves which stand on the down, in addition to two cairns. It is 12m in diameter; apparently an encircling kerb was destroyed during misguided restoration work by the MoW. Although it was excavated in 1899 by George Bonsor, only Bronze Age pottery was found and it was reported that the tomb had already been cleared.

6. Old Blockhouse, Tresco

The Old Blockhouse is a small gun blockhouse, built to protect Old Grimsby harbour between 1548 and 1552. It later played an important part during the Civil War. In 1651 a Royalist garrison was defending the islands against attack by a Parliamentarian fleet commanded by the famous Admiral Robert Blake. Blake attacked Tresco first and although the blockhouse was vigorously defended, the Parliamentarians went on to defeat the Royalist stronghold at the Garrison on St Mary's.

7. King Charles' Castle, Tresco

King Charles' Castle was a coastal artillery fort built between 1548 and 1554 during the reign of Edward VI to protect the narrow strait leading past New Grimsby harbour. It is a semi-hexagonal structure, providing a wide field of fire and the two-storey building would have contained two tiers of guns. Domestic quarters for the garrison were located at the rear. However, the castle proved to be badly sited to fire on ships in the channel below: some of its guns wouldn't have been able to be depressed to the steep angle needed.

During the Civil War, the castle was garrisoned by Royalists, and low earthwork bastioned defences were thrown up beyond the castle to protect it from landward attack; these can still be seen. When the Parliamentarians took Tresco in 1651 they bypassed the castle by landing on the other side of the island, near the Old Blockhouse, and attacked over land. The castle was replaced later in the Civil War by Cromwell's Castle.

8. Cromwell's Castle, Tresco

This coastal gun tower built by Oliver Cromwell in 1651-2 was a replacement for King Charles' Castle, built once Tresco had been taken by the Parliamentarians. It was built on a promontory to guard the anchorage and narrow channel between Bryher and Tresco. The guns were mounted on the roof above the garrison's living quarters and magazines. The tower was originally entered at first floor level by an external stair on the south side. The present entrance dates from the construction of the lower gun platform, added in the 1740s by Abraham Tovey, Master Gunner.

2.7.4 Listed Buildings

Scilly has 129 Listed Buildings (Fig 2.8), four Grade 1, eight Grade II* and 117 Grade II (as at July 2004). This is the lowest number of any local authority in the South West but the overall density of 5.54 per km² places it sixth out of 16 (Webster (ed) 2008, tables 1.3 and 1.4).

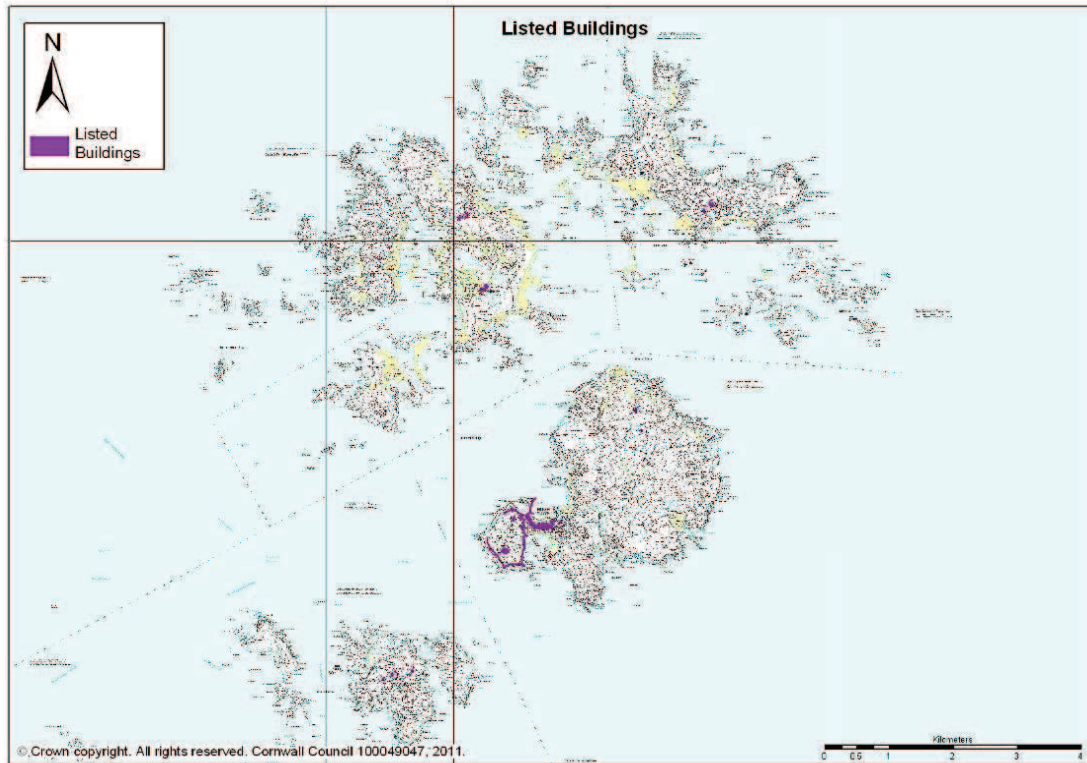


Fig 2.8 Distribution of Listed Buildings in Scilly

2.7.5 Registered Parks and Gardens

The islands contain one Grade 1 Registered Park and Garden (Tresco Abbey Gardens).

2.7.6 Registered Battlefields

Scilly does not contain any Registered Battlefields.

2.7.7 Protected Wrecks

Of a total of some 771 recorded wreck sites in the waters around Scilly, four wrecks are designated under the Protection of Wrecks Act 1973 (section 1). These are:

- the mid-late sixteenth century possible small Spanish cargo on Bartholomew Ledge in St Mary's Sound;
- the Tearing Ledge shipwreck south of the Bishop Rock lighthouse which is now thought to be the *Eagle*, lost in 1707;
- HMS *Colossus*, lost in 1798 off Southard Well, Samson.
- The Little Gannick wreck, comprising a discrete mound of post-1850 Cornish mining equipment (Fig 2.9).



Fig 2.9 The Little Gannick or Wheel Wreck (© Crown Copyright, photo by Wessex Archaeology)

2.8 Other Designations

Eight different designations apply to Scilly:

- Area of Outstanding Natural Beauty (whole of the Isles of Scilly)
- Conservation Area (whole of the Isles of Scilly)
- Heritage Coast (whole of the Isles of Scilly)
- Candidate Special Area of Conservation EU Habitats Directive (SAC) – covers an area of 268.5 km² (26,851 ha, of which 181.32 ha is terrestrial)
- Special Protection Area EU Habitats Directive (SPA) – covers an area of 4.09km² (401.64 ha)
- Non Statutory Marine Park – to 50m contour
- Ramsar Convention-designated wetlands – covers an area of 4.09km² (401.64 ha)
- Sites of Special Scientific Interest (SSSIs) – 26 sites, 5 of which are geological – covers an area of 5.63 km² (554.98 ha) (Council of the Isles of Scilly 2004, 4).

2.9 Other English Heritage National Programmes

2.9.1 Extensive Urban Surveys

The urban survey of Hugh Town was carried out in 2002-3 as part of the Cornwall and Scilly Urban Survey project (Kirkham 2003).

2.9.2 Rapid Coastal Zone Assessment Surveys

The Rapid Coastal Zone Assessment Survey (RCZAS) Phase 1 Desk-based Assessment was carried out by the Historic Environment Service, Cornwall County Council in 2003-4 (Johns *et al* 2004).

2.9.3 Historic Landscape Characterisation

In 1996 Historic Landscape Characterisation was applied to Scilly in the *Historic Landscape Assessment and Management Strategy* (Land Use Consultants 1996), which highlights the antiquity and archaeological potential of Scilly's landscape. The HLC is available as layer on the Isles of Scilly HER GIS database.

2.9.4 Historic Seascape Characterisation

The national Historic Seascape Characterisation (HSC) programme began in 2005 with pilot project in Liverpool Bay undertaken by Wessex Archaeology, subsequent pilot projects were followed by the consolidation of a national methodology for HSC, a demonstration project on the North East and application of HSC to four more areas. The Isles of Scilly is included in the South West Peninsula and adjacent inshore and offshore waters HSC Project which will be completed in August 2013 (Dudley and Johns, forthcoming).

2.9.5 National Mapping Programme

The National Mapping Programme (NMP) grew out of Royal Commission on the Historical Monuments of England (RCHME) projects to map large areas of archaeological remains visible on aerial photographs. Following pilot projects the programme started in 1990. The NMP for Scilly was carried out in 2003 by the Historic Environment Service, Cornwall County Council, to tie in with the RCZAS (Johns *et al* 2004) The NMP plot for Scilly added 108 sites to the HER, of these approximately 25% are in the coastal and intertidal zones.

2.10 Air photographs and LIDAR

Good air photography cover exists for Scilly. It includes photographs taken by the OS, RAF and Admiralty. The National Monument Record holds 1154 specialist oblique records and 516 vertical prints. Historic Environment, Cornwall Council, has a collection of oblique and vertical photographs.

Scilly has 1m resolution Lidar data, together with complete 0.25m aerial photographic coverage (available from the Channel Coastal Observatory <http://www.channelcoast.org/southwest/>).

2.11 Portable Antiquities Scheme

The Portable antiquities Scheme (PAS) only holds eight finds from Scilly on their database, with reference numbers CORN-50CE42, CORN-70BCB3, CORN-FEAC20, CORN-B5D061, CORN-327A62, CORN-31B2A7, SOM-163205 and HAMP-DB29D6.

2.12 Historic Environment Records

2.12.1 The Cornwall and Scilly Historic Environment Record

The Scilly Sites and Monuments Register (SMR) was set up by the Institute of Cornish Studies in 1983 and is currently maintained by Historic Environment, Cornwall Council, as part of the Cornwall and Scilly Historic Environment Record (HER).

The Cornwall Scilly HER contains records for 10 Palaeolithic and Mesolithic sites, 43 Neolithic sites, 684 Bronze Age sites, 107 Iron Age and Romano-British sites, 43 early medieval sites, 63 late medieval sites, 546 post-medieval sites and 88 modern sites.

The Cornwall and Scilly HER also holds copies of grey literature reports for interventions relating to the historic environment in Scilly.

2.12.2 The National Monument Record

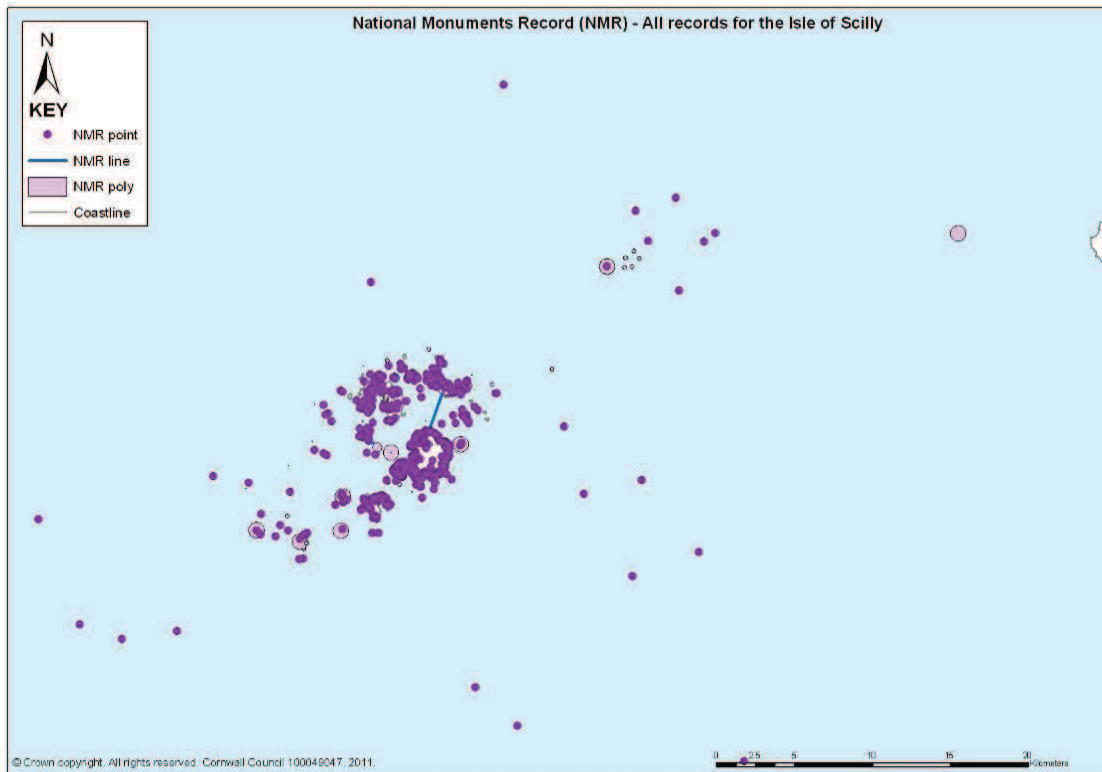


Fig 2.10 Distribution of NMR records for the Isle of Scilly

The National Monument Record (NMR) holds 1462 terrestrial and maritime records for Scilly (Fig 2.10) and 180 NMR event activity reports.

2.12.3 The United Kingdom Hydrographic Office

The United Kingdom Hydrographic Office, Taunton (UKHO) holds 183 wreck and underwater obstruction records for the Isles of Scilly and a large number of charts and maps.

2.13 Museums and archives

2.13.1 The Isles of Scilly Museum

Following the severe gales in the winter of 1962 the small island of Nornour yielded up some remarkable Roman finds, causing some St Mary's residents to establish a local museum. Initially the only viable option was a temporary display in the Wesleyan Chapel during the summer months. After much fundraising and thanks to huge volunteer enthusiasm, the present Museum was opened to the public on 15 July 1967.

The Isles of Scilly Museum (IOSM) is situated in Hugh Town, St Mary's. The collections are extremely diverse, including material from many wrecks, prehistoric and Roman artefacts, natural and social history, local art and much more. In order to preserve links with the rich Scillonian past, the Museum has a comprehensive collection of oral history videos featuring local residents. The Museum's Baxter Room holds over 1200 books and also contains plans, surveys, magazines and assorted paper records relating to the Islands.

The Trustees have the following objectives as far as the IOSM is concerned: to collect, preserve, display and interpret a representative collection of objects, photographs and works of art to illustrate the way of life of the inhabitants of the Isles of Scilly. Within

limits imposed by resources, the Trustees will, on behalf of the IOSM, collect in the following fields: archaeology (terrestrial and marine); fine and decorative art; natural history; social, economic and local history; books; photography and film.

Archaeology

The Trustees will collect, preserve, display and interpret all available archaeological artefacts from the Isles of Scilly. It will, where possible, support any archaeological excavation within the Isles of Scilly and act as a depository for any finds and paper archives. On 20 April 2006 the Museum was awarded the status of Full Accreditation by the Museums, Libraries and Archives Council (MLA); this was renewed in 2010. As the only Accredited Museum in the Isles of Scilly, the Museum is recognised by English Heritage as the depository for material from past, current and future excavations.

Amongst nearly 7000 accessions, the majority of which are archaeological material, the Museum holds finds and records from sites of all periods on Scilly. These include Bronze Age urns from Knackyboy and other entrance graves, the sword and mirror from an Iron Age cist on Bryher, prehistoric and Roman finds from Nornour and Early Christian material from Samson, St Helen's and Tean. There is a large collection of sherds, stone and metal tools and objects from these and many other sites throughout the Islands. They show a rich mixture of imports and local products and can be used to identify Scilly's connections with both mainland Britain and various areas on the Continent at different periods.

Much effort has gone into tracing material from past Scillonian excavations. The process of repatriating artefacts and records began some years ago: for example, Penlee House, Torquay Museum and Historic Environment, Cornwall Council, have sent boxes of material to the IOSM and more is expected, especially from the Royal Cornwall Museum.

Apart from the displayed objects the Museum has extensive stored material. This is shelved in standard boxes, and has been catalogued by site and period; it is available on request to visiting researchers.

Archives

The records, drawings and photographs of excavations carried out on the Islands are stored in files and plan drawers; these are also catalogued and available for research. The entire Accessions Register has been computerised and there is also a computerised index of the Museum storage areas.

2.13.2 The Royal Cornwall Museum

The Royal Cornwall Museum (RCM) holds the majority of the archaeological finds and archives of Cornwall and a proportion for the Isles of Scilly on behalf of the Royal Institution of Cornwall (RIC), a charitable trust (RIC Isles of Scilly Collection List, July 2011). The RCM is a Museums, Libraries and Archives 'accredited' museum. The RCM is also the 'designated' English Heritage store for Cornwall, eligible for storage box grants. All archaeological archives for Scilly are now deposited with the IOSM, St Mary's.

In 2003 the RCM became one of only 14 museums across the country to receive temporary financial support from the Department of Culture, Media and Sport, and Education and Skills, through a programme called Renaissance in the Regions. The purpose of the funding was to build capacity in important regional museums, enabling them to become centres of excellence. Isles of Scilly finds and archives have benefited from recent work that has included reconciliation of documentation and repackaging of the collection in the Basement Store to current standards and a refurbishment of the main gallery displays where Isles of Scilly material is on display.

Over the years, the museum has provided free resources for the study of the Isles of Scilly collection in terms of a specialist archaeological curator and conservator,

equipment and customised research space within the stores. The Curators' library and the Courtney Library reference library are available to researchers.

Some of the archives were placed at the RCM so that the IOSM could exhibit 'displayable' material while the RCM housed the archives for researchers, due to lack of space at the IOSM (Anna Tyacke, previous Curator, pers comm). The majority of the Isles of Scilly collection was 'deposited' by the Ministry of Works/Historic Buildings Commission/English Heritage or the Duchy and are, effectively, on loan. Loan agreements are currently being agreed by the Duchy and the RIC.

Since 2005, the IOSM has requested the return of the above archaeological archives and RCM is in liaison with the Duchy and English Heritage to facilitate the repatriation. The material from Nornour (TRURI: 1993.34) and the Isles of Scilly Electrification Project (TRURI: 1992.100) was returned in 2012 and East Porth, Samson (TRURI: 1993.95), when HE Projects has completed analysis; the remaining archives will then be returned in liaison with the IOSM over a period of time. Some finds and archives were donated to the RCM and these will remain at the museum but could be loaned to the IOSM. The RCM will retain material donated and currently on display in the new refurbished gallery.

2.13.3 Other archives

The British Museum holds some artefacts, including Bonsor's finds from Porth Hellick Down, Normandy Down, Obadiah's Barrow, and Samson. Other material is held at the Museum of Archaeology and Ethnology in Cambridge, the Museum of the Torquay Natural History Society and in an English Heritage store. Some material is also held in private collections of antiquities. Archives for current projects are held by various contractors and researchers.

2.14 Approaches to the study of the historic environment of islands

Approaches to island archaeology were developed during the New Archaeology phase in the early 1970s and, as suited theoretical perspectives of the time, drew inspiration from the natural sciences, particularly island biogeography used to explain island biota. Of special interest was the publication of McArthur and Wilson (1968) that set out principles for understanding the processes for island colonisation by flora and fauna. Two key aspects of their treatise still remain influential today, the first is the distance vs. area effect and the second is founder effect.

Distance vs. area effect sets out the limits to island settlement by proposing the fairly straightforward formula of the distance vs. area, where increases in the distance to the nearest mainland amplifies barriers to successful colonisation while the size of the island (its area), may mitigate this to a certain extent if it is large, but will also exacerbate barriers to colonisation if it is a small island. A complicating matter is 'stepping stone islands' which also have to be considered. Simply stated, big islands close to the mainland will present few barriers to colonising species, while small islands distant from the mainland will present the biggest barriers to colonising species and the expectation will be that there will be minimum species diversity on such islands. An add-on to the latter condition is that 'founder effect' may occur where a species finds itself in a new ecological niche, unchallenged by other species as it had been in its mainland habitat, and evolves in relative isolation to become distinct from its mainland ancestors. This for animals often appears to result in dwarfing, where the animals become much smaller than their mainland variety.

In archaeology, island biogeography has been enlisted to explain why the Mediterranean islands were colonised by humans in the order that radiocarbon dates of the time suggested (Cherry 1981), and why people in islands constructed unique structures, like the carved heads of Easter Island and the Copper Age temples of Malta (Evans 1973).

While few island archaeologists now accept that human activities are governed by the same principles that apply to other animals or plants, the theories developed in island biogeography still have a role in thinking through the differences that islands hold, compared to communities in mainland situations. Cyprian Broodbank (2000) has proposed the term 'islandscapes' as a way of recognising that the seascapes and landscapes that make up island environments are distinct from landscapes as viewed through the typical lens of landscape archaeology. Paul Rainbird (2007) has gone a step further in highlighting the ascendancy of the marine environment in island lives, arguing for an 'archaeology of the sea' that acknowledges the values of fusion, fluidity and flux in island histories. In this, initial assessments of island history should assume, until shown otherwise, that the sea was a highway, allowing for the fusion of cultural traits from a variety of directions, for fluidity in the directions of the contacts and flux in the amount of contacts in any particular direction, with, on occasions, extremely limited direct contact, but always with the expectation among island peoples that contact with outsiders may occur at any time.

Approaches to island archaeology may help us to problematise and theorise our expectations of the Scillonian archipelago at various phases in its history. Firstly, we need to know that we are dealing with an island or islands for any particular time, limiting the use of island archaeology (except in a purely metaphorical sense), to the last 12,000 years. A proxy indicator of a long-term separation from the mainland comes in the form of the Scilly Shrew (*Crocidura suaveolens*), which is unique to the islands (Hosfield *et al* 2008). Within this period it would be useful to know whether other islands, capable of acting as stepping stone islands for humans, existed between Scilly and the mainland. The Seven Stones and other submerged rocks may have remained usable islands for millennia (Hosfield *et al* 2008).

In regard to accessibility, Scilly is visible from the mainland despite the 45km of current sea gap. Potential past usable islands at Wolf Rock or Seven Stones would reduce sea distances to some 32km, but given the low altitudes would not much improve inter-visibility. In human history the earliest evidence for sea travel beyond the sight of land dates to the Upper Palaeolithic in Melanesia, where the island of Manus was settled. More locally we might compare Scilly to St Kilda, the most famous of Atlantic archipelagos, which has evidence of occupation in the Neolithic (Fleming 2005). Scilly in the Neolithic would have attained a similar altitude as today, 50m. By comparison, St Kilda reaches 430m and is 64km from the stepping stone islands of the Outer Hebrides. At the end of the Neolithic in c 2500 cal BC Scilly had an estimated area of 31.7 sq km (Charman *et al* 2012) while St Kilda had an area probably similar to today of 8.5 sq km. Both island groups are situated in the Atlantic and both could be seen from their nearest occupied neighbours. The conditions relating to St Kilda, in its small size and greater distance from neighbour, relative to Scilly, should indicate from an island biogeography perspective that the colonisation of Scilly was an easier undertaking. In regard to the evidence for Neolithic settlement on St Kilda, Fleming (2005, 54) concluded that 'it is obviously wrong to think of the archipelago as so 'marginal' that it was settled reluctantly and late, or so remote that any prehistoric culture must necessarily have developed an eccentric character.'

Anthropologists of migration point out that it is rare for colonisation to take place by *ad hoc* exploration, but is rather usually direct and to a known place. Once settlement has occurred connections with the source community are typically maintained. Causes of migration can be varied but in general fall into the category of either 'push' or 'pull' effects (*cf* Anthony 1990). A push effect occurs when there is an impetus in the home community for a group to depart; this may be, for example, a coping mechanism for population pressure, what Lewis Binford (1968) called 'budding off'. The alternative is the pull effect where there is something at the target destination which attracts people to migrate; this may be the exploitation of new (but known) resources. A further conclusion drawn from the anthropology of migration is that migration is rarely a single event, but more usually a process where the visits to a place only ultimately through time result in long-term residential relocation (Curet 2005). This assumes a migration

and can be considered in relation to the evidence for Scilly, but it may also be the case that new, particularly neighbouring islands come into the orbit of a community through expansion, and there are many circumstances where archipelagos and mainland are part of the same community. For the Aegean Sea Christos Doumas (2004) has noted that all islands have a corresponding part of a larger land mass, the mainland or a bigger island, with which they share cultural links; this he calls the *peraia*.

Moving beyond the direct associations between a community and its *peraia*, the Scilly archipelago, with West Penwith, is geographically located on a significant node in relation to what, following Sir Cyril Fox (1932), we may call the 'western seaways'. Since the first half of the twentieth century geographers and archaeologists have recognised the important influence of the sea in understanding the human history of the Atlantic archipelago. Much of the focus was on maritime routes connecting large parts of the central archipelago; that is, on the east side of Ireland and west side of Britain. Routes were envisaged plying in both directions through and across the Irish and Celtic Seas and heading south to the Bristol Channel, the south-west peninsula of Britain and to Brittany and Galicia and beyond. In the north these passed through the Inner and Outer Hebrides, continuing to the Northern Isles of Orkney and Shetland and beyond, towards the Faeroes, Iceland and Scandinavia. Jonathan Wooding (1996) has reviewed the character of the western seaways, noting the coastal geography, prevailing winds, currents, tides and shoals and off-shore rocks, and finds that 'The societies which have existed along the western sea lanes have regularly navigated these forbidding waters, finding various technological solutions to the conditions. Initially disconcerting, the conditions command respect, but are not so terrifying as to compel travellers to go overland by preference' (Wooding 1996, 6).

It is the long-term experience of these waters which is essential to their use and as such, it is not surprising that a number of the scholars of the western seaways were based at the University in Aberystwyth where the vista from their windows overlooking the Irish Sea may have helped shape their perspectives. Emrys G Bowen was professor of geography and anthropology and was the last great advocate of the western seaways concept in its first phase. Bowen (1970; 1972) provides a history of the development of thinking on this matter, showing that those educated in classical traditions were influenced by concepts of the Roman Empire where 'the sea divides; the land unites'. Later scholars such as O G S Crawford, H J Fleure and Sir Cyril Fox took the opposite view and can be seen to be influential in allowing the archaeologist Gordon Childe to imagine the Irish Sea as having 'grey waters as bright with Neolithic argonauts as the western Pacific is today' (quoted in Bowen 1970, 14). This view of the western seaways was taken up with vigour and they became identified as the source for everything from megalithic tombs (Daniel 1941) to Celtic Christianity (Bowen 1969). However, although such other luminaries of twentieth century archaeology as Christopher Hawkes, Stuart Piggott, Raleigh Radford and Charles Thomas had found good uses for the concept, in the 1970s few other academic scholars shared such vistas and, with prehistorians rejecting migrationist and diffusionist views of culture history, the western seaways fell out of favour. In the twenty-first century the western seaways have been revived by a new group of scholars, not that they completely went away, as illustrated in a review by Cummings and Fowler (2004). Many archaeologists are finding the role of communication by sea a useful explanatory framework for understanding both similarities and differences in the material remains in various periods of the prehistoric past (e.g. Cunliffe 2001). The nuanced interpretations available derived from the debates following the rejection of culture history as a descriptive and explanatory device. This means that archaeologists are now better able to interrogate and interpret exotic material and proxy indicators as evidence of overseas, and perhaps regular, contact, without compromising understandings of local identity and difference.

3 Palaeolithic and Mesolithic

Edited by Trevor Kirk with contributions from Kevin Camidge, Dan Charman, Ralph Fyfe, Charles Johns, Andy M Jones, Steve Mills, Jacqui Mulville, Amelia Pannett, Paul Rainbird, Helen M Roberts, and Robert Scaife.

3.1 Introduction

The main characteristics of Scilly's Palaeolithic and Mesolithic resource are summarised in this review. These periods make brief cameo appearances in earlier assessments of Scilly's archaeological resource but have produced scant archaeological and environmental evidence by comparison with Scilly's post-Mesolithic prehistory (Ashbee 1986; Ratcliffe 1989; Ratcliffe and Straker 1996; Johns *et al* 2004). However, the depth and quality of environmental data, especially for the Mesolithic, has been substantially improved by the results of the Lyonesse Project (Charman *et al* 2012) and there is emerging evidence for Mesolithic flintworking to supplement the only previously recorded flint scatter of this period at Old Quay, St Martin's (Pannett 2007). The main characteristics of Scilly's Palaeolithic (c 700,000 to 10,000 BP) and Mesolithic (c 10,000 to 6,000 BP) resource are summarised in this review.

3.2 Palaeolithic (c 700,000 – 10,000 BP)

3.2.1 Landscape and environmental background

Current knowledge of the Palaeolithic environmental background of Scilly was summarised recently for the South West Archaeological Research Framework (Hosfield *et al* 2008, 27). The earliest pollen evidence for vegetation in the Devensian in south-west England is from Scilly and published by Scourse (1985; 1986; 1991) as part of his research investigating the extension of the Irish Sea glacier. Formerly it was thought that glacial ice did not spread as far as the south of England in the last glacial episode (c 21,000 BP) but his research suggests that it reached the northern flanks of Tresco, Bryher and St Martin's. The resulting glacial deposits include flint (originally from the floor of the Irish Sea) that was subsequently exploited by prehistoric communities in Scilly.

Scourse also carried out pollen analyses on organic lenses thought to have accumulated in small lakes or ponds during the build up of solifluxion of granitic head in Scilly. These are exposed in section at Carn Morval and Watermill Cove, St Mary's, and Bread and Cheese Cove, St Martin's, and the pollen suggested open, largely grassland-dominated herbaceous vegetation during the Upper Palaeolithic. Similar arctic tundra conditions were also identified in deposits from Porth Seal on St Martin's. High *pinus* values were interpreted as evidence of climatic deterioration (*cf* Hosfield *et al* 2008, 28).

3.2.2 Palaeolithic archaeology

The only possible Palaeolithic artefact from Scilly is an unprovenanced curved-backed point held at the Royal Cornwall Museum (Truro). This piece may be an Upper Palaeolithic 'penknife point', such as are found in cave sites throughout Britain (Berridge and Roberts 1986, 8-9; Fig 3.1), although similar points are also known from Mesolithic contexts on the mainland.

This artefact is an intriguing indication that people were visiting the archipelago during the climatic improvements ahead of the Younger Dryas cold spell. The penknife point, a member of the continental *Federmessergruppen*, ought to date to between 12,000 and 11,000 BP, after Scilly had become separated from the mainland. The distribution of earlier Upper Palaeolithic material from the Aurignacian (c 31,000 BP), has led Paul Pettit (2008) to propose a small-scale colonisation event taking in the west of Cornwall, presumably including Scilly, thus allowing for the possibility of finds from that period, although there is currently no other evidence of human presence in Scilly during the Palaeolithic.



Fig 3.1 The penknife point from Scilly (photo: Anna Tyacke)

3.2.3 The Isles of Scilly resource: aspects and prospects

The palaeoclimatic and palaeoenvironmental evidence from Watermill Cove Site of Special Scientific Interest (SSSI), St Mary's, is indicative of the potential for sites primarily known (or designated) for their geological qualities to illuminate the Palaeolithic environment and climate in Scilly. Extreme serendipity might also lead such sites to yield Palaeolithic material culture and/or fauna.

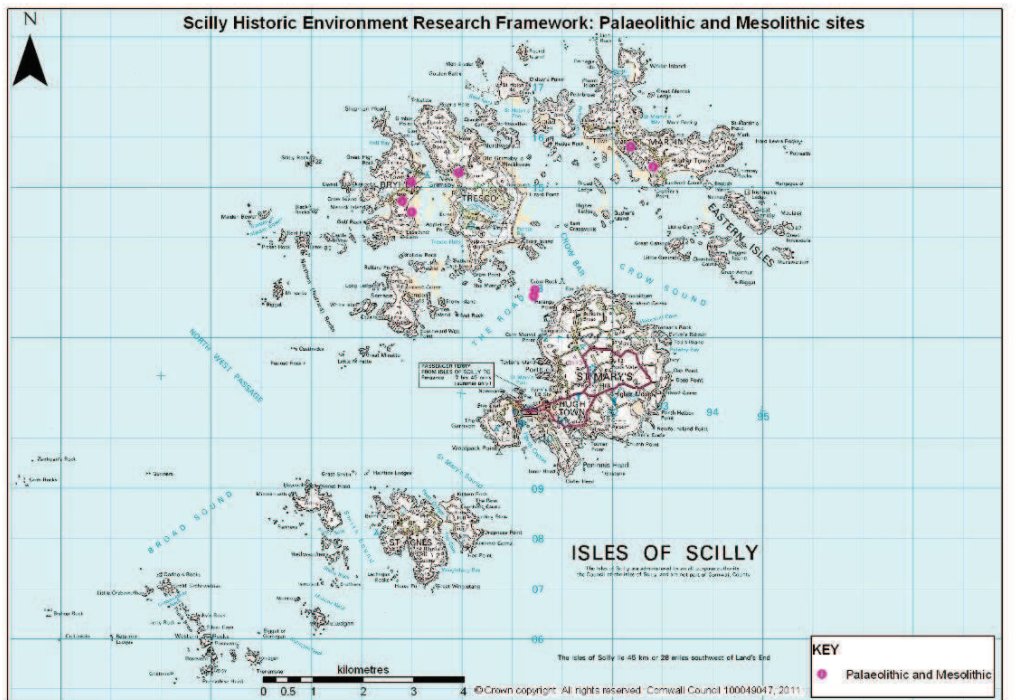


Fig 3.2 Distribution of Palaeolithic and Mesolithic sites recorded in the Cornwall and Scilly HER

3.3 Mesolithic (c10,000-6000 BP)

3.3.1 Landscape

The sub-surface bathymetry between the Isles of Scilly and Penwith, Cornwall, suggests that the archipelago may have been surrounded by the sea as early as c 12,000 BP (c 13,130–12,700 cal BC). Rocks, such as the Seven Stones and one or two others that are currently largely submerged, would have remained as islands for some millennia. Although this hypothesis is untested, a possible Late Glacial or Early Postglacial separation raises interesting questions related to island biogeography. The unusual small mammal fauna goes some way to support early island status. Pernetta and Hanford (1970) and Turk (in Butcher 1978, 99) discussed the apparently relict Postglacial survival of the root vole (*Microtus oeconomus*) and the presence of the Scilly Shrew (*Crocidura suaveolens*), which is only found on the islands (cf Hosfield *et al* 2008, 27).

Current evidence suggests that at the end of the last glaciation the archipelago may have consisted of a single landmass roughly 17km long and 8.5km wide stretching from the Western Rocks to the Eastern Isles and from Peninnis to Shipman Head (e.g. Johns *et al* 2004). As the ice sheets melted the sea level rose and perhaps by as early as 4,000 BC submergence of low lying areas led to the formation of a number of different islands. To the north the modern islands of St Mary's, Bryher, Tresco, and St Martin's were encompassed in one large island, while to the south St Agnes, Annet and the Western Rocks constituted three smaller tracts of land (Fig 3.3).

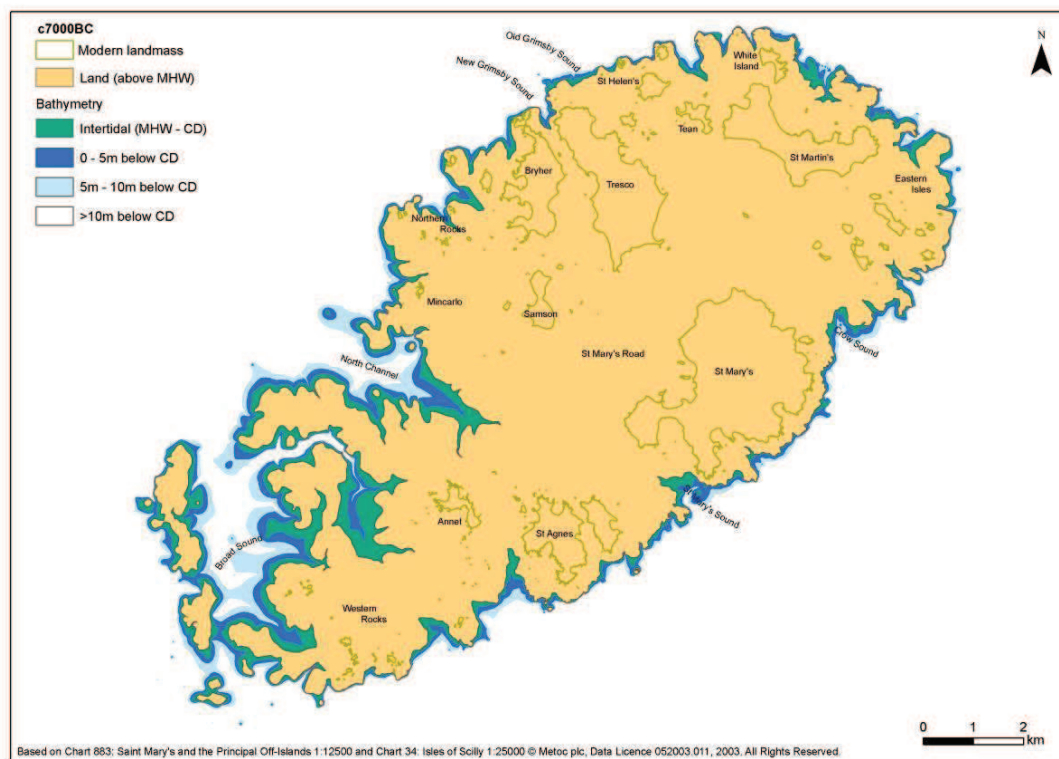


Fig 3.3 Inferred submergence model c 7,000 BC, based on data from the Lyonesse Project (Charman *et al* 2012) and shown as simulations of the modern Admiralty Chart. Land area (brown) is defined as above MHWs, and the intertidal area (green) as between chart datum and Mean High Water Springs (MHWs). Blue and white areas are below chart datum (dark blue 0 to-5 m CD, pale blue -5 to -10 m CD, white < -10 m CD)

3.3.2 Environmental background

The Mesolithic environmental background of Scilly was summarised recently by Hosfield *et al* (2008, 41) for the South West Archaeological Research Framework. The longest pollen sequence is that at Higher Moors, with Late Mesolithic oak-ash and hazel woodland at the base of the sequence (5725-5378 cal BC, HAR- 3695). Birch scrub in this context may indicate woodland regeneration following small-scale clearance by gatherer-hunters (Scaife 1984; Ratcliffe and Straker 1996; Hosfield *et al* 2008, 41).

The Late Mesolithic-Early Neolithic intertidal peats at Par Beach on St Martin's and at Porth Mellon on St Mary's indicate mixed deciduous woodland with birch, oak, hazel, lime, holly, alder and willow (Ratcliffe and Straker 1996; Hosfield *et al* 2008, 41).

Samples of intertidal peat taken from Porth Hellick, St Mary's, in September 2010 for the Lyonesse Project indicate establishment or expansion of hazel-oak woodland at the beginning of the Mesolithic: 9750-9280 cal BC (OxA-23858, 9945 ±60) and 9450-9280 cal BC (SUERC-32915, 9450-9280 cal BC) (Charman *et al* 2012).



Fig 3.4 Mesolithic submerged forest in St Mary's Roads (photo: Kevin Camidge)

A submerged forest was discovered on the seabed in St Mary's Roads by diver Todd Stevens in 2006. Subtidal samples from the site taken during the Lyonesse Project indicate rapid changes in Mesolithic forest conditions, although the deposits may be compressed and it is possible that the changes occurred over a longer period of time. The pollen spectra show a sequence of vegetation change through the Mesolithic period. A herb-rich grassland was gradually colonised by oak, birch and hazel woodland. A large peak in charcoal at the transition to the overlying peat is associated with a peak in birch and a decline in oak, suggesting possible disturbance or clearance by fire, followed by a phase which sees recovery of oak-dominated woodland, with an increasingly wet surface indicated by the presence of willow. The final phase sees a change to an open marsh dominated by sedges, changing to grass dominance, with increasing levels of salinity possibly from rising sea-levels (Charman *et al* 2012).

Lyonesse Project subtidal samples from the channel between St Martin's and Nornour indicate open ground with moderate-high saltmarsh indicators and low background

woodland in the later Mesolithic, at 5310-5050 cal BC (SUERC-32919, 6215 ±35) (Charman *et al* 2012).

3.3.3 The Isles of Scilly resource: aspects and prospects

Mesolithic flints are recorded at:

- Old Quay, St Martin's (assemblages from eroding cliff-face combine Mesolithic and Neolithic flints and Early Neolithic Hembury-style Ware);
- Knackyboy Cairn, St Martin's (borer-needle in association with flints in rock cleft);
- The Brow, Bryher (Mesolithic and Neolithic flints);
- The Town, Bryher (Mesolithic blade);
- Veronica Farm, Bryher (tranchet axe sharpening flake);
- New Grimsby, Tresco (possible Mesolithic bladelet);
- Halangy Down, St Mary's (geometric microlith);
- Porthcressa, St Mary's (unfinished pecked hammer); and
- Unprovenanced flints (including Larnian blades).

Ashbee (1986, 185) suggested that, although there was meagre positive evidence of Mesolithic occupation in Scilly, rising sea levels may have obliterated much evidence for occupation during this period. Artefactual evidence has not greatly increased in the last 25 years, the main discovery being the 20 or so pieces collected from the cliff face at Old Quay, St Martin's, which is the only identified Mesolithic flintworking site on the Islands (Ratcliffe 1989, 33; 1994, 13). Although the evidence is sparse, it has long been considered that Scilly was visited on a seasonal basis by groups of Mesolithic hunter gathers travelling by boat from the mainland (e.g. Ratcliffe 1989, 33; Ratcliffe and Johns 2003, 3).

In 2006 Amelia Pannett carried out an initial assessment of the lithics collection held by the Isles of Scilly Museum, as part of the 'Islands in a Common Sea Project' (Pannett 2007). Clear evidence for Mesolithic activity was present in the archive, with several collections of blades, many of which showed characteristic signs of Mesolithic technology: platform preparation and dorsal scar patterns indicative of the use of a carefully prepared blade core. Crested and truncated blades were also recognised, together with two roughly manufactured microliths (Pannett 2007).

Despite the unprovenanced character of the material examined in the lithic archive, it provided important details about the nature and potential of the resource on Scilly. The range of tools recovered by collectors is interesting and adds further to the current slight evidence for Mesolithic occupation in the Islands. Aside from the examination of excavated lithic assemblages, there are a number of known findspots which could be systematically investigated in order to recover complete *in situ* assemblages, in particular Old Quay on St Martin's and a further scatter of lithics from a garden on the south side of the island. Both assemblages would benefit from assessment, perhaps using a test pitting strategy to determine the extent and nature of the *in situ* material. Fieldwalking in available fields could also be undertaken to identify further scatters and determine their distribution within the landscape.

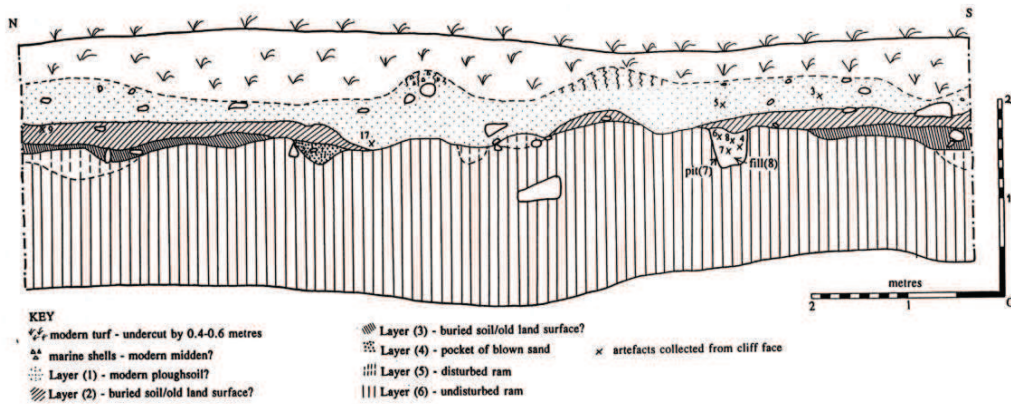


Fig 3.5 Detail from the cliff section at Old Quay St Martin's, drawn by CAU in 1993

It is possible that further Mesolithic flints from Scilly reside unidentified in museum collections (e.g. Royal Cornwall Museum, British Museum) and in private collections. Review of stone assemblages from Scilly by a lithic specialist may reveal previously unidentified Mesolithic material in existing museum archives and private collections. It is important that the results of such a review should be widely disseminated.

3.3.4 Animals

In common with more northerly British outer island groups, and unlike the Channel Islands (e.g. Lister 1995), there is no evidence for pre-glacial fauna on Scilly. Research suggests the islands were periglacial during the Ice Age and, while there is the possibility of continuity for some terrestrial species (e.g. the Scilly Shrew), the survival of any other species remains unknown. Even in the absence of terrestrial food species the Islands would have provided substantial marine resources for any early settlers. There is recent evidence suggestive of human occupation as early as the sixth millennium cal BC from burning events in the pollen record (Charman *et al* 2012) and this date is in agreement with data from Scottish isles where even the more remote northerly island groups, with a similarly sparse terrestrial fauna, were inhabited (e.g. Shetland and Orkney). British inner islands and coastal sites have provided the best evidence for early human animal interactions through the direct reconstruction of diets using stable isotope analysis of skeletal remains. Analysis revealed that Mesolithic people who lived relatively close to the coast relied on a wide resource base, exploiting a significant proportion of marine and terrestrial foods (e.g. Schulting *et al* 2003).

Paul Ashbee considered that the question of deer in Scilly was by far the most important concern for vertebrate fauna study, with bones of large and small red deer having been found at Halangy Porth, St Mary's, on St Agnes and on Nornour (Ashbee 1986, 194-5). It is possible that red deer had been introduced by the Mesolithic period and that woodland burning was intended to encourage the growth of new willow shoots that would attract red deer to feed (J Mulville, pers comm), supporting the idea of an early controlled, insular deer economy suggested by Ashbee.

There are indications, for example, that island environments in Scotland were being adapted for human use by the introduction of red deer, and any such Mesolithic activity in Scilly may be established archaeologically by proxy indicators from similarly introduced species.

The identifiable Mesolithic flints indicate that fisher-gatherer-hunter peoples exploited the resources of the Islands. Coastal inundation is likely to inhibit the search for sites of this period but well-preserved submerged remains from the Mesolithic have been identified in the Solent. The evidence of domestic cattle in a midden at Ferriter's Cove in south-west Ireland, dated to 4495-4195 cal BC, has been proposed as a seeding of

stock by Late Mesolithic peoples in an environment where indigenous large mammals had not existed prior to human seaborne colonisation (Woodman and McCarthy 2003). Domesticated cattle would only have been available on the European continent, suggesting long-distance contacts by sea, necessitating the rounding of the South West peninsula, perhaps even via Scilly, and showing that as far back as the Mesolithic contact by sea was not by necessity with nearest neighbours. As in many of the Scottish islands, deliberate seeding of red deer has been argued for Late Mesolithic Ireland, but it has also been proposed that the people there were more reliant on marine resources than their neighbours across the Irish Sea. This may have been true for the seasonal visitors to Scilly in the Mesolithic too, perhaps continuing into the Neolithic. In this regard, it is important to note the discovery and excavation of wooden fish traps along the former Liffey estuary in modern Dublin, the traps consisting of staked fences and baskets (McQuade and O'Donnell 2007). The pull effect for Mesolithic seafarers may have been Scilly's coastal flats, at a later stage inundated, providing myriad opportunities for the trapping of fish, with the outer shore providing hunting grounds for seal and sea birds. The Mesolithic-Neolithic transition in Scilly may be illuminated by further work at sites that have yielded material culture of both periods, notably Old Quay, St Martin's.

3.3.5 Transport

No remains of prehistoric boats have been found in Scilly. The most likely type of boat used by Mesolithic adventurers to the islands would have been hide boats made by stretching stitched-together animal skins over a lightweight framework of wood or wicker. This makes a very lightweight boat, which can be bowl- or boat-shaped. Hide boats vary in length from 1.5m (usually circular) to about 10m; 12m is the practical limit for this type of construction (McGrail 1998). Another common form of prehistoric boat is the log boat but European logboats are generally considered to be only suitable for use in extremely calm waters and not as seagoing craft (Ransley *et al* 2011). There is no evidence of mast steps or the use of oars in Europe until the middle of the first millennium BC: '*Mesolithic and Neolithic seamen would have used paddles*' (McGrail 2001).

3.4 Scientific dating

3.4.1 Radiocarbon dates

The 50 radiocarbon determinations listed in Figure 3.6 have all been calibrated using OxCal 4.1. Previous modelling of dates has not been used and all are expressed at the full 95.4% confidence level, rather than to the period to which the date may be weighted (for example at 89%). This means that the calibrated dates in the tables may vary significantly from the publications where they appear.

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
Q-2410	34,500+ 985 - 800	38284-36878	Porth Seal	Organic deposit	Scourse 1991
Q-2408	33,050+ 960 -800	36576-35040	Watermill Cove	Organic deposit	Scourse 1991
Q-2409	25,670+ 560 -530	28752-28332	Porth Seal	Organic deposit	Scourse 1991
Q-2356	24,490+ 960 -860	27651-26651	Carn Morval	Organic deposit	Scourse 1991

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
Q-2358	21,500+ 890 -800	24141-23256	Carn Morval	Organic deposit	Scourse 1991
SUERC-38109	11385 ±35	11410-11190	St Mary's Roads	Sediment humin fraction from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-38108	11315 ±40	11370-11150	St Mary's Roads	Sediment: humic acid from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-38104	11035 ±35	11150-10730	St Mary's Roads	Sediment humin fraction from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-38103	10950 ±35	11010-10700	St Mary's Roads	Sediment: humic acid from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-38102	10670 ±35	10740-10600	St Mary's Roads	Sediment humin fraction from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-38101	10535±35	10670-10460	St Mary's Roads	Sediment: humic acid from submerged clay & peat	Marshall <i>et al</i> 2012
OxA-23858	9945 ±60	9750-9280	Porth Hellick	Wood: single twig fragment, 19cm below surface of intertidal peat	Marshall <i>et al</i> 2012
SUERC-32915	9915 ±35	9450-9280	Porth Hellick	Wood: unidentified twig, 24cm below surface of intertidal peat	Marshall <i>et al</i> 2012
OxA-25790	9185±45	8550-8280	Great English Island Neck (Nornour Channel)	Charcoal, knotted wood fragment too distorted for identification, 0-1cm below surface of submerged peat	Marshall <i>et al</i> 2012
SUERC-40873	8740 ± 35	7960-7600	St Mary's Roads	Organic clay: humin fraction from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-40872	8375 ± 35	7540-7340	St Mary's Roads	Organic clay: humic acid from submerged clay & peat	Marshall <i>et al</i> 2012
OxA-25612	7490 ± 45	6450-6230	St Mary's Roads	Plant remains, indet. possible stem fragments from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-38100	7695 ±35	6610-6450	St Mary's Roads	Sediment humin fraction from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-38099	7500±35	6440-6250	St Mary's Roads	Sediment humic acid, from submerged clay & peat	Marshall <i>et al</i> 2012
SUERC-28995	6980 ±35	5990-5750	St Mary's Roads	Peat: humic acid, 27-28cm below surface of submarine peat	Marshall <i>et al</i> 2012
HAR-3695	6630±100	5725-5378	Higher Moors	Peat	Scaife 1984
HAR-3695	6630±100	5490-5050	Higher Moors	Peat	Scaife 1984
SUERC-40883	6325 ± 35	5370-5220	St Mary's Roads	Peat: humic acid, 20-21cm below surface of submarine peat	Marshall <i>et al</i> 2012

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
SUERC-40884	6315 ± 35	5370-5210	St Mary's Roads	As SUERC -40883	Marshall et al 2012
SUERC-26629	6230 ±35	5310-5060	St Mary's Roads	Wood (<i>Betula</i> sp.) embedded in eroded surface submarine peat	Marshall et al 2012
SUERC-32919	6215 ±35	5310-5050	Great English Island Neck (Nornour Channel)	Monocot stems, <i>Phragmites</i> ? 2 cm below surface of submerged peat	Marshall et al 2012
SUERC-28994	6175±30	5220-5020	St Mary's Roads	Wood (<i>Alnus glutinosa</i>) just below upper charcoal peak	Marshall et al 2012
SUERC-40877	6170 ± 35	5220-5000	St Mary's Roads	Peat: humic acid, 11-12cm below surface of submarine peat	Marshall et al 2012
SUERC-40882	6170 ± 35	5220-5000	St Mary's Roads	Peat humin fraction, 14-15cm below surface of submarine peat	Marshall et al 2012
SUERC-40881	6160 ± 35	5220-4990	St Mary's Roads	Peat: humic acid, 14-15cm below surface of submarine peat	Marshall et al 2012
OxA-25613	6130 ±40	5220-4940	Great English Island Neck (Nornour Channel)	c 30 monocot stem fragments, 1 cm below surface of submerged peat	Marshall et al 2012
OxA-22484	6134±34	5220-4960	St Mary's Roads	Wood (<i>Betulaceae</i>) embedded in submarine peat 14-15cm below surface. Major decline in tree pollen	Marshall et al 2012
SUERC-40876	6120 ± 35	5210-4940	St Mary's Roads	Peat: humic acid, 11-12cm below surface of submarine peat	Marshall et al 2012
SUERC-38084	6040±35	5050-4830	St Mary's Roads	Monocot stem fragments + wood fragments, 27-28cm below surface of submerged peat	Marshall et al 2012
SUERC-28993	6010±35	5000-4790	St Mary's Roads	Leaf (<i>Phragmites</i> sp.) from seabed peat	Marshall et al 2012
SUERC-40875	6010±35	5000-4790	St Mary's Roads	Peat: humic acid 1-2cm below surface of submarine peat	Marshall et al 2012
OxA-25614	5995 ±40	5000-4780	Great English Island Neck (Nornour Channel)	2 monocot stem fragments, 5-6 cms below surface of submerged peat	Marshall et al 2012
SUERC-40874	5965±35	4950-4720	St Mary's Roads	Peat: humic acid, as SUERC-40875	Marshall et al 2012
SUERC-26631	5860±35	4800-4620	St Mary's Roads	Wood (<i>Salix</i> sp.) from submarine peat	Marshall et al 2012

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
OxA-25690	5784±33	4720-4540	St Mary's Roads	Wood (<i>cf Salix/Populus</i> sp.) 21-22cm below surface of submerged peat	Marshall <i>et al</i> 2012
OxA-23861	5720 ±55	4710-4450	St Mary's Roads	Unidentified woody stems, 9-10 cms below surface of submarine peat	Marshall <i>et al</i> 2012
SUERC-26630	5680 ±35	4610-4450	St Mary's Roads	Leaf: <i>cf Phragmites</i> sp. embedded in surface of eroded submarine peat	Marshall <i>et al</i> 2012
GU-5222	5410±70	4366-4046	Par Beach	Oak in surface of intertidal peat	Ratcliffe and Straker 1996
GU-5061	5210±50	4230-3947	Par Beach	Base of intertidal peat deposit	Ratcliffe and Straker 1996
OxA-21892	5614 ±37	4540-4350	St Mary's Roads	Leaf: <i>cf Phragmites</i> sp. (D Charman) – not the same leaf as SUERC-26630. Embedded in surface of eroded submarine peat	Marshall <i>et al</i> 2012
SUERC-38241	5590 ± 30	4490-4350	St Mary's Roads	Twig and seeds (<i>Betula</i>), 9-10cm below surface of submerged peat	Marshall <i>et al</i> 2012
OxA-25681	5570±32	4460-4340	St Mary's Roads	Wood (? <i>Betula</i> , not oak). As SUERC-38241	Marshall <i>et al</i> 2012
SUERC-32918	5445 ±30	4350-4240	St Mary's Roads	Bulk: <i>Phragmites</i> stems, 9-10 cms below surface of submarine peat	Marshall <i>et al</i> 2012
OxA-25680	5435±32	4350-4230	St Mary's Roads	Wood (? <i>Betula</i> , not oak), 2-2.5cm below surface of submerged peat	Marshall <i>et al</i> 2012
SUERC-32917	5360±30	4330-4050	St Mary's Roads	Wood (unidentified stem fragment), 0-1cm below surface of submarine peat	Marshall <i>et al</i> 2012

Fig 3.6 List of Palaeolithic and Mesolithic radiocarbon dates

3.4.2 OSL dating

Optically Stimulated Luminescence (OSL) dating was carried out on quartz from an intertidal sample recovered from Porth Hellick and Porth Mellon, both on St Mary's (Roberts, in Charman *et al* 2012).

Location	Lab no.	Context	Material	OSL Age	Calibrated date (95% confidence)
Porth Hellick, St Mary's	184/LPPH-1A	0.16 ± 0.01m	Quartz	12970 ±690 BP*	12350-9580 cal BC
Porth Mellon, St Mary's	161/LPPM1-1	15-17cm below surface of intertidal peat	Quartz	4750 ±1210 BP*	5170-3210 cal BC

Fig 3.7 List of Palaeolithic and Mesolithic OSL Ages expressed as years before AD 2010, rounded to the nearest 10 years

4 Neolithic and Early Bronze Age

Edited by Andy M Jones from contributions by Eleanor Breen, Kevin Camidge, Dan Charman, Ralph Fyfe, Duncan Garrow, Charles Johns, Trevor Kirk, Steve Mills, Jacqui Mulville, Amelia Pannett, Henrietta Quinnell, Paul Rainbird, Helen M Roberts, Gary Robinson, Katharine Sawyer, Fraser Sturt and Robert Scaife.

4.1 Introduction

The Isles of Scilly contain a large number and diverse range of Neolithic and Early Bronze Age sites and artefacts ranging from pottery through to entrance graves, which are now thought to be of Bronze Age date. The Islands also hold a wealth of environmental data in the form of buried peat deposits. The rich archaeological record and the Islands' position at the 'gateway' to the Atlantic façade means that there is the potential for major research questions relating to the transition to the Neolithic, as well as questions relating to patterns of exchange and contact throughout the Neolithic and Bronze Age periods. The main characteristics of Scilly's Neolithic and Early Bronze Age (c 4000 cal BC to 1500 cal BC) resource are summarised in this review.

4.2 Chronology

While it is accepted archaeological terminology it must be emphasised that it is artificial to draw a boundary between the Late Neolithic and the Early Bronze Age. At a national scale the Bronze Age marks the introduction of metalwork, changes in pottery styles, the increased occurrence of single burial traditions and changes in monumental building. At a regional scale there are hints at broad changes in religious, agricultural and social practices during the later half of the third millennium cal BC, but there is also evidence for a large measure of continuity in the archaeological record. Present evidence might suggest that Scilly was not permanently settled until the Early Bronze Age and that the few Neolithic artefacts and features found represent occupation of a more temporary nature. However, with the exception of the tor enclosures and quoits in Penwith and taking into account the small scale of the Islands, the evidence may not be that different from the mainland – i.e. small pits, pottery and flints – and Cornwall is not considered to have been unpopulated during the Neolithic.

The Early Bronze Age of Scilly saw major interventions within the Island landscape. The archaeological record for this period is marked by burial and ceremonial monuments such as entrance graves, cairns and standing stones, and an apparent absence of recognisable settlement. Because of the very definite increase of burial-type monuments in Cornwall during the full Early Bronze Age after 2000 BC, a Beaker phase is distinguished between 2500-2000 BC, although there is currently only one sherd of possible Beaker pottery from Scilly (from Bonfire Carn, Bryher).

For the purposes of this chapter the periods have been broken down as follows: Early Neolithic (c 4000 cal BC to 3400 cal BC); Middle to Late Neolithic (c 3400 cal BC to 2500 cal BC); Beaker phase (c 2500-2000); Early Bronze Age (c 2000 to 1500 cal BC). Tables of radiocarbon determinations and OSL ages relating to the period are presented at the end of the chapter (Figs 4.13 and 4.14).

4.3 Environmental background

By the beginning of the Neolithic period St Agnes and the other western islands had separated from the main island, and the development of a more extensive intertidal zone continued throughout the period. St Mary's Roads, which had previously held freshwater marsh, was succeeded by saltmarsh by c 4000 cal BC (Fig 12.6). By the end of the Neolithic in 2500 cal BC a major change to the main island group had occurred, with tidal flooding between the islands at high tide. Tresco, Bryher and Samson remained joined at all times but some areas between St Martin's and Tresco and a wide area of St Mary's Roads were below MHWS and consequently flooded during many high tides (Fig 4.1; Charman *et al* 2012).

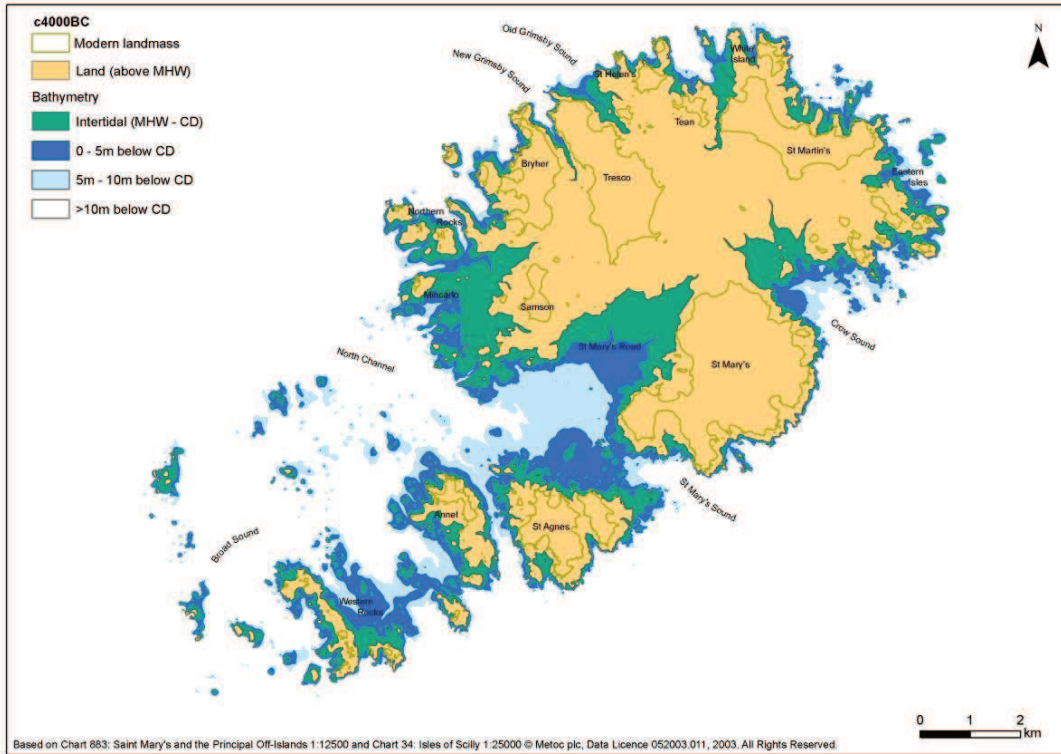


Fig 4.1 Inferred submergence model, c 4000 cal BC, based on data from the Lyonesse Project (Charman et al 2012); all details as in Fig 3.3

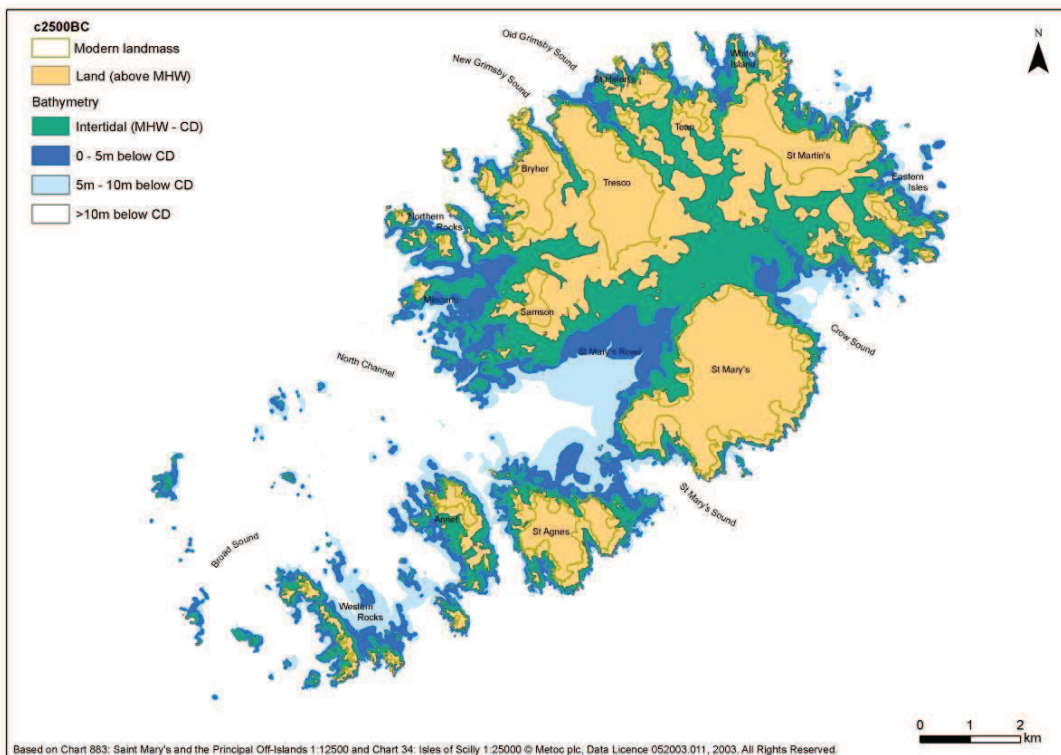


Fig 4.2 Modelled land and intertidal areas, c 2500cal BC; all details as in Fig 3.3

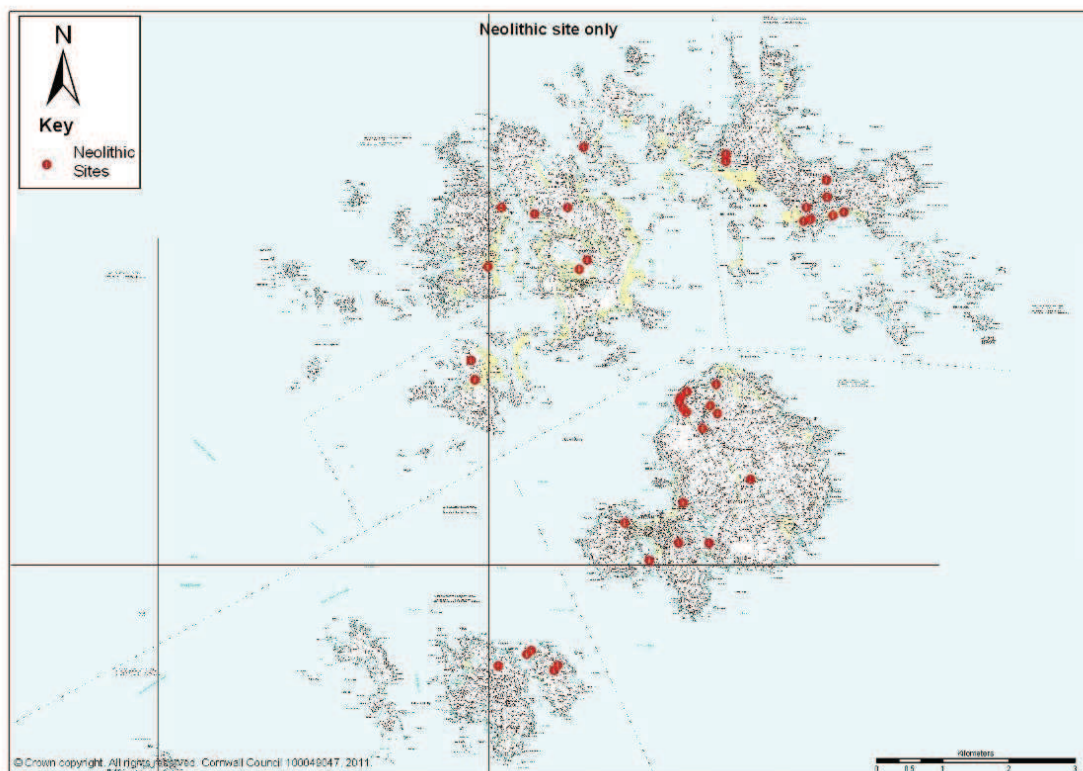


Fig 4.3 Distribution of Neolithic sites recorded in the Cornwall and Scilly HER

The Neolithic and Early Bronze Age environmental background of Scilly was summarised recently for the South West Archaeological Research Framework (Wilkinson and Straker 2008, 72). There are three published palynological studies of Neolithic and Bronze Age environments from the Islands (Ratcliffe and Straker 1996, 32). The longest and best known pollen sequence is from Higher Moors on St Mary's (Scaife 1984), which begins in the Mesolithic at 5725-5378 cal BC (HAR-3695) and indicates oak woodland with an understorey of hazel (Wilkinson and Straker 2008, 72).

The picture of the Neolithic environment is of localised disturbance of woodland, while the main phase of clearance, eventually leading to the present heathland environment, dates from the Late Bronze or Early Iron Age (Dimbleby *et al* 1981; Scaife 1984; Ratcliffe and Straker 1996, 33). The prominence of birch in the Neolithic flora of the Isles of Scilly is notable, especially given that it is a minor component of woodland elsewhere in the South West at this time. Nevertheless, given that most studies have been carried out on St Mary's, it is at present uncertain how widely any of these interpretations can be applied to other islands in the archipelago. Even on St Mary's there are many local variations in the vegetation despite its small area (Wilkinson and Straker 2008, 72).

At some point prior to the Middle Bronze Age, 1608-1056 cal BC (HAR-3694), there was small-scale woodland clearance at Higher Moors; cereal and ruderal pollen suggest this was for cultivation. Later in the Bronze Age the woodland regenerated and birch rose to dominance, although cereal and herbaceous pollen were still present, indicating continued cultivation. Organic deposits associated with a radiocarbon date of 4230-3947 cal BC (GU-5061) were investigated at Par, or Higher Town, Beach, St Martin's, in the early 1990s (Ratcliffe and Straker 1996, 19). These contain pollen spectra indicative of hazel-oak woodland during the Earlier Neolithic. Later (but before 3486-3017 cal BC, GU-5060), birch had colonised and replaced much of the hazel, but unlike

at Higher Moors there is no evidence of forest clearance. Palynological examination of a later coastal peat exposure at Porth Mellon, St Mary's, dating to 3263-2703 cal BC (GU-5394), suggests local woodland dominated by birch, with a lesser component of hazel and oak. After 2866-2204 cal BC (GU-5396) lime appears and oak becomes a more prominent element of the local woodland, but once more there is no evidence of clearance (Ratcliffe and Straker 1996, 25; Wilkinson and Straker 2008, 72).

Analysis from a peat sample taken at Porth Mellon, St Mary's, during the Lyonesse Project in 2010 suggests a slight decline in birch, hazel and oak woodland cover and an increase in open disturbed or pastoral grassland during the Late Neolithic or Early Bronze Age (OSL age of 4750 ±1210 in an interbedded sand layer). The range of herb pollen and the absence of saltmarsh plants suggest drier grassland well above any tidal influence.

4.4 Landscape

4.4.1 The landscape context of monuments

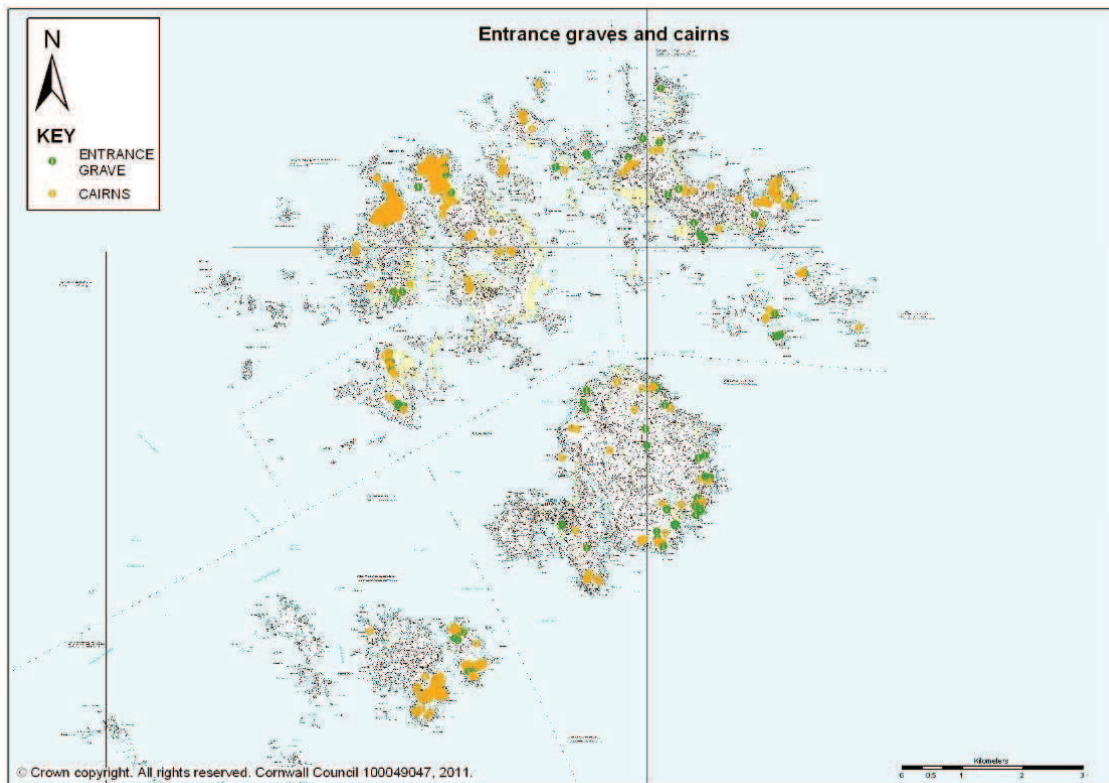


Fig 4.4 Distribution of entrance graves and cairns in Scilly

Entrance graves occur around the current coastline of the archipelago where they are a feature of higher ground (Fig 4.4). They usually occur in clusters, as on Porth Hellick Down, or as linear groupings of monuments, as on North and South Hill, Samson. They are not evenly distributed throughout the archipelago being absent from St Agnes, Ganilly and Annet and with restricted distributions on Bryher and Tresco. Over 40% occur in only three locations: the island of Samson; Porth Hellick Down, St Mary's, and Kittern Hill, Gugh. While it has been argued that proximity to the sea may have been an important aspect in their landscape setting they are absent from areas on the periphery of the archipelago, such as Shipman's Head Down, Wingletang Down and Peninnis Head, which command the most extensive views over the sea. It should be noted that this is their present day distribution and there is evidence for inland sites on

St Mary's being destroyed for agriculture in the late nineteenth and early twentieth centuries (Robinson 2007).

There is an interesting absence in Scilly of earlier megalithic tombs such as portal dolmens which are found in Penwith, Ireland, and France. It is possible that 'propped stones' could have acted as small megalithic tombs although none of these have been dated (see below, section 4.4.2)

The overall distribution of cairns is different to entrance graves, although they are also found predominantly on high ground around the coastline (Fig 4.3). Most significantly, cairns occur in large cairnfields on exposed headlands around the periphery of the archipelago, notably on Wingletang Down, St Agnes, Shipman Head Down, Bryher, Castle Down, Tresco, and Chapel Down, St Martin's. The location of cairns around the periphery of the archipelago is emphasised further by the presence of cairns on small, barren rocky islets such as Menawethel and Round Island.

The majority of standing stones or menhirs are found in the northern part of St Mary's, with one on Gugh and three on St Martin's. Most are on hilltops, ridges or slopes. The site of a destroyed example on St Mary's is at the highest point of the Islands. Two other stones are in very prominent positions and can be seen from some distance. The distribution pattern emphasises the north and east coast of the archipelago, which Robinson (2007, 126) considers may relate to the importance of the easterly approach by seafarers to the Islands.

A possible stone row has been recorded on Par Beach, St Martin's, located midway along the beach between the high and low tide (Fulford *et al* 1997; Ratcliffe 1990, 22, figs 8 and 9) (below, Section 4.7.3). Two more stone alignments were identified on Castle Down/Tregarthen Hill, Tresco, by Dave Hooley during the Monuments Protection Programme (MPP), the status of which is supported by Tom Greeves (pers comm to Charles Johns).

No stone circles have so far been confirmed on Scilly, although Borlase (1756) described a stone circle or 'Druid Temple' on Salakee Down, St Mary's, the site of which has recently been identified and recorded (Seaney 2010a). The stones appear to be natural, most of them being earth-fast boulders defining a platform of bare rock. Despite being natural, they may be significant as they are set in the wider Bronze Age ceremonial landscape of Salakee and Porth Hellick Downs. Two possible submerged stone circles have been reported to the west and south of Samson.

Thomas (1985) suggested there was a considerable period of agricultural land use before the construction of entrance graves and it has been suggested that six entrance graves post-date cultivation lynchets; i.e. terraces formed on sloping ground by the downhill movement of cultivated soil (Coate 1994). Bant's Carn (Fig 4.4) and Upper Innisidgen Cairn on St Mary's appear to sit on earlier lynchets; a lynchet runs up to the east side of Lower Innisidgen entrance grave; the entrance grave on John Batty's Hill, St Martin's, appears to sit on top of a low lynchet; one of the entrance graves on the island of Arthur in the Eastern Isles stands on the lip of a lynchet; and Obadiah's Barrow on Gugh seems to be set into a lynchet, apparently post-dating its establishment (Coate 1994, 35-5, 64-5). An entrance grave at the foot of Halangy Down merges into a lynchet that partly overlies it. The discovery of a Neolithic flint adze or axe below Knackyboy Cairn on St Martin's may also indicate prior cultivation on the site (O'Neil 1952). Most of the Penwith entrance graves are sited within shallow valleys suitable for settlement or close to prehistoric field systems (Jones and Thomas 2010, 289).

The pits at East Porth, Samson, which contained the largest assemblage of Neolithic pottery so far found on Scilly were in a low-lying location that is now a beach but would have been about 1km inland in the Early Neolithic (Neal, forthcoming).



Fig 4.5 Buzza Hill, St Mary's, showing the entrance grave with Hugh Town beyond (photo: Cornwall Council)

4.4.2 The appropriation of natural topographic features

In Devon and Cornwall, tors and distinctive hilltops may have been referenced and embedded within the routines of everyday life, and in cosmological and mythical structures (Bender et al 1997; Tilley 1995; Pollard et al 2008). Enclosures were built around some tors as such as Carn Brea, Helman Tor and probably Stowe's Pound during the earlier Neolithic while other outcrops were the focus for pit groups or artefact deposition in crevices (cf Pollard and Healey (eds) 2008, 78).

The topography of Scilly contains landscapes and seascapes which may have been perceived to have held liminal or supernatural properties, in particular, granite tors and fantastical rock formations such as on Penninnis Head, St Mary's, and Wingletang Down, St Agnes; on a wild day the latter feels like the edge of the world, literally. It is difficult to believe that such tors and rocks did not have a comparable significance for the early inhabitants of Scilly as those on the south west mainland did for people there. Robinson (2007, 16-18, 115, 128) has touched briefly on this theme but there is considerable potential for further research and exploration of the phenomenology of natural features on the Islands.

Scourse (1986, 81, fig 31; 1987) defines four tor forms on the Islands: horizontal, vertical, fill slope and erode, each type relating to variations in their geological formation, exposure and erosion. Robinson (2007, 115) has observed that entrance graves are consistently located in close proximity to granite tors and that through this their builders were emphasising the importance of such features in their everyday world. In particular Robinson (*ibid*, 129), considers that the incorporation of earth fast boulders within monuments emphasised the significance of particular elements of the natural world. He also (*ibid*, 115) catalogues instances of artefact deposition in tors: a ceramic vessel at Yellow Rock Carn (Lewis 1948, 7); a Late Neolithic/Early Bronze Age dolerite adze and pottery at English Island Carn, St Martin's (Ransom 1984, 194); a bronze dagger and comb-impressed urn at Cruther's Neck, St Martin's; and a stone

macehead found below a rock prominence at Block House, Tresco (Ashbee 1974; Hencken 1932; Lewis 1948; Ratcliffe 1989).

A type of site recently recognised in Cornwall is the 'pseudo quoit' or 'propped stone', found on Bodmin Moor at sites such as Leskernick and Tregarrick by Peter Herring, and in Penwith, for example, on Carn Galva (Blackman 2011). None of the Cornish examples are currently dated, although Early Bronze Age pits have recently been recorded beside a stone-setting near Sennen (Jones *et al*, forthcoming). Further examples have been recognised on Dartmoor and in the Channel Islands. Similar constructions ('earth-fast' monuments), of probable Early Neolithic date, are known from south-west Wales (Cummings and Whittle 2009, 165). There are a number of these sites on Scilly, although no systematic record has been made and they are not recorded in the HER (Fig 4.6).



Fig 4.6 Possible propped stone on Gugh (photo: Richard O'Neill)

4.4.3 Settlement

No Neolithic settlements have been identified to date, although submergence will have destroyed any low-lying or coastal sites; as most surviving prehistoric houses are unexcavated it is possible that some may overlie earlier structures. On current artefactual evidence the earliest indications of occupation appear to be at Old Quay, St Martin's, followed by East Porth, Samson, Porth Killier, St Agnes and Bonfire Carn, Bryher (below, section 4.5.2.3). The identification of early settlement has only come to light through the careful excavation of later settlements demonstrating the potential importance of certain locales within the island landscape throughout considerable periods of prehistory. The absence of identified permanent houses on the islands during this period may suggest a degree of residential mobility. It is possible that, as on the mainland, flint scatters and pits are more typical signatures of Neolithic settlement activity than structures.

Little is known about Early Bronze Age settlement sites on Scilly and sites which have demonstrated evidence for Early Bronze Age occupation also show evidence for later activity. A number of early features located beneath later settlements may be related to the Early Bronze Age. At Little Bay, St Martin's, a stone-lined pit was located below the floor of a Middle Bronze Age house. The walls of this house partially overlay this pit and a hearth had been constructed directly above it (Neal 1983, 52). A radiocarbon date from the hearth provided a date of 2125-1533 cal BC (HAR-4324; 3490 ±100 BP) suggesting that the pit was an early feature of this site. A similar stone-lined pit was found beneath a prehistoric house at Perpitch, St Martin's (O'Neil nd g), although in this instance there is no independent evidence for its date.

Rectangular stone-lined box hearths are the earliest features of settlements such as English Island Carn, St Martin's, and Nornour. At English Island Carn a sanded area and hearth was found beneath the floor of a later house where it was sealed by a thick layer of ash and soil containing substantial quantities of comb-impressed and cord-impressed pottery (O'Neil nd h; nd k). At Nornour the earliest features of the settlement comprised three stone-lined hearths and an arc of postholes (Butcher 1978). The dating of many of these early features remains unclear, but they might relate to the late third or early second millennium cal BC.

4.5 The material world

4.5.1 Material culture

Neolithic and Early Bronze Age culture is represented in Scilly by assemblages and individual finds of bronze, ceramics, and lithics; organic components of the material culture such as wood or leather have not survived.

The impressions of cord in various forms and of 'matting' on the bases of Early Bronze Age pottery have great potential to inform us about various aspects of cordage, mats, basketry and sewn items; preliminary work suggests that impressions on Scillonian ceramics differ in subtle ways from those on the mainland, thus confirming the impression of a developing sense of identity among Island communities (Owoc *et al* 2003; Manske *et al* nd; M Owoc, pers comm to H Quinnell).

Imported objects or artefacts include a group of nine glass beads and a star-shaped faience bead from Knackyboy Cairn (O'Neil 1952) and occasional non-local stones, such as the pumice found in an entrance grave at Porth Hellick (Hencken 1932, 20) and in a pit containing Neolithic pottery at East Porth, Samson (O'Neal, forthcoming). The latter may have been casual beach finds retained for their exotic quality.

4.5.2 Material extraction and artefact production

Metalwork

A few items of Early Bronze Age metalwork have been found on Scilly: a dagger from a burial at the Carrion Rocks, St Martin's (Ashbee 1974, 325), a copper alloy awl from Obadiah's Barrow (Hencken 1932, 28, fig 12) and the possible terminal of a bronze armlet and clip from a bronze earring from Knackyboy Carn (O'Neil 1952, 30; Ashbee 1974, 241).

Faience and glass

Nine glass beads and a star-shaped faience bead were recovered from Knackyboy Cairn (O'Neil 1952; Ashbee 1974, 115).

Ceramics

Neolithic

Early Neolithic ceramics probably belong to the South Western or Hembury style, represented by a few small assemblages and some single finds. However, the range of forms present is limited at present to plain bowls, with a possible carinated example

from Porth Killier, St Agnes (Quinnell, in prep a); the few lugs known are imperforate. The more distinctive features of the south western style, such as trumpet lugs and broad shallow bowls, have not yet been found. Fabrics appear to be distinctive amongst the granite derived material on Scilly, the matrix well mixed without large inclusions but with distinctive chunks of granite minerals added. The fabric of the assemblage from East Porth, Samson, is slightly different. Its matrix, although granitic, is smoother and finer and its added inclusions are predominantly vein quartz (Quinnell, in prep b). It is presumed that these granite fabrics were made on Scilly but probably used clay deposited by larger streams than survive today. A sherd of Lizard gabbroic clay, similar to that of fine wares from Carn Brea on the mainland, comes from the cliff face site at Old Quay, St Martin's (Quinnell 1994), and, if confirmed petrographically, represents the only currently known ceramic import to the Islands in the Neolithic. Robinson's (2007, 140) suggestion that most Scillonian Neolithic pottery used mixed gabbroic and granitic material is not supported by Henrietta Quinnell's observations.

One assemblage, East Porth, Samson (Quinnell, in prep b), comes from a pit, while that from Old Quay, St Martin's (Quinnell 1994), came from unspecified contexts in the vicinity of a pit; the context of a third, at Bonfire Carn, Bryher, is uncertain (Quinnell 1994). The relationship of the possible carinated bowl sherds from Porth Killier to a cist needs further consideration (Quinnell, in prep a). Sherds or small scattered groups were recorded at five locations during the 1985 Electrification Project (Quinnell 1994). Robinson (2007, 65) reports Early Neolithic sherds from a midden on Annet but Henrietta Quinnell is dubious about this ascription. No Neolithic ceramics can now be attributed to entrance graves. The material suggested as Neolithic by Hencken from Bant's Carn (1932, 24) and North Hill on Samson (1933, 27), an identification frequently quoted, is not of this date. Hencken (1933, 14) never saw the sherd from Bant's Carn and that from North Hill should, in the light of modern knowledge, belong to the Bronze Age. Recently Katharine Sawyer has traced George Bonsor's drawing of a possible Early Neolithic bowl from Bant's Carn (Hencken 1932, fig 10 B) and this is clearly marked 'Halangy Porth' (Bonsor 1899-1900): there are first millennium cal BC finds from Halangy Porth and this vessel may be of this date (see below).

No Middle Neolithic Peterborough pottery or Late Neolithic Grooved Ware are yet known from the Islands. Peterborough ceramics are virtually unknown in Cornwall although Grooved Ware groups are now being found, with some eight sites known (Jones and Quinnell 2011).

The suggestion by Robinson (2007, 54) that the lowest deposit of vessels at Knackyboy Cairn, St Martin's, with horizontal rows of comb or cord impressions above the girth, represents a local Late Neolithic Scillonian style lacks supporting evidence.

No Neolithic material from Scilly has yet appeared in a published pottery report.

Beaker Phase

No Beaker pottery has definitely been identified although a possible sherd with comb stamping and cord impressions comes from Bonfire Carn, Bryher (Quinnell 1994). The sherd from Halangy Porth interpreted by Ashbee (1983, fig 9, No 3, 25) as Beaker-related is better regarded, in the light of subsequent work, as Later Iron Age (Quinnell 1994).

Early Bronze Age

For the Earlier Bronze Age there are only four or five possible examples of mainland vessel types recorded. A Collared Urn, possibly from Normandy Down, was petrographically examined by Parker Pearson (1990, 14, no 180) and contained greenstone, which suggested that this vessel had been imported from the mainland: Henrietta Quinnell's discussions with Katharine Sawyer and Gary Robinson suggest that the provenance is uncertain. Sherds from Porth Hellick Down 'Great Tomb' with impressed cord chevron decoration are illustrated by Hencken (1932, fig 9) and photographs provided by Katharine Sawyer have been examined by Henrietta Quinnell:

the fabric appears to be granitic, so of either Cornish or Scillonian manufacture. These appear to belong to the Cornish Trevisker sequence and to be the only examples of this ceramic type so far noted on the Islands. Trevisker cord impressed ceramics were produced through much of the second millennium cal BC (Jones and Quinnell 2011). A single sherd, apparently in granitic fabric, with plaited cord chevron impressions, was found on the beach adjacent to Building 1 at Nornour (Butcher 1968, 71, fig 34 no 134); this also appears to be Trevisker. P8 from Porth Killier, found away from the main Bronze Age settlement, had a zone of fingernail and twisted cord impressions very much in the Trevisker fashion (Quinnell, in prep a). The illustration of a vessel from Halangy Porth described as 'reconstructed' (Ashbee 1972, fig 14, no 14a) has twisted cord impressed decoration and simple lugs and could also have Trevisker affinities.

The most common prehistoric ceramic in Scilly is a style unique to the Islands, best described as 'Scillonian Bronze Age'. This is found both in burial-related contexts such as entrance graves and cairns and in domestic contexts such as hut circles and middens. The vessels are generally biconical, sometimes bucket-shaped, sometimes plain, but often decorated with comb or cord impressions or incisions above their girth; lugs of various shapes are frequent. These features are all found in the mainland Trevisker ware of the Early and Middle Bronze Ages. However, Scillonian Bronze ceramics differ from Trevisker in four principal ways: decoration is almost always arranged in horizontal lines; more complex geometric patterns are absent; biconical vessels tend to be more curved; and lugs are more frequent, as are undecorated vessels. A further feature is the presence on some vessel bases of impressions apparently formed by mats. All data currently available indicate that the ceramics are of granitic fabrics likely to have been made on the Islands. Ashbee (1976, 17) provides a clear description of various granitic fabrics from Bant's Carn in which mineral components derived from the granite appeared to have been added, in differing quantities, to water-sorted granitic derived clay. There has been no comprehensive study of types and the relationship of these to varying decorative traits or lack of them.

The majority of excavations of burial-related sites yielding Scillonian Bronze Age ceramics have never been published, notably those carried out by George Bonsor around a century ago, and some records survive imperfectly. Bonsor's finds, reported to have been deposited in the British Museum, could not be found until recently (Robinson 2007, Appendix U; Katharine Sawyer, pers comm to Henrietta Quinnell) and so have not been available to inform subsequent work. The most important publication of a ceramic assemblage from an entrance grave is that by Ashbee (1976) from Bant's Carn, which covers both his own excavations and Bonsor's earlier work. The Appendix to Ashbee's report provides a useful list of finds from investigated entrance graves with details of publications where these have taken place. Ashbee makes it clear that ceramics in entrance graves, while sometimes found in quantity, were frequently deposited as sherds. The illustrations of the Bant's Carn assemblage show a range of rather similar biconical vessels with curved walls and lugs, some plain, some with a variety of decoration, reconstructed from very small pieces. The overall shape of the vessels appears to have been influenced by the illustrations in O'Neil's (1952) interim report on Knackyboy Cairn. The only other report to reasonably modern standards is that by Grimes (1960, 170-180) on the entrance grave at Salakee Down, St Mary's. This yielded two vessels found in fragments, both plain with lugs.

The only cairn with useful ceramic data is that at Porth Killier (Quinnell in prep a), with a small group of undecorated but lugged biconical vessels from a cist. Dates from the Porth Killier cairn await publication. There are problems with the data from this site (Jeanette Ratcliffe, pers comm to Henrietta Quinnell), although this is probably due to disturbance of the stratigraphy by burrowing rats (Andrew Young, pers comm to Charles Johns).

Datable associated objects are restricted to the group of Early Bronze Age faience and glass beads from Knackyboy Cairn. Consequently an initial date for these ceramics can not be established. O'Neil's interim report (1952) of Knackyboy provides a strong

indication of a stratigraphic sequence: curved walled vessels with cord or comb impressions were first deposited and then overlain by cremated deposits which included the faience beads. The deposits above appear to have contained vessels with incised decoration, with plain vessels more towards the top. Robinson (2007, 56), has published an interpretation of this sequence in which he places the lowest level, and the cord impressed vessels, at a date preceding the Early Bronze Age beads, in the Late Neolithic. From this he moves to situate most initial entrance grave deposits in the third millennium cal BC (*ibid*, 60).

The first radiocarbon determinations from an entrance grave have just been obtained (Mulville and Sawyer forthcoming): the sequence of ten dates from cremated bone from Knackyboy Cairn on St Martin's all fall within the period 1742 to 1266 cal BC (2 σ), while a date of 1893-1742 cal BC has been obtained from cremated bone in a cist from Old Town, St Mary's (*ibid*) and Robinson's interpretation must be regarded as speculation until Knackyboy Cairn is published. Katharine Sawyer's current work towards a University of Exeter Doctoral thesis on entrance graves is expected to clarify much of the ceramic and artefactual data.

An Early to Middle Bronze Age date for the principal use of entrance graves is supported by comparison with data from the Cornish mainland. If the analogy between Scillonian Bronze Age ceramics and Trevisker ware is valid, then the former belongs broadly within the second millennium cal BC. Trevisker cord decorated ceramics appear to have been selected – as opposed to those with incised decoration – for Early Bronze Age burial deposition (Quinnell, in prep c). This fits well with the apparent primacy of cord impressed vessels at Knackyboy Cairn and their frequency at Bant's Carn. The recent publication of Bosiliack entrance grave in West Penwith has produced radiocarbon dates centred on the seventeenth and sixteenth centuries cal BC for that site (Jones and Thomas 2010, 275). Jones and Thomas also re-emphasise the close relationship between Trevisker ceramics and entrance graves at Ballowal and Tregaseal (*ibid*, 282), and redraw attention to an Early Bronze Age radiocarbon determination at Tregiffian (*ibid*, 284). In Cornwall large and complex structures associated with burial appear to belong to the Early Bronze Age, with small monuments in unobtrusive positions continuing the position into the Middle Bronze Age (Jones and Quinnell 2011). This background would be compatible with some continued use, or building, of smaller monuments in Scilly in the Middle Bronze Age.

Two settlement sites with stone houses dating to the Middle Bronze Age have produced radiocarbon dates suggesting some form of domestic activity in the preceding Early Bronze Age. That at Little Bay, St Martin's (Neal 1983, 52), was associated with comb stamped sherds. The Nornour data (Butcher 1978) shows a range of plain vessels with occasional comb or cord impressed and incised sherds, most clearly accessible in Robinson's representation (2007, 192-5). The Nornour data may include early phases of stone buildings. East Porth, Samson, has also produced an Early Bronze Age date from a hearth with a small ceramic assemblage; it was adjacent to a structure in the cliff not fully investigated (Quinnell 1994). It is possible (below) that much of the material from Halangy Porth belongs to the Early Bronze Age.

Flint and stone

Flint artefacts in Scilly are usually isolated finds, but at a number of locations worked flint has been found in sufficient quantities to constitute a flint scatter; the majority date to the Neolithic or Bronze Age and represent prehistoric flint working sites. Flint scatters have yielded a variety of implements such as scrapers, awls, knives, and arrowheads. The Cornwall and Scilly HER records ten flint scatters on St Mary's, Tresco, and St Martin's. Notable Neolithic items include the axe or adze from below the main cairn material at Knackyboy Cairn (O'Neil 1952) and a recent find of an axe or adze from the west shoreline of Bryher (Fig 4.6).



Fig 4.7 Neolithic axe or adze found on the west shoreline of Bryher c 2010 (photo: Carl Thorpe)

Amelia Pannett's assessment of the lithics collection held by the Isles of Scilly Museum is discussed above in Section 3.3.3. A number of plano-convex knives were identified, all manufactured on large flakes, with invasive pressure flaking along one edge of the dorsal surface and rounding at the distal end. These are characteristic of the Early Bronze Age. Several arrowheads were examined, including barbed and tanged, oblique, chisel and triangular forms. All date to the later Neolithic and Early Bronze Age. Two possible leaf-shaped arrowheads were also recognised, but both were very rough and could actually be poorly manufactured triangular forms (Pannett 2007).

A large number of flakes and blades had abrupt retouch along one or both lateral edges, and several showed tentative evidence for use in the form of edge damage. A number of notched flakes and blades were also recognised. Abrupt retouch had been utilised in the manufacture of awls and borers, a range of which was represented in the collections. In a small number of examples, a double tool form was recognised, with a scraper edge on one end, and the opposite end retouched to form a borer. These tool forms are, again, not particularly diagnostic of a period, and could date from the late Mesolithic to the Early Bronze Age (Pannett 2007).

Despite the unprovenanced character of the examined material in the lithic archive, it provides important details about the nature and potential of the resource on Scilly. Evidence for the later Neolithic and Early Bronze Age is abundant, as expected, but there is little or no evidence for the early Neolithic. It is possible that such evidence is present, but currently invisible within the collections due to a lack of clearly diagnostic pieces (such as leaf-shaped arrowheads) and full working assemblages (Pannett 2007). It has been noted that artefacts reflecting 'early post-Mesolithic flintworking traditions' have been recovered from the area towards Kallimay Point, St Agnes (Quinnell 1994, 9).

Katharine Swayer has identified five pumice objects from Scilly. A fragment of pumice was found in one of the pits containing Neolithic pottery at East Porth, Samson (Neal

forthcoming a), by Bonsor at Porth Hellick entrance grave (Hencken 1932), two pieces from the western section at Nornour (Buthxcher 1978), Little Bay settlement (Neal 1983) and a surface find made by Alec Gray near Bant's Carn (Gray 1972).

4.5.3 Art

The only recorded non-ceramic art of this period in Scilly is the large stone incorporated within a house at Halangy Down, St Mary's, the surface of which is decorated with a pecked-out geometric design that Ashbee suggests represents a stylised face (Ashbee 1966, fig 2; 1974, 153).

During recent fieldwork associated with the English Heritage-funded Lyonesse project previously unreported rock art has emerged, an image pecked into a native granite boulder lying on the East Porth foreshore, Samson. The 'cigar' or 'boat-shaped' image, approximately 300mm by 100mm and aligned north-south, lies on the flat surface of a very large beach boulder and incorporates a natural fissure as a central division (Fig 4.8). Photographs of the image have been shown to various rock art specialists but as yet no parallels have been identified. Invoking the image as an early representation of one of the boats used to access the islands is very tempting, but in the absence of dating evidence this cannot be confirmed and the 'boat' could just as easily be referencing the post-medieval tradition of pilotage or is not a boat at all.

4.5.4 Subsistence

Animals

A domesticated, neo-natal calf's tooth from Par Beach, St Martin's, apparently associated with late Mesolithic peat deposits, has been radiocarbon dated to the Early Bronze Age, 2270–2030 cal BC (OxA-X-2465-6; 3740 ±30), which makes it the earliest recorded osteological faunal remain from Scilly and also the earliest indicator of animal husbandry on the Islands (Ratcliffe and Straker 1996, 29; Marshall and Bronk Ramsey 2012). Otherwise the earliest recorded faunal remains date to the Middle Bronze Age.

Ceramic and stone vessels were probably used for the storage of cereals and other foodstuffs and there is the potential that residue analysis of the Early Neolithic ceramic assemblages will reveal information about vessels contents (for example, ruminant, porcine, dairy and marine fats) and provide indirect evidence for early foods, and it is planned to carry out such analysis of the Neolithic pottery from East Porth, as part of the current 'Changing Patterns of Marine Product Exploitation in Human Prehistory via Biomarker Proxies in Archaeological Pottery' project led by Richard Evershed of Bristol University and Jacqui Mulville of Cardiff University.

Plants

The earliest Bronze Age assemblage, recovered during the 1989-93 Coastal Erosion Project, was a cache of barley from East Porth, Samson, dating to 2198-1772 cal BC (OxA-3649, 3620 ±70). This almost entirely comprised a cleaned crop of naked, probably six-row barley, providing good evidence that it had become crop in its own right by the Early Bronze Age. Hulled barley grain constituted less than 1% of the total assemblage. There was no chaff and only a single charred spike rush, emphasising that this was cleaned harvest which may have been burnt accidentally prior to consumption (Ratcliffe and Straker 1996, 10).

4.5.5 Transport

'The Isles of Scilly stand as an important reminder as to the seafaring abilities of Neolithic and Early Bronze Age people within this region'

(Ransley *et al* 2011)

Exactly when Scilly was first permanently settled is a matter yet to be precisely determined, but what is certain is that the first visitors and settlers came by boat. No Neolithic seagoing boats have been found in Scilly, or anywhere else in Britain, but it is

important to keep sight of the effects sea level rise have had on Neolithic and Bronze Age coastlines; most prehistoric boats have been found in estuarine and inland contexts.

Island communities are important when considering maritime transport as seafaring is implicit in trading and migration. Any artefacts originating outside the islands, such as the sherd of gabbroic pottery from Old Quay, St Martin's, attest to the use of boats to carry goods and people across the sea.

Clark (2004b, 7) suggests that the archaeology of south-east England and nearest France indicate that there may have been a tribal connection which straddled the English Channel during the Bronze Age. He notes that the journey from Dover to the nearest contemporary site in France is 55km, although the coastal voyages attested by the shale in the Dover Boat and a nearby find of a Trevisker-type urn from Cornwall indicate distances travelled of 220 and 450km respectively in the Middle Bronze Age. By the end of the Bronze Age a maritime community may have been established utilising the connecting waters of the English Channel / La Manche and possibly stretching along the south coast of Britain as far as the south-west peninsula and Scilly. Materials and artefacts in bronze, amber and gold formed elements of contemporary material culture and indicate that these connections stretched north to Scandinavia and south to the Alps. In this connection it is interesting to note Stuart Needham's concept of a 'maritory' in the Early Bronze Age, linking south-west England with mainland Europe, as indicated by the Rillaton cup and similar contemporary items (Needham 2009), although there is very little evidence for the circulation of south west tin or copper before the middle of the Bronze Age (the tin slag recovered from an Early Bronze Age ring cairn at Caerloggas on the St Austell granite being one of the notable exceptions (Miles 1975).

Gabriel Cooney (2004) envisages hide-covered keeled *currachs*, a type known historically in Ireland, plying the western seaways from the Neolithic onwards. Plank-built craft have been considered less likely in the western seaways due to a supposed lack of suitable timber on these exposed and damp coasts, but it can equally be questioned, particularly for Ireland, as to where the large mammals were found to provide hides for *currachs* in the earliest periods. Both hides and wood can be imported (by people with the appropriate seacraft), as can complete vessels, and the presence of both hide and plank traditions in the western seaways should not at this stage be discounted. Indeed, two Bronze Age find-sites of plank boats are known from Caldicot and Goldcliff at the head of the Bristol Channel on the Welsh side of the Severn Estuary (Nayling and Caseldine 1997). Plank boats are regarded as more stable and robust craft compared with hide boats and the sewn-plank design may be an innovation based on the earlier sewing of hides (Van de Noort 2004). Roger Mercer (2003) has pointed out, however, that an advantage of hide boats is that they are lighter and more easily carried or hauled across the isthmus of a peninsula to avoid the potential dangers of rounding headlands by sea. Such a scenario would perhaps allow the avoidance of Scilly, and the strait between the islands and Cape Cornwall, by taking boats over the 8km of isthmus between Mount's Bay and St Ives Bay.

Scilly lies some 45km from Cornwall, 190km from France and 240km from Ireland. The Islands are visible from Land's End on a clear day and given the lack of any known navigational instruments in this period, sight of the destination from point of departure was probably important. The difficulties of such journeys undertaken in prehistory are often the subject of speculation: '*The undertaking was formidable, but it was never insuperable*' (Thomas 1985).

To put the journey into some sort of perspective it is worth considering a recent crossing to Scilly from Cornwall in small kayaks. On 2 May 2009 seven individuals travelled from Lamorna Cove in Cornwall to St Mary's in small fibreglass kayaks propelled with double-ended paddles. The wind was light (Force 2) but a considerable Atlantic swell was running (5-6m claimed). The journey took 10 hours and was completed by six of the seven canoeists. One interesting observation made by the

participants was that as Scilly is so low-lying, the islands were not visible from the kayaks until very close at hand. Although this journey was made with the benefit of modern navigation (GPS), lightweight fibreglass kayaks and an accompanying safety boat, it illustrates that the journey can be made using very small boats and paddles when conditions are relatively benign (The Big 5 Kayak Challenge 2011). Rainbird (2007) discusses how animals could be used to help navigate and subtle changes in wave patterns also indicate land before it came into view; Pacific navigators in canoes were able to steer between low atolls without intervisibility using these techniques

4.6 Social relations

Thomas (1985, 103-9) created a model for early settlement in Scilly, identifying five 'founder' settlement sites each with an associated entrance grave. All the sites were in original inland locations which were sheltered, favourable spots, and three had produced early finds. He proposed that some 50 or 60 people were the founder settlers of Scilly and that subsequent settlement and ritual monuments developed from these original sites: below Knackyboy Cairn on St Martin's; Gimble Porth, Tresco; East Porth, Samson; Halangy Porth, St Mary's, and a site below Kittern Hill, Gugh. He envisaged the initial settlement of Scilly as being dispersed rather than nucleated, with the development of a segmentary society expressing its territoriality through similarly dispersed monuments with no sign of hierarchy, although the varying size of different entrance graves could be seen as reflecting a difference in social status or perhaps in function.

Robinson (2007, 145-6) suggests that Early Bronze Age islanders did not fix their settlements within specific locales and that settlement of this period appears fluid and transient, perhaps moving to different locations within the archipelago dependant upon season and availability of resources. This would suggest a degree of residential mobility with relatively little rigid differentiation of settlement space. By this scenario, a distinct class of settlement site would not have existed in this period and those activities defined as domestic took place in different island landscape settings, as yet largely unrecognised.

The abundance of monuments during this period suggests that by the Early Bronze Age the archipelago contained a resident population. In contrast to settlements, monuments of this period are substantial permanent structures that emphasise and fix specific island locales.

4.7 Monumentality, ritual and burial

4.7.1 Entrance graves

Scillonian entrance graves are small chambered cairns, comprising a roughly circular mound of stone and earth, revetted by a kerb and containing a chamber. The Cornwall and Scilly HER records 92 entrance graves, four of which are destroyed and 11 of which are only alleged (Fig 4.3). Whilst higher concentrations of entrance graves are found on Scilly, similar monuments are found on the Cornish mainland – around 13 entrance graves have been recorded in West Penwith (Barnatt 1982; Jones and Thomas 2011; Ratcliffe 1989).

O'Neil and Hencken's classification of entrance graves draws attention to the standardisation of monument plans and the presence of an open chamber, and therefore the ability to re-enter and reuse the monument after its construction (Hencken 1932, 1933). Although some standardisation exists, the excavated evidence demonstrates a greater variety of monument forms than is implied through the application of a single classification. In practice, the nature of the standing field evidence makes it difficult to always make clear distinctions between open chambers and cairns containing sealed chambers or cists.

As discussed above, the dating of Scillonian entrance graves has been problematic in the past but the new radiocarbon determinations from Knackyboy Cairn indicate that

their principal use was in the Early and Middle Bronze Age (Mulville and Sawyer, forthcoming). Comparison has been drawn between the Scillonian entrance graves and similar monuments located within the Tramore region of County Waterford, Ireland (Piggott 1954; Powell 1941), as well as with Irish wedge tombs which are dated to the Early Bronze Age (Jones and Thomas 2010). Typological parallels could also be made with a group of small passage graves which run up both sides of the Irish Sea and have an arguably early date (Lynch 1975; Powell *et al* 1969).

Monument construction

The size of Scillonian entrance graves varies considerably, with examples ranging from 5.2m to 22.7m in diameter. The mounds of stone and rubble that comprise entrance graves do not appear to have any discernible structure, although as there have been only a small number of recorded excavations this observation may be misleading. Kerbstones may comprise orthostats or stones laid as coursed walling. Chambers are constructed of a mixture of orthostatic and coursed walling, held in place by 'trig' stones along their bases. Surmounting these walls, large capstones are placed across the chamber and levelled into place with smaller stones to form a roof. The shape of chambers is remarkably consistent, being widest at their centres and narrowing towards their entrances and terminals. Evidence from four monuments suggests that some chamber walls were plastered with clay: Buzza Hill, Innisidgen Carn and Lower Innisidgen, St Mary's, and Knackyboy Cairn, St Martin's (Ashbee 1974; Borlase 1753; 1756; Hencken 1932; 1933; O'Neil 1952). The orange plaster used within the chambers derives from clayey deposits found within the *ram* which set hard when exposed. Chamber entrances are frequently restricted, in some instances, as at Porth Hellick Down (Ashbee 1974, 80), by blocking stones. A number of entrance graves stand out from the majority in both scale and complexity. For example, at Porth Hellick and Bant's Carn, St Mary's, and Obadiah's Barrow, Gugh, entrance to the monument's chamber is gained via a seemingly open passage where first an extension collar or platform has been constructed (Ashbee 1974, 79).

A recurrent feature of entrance graves is the incorporation of earth-fast boulders in their construction. In a few instances, the grounders incorporated are substantial and would have been clearly visible within the monument after construction. This feature of monument construction is, however, not limited to entrance graves but is equally apparent within cairns (see discussion below). On Porth Hellick Down an entrance grave, known as Peter's Barrow, contains a large natural grounder that forms a large percentage of the monument whilst a second entrance grave contains a large weathered grounder which forms the back and one of the sides of its chamber (Ashbee 1974, 83; Robinson 2007, 130). Similarly at Knackyboy Cairn, the back and part of the northern side of the chamber is formed by large grounder (O'Neil 1952, pl XV) whilst on South Hill, Samson, the lower part of the chamber of an entrance grave is formed by a grounder around which the monument was constructed (Ashbee 1974, 84).

Funerary practices and deposition within entrance graves

Entrance graves are associated with a range of practices. At Obadiah's Barrow, Gugh, unburned disarticulate bones were found in a layer of hard blackish soil on the stone paving that formed the floor of the later chamber over which were inverted pots containing creamed human remains (Hencken 1932, 28; Hencken 1933, 21; Ashbee 1974, 108-9). At Knackyboy Cairn, St Martin's, and North Hill, Samson (O'Neil 1952; Hencken 1933, 22), the excavation of chambers revealed deposits of dark soil (containing small abraded pieces of pottery) below stone paving, but, in contrast to Obadiah's Barrow, no evidence for inhumation burials was found in either chamber. This may be due to poor preservation of human bone (due to the acid soils), inadequate and limited excavation and disturbance due to later reuse of their chambers.

Later burials placed within the chambers of entrance graves were usually within urns and occasionally accompanied by grave goods such as beads, bone artefacts,

metalwork and selected pebbles and stones. Chambers appear to have received a series of burials throughout their use, although in the majority of cases it is not possible to reconstruct a sequence of deposition. It is also unclear why some entrance graves such as Knackyboy Cairn or Obadiah's Barrow should contain large quantities of burials whilst others contain only a few or none at all. Whilst this discrepancy may be partly due to the small number of monuments excavated and perhaps to later disturbances (at least one of the Penwith entrance graves was used as a piggery) this alone cannot explain this phenomenon and it is likely that social factors played a significant role, such as circulation of bones or perhaps the spreading of ancestral occupation material onto the fields.

Whilst containment of the dead was certainly one function of these monuments, the most common recorded contents of these monuments are deposits of dark greasy soil. Ashbee (1982a) and Thomas (1985, 138) describe these deposits as containing soil, small sherds of pottery, charcoal, ash (not associated with cremations) and pebbles, and have interpreted them as representing the deliberate deposition of occupation debris. Some of this material – such as non-local stone like the pumice found at Porth Hellick (Hencken 1932, 20) – could be interpreted as 'grave goods' or ritual deposits, whilst others, such as topsoil and ash, are not so easily explained. The consistent deposition of this material within the chambers of entrance graves suggests that such deposits were intentional and significant. An alternative interpretation of these deposits is that they are the scraped up remains of funeral pyres. However, whilst funerary pyres would have existed on the islands, evidence for their identification is sketchy (Ashbee 1974, 116-117; Cornish 1874). Once the visible remains of cremations, such as human bone, were collected from the pyre and deposited within urns, the remaining material might comprise a dark oily deposit of ash and soil. The description of the contents of entrance graves as 'dark and greasy' or as 'strong unctuous earth that smelt cadaverous' (Borlase 1754, 54) might fit well with this interpretation, but also with the deposition of midden material (discussed below).

Interpretation of the origin and function of entrance graves

Since the mid-eighteenth century antiquarians and archaeologists have conjectured upon the function of the Scillonian entrance graves. Borlase was the first to classify these 'ancient Sepulchres' into 'Caves' (exposed chambers without cairn and surrounding kerb) and 'Barrows' (entrance graves with cairn and surrounding kerb) (Borlase 1756, 14). The number of these monuments in Scilly led Hencken (1932, 38) to suggest that these Islands may have been regarded as one of the special abodes of the departed in ancient times. The term 'entrance grave' has only been used to describe this type of monument since the 1940s; before that they were referred to as barrows, covered galleries or passage graves (Jones and Thomas 2010, 283). Ashbee (1981) has argued for a Mesolithic origin but they are now generally considered to date from the Early Bronze Age onwards as they do in Cornwall (K Sawyer, pers comm; Jones and Thomas 2010). Whatever their origins, antiquarians and early archaeologists saw entrance graves as tombs, whether for single, collective or successive burials, but in the last 40 years or so alternative interpretations have been offered (*cf* Coate 1994, 18-9).

As a result of his investigations into the relation between entrance graves and field systems, the use of occupational debris and the lack of burials in some examples, Ashbee (1976, 21) suggested that, other than being mausolea, their function might have been as cult monuments to counteract soil impoverishment and loss of fertility. It has been suggested that deposits such as ash and topsoil were derived from settlements and could represent a transfer of material from the world of the living to the ancestors (Thomas 1985, 142; Robinson 2007, 21).



Fig 4.8 The 'Giant's Grave', Porth Hellick, St Mary's (photo: Cornwall Council)

Thomas (1985, 108, 126) viewed the prehistory of the Islands as that of a segmentary society expanding into estimated territories (above, section 4.6). He suggests that even if the monuments housed burials they were not originally constructed as tombs but as territorial markers, an outward and visible expression of ownership of defined territories by defined groups.

Because entrance graves are mainly situated on the periphery of the Islands and many are not connected with field systems, Ashbee (1986, 199) suggested that they might also have a maritime connection, being intended to ensure continuing fertility of the sea. It has been noted that the chambers of many entrance graves and cists in cairns are boat-shaped (Thomas 1985, 144). Robinson also points out that entrance graves are consistently located close to granite tors, which would have been important navigation aids since the Mesolithic, and that through the construction of these monuments the knowledge and significance of these tors became embedded within the lives of prehistoric islanders (2007, 115-20)

Thomas and Jones (2010, 289), in the most recent exposition on entrance graves, suggest that the Penwith entrance graves may have been communal shrines as much as being repositories for the dead.

The transition between the Early (2500 BC) and Middle (1500 BC) Bronze Age sees the most rapid loss of land and the development of the greatest extent of intertidal area at any time in the history of Scilly. The land area reduced from 31.7 km² to 18.4 km², compared to the modern extent of the islands of 14.7 km², so the loss of land during the period 2500-1500 BC was equivalent to losing almost the entire modern area of the Islands. Changes to the island landscape would clearly have been perceptible over a single human lifespan and thus must have been part of the backdrop against which everyday life and cultural development took place. We know that in Cornwall there is a huge increase in ceremonial monuments, mainly barrows, after 2000 BC (Jones 2005, 138), so, while it may be coincidence that the period of principal use of entrance graves corresponds with this time of rapid landscape change in Scilly, it is also possible that

their proliferation represents a structuring of the Island population's response to the drastically shrinking landmass and the concurrent agricultural implications.

4.7.2 Cairns and cists

The Cornwall and Scilly HER records a total of 384 cairns in Scilly, the majority of which occur within cairn-fields. Few cairns have been excavated on Scilly and it is therefore difficult to construct a chronological sequence for these monuments. The only radiocarbon determination is from a small cairn at Porth Killer, St Agnes, which is dated to 2030-1667 cal BC (Wk-5690, 3512 ±70BP) (Ratcliffe *et al* forthcoming). Cairns in Cornwall date primarily to the late third and early second millennium cal BC, confirmed by radiocarbon determinations from several cairns and barrows (Jones 2005; Jones and Quinnell 2011). Rather than their contents, the main contrast between cairns and entrance graves is the lack of access to human remains in cairns after burial.

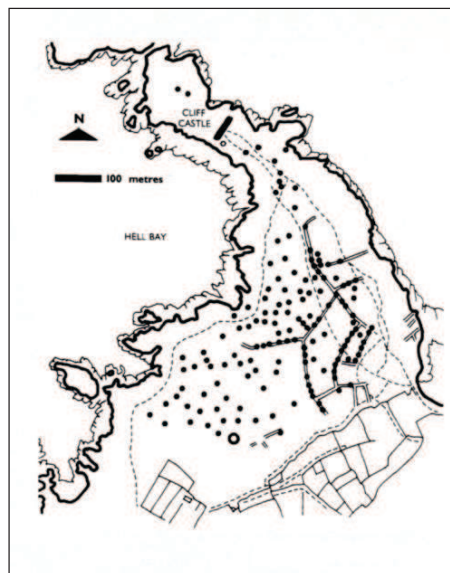


Fig 4.9 Plan of Shipman Head Down, Bryher: the black dots are cairns (© Cornwall Council)

The largest of the cairn-fields is located on Shipman Head Down at the north end of Bryher (Fig 4.9; Breen 2008). It comprises 134 cairns arranged in both clusters and rough alignments which follow slight ridges or contours. This cairn-field is located upon the highest and most exposed part of the headland within a zone enclosed by the 20m contour. The second largest cairn-field is on the highest contours of Castle Down, Tresco, comprising 78 cairns. The cairn-field on Wingletang Down, St Agnes comprises 43 cairns. At the remaining five cairn-fields (Chapel Down, St Martin's; Kittern Hill, and Clapper of Works Down, Gugh; and Peninnis Head Down and Salakee Down, St Mary's), a similar scenario occurs with cairns occupying exposed headlands.

Some of the cairns within cairn-fields have been interpreted as agricultural clearance mounds. This interpretation has arisen through their association with boulder walls that connect cairns such as those found on Shipman Head Down and Kittern Hill (Ratcliffe 1994; Thomas 1985; below, section 5.4.4). The sequential relationship between cairns and walls on the downs is difficult to determine and might only be clarified through excavation.

The interpretation of these walls as evidence for agricultural intensification has been considered problematic because these downs are the most barren and exposed places in the archipelago and are unlikely to ever have been exploited for agriculture, so that perhaps other interpretations for these stone structures should be sought (Lousley 1977; Thomas 1985, 132-3; Breen 2008). At the same time it should be remembered that the climate was more clement in the Bronze Age and that Bodmin Moor and the Penwith Moors, equally inhospitable today, contain considerable evidence of Bronze Age settlement and agriculture (see below, section 5.3.4, for further discussion).

A range of sizes and types of cairn occur on Scilly, all employing similar structural principles. However, due to the lack of excavation within cairn-fields we do not know how this variation relates to the use of these monuments. Most cairns are relatively small with visible diameters falling between 4m and 7m and seldom rising over 0.5m in height. In a small number of instances, however, larger cairns occur, with dimensions of up to 22m in diameter and 2.2m in height. Cairns vary in form, the most basic comprising small piles of loose boulders, whilst kerbs of orthostats surround others. Questions remain as to how many cairns contain burial deposits, but on the basis of excavated examples it would appear that a significant proportion contain stone-lined cists or burial pits (*cf* Thomas 1985, 129-33). In a few instances, such as North Hill, Samson, and Hillbenigates, St Martin's, cists beneath cairns have been identified through excavation (O'Neil *nd e*; Smith 1863), while in other instances the presence of a cist is suggested by depressions within the fabric of the cairn, resulting from antiquarian robbing. A cairn on North Hill, Samson, contained a carefully constructed central cist, held together with mortise and tenon joints, a technique more akin to woodworking than stone working (Smith 1863; Piggott 1941; Ashbee 1974).

Cists are also found on Scilly without covering cairns, as at Old Town (McKenzie 1965), Content Farm (Ashbee 1954) and Town Lane (Crawford 1928), all on St Mary's. The dating of these cists is problematic because of limited and poorly documented excavation and the apparent absence of datable finds, although a radiocarbon determination of 1893 – 1742 cal BC (3492 ±28; OxA-26373) has recently been obtained from cremated human bone from the Old Town cist (Mulville and Sawyer *forthcoming*). By analogy with similar monuments on the Cornish mainland, these monuments should belong to the early second millennium cal (Jones and Quinnell 2011). The classification of flat cists as a separate burial tradition to cairns should be treated with caution as, in a number of instances, archival reports suggest small cairns may once have covered them (Ashbee 1952-53, 30; O'Neil *nd a*).

A recurring feature of cairns is the incorporation of natural earth-fast grounders and outcrops. In a few instances, the grounders incorporated are substantial and would have been clearly visible within the monument after construction. The most striking example of this occurs on Castle Down, Tresco, where a large grounder, known as the 'Borlase Altar', is incorporated within a kerbed cairn (Quinnell 1978). Similarly, a large grounder covered in solution holes on Wingletang Down is encompassed within a kerbed cairn, while at Hillbenigates (also known as Flat Rock Hill) a cairn containing a cist was constructed directly on top of a large grounder, with the burial chamber constructed within a natural hollow in its surface (O'Neil *nd e*). These tor and boulder cairns are also a key feature of the Cornish Bronze Age where they are sometimes associated with multiple urned and unurned cremation burials (Borlase 1879; Tilley and Bennett 2001). On Scilly many entrance graves are also associated with natural rock outcrops (Ashbee 1974, 82-84). In some instances the similarity between these monuments may have resulted in misclassification.

4.7.3 Standing stones and stone rows

The Cornwall and Scilly HER identifies 13 possible standing stones, five of which are upstanding. These standing stones are found throughout the archipelago but little evidence for their date is available. An excavation at the base of a standing stone on Gugh (Fig 4.10) found no evidence of associated features or finds (Borlase 1756, 40). On Mount Flagon, St Mary's (Fig 4.10), and Higher Town, St Martin's, standing stones are found at the centre of small cairns, whilst at Gun Hill and Chapel Down, St Martin's, standing stones are used to form the sides of stone cists. A standing stone on Cruther's Hill, St Martin's, recorded as upstanding by Borlase (1756), lies fallen amongst gorse. Ashbee interprets a large stone incorporated within a house at Halangy Down, St Mary's, as a 'decommissioned' standing stone. The surface of this stone is decorated with a pecked-out geometric design which he suggests represents a stylised face (Ashbee 1966, fig 2; 1974, 153). Borlase recorded a standing stone, the 'High Stone'

on Peninnis Head, St Mary's, and this has been possibly identified as a now recumbent monolith (Seaney 2010b).



Fig 4.10 Standing stones: left Gugh (photo: Ian Dennis) and right Mount Flagon, St Mary's (photo: Cornwall Council)

A possible stone row has been recorded on Par Beach, St Martin's, located midway along the beach between the high and low tide (Fulford *et al* 1997; Ratcliffe 1990, 22, figs 8 and 9), it consists of three granite orthostats set along an east-west alignment and with an overall length of 15m. The location of a stone row on Scilly, within a coastal context, is without precedent and suggests caution. In 1949, O'Neil excavated a prehistoric house on Par Beach in close proximity to the suggested stone row (O'Neil nd a) uncovering two parallel rows of stones running along the beach, between high and low tide which he interpreted as field boundaries. The lower wall consisted of a single row of orthostats between which sections of coursed walling occurred. The location, description (except for the coursed sections), and alignment of this wall match well with that of the suggested stone row and it is possible that the lower wall identified by O'Neil and the recently identified stone row are the same feature. If this interpretation is correct, the higher of O'Neil's wall is now buried beneath sand dunes further up the beach. A photograph taken in 1990, when there was much less sand on Par Beach than today, shows one of the field boundaries and the stone row (Fig 4.11).

Two more stone alignments were identified on Castle Down, Tresco by Dave Hooley during the Monuments Protection Programme (MPP). Stone rows have a wide distribution in Britain, with concentrations in the south west on the uplands of Dartmoor and Bodmin Moor (Barnett 1982; Butler 1997; Johnson and Rose 1994).



Fig 4.11 A field boundary (centre right) and the possible stone row (top left) on Par Beach St Martin's in 1990; only the tips of the stone row are now visible (photo: John Poat)

4.7.4 Pits

The digging of pits and burying of pottery and other artefacts and deposits is a well-attested phenomenon in the British Isles during the later prehistoric period (*cf* Richards and Thomas 1984; Bradley 1990; Bradley 2007; Cole and Jones 2002-3; Jones and Reed 2006; Anderson-Whymark and Thomas 2011) and extensive archaeological evidence has been discovered in Cornwall for the curation and 'structured deposition' of broken potsherds, worked stone and other artefacts (e.g. Gossip and Jones 2007).

It has been suggested that the act of pit digging and deposition may have been intended to render activity memorable and fix a connection between people and place. In Cornwall the shape of pits and repertoire of materials placed in them seems to have changed little from the beginning of the Neolithic period into the Bronze Age, other than the changing ceramic types deposited in them, although it has been argued that the character of such pits generally developed over time, with more care taken over the objects selected and the pits themselves being better crafted (Cole and Jones 2002-3; Jones and Reed 2006).

A growing number of prehistoric pits are being identified in Scilly and their significance is being reassessed (see below, Section 5, for further discussion). Two pits excavated at East Porth, Samson, in 1971 contained the largest assemblage of Neolithic pottery so far found in Scilly, as well as some carefully selected stones and a fragment of pumice (Neal forthcoming a). Neolithic pottery was in the vicinity of a pit exposed in the cliff face at Old Quay, St Martin's (Quinnell 1994), and two nested vessels found in pits in a field near Kallimay Point, St Agnes, in 2007, are tentatively dated to the Early Bronze Age (Johns and Quinnell, forthcoming).

4.8 National and international context

4.8.1 Introduction

The Isles of Scilly have the potential to make a significant contribution to our understanding of the Neolithic and Early Bronze Age more broadly – at both a national and international level – in a number of ways. Equally, as with any region, it is vital that we seek to understand the specifics of the Islands' archaeology in relation to this bigger picture.

4.8.2 The Mesolithic/Neolithic transition

As discussed above (Section 3), the Mesolithic-Neolithic transition in Britain and Ireland is a topic which has witnessed a considerable resurgence of interest in recent years (for example, Thomas 1999; 2008; Pailler and Sheridan 2009, Whittle *et al* 2011). One of the major issues debated is the broader process by which the transition occurred: indigenous adoption, migration/invasion from the European mainland, or a combination of the two (Garrow and Sturt 2011). A secondary, directly related issue, has been the actual route(s) that either native British or migrating northern European mariners (or both) would have taken between mainland Europe and the British Isles and Ireland (Callaghan and Scarre 2009, Sheridan 2010, Whittle *et al* 2011).

The 'western seaways' of Britain have long been considered crucial, geographically, to any understanding of these processes of transition (Callaghan and Scarre 2009; Garrow and Sturt 2011). In recent years further weight has been added to this suggestion, as it has been noted that many of the earliest glimpses of Neolithic practices and material culture occur within and around the western seaways zone: early cow bones have been found in Ireland (Woodman and McCarthy 2003), potentially early pottery in western Scotland (Sheridan 2000), possibly very early cereal pollen in the Isle of Man (Innes *et al* 2003), and a passage tomb of earlier Neolithic date in Devon (Sheridan *et al* 2008).

If we accept that people were indeed journeying between Britain, Ireland and mainland Europe within this zone, the importance of a clear understanding of the late fifth and early fourth millennium cal BC archaeology of Scilly in relation to this question becomes clear. The possibility that the islands may have witnessed very early Neolithic settlement from the Continent or Cornwall as a consequence of this maritime activity is raised. Equally, if the islands did not see such early settlement, that in itself tells us something important about the process of transition: either that early colonists were seeking only large land masses on which to settle, or that they journeyed in short hops along the shore of the mainland rather than carrying out long-distance sea voyages (Garrow and Sturt 2011, 68).

At present, unfortunately, we know very little indeed about the earliest Neolithic sites on the islands (Kirk 2004; Robinson 2007; and see above, Section 4.4.3), and even less about the precise date(s) of any such activity. There is considerable potential for future research in Scilly and Cornwall to assess relationships between the latest Mesolithic assemblages and Early Neolithic flint scatters / pit sites, etc – for example how do they relate to one another spatially? It is also worth noting the possible similarities between locally manufactured Early Neolithic pottery found at various locations in the islands (see above, Section 4.5.1) to that found on mainland Cornwall.

4.8.3 Continuing Neolithic and Early Bronze Age maritime connections

The subject of maritime connections around the western seaways in the later third and second millennium cal BC is a very important one, which is not only of relevance in relation to the Neolithic / Early Bronze Age transition. The Early Bronze Age in particular has long been viewed as a period in which long-distance, trans-European networks of interaction were important: Beaker pottery is found across a wide area of western Europe (for example, Vander Linden 2007), and the raw materials required for bronze moved over long distances (Ottaway and Roberts 2008). Intriguingly, given these pan-European connections and similarities, the evidence from the Isles of Scilly

during this period does not fit particularly well with the broader picture even across the rest of Britain. Beaker, Collared Urn and other Early Bronze Age pottery types current across most of Britain are rare, with even the Trevisker style found across mainland Cornwall being relatively uncommon (Jones and Quinnell 2006; Pollard *et al* 2008, 86). Jones and Quinnell (2006) have suggested that in Cornwall, Beakers were adopted relatively late from further east in England, rather than from the Continent, and were slotted in alongside pre-existing local pottery traditions. It is quite possible that, in the Isles of Scilly, we are seeing a more extreme version of a similar process, with very few Beakers at all ever having been used.

Having noted this pattern, which appears to be reflecting a strong assertion of local regional identity (as seen in the uptake of pottery styles at least), it is interesting to note other patterns which show a somewhat contrasting picture. Jones and Thomas (2010, 291-2), for example, have discussed the possibility that entrance graves, which are abundant in the Isles of Scilly (above, Section 4.7.1), represent one manifestation of a very broad phenomenon whereby closely comparable tomb types also emerged in Ireland, Scotland and perhaps even the Channel Islands at around the same time (c 2100-1700 cal BC). Intriguingly, given the above discussion of pottery styles, Jones and Thomas suggest that these shared tomb styles may actually been a consequence of the same maritime connections which led to the spread of artefacts, including Beakers and lunulae (Jones and Thomas 2010, 292). Recent research into the British Neolithic has tended towards the production of regional studies (for example, Brophy and Barclay 2009; Anderson-Whymark and Thomas 2011), and a consequent understanding of regional variability across Britain. In this context, the Isles of Scilly offer an excellent opportunity to investigate the way in which local identities and broader trans-regional connections were played out materially during the Late Neolithic and Early Bronze Age.

4.8.4 Diet and taskscapes

One issue which has caused considerable debate in recent years is whether or not there was a dietary 'sighting of the sea' at the beginning of the Neolithic. Based on isotopic evidence, it has been argued by some that a (possibly cultural) rejection of fish and other marine resources occurred at that time (Schulting 1998; Richards and Hedges 1999; Thomas 2003). Others have pointed out, however, that the archaeological evidence – particularly in island contexts – supports continued fishing (and thus presumably also the eating of fish) well into the Neolithic (Milner *et al* 2004, 12; Sturt 2005). Clearly, if the Isles of Scilly were being visited periodically, perhaps specifically for the purpose of fishing, then archaeological evidence there has significant potential to contribute to this often heated debate, again adding south-western substance to a picture glimpsed further afield. However, unburnt human skeletal material is rare in Scilly and in the south west in general, and is unlikely to survive from the Neolithic or Early Bronze Age because of the soil acidity, which means that it has not been possible to carry out stable isotope analyses. Future recovery of suitable human bone for isotope analyses is therefore a priority to answer questions of changing dietary preferences.

The character of Neolithic and Early Bronze Age settlement, and of the broader distribution of tasks across the landscape at that time, have also been much-debated in recent years (for example, Gibson 2003; Rowley-Conwy 2003; Garrow 2010). The unusual geographical location of the Isles of Scilly – in terms of Britain as a whole, at least – ensures that the islands' archaeology has a strong contribution to make in relation to these debates. At present, many would agree that, broadly speaking, across much of southern England, people remained fairly mobile throughout the Neolithic and Early Bronze Age, moving intermittently around the landscape rather than settling permanently in one place (for example, Whittle 1997; Brück 1999b; Pollard and Healy (eds) 2008, 80-83). As might be expected, particular places often came to be associated with particular tasks (Edmonds 1997). At present, the current consensus of opinion suggests that the Isles of Scilly were themselves occupied only intermittently before the Early Bronze Age, with perhaps seasonal visits from people who more

usually resided in mainland Cornwall, perhaps in order to collect shellfish and hunt sea mammals or as a landfall during deep-sea fishing trips (*cf* Robinson 2007, 65). Intriguingly, however, there is evidence for agriculture preceding the construction of entrance graves, which may hint at settlement of a more permanent nature (above, Section 4.4.1). In many ways, therefore, the picture for the Isles of Scilly – of intermittent occupation, and of task-specific associations – matches that for much of southern England rather more closely than might have been expected. Again, further evidence revealing in more detail the character of occupation sites in the islands during this period would help flesh out what is at present a rather patchy picture.

4.8.5 Summary

The key maritime location of the Isles of Scilly in relation to assumed networks of connectivity between the European mainland and Britain and Ireland means that a good understanding of the islands’ Neolithic and Early Bronze Age archaeology is crucial to this broader national and international picture. Equally, their offshore location ensures that they have the potential to make a crucial contribution to our appreciation of marine exploitation and taskscapes more generally during this period. The archaeological evidence for wider contacts in Scilly suggests they are both long-term and varied, including occasional imports such as pottery, metalwork, pumice (although this might have floated to the Islands) and faience which reflect a tradition of adopting some things but rejecting others. Entrance graves and cairns also provide evidence for contact and possibly a shared wider identity; the local form of pottery may speak of a more nested identity which developed during the Bronze Age, suggesting that people may have wanted to affirm wider ancestry and connections at some times but a more local identity at others.

4.9 Scientific dating

4.9.1 Radiocarbon dates

The 39 radiocarbon determinations listed below in Figure 4.12 below have all been calibrated using OxCal 4.1. Previous modelling of dates has not been used and all are expressed at the full 95.4% confidence level, rather than to the period to which the date may be weighted (for example at 89%). This means that the calibrated dates in the tables may vary significantly from the publications where they originally appeared.

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
GU-5061	5210 ±50	4230-3947	Par Beach, St Martin’s	Basal 10mm of exposed peat, - 2.02m OD	Ratcliffe & Straker 1996, 19, 127
Wk-19091	4968 ±38	3926-3654	Dolphin Town, Tresco	Potsherd residue, layer 15 in house 13. This is an anomalous date – the potsherd is BA	Taylor & Johns, forthcoming
GU5060	4510 ±60	3486-3017	Par Beach, St Martin’s	Basal 50mm of exposed peat, - 0.21m OD	Ratcliffe & Straker 1996, 19, 127
GU-5394	4310 ±60	3263-2703	Porth Mellon, St Mary’s	Basal 20mm of exposed peat	Ratcliffe & Straker 1996, 127
SUERC-32991	4310 ±30	3010-2880	Par Beach, St Martin’s	Bulk: organic sediment (humic acid fraction), 16-17cm below surface of intertidal peat	Marshall <i>et al</i> 2012
OxA-23825	4377 ±30	3100-2900	Par Beach, St Martin’s	Bulk: organic sediment (humin fraction) 5-6cm below surface of intertidal peat	Marshall <i>et al</i> 2012
GU-5393	4280 ±50	3082-2699	Porth Mellon, St Mary’s	Sample 1 (top 40mm of exposed peat)	Ratcliffe & Straker 1996, 129
SUERC-32992	4345 ±30	3080-2890	Par Beach, St Martin’s	Bulk: organic sediment (humin fraction as SUERC-32991)	Marshall <i>et al</i> 2012

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
OxA-23826	4270 ±29	2920-2870	Par Beach, St Martin's	Bulk: organic sediment (humic acid fraction) 5-6cm below surface of intertidal peat	Marshall <i>et al</i> 2012
SUERC-38094	4260 ±35	2920-2870	Porth Mellon, St Mary's	Sediment: humic acid, 1-2cm below surface of intertidal peat	Marshall <i>et al</i> 2012
OxA-23859	4269 ±38	2920-2870	Porth Mellon, St Mary's	Monocot stem, 23cm below surface of intertidal peat	Marshall <i>et al</i> 2012
SUERC-38098	4235 ±35	2910-2700	Porth Mellon, St Mary's	Sediment: humin fraction, as SUERC-38094	Marshall <i>et al</i> 2012
SUERC-38090	4160 ±35	2890-2580	Porth Mellon, St Mary's	Sediment: humic acid, 28-29cm below surface of intertidal peat	Marshall <i>et al</i> 2012
SUERC-38091	4135 ±35	2880-2570	Porth Mellon, St Mary's	Sediment: humin fraction, as SUERC-38091	Marshall <i>et al</i> 2012
GU-5396	3980 ±100	2866-2204	Porth Mellon, St Mary's	Basal 20mm of exposed peat.	Ratcliffe & Straker 1996, 127, 129
SUERC-38093	4160 ±35	2860-2490	Porth Mellon, St Mary's	Sediment: humin fraction, 0-1cm below surface of intertidal peat	Marshall <i>et al</i> 2012
SUERC-32925	3980 ±30	2580-2460	Par Beach, St Martin's	Bulk: organic sediment (humic acid fraction) 2-3cm below surface of intertidal peat	Marshall <i>et al</i> 2012
SUERC-32926	3980 ±30	2580-2460	Par Beach, St Martin's	Bulk: organic sediment (humic fraction), as SUERC-32925	Marshall <i>et al</i> 2012
GU-5395	3900 ±70	2572-2151	Porth Mellon, St Mary's	Sample 2 (20-40mm towards top of peat)	Ratcliffe & Straker 1996, 127, 129
GU-5392	3810 ±80	2472-2032	Porth Mellon, St Mary's	Sample 2 (wood towards base of intertidal peat)	Ratcliffe & Straker 1996, 129
SUERC-38092	3795 ±35	2350-2130	Porth Mellon, St Marys	Sediment: humic acid, 0-1cm below surface of intertidal peat	Marshall <i>et al</i> 2012
OxA-X-2465-6	3740 ±30	2270-2030	Par Beach, St Martin's	Domestic cow tooth	Marshall and Bronk Ramsey 2012
HAR-239	3260 ±280	2300-840	Nornour	Charcoal (oak & larch) from lower midden in passage between houses 1 & 3.	Butcher 1978, 29-112
OxA-3649	3620 ±70	2198-1772	East Porth, Samson	Charred seeds (naked barley) from OLS	Ratcliffe & Straker 1996, 62
HAR-4324	3490 ±100	2125-1533	Little Bay, St Martin's	Charcoal (gorse) from heath [60] in House 2.	Neal 1983, 52; <i>Radiocarbon</i> 1985 27 , 83
Wk-5690	3512 ±70	2030-1667	Porth Killier, St Agnes	Basal fill (156) in cist [163] below cairn [154].	Ratcliffe <i>et al</i> forthcoming
OxA-26373	3492 ±28	1893-1742	Old Town Cist, St Mary's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-26372	3386 ±29	1750-1613	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-26364	3365 ±28	1742-1538	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
HAR-1715	3190 ±110	1741-1133	Little Bay, St Martin's	Charcoal from hearth F in House 2	Neal 1983

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
Ox-36363	3319 ± 29	1682-1524	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-3647	3220 ± 70	1682-1323	Porth Killier, St Agnes	Charred seeds (<i>Hordeum sp.</i>) from layer 14 at top of midden in house exposed in cliff-section. C14 dates inconsistent with stratigraphy	Ratcliffe & Straker 1996, 67; <i>Archaeometry</i> 1995, 421-2
GU-5413	3250 ± 50	1636-1422	Porthcressa, St Mary's	Shell (<i>Patella Vulgata</i>) from midden 3 in house exposed in cliff-face	Ratcliffe & Straker 1996, 77
OxA-26370	3276 ± 29	1626-1423	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
HAR-3694	3100 ± 100	1608-1056	Higher Moors, St Mary's	?Peat. Of limited value due to high deviation?	Scaife 1984
OxA-3648	3170 ± 65	1610-1301	Porth Killier, St Agnes	Charred seeds (<i>Hordeum sp.</i>) from layer 14 at base of midden in house exposed in cliff-section	Ratcliffe & Straker 1996, 67; <i>Archaeometry</i> 1995, 421-2
OxA-26367	3246 ± 30	1609-1447	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-4701	3165 ± 55	1605-1304	Porthcressa, St Mary's	Charcoal (Rosaceae) from midden in hutcircle exposed in cliff-face	Ratcliffe & Straker 1996, 77; <i>Archaeometry</i> 1995, 421-2
OxA-26368	3215 ± 28	1531-1422	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming

Fig 4.12 List of Neolithic and Early Bronze Age radiocarbon dates

4.9.2 OS� dating

Optically Stimulated Luminescence (OSL) dating was applied to sand-sized quartz taken from clean grey sand between intertidal 'peat' units found at Porth Mellon, St Mary's, during the Lyonesse Project (Roberts 2012).

Location	Lab no.	Context	Material	OSL Age
Porth Mellon, St Mary's	161/LPPM1-1	15-17cm below surface of intertidal peat	Quartz	4750 ± 1210
Porth Mellon, St Mary's	184/LPPM-2	0.11 ± 0.02m down core	Quartz	4630 ± 250
Porth Mellon, St Mary's	184/LPPM3B	0.03 ± 0.01m down core	Quartz	4290 ± 250
Porth Mellon, St Mary's	184/LPPM3A	0.17 ± 0.02m down core	Quartz	4120 ± 250

Fig 4.13 List of Neolithic and Early Bronze Age OS� Ages, expressed as years before AD 2010, rounded to the nearest 10 years

5 Later Bronze Age and Iron Age

Edited by Charles Johns with contributions from Kevin Camidge, Dan Charman, Ralph Fyfe, Andy M Jones, Steve Mills, Jacqui Mulville, Henrietta Quinnell, Paul Rainbird, Helen M Roberts, Gary Robinson, Niall Sharples and Sean R Taylor

5.1 Introduction

The Isles of Scilly contain a large number and diverse range of Later Bronze Age and Iron Age sites and artefacts including settlements and field systems, cliff castles and cemeteries, pottery and metalwork. The Islands hold a wealth of environmental data in the form of buried peat deposits while the enigmatic remains of stone walls and possible hut circles in the subtidal and intertidal zones have been noted since the mid-eighteenth century. The rich archaeological record and the Islands' pivotal position on the Atlantic façade means that there is the potential to pose major research questions relating to Later Bronze Age and Iron Age settlement, Iron Age funerary and ritual practices, the development of British metalwork and the introduction of insular Celtic art, as well as questions relating to patterns of exchange and contact throughout the Late Bronze Age and Iron Age. The main characteristics of Scilly's Later Bronze Age (1500 to 800 BC) and Iron Age (800 BC to AD 43) resource are summarised in this chapter.

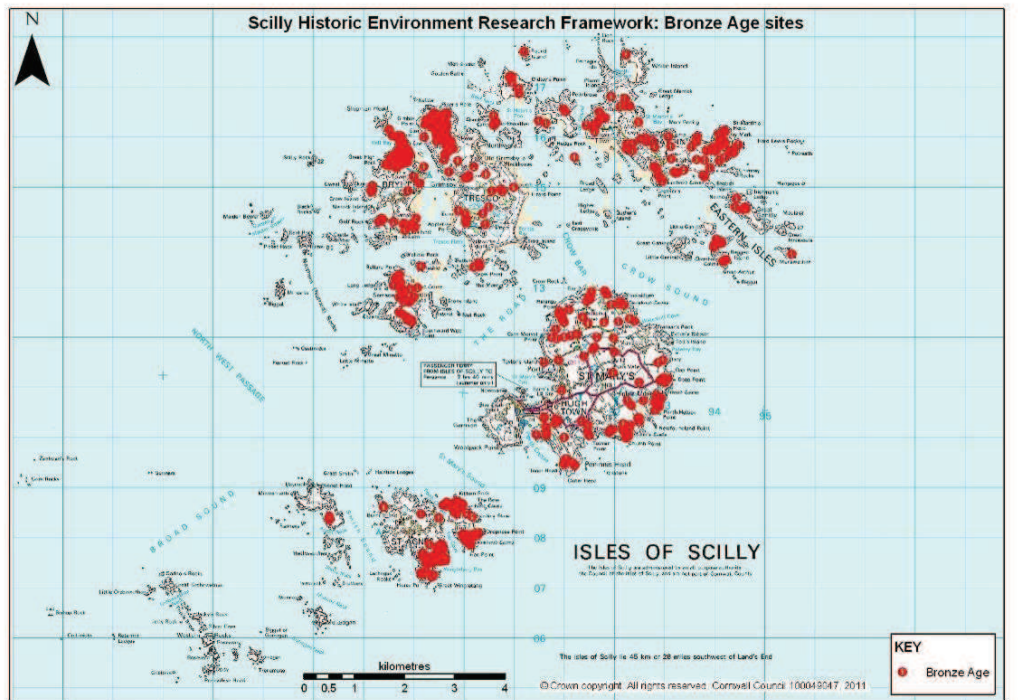


Fig 5.1 Bronze Age sites recorded in the Cornwall and Scilly HER

5.2 Environmental background

The environmental background of Scilly during this period was summarised for the South West Archaeological Research Framework (Straker *et al* 2008, 111).

Pollen analysis and assessment covering the later part of the Bronze Age and the Iron Age has been carried out at various locations in Scilly ranging from the sequences at Higher and Lower Moors on St Mary's (Scaife 1984; with some reinterpretation by Ratcliffe and Straker 1996), the intertidal organic soils on Crab's Ledge, Tresco (Iron Age: Ratcliffe and Straker 1996) and buried soils at Bar Point, St Mary's (Iron Age: Evans 1984), Innisidgen, St Mary's (Dimbleby 1976–7), Halangy Porth, St Mary's

(probably Iron Age: Dimpleby *et al* 1981; Dimpleby in Ashbee 1996, 171–3) and below the rampart of the cliff castle on Shipman Head, Bryher (Ratcliffe and Straker 1996). At Higher and Lower Moors, some regeneration of the birch, oak and hazel woodland is evident in the Middle to Late Bronze Age, with herbaceous and cereal pollen also pointing to some open areas (Straker *et al* 2008, 111).

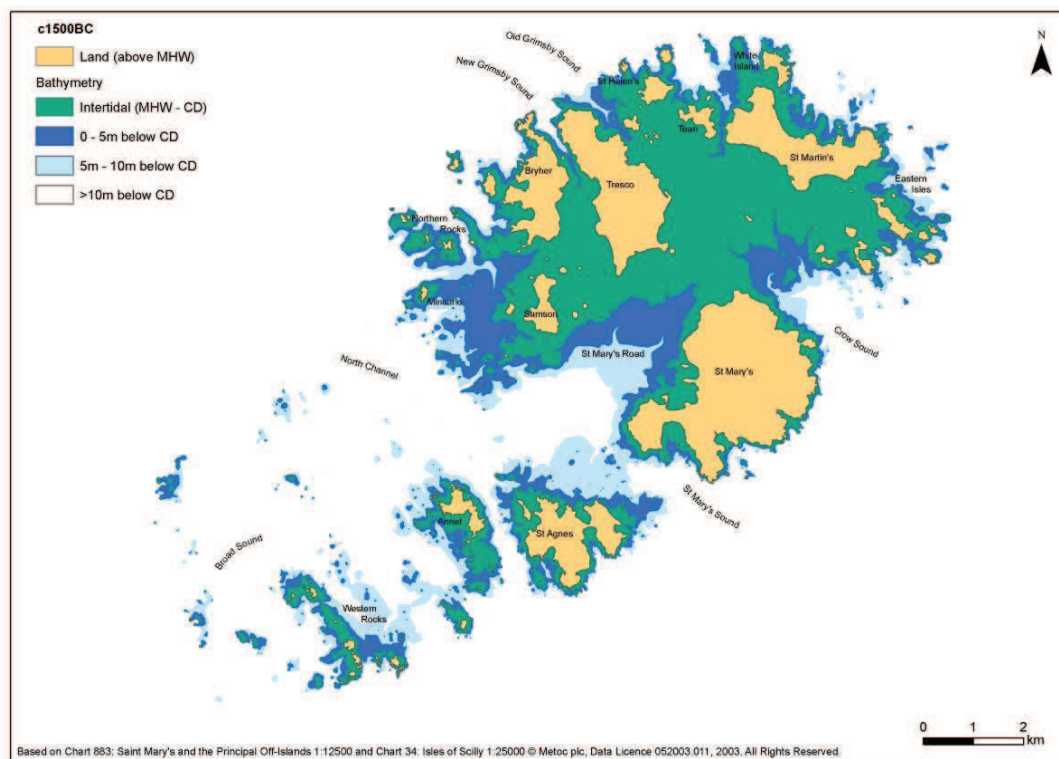


Fig 5.2 Inferred submergence model c 1500 BC, based on data from the Lyonesse Project (Charman *et al* 2012); all details as for Fig 3.3

The start of the main phase of woodland clearance in the Islands is dated at Higher Moors to the Late Bronze Age – Early Iron Age (815-412 cal BC, HAR-3724, 2540±80; 753-234 cal BC, HAR-3723, 2360±60). The soil pollen analyses noted above all testify to open environments, with a little alder, oak, birch and hazel recorded at Bar Point but not at Halangy Porth. The open ground is mainly grazed grassland but at Innisidgen arable was also suggested. Pollen of heathland plants is rare, but the charcoal of heather and gorse/broom at Bonfire Carn and Porth Killier show that it was used as fuel from as early as the Middle Bronze Age (Ratcliffe and Straker 1996). The Crab’s Ledge pollen and plant macrofossils are of grasses and members of the Cheopodiaceae family including annual sea blite, suggesting coastal grassland and saltmarsh (Ratcliffe and Straker 1996; Straker *et al* 2008, 111-2).

The Crab’s Ledge saltmarsh deposits on Tresco show that saltmarsh was present during the Late Bronze Age and Iron Age, with development beginning from at least as early as c 1000 cal BC and continuing for perhaps another 2000 years. The Crab’s Ledge and Bathinghouse Porth deposits probably represent the remaining fragments of a slowly retreating saltmarsh area that previously extended across the whole of St Mary’s sound at different times during the late Neolithic through to the first millennium AD (Charman *et al* 2012).

5.3 Middle and Late Bronze Age (1500 – 800 BC)

5.3.1 Chronology

Radiocarbon dates and artefactual assemblages from sites excavated during the last 15 years are beginning to provide an increasingly secure chronology for the Middle and Late Bronze Age in Scilly. Tables of radiocarbon determinations, OSL ages and magnetic dates relating to the period are presented at the end of the chapter (Figs 5.15, 5.16 and 5.17).

5.3.2 Landscape

By the Middle Bronze Age, the configuration of the islands was approaching that of the present day with the most dramatic difference being that there was a vast intertidal area stretching right across St Mary's Roads and covering almost all of the region between the main islands of St Martin's, the Eastern Isles, Treco, Bryher and Samson. It should be stressed that much of this would have only been covered during spring tides, such that it would have remained a useful part of the land, especially for grazing, and would have been passable with ease almost all of the time. It seems very likely that there were extensive saltmarsh areas as part of this intertidal zone, although no deposits from this period were found by the Lyonesse Project (Charman *et al* 2012).

After 1500 BC, the rate of change slowed significantly, and there was a slow loss of both land and intertidal areas throughout the rest of the Bronze Age. The extensive intertidal area between the main islands remained largely intact, although it was being gradually lost due to landward encroachment of the sea up St Mary's Roads from both the west and the east. Again much of this zone may have remained usable for grazing and certainly would have provided no hindrance to passage between the islands at the end of the Bronze Age (*ibid*).

5.3.3 Settlement

Most known settlements are clustered within specific topographical locales along the coastlines of Scilly (Fig 5.1). This distribution might be a result of a lack of coordinated fieldwork within the interior of the islands. An evaluation of geophysical anomalies at Normandy Farm, St Mary's in 2006, for example, revealed evidence of Late Bronze Age settlement activity (Mulville *et al* 2007, 26-35), while excavations in 2009-10 revealed Late Bronze Age settlement remains near Higher Town, 200m inland from the coast on St Agnes (Fig 5.4; Taylor and Johns, in prep).

The identification and interpretation of houses is frequently problematic, especially when they occur within the present day intertidal zone, where movements of sand, gravel and beach boulders obscure them (cf Camidge *et al* 2010). Equally, houses identified in present day cliff-sections are difficult to interpret because of their limited exposure and constant erosion. The character of several present day intertidal and cliff exposed sites has been confirmed through survey and excavation, but the interpretations of others remain questionable (Ashbee 1983; Camidge *et al* 2010; Gray 1972; Ratcliffe and Straker 1996, 87; Thomas 1985).

The stone-built houses of this period are constructed from granite blocks laid in courses or set as orthostats, and are frequently terraced into hill slopes or constructed within natural hollows. Walls are substantial, measuring 1-2.5m thick, double-faced and containing a central core of earth and rubble. At Nornour (Fig 5.3) and Little Bay houses were dug into substantial middens (Butcher 1978; Neal 1983). Postholes are largely absent from house interiors and it is not known how they were roofed. At Nornour, house walls remain standing in places to over 2m in height and appear to be corbelled (Dudley 1967; Butcher 1978). Other houses have substantial internal partition walls that may have supported cross beams, onto which a roof of stone or turf could have been constructed. Although some house roofs may have been corbelled, the majority show no evidence for this and we should presume that this method of roofing, if adopted, was restricted to only a small percentage of houses. A further variation in

roof construction is found at English Island Carn, where O'Neil detected postholes within the earthen wall cores of a house. These post holes sloped inwards towards the house interior at an angle of approximately 45°, suggesting the house had a pitched roof constructed around a central ridgepole (Ashbee 1974; O'Neil 1949a; 1949b; nd h).



Fig 5.3 Sketch reconstruction of the settlement at Nornour (after David Neal)

Single houses are rare and many apparent examples are shown on further investigation to form part of larger house groups. For example, in 1936 Gray (1972, 43) detected the remains of a single house within a *ram* cliff at Porth Killier but when this site was revisited and recorded in 1985 it proved to comprise not one but three houses (Ratcliffe and Straker 1996, 125). Subsequently, geophysical survey has shown that this settlement is more substantial than previously thought, extending inland for a further 20m (Ratcliffe 1989, 10). Similarly at Halangy Porth a single house exposed in the cliff-section is now shown to be at least two houses (Ashbee 1983; Ratcliffe and Straker 1996). At Little Bay, what O'Neil identified as a single house was shown on subsequent excavation to be a group of at least four houses (Neal 1983). Similar scenarios are also recorded at other sites on the Islands such as English Island Carn, Halangy Down and Nornour, where in each instance what was initially interpreted as single houses have consequently been shown to comprise more substantial settlements (Ashbee 1999; Butcher 1978; Neal 1983; Ratcliffe 1991).

Settlements tend to be reused over long periods, with houses occupied, abandoned, modified and reoccupied within relatively short periods. The excavation of a settlement of four houses at Little Bay suggests that, here, houses were not occupied simultaneously but constructed, modified, abandoned and rebuilt (Neal 1983, 58). For example, radiocarbon dates from a sequence of internal hearths in house B at Little Bay demonstrates occupation between 2125-1533 cal BC (HAR-4324; 3490 ±100 BP) and 1191-799 cal BC (HAR-1726; 2780 ±80 BP) separated by episodes of abandonment and modification, evidenced by infilling layers consisted of soil, rubble, midden and broken artefacts (Neal 1983, 52-56). At Dial Rocks, Little Arthur, May's Hill and Porth Killier, a similar scenario of house abandonment and reoccupation is suggested from the chronologically mixed assemblages recovered (O'Neil nd d; nd f; Ratcliffe 1991; Ratcliffe and Straker 1996). For example, artefacts recovered from houses at Dial Rocks contain artefacts dating from the second millennium BC to the first century AD, whilst at Little Arthur a mixed assemblage of first and second millennium BC pottery is

associated with a house that was constantly modified and rebuilt (O'Neil nd f; Ratcliffe and Thorpe 1991).



Fig 5:4 Excavation of a Late Bronze house at Higher Town, St Agnes, in 2009 (photo: Cornwall Council)

Recent archaeological research on mainland Bronze Age settlement sites has shown that the structured deposition of objects played an important part in house abandonment (Brück 1996; 1999b), and in Cornwall the abandonment of lowland Bronze Age settlements resulted in houses being intentionally filled with soil and rubble to look like burial cairns (e.g. Nowakowski 1991; 1999; 2001). Structured deposition and 'middening' (the ritualistic re-working and re-deposition of midden deposits) have scarcely been considered in regard to prehistoric settlement in Scilly and would be rewarding subjects for future work. At Higher Town, St Agnes, for example, a roundhouse was filled with granite rubble containing a large amount of Middle to Late Bronze Age / Early Iron Age pottery, flint and stone artefacts, possibly with the intention of making it into a cairn (Fig 5.4; Taylor and Johns, in prep).

Pottery vessels have been found in clay-lined pits, which are often associated with settlements. A layer of occupation soil at Bar Point, St Mary's, for example, contained several small pits, one of them filled by a complete pot standing upright (rim missing), while several of the others contained sherds (Butcher and Johns, forthcoming). At Pendrathen, also on St Mary's, the lower part of a flat-based coarse vessel was found in a clay-lined pit dug into the *ram* (Samuels 1975, 117), while a similar vessel was found in a clay-lined pit at Halangy Porth, St Mary's, in 1936, containing about a dozen sherds from two or three different pots, along with some calcined bone and charcoal (Gray 1972, 34-5). It is sometimes difficult to distinguish ritual pits from domestic ones (Jones and Reed 2006, 20-1), but these Scillonian pits seem to be domestic with a possible storage function, the clay pit-lining making them watertight.

At Higher Town, St Agnes, a freestanding loess-encrusted vessel was found in a stone-lined chamber within a structure. It is possible that this pot represents a halfway stage in which the pot was coated in loess before being placed into a clay-lined pit. On the

same site were 12 shallow pits apparently dating to the Middle or Late Bronze Age, which may have been dug to extract the soft natural clay in this area, either for the manufacture of pottery or to coat the outside of the pots (Taylor and Johns, in prep).

5.3.4 Field systems

In the 1970s Fowler and Thomas recorded field systems on Halangy Down and Bar Point, St Mary's, on Chapel Down, Porth Morran, and Burnt Hill, St Martin's, at Gimble Porth, Tresco, on the islands of Tean and Gugh (Fig 5.5) and, in particular, on North and South Hill, Samson, which they considered to be 'one of the most significant areas of archaeological importance anywhere in the British Isles' (1979, 178). They also noted field enclosures at Shipman Head Down and Heathy Hill on Bryher, and on St Agnes, St Helen's, Northwethel and Arthur in the Eastern Isles (*ibid*).

The walls are of several different constructive techniques: single lines of orthostats, sometimes with the gaps filled by rubble; double-faced walls, often incorporating boulder-sized grounders, with rubble infill; stone banks which in some places have become lynchets (e.g. Heathy Hill, Bryher, and North Hill, Samson). In some places apparent lynchets could represent deliberate revetments for terracing as at Halangy Down (Fowler and Thomas 1979, 185-6).

Fowler and Thomas described the fields as

'Small, adjacent, rectangular enclosures, fairly definitely used as arable plots and for grazing... on South Hill, Samson and Halangy Down, St Mary's, we are looking at the remains of prehistoric arable field systems. On the latter site, an 'early' phase of fields, each c 50m by c 25m, can be discerned, and similar oblong fields probably exist among the much more complex pattern on South Hill...At Porth Morran, White Island, the widths of fields are either c 50m or c 25m, and the lengths at least 200m but there is no obvious evidence of cultivation here, and an 'arable field-system' interpretation is not necessarily correct. The same reservation must apply, for example to the yet unsurveyed complex on Chapel Down, St Martin's. Nevertheless oblong, small, squarish and long strip-like can tentatively be distinguished as three potential types' (Fowler and Thomas 1979, 186).

There are also enclosures of other shapes bounded by walls, such as two roughly oblong enclosures on North Hill, Samson, which are separate from each other and now part of a later field system, and irregular enclosures on Green Bay, Bryher. As well as enclosing, walls also link cairns, which may be funerary monuments or agricultural clearance cairns, as on Shipman Head Down, Bryher, and the northern end of South Hill, Samson (*ibid*).

Seventy-one extant field systems are recorded in the Cornwall and Scilly HER. With the exception of the Iron Age example at Bar Point, St Mary's (below, Section 5.4.4), none of the prehistoric walls on Scilly have been conclusively dated. As discussed above in Section 4.4.1, six Early Bronze Age entrance graves appear to post-date lynchets and many of the walls are thought to date from the Bronze Age.

As discussed above in Section 4.7.2, some of the cairns within cairn-fields have been interpreted as agricultural clearance mounds, an interpretation which has arisen through their association with connecting boulder walls as on Shipman Head Down and Kittern Hill. It has been pointed out that these downs are the most barren and exposed places in the archipelago and are unlikely to ever have been exploited for agriculture so that other interpretations for these stone walls should be sought (Lousley 1977; Thomas 1985, 132-3; Breen 2008). However, it should be noted that the Bronze Age climate was a more favourable one, and that Bodmin Moor and the Penwith Moors with their numerous Bronze Age settlements and field systems seem equally inhospitable today.

Stone walls in the intertidal zone on Samson Flats were first recorded by William Borlase in 1756 and led O G S Crawford to suggest that Scilly was 'the lost land of Lyonesse' (Crawford 1927), although he later considered in an editorial for *Antiquity* that these features might instead be the remains of medieval fish traps (Crawford 1946). Other walls include those on Tresco Flats, Town Beach and Green Bay, Bryher; Appletree Bay, Bathinghouse Porth and Crab's Ledge, Tresco; Bar Point, St Mary's, Par Beach and Porth Morran, St Martin's, and West Porth, Tean.

A detailed survey and interpretation of the intertidal stone walls on Samson Flats was carried out by the Cornwall and Isles of Scilly Maritime Archaeology Society (CISMAS) in 2009/10 (Fig 5.6; Camidge *et al* 2010). The extent and complexity of the exposed remains proved to be greater than was envisaged at the outset of the survey. There were at least two different types which may be of different date and function.



*Fig 5.5 Field boundary on Gugh
(photo: Richard O'Neill)*

One type was 'boulder walls' comprising medium to large stones set on edge, often just a single line of stones with smaller stones filling the gaps. The other type was 'stone-faced stone walls', courses of flattish stones with larger, more regular stones defining the edges, and irregular rubble forming the core of the wall.

The survey established that the linear stone features could have functioned as fish traps, but it cannot prove that they were actually used as such. One tentative suggestion is that some walls were constructed as prehistoric field boundaries which were then inundated by rising sea levels and subsequently reused as part of a tidal fish trap by the addition of additional walls, possibly in the post-medieval period (Camidge *et al* 2010, 67).

We do not have any direct dating evidence for these intertidal field systems but according to the new sea-level maps their locations correspond to areas which were dry land in the Early Bronze Age, c 2500 to 2000 cal BC, but which had become intertidal by the beginning of the Middle Bronze Age c 1500 cal BC. If they served the purpose of stopping animals straying into more dangerous areas of low marsh these intertidal areas could well have been used for grazing, so the walls could still date to the Late Bronze Age or Iron Age. However, if their purpose was to enclose arable fields they must date to the Early Bronze Age.



Fig 5.6 The intertidal stone walls on Samson Flats can be seen top centre of this aerial photograph, the curving arc to the left is seaweed caught on the contour line (photo: Cornwall Council)

5.3.5 The material world

Metalwork

Bronze was not used for everyday tools in Cornwall until c 1400 BC. In Scilly, where lack of raw materials would have restricted local metal production, traditional tools of stone and bone would probably have stayed in use longer and always have been more common. Only eight Later Bronze Age metal objects have been recorded from the Islands, four of these from settlements: a bronze awl from May's Hill, St Martin's, and three unidentifiable objects from Nornour. The remaining bronzes, a socketed axe from St Mary's, two heavy torcs and a rapier blade fragment from the beach at Nornour, are either unprovenanced or from burials (Ratcliffe and Johns 2003, 9).

An Irish gold bracelet found on the foreshore on the south-west side of St Martin's in 1990 probably originated from a hoard. Its distinctive expanded terminals indicate that it is a Covesea variant dating to c 900 BC; such bracelets have a specific Atlantic distribution (Ratcliffe and Johns 2003, 9; Robinson 2007, 68).

Ceramics

Middle Bronze Age

Scillonian Bronze Age ceramics continued to be used in Middle Bronze Age settlements with stone houses. All the sites investigated and published are situated on the modern cliff edge and excavation has tended to be restricted to narrow strips. Settlements generally appear to have included midden deposits with pottery. The practice of depositing broken ceramics near houses ensures that sites generally produce substantial quantities of pottery but also makes redeposition likely when structures were rebuilt. Consequently it is difficult to determine in many cases how far a context contains ceramics of a single period.

The sites excavated and published are Nornour (Dudley 1968; Butcher 1978), Little Bay, St Martin's (Neal 1983), Halangy Porth (Ashbee 1983) and Dolphin Town, Tresco (Quinnell, 2009-10). Sites for which pottery reports have been prepared but which await full publication are Porthcressa, St Mary's (Quinnell 1994), Porth Killier, St Agnes (Quinnell, in prep a), and Higher Town, St Agnes (Quinnell, in prep f); some stratigraphic and dating data for Porthcressa and Porth Killier has been published by Ratcliffe and Straker (1996). These sites have all, except Halangy Porth, produced at least one radiocarbon determination relating to the Middle Bronze Age, c 1600 -1100 BC.

Unpublished excavations by O'Neil took place on St Martin's at English Island Carn, Great Bay, May's Hill and Par Beach; details of archive reports are given by Robinson (2007, Bibliography). Ceramics from at least four sites not previously known were found in the archaeological work accompanying the excavation of electricity cable trenches in 1984-5 (Quinnell 1991). Details of a further four sites known from retrieval of finds in varying circumstances are listed by Robinson (2007, Appendix M). All these sites appear to have Scillonian Bronze Age ceramics.

The assemblage from Nornour is by far the largest, with the material from Butcher's excavations totalling 4522 sherds (Robinson 2007, 60). However this covers a period from the Early Bronze Age until the Iron Age. This is the only assemblage to be published by type, context and site period, with the data presented in a visually clearer fashion by Robinson (2007, Appendix K).

Fabrics are almost universally granitic, in varying degrees of fineness. Thin-section petrography was carried out for Nornour by D F Williams (in Butcher 1968), with the granitic fabrics demonstrated to include small fragments of granite. Williams (in Neal 1983) also examined the fabrics from Little Bay, apparently without thin-sections, and described these as similar to those from Nornour. R Taylor (in Quinnell 2009-10) included some thin-sections in his examination of the Dolphin Town pottery and again noted granite inclusions which he considered to have been crushed and added to a granitic clay. No petrographic work has taken place on the other sites considered.

It is difficult to provide a comprehensive and comprehensible account of vessel typology and decoration. Halangy Porth, where Ashbee (1983) combined a report on his work with an account of the very large quantities of sherds excavated by Alec Gray in the 1920s and 1930s, appears to have had a large midden in which there were numerous vessels with cord or comb impressed decoration, as well as large plain vessels. There is no radiocarbon dating for the Bronze Age but it is quite possible that most of the ceramic material here is Early Bronze Age in date. At all the other sites vessels with cord and comb impressions are infrequent. At Little Bay (Neal 1983, 62) decorated sherds came from lower stratigraphic levels in buildings. At Nornour decorated sherds are infrequent and at Porthcressa (Quinnell 1994) and Dolphin Town (Quinnell 2009-10) are represented only by single pieces. At Porth Killier (Quinnell, in prep a) a midden preceding the excavated hut circle contained several vessels with grooved or incised decoration and had radiocarbon dates of 1610-1310 cal BC (OxA-3648) and 1680-1320 cal BC (OxA-3647). Otherwise on all sites except Halangy Porth plain vessels predominate. These are principally of Nornour Types 1 to 7, simple jars with slight necks and everted rims, vessels with straight sides or slightly closed forms. It appears on current evidence that for much of the Middle Bronze Age, plain wares of simple form made up most of the ceramics on domestic sites. Decorated vessels either belonged to the early part of this period or were made infrequently, perhaps for some special use.

Imported gabbroic Trevisker sherds are now recognised in the assemblage from Higher Town, St Agnes (Quinnell, in prep e).

Late Bronze Age and Early Iron Age

In mainland Cornwall two sites, Higher Besore (Quinnell in Gossip, forthcoming a) and Scarcewater (Quinnell 2010), have recently produced Late Bronze Age Plain Ware (LBAPW) assemblages with radiocarbon and artefact dating relating to the eleventh to

ninth centuries BC. The most common forms are straight-sided jars and small shouldered jars. Bowls with carinated shoulders which occur in LBAPW elsewhere are not present. The earliest mainland context with a carinated bowl is radiocarbon dated to the eighth century BC at Trevelgue cliff castle (Nowakowski and Quinnell 2011, 7.7); this context also includes large shouldered jars. Both these types occur at Bodrifty (Dudley 1956). This data suggests for the mainland a LBAPW phase followed by an Early Iron Age phase with carinated bowls and large shouldered jars.

A structure at Bonfire Carn, Bryher, with indeterminate ceramics has two radiocarbon determinations relating to the eleventh to ninth centuries BC (Quinnell 1994; Ratcliffe and Straker 1996). Little Bay has a late phase with a radiocarbon date of the twelfth to ninth centuries, the ceramics an apparent continuation of the plain forms of the MBA, but some of the large straight-sided vessels might relate to LBAPW. Porth Killier (Quinnell, in prep a) in Sector B has a group of pits which provide closed deposits, unusual on Scilly. One of the pits had two radiocarbon determinations covering the eleventh to seventh centuries. The small assemblage comprises simple, slightly necked vessels, continuing forms present in the MBA. Dolphin Town (Quinnell 2009-10) has parts of two small carinated bowls in the upper part of the spread which yielded MBA radiocarbon determinations. Nornour has both small shouldered jars and carinated bowls, some of them in broad association with a radiocarbon determination covering the tenth to seventh centuries (Butcher 1978; Robinson 2007, 62). West Porth, Samson (Quinnell 1994; Ratcliffe and Straker 1996), has both shouldered jars and carinated bowls in an apparently single phase site with two C14 determinations covering the eighth to fifth centuries BC. Finally, LBAPW has been identified at Higher Town, St Agnes (Quinnell, in prep f). The data from these seven sites may represent successive Late Bronze Age and Early Iron Age ceramic phases but these are not currently very clearly defined. They would support the introduction of carinated bowls in the eighth century, the earliest century of the Iron Age as chronology for Britain is currently understood. Both the data from Scilly and the mainland currently suggest that carinated bowls were introduced here later than further east in Britain.

A number of domestic sites excavated by O'Neil are recorded by Robinson (2007, Appendix M) as having first millennium BC ceramics. Until this material has been examined by a modern ceramic expert no comment can be made as there is a long history of this material being misinterpreted.

No petrography was carried out for Bonfire Carn or West Porth. Porth Killier (Sector B) has a gabbroic bowl from a sealed pit. All other fabrics appear to be similar to the local granitic material of the Middle Bronze Age.

On the mainland a Plain Jar Group (PJG) with small and medium necked jars without decoration has recently been identified as the ceramic of the later Early Iron Age, covering the sixth to fourth centuries BC (Nowakowski and Quinnell 2011, 7.8; Quinnell 2011). Nothing comparable has been so far been identified on Scilly and ceramics for these centuries are currently unrecognised. The one exception is Halangy Porth (Ashbee 1983; Ratcliffe and Straker 1996). Re-examination of collections from sites with assemblages dating to the centuries either side of this period, especially the west area of Nornour excavated by Dudley (1968), might well show that it was present.

Stone

Stone artefacts from Scillonian settlements of this period are especially common (e.g. Butcher 1978, 95) but have received little detailed study. Artefact groups include bowl and saddle querns, bowls, troughs, whetstones, holed weights, bruising mullers, rubbing stones, pebble hammers, hammer stones and pivot stones.

Current knowledge has been summarised by Quinnell (in prep d). Because of the frequency of finds of pebbles, it is not easy to distinguish those which show signs of use or working and until the last few decades all but the most obvious artefacts were probably not recognised. Only the reports on Nornour (Butcher 1978), Little Bay (Neal 1983), Halangy Porth (Ashbee 1983), and Halangy Down (Ashbee 1996) have sufficient

detail for comparative discussion. Stone artefacts from the Isles of Scilly Electrification Project were all without contexts and have been briefly summarised (Ratcliffe 1991, 67-71); the small number of artefacts from the 1989-1993 Coastal Erosion Project has not so far been discussed as a group (Quinnell 1994).

Large quantities of stone artefacts were identified at Dolphin Town, Tresco (Taylor and Johns 2009-10), and Higher Town, St Agnes (Taylor and Johns, in prep). At present the consensual policy is for large stone artefacts such as quern stones to remain on the island where they were found. However, this can make analysis difficult and the question of the long-term storage and curation of such items needs to be reconsidered.

Pivot stones are fairly frequent finds on Scilly (e.g. Ratcliffe 1991, 67-8) and occurred at Little Bay (Neal 1983, 59), a site with a long occupation within the Bronze Age but with no subsequent use. While pivot stones are not uncommon, there appears to be no clear published account of how they actually functioned. The subject is one which would benefit from a more detailed examination of surviving pivot stones and from experimental work (Quinnell, in prep d).

Flint

The flintworking traditions of the full second millennium BC are cruder than those of the Mesolithic and Neolithic, although they are parts of the same long continuum. The scarcity of flint from Porth Killier, St Agnes, and the Early Iron Age site at West Porth, Samson, may suggest that during this period flint was no longer of such importance as in earlier prehistory (Quinnell, in prep e).

5.3.6 Subsistence

Occupation debris from settlements reveals that their inhabitants practised a mixed subsistence economy; as well as growing crops and raising stock, they fished, gathered shellfish and hunted wild animals and birds. Cereals such as naked barley and emmer wheat were cultivated, with pulses such as the Celtic, horse and horn bean (Ratcliffe and Johns 2003).

Plant remains

At Porth Killier, St Agnes, and Porthcressa, St Mary's, crops represented include emmer wheat and Celtic bean as well as naked and hulled barley; also two grains of oats, which could have been crop or weed. Many weeds were present: vetches, knotgrass, black bindweed, chickweed, small nettle and red goosefoot. The presence of ploughman's spikenard (*Inula conyza*) indicates that more calcareous soils had developed, perhaps in areas where shelly sand had accumulated; also the finding of corn spurrey (*Spergula arvensis*) at West Porth, Samson, indicates that some acidic soils had developed on granite, unless the presence of sand with shells had altered the balance. Clover (*Trifolium* sp.) and grasses point to open grassy areas or perhaps sand dunes in the vicinity. The presence of stinging nettles could indicate nutrient (phosphate) –rich conditions such as dung and domestic waste around settlements. The few seeds of sedge and rushes suggest collection of plants from damp conditions, perhaps for flooring or roofing materials. There is also evidence that a heathland flora had already developed over the granite by the Bronze Age. At Bonfire Carn, Bryher, this was well developed with gorse present as well as heath grass and ling. Charcoal was of gorse, broom, heather or ling and rose and bramble, all scrub or heath rather than woodland plants. At Porth Killier and West Porth, Samson as well as charred seeds there were others, dock and stinging nettle, that had been preserved by mineralisation probably caused by dumping of large numbers of limpet shells or perhaps phosphate-rich animal dung (Ratcliffe and Straker 1996, 11).

It is interesting to note that Bronze Age saddle querns and grinding mullers on Scilly are very large. These would have required considerable preparation and involved much effort to use. The heavy mullers from the Late Bronze Age settlement at Higher Town, would only grind with considerable pressure applied to their 8-10kg weight (Quinnell, in

prep g). The size of the equipment, both the mullers and the querns, suggests that considerable importance was attached to the preparation of grain, as does the deliberate decommissioning and deposition of these items. The importance of grain and its preparation could have been related to difficulties of production in Scillonian conditions and moreover to the rapidly diminishing area of good agricultural land available. In prehistoric Scilly grain might have been a rare and symbolically high status food source, as opposed to everyday fish and limpets.

Osteological faunal remains

Introduction

With the exception of the Par Beach calf's tooth (above, Section 4.5.4), the earliest records for the Islands date to the Middle Bronze Age. There are reports on material from Nornour (Turk 1967; 1968; 1971; 1973; 1978), Halangy Down, St Mary's (Locker 1996), Halangy Porth, St Mary's (Gray 1983), Little Bay, St Martin's (Locker 1983), Porth Killier, St Agnes (Turk 1991; Locker, forthcoming); Dolphin Town, Tresco (Ingrem 2009-10), and Higher Town, St Agnes (Ingrem, in prep).

Quality of the resource

Scillonian faunal remains were last summarised in Ratcliffe and Straker (1996). Since this authoritative work only a few new assemblages have come to light. There are few substantial and fully recorded assemblages and the faunal resource is generally small, often unquantified, and poorly dated. The largest quantified assemblages are derived from the Romano-British settlement on Halangy Down (Locker 1999; Number of Identified Specimens (NISP) 1651, excluding unidentified fragments) and East Porth (Locker 1983, Ratcliffe and Straker 1996; NISP 1242).

The assemblage from Nornour (Turk 1967; 1968; 1971; 1973; 1978) is also substantial but no NISP was published. The larger assemblages produced a quantity of metrical data, however aging information remains scant. Data relating to butchery, taphonomy, animal health, etc, has also been reported anecdotally by Turk and more systematically by Locker but overall the quality of the excavated resource remains poor. Sieving has been used in recent excavations but was not systematically applied in the past; as a result small bones and in particular smaller species (small mammals, fish and birds) are likely to be underrepresented. Whilst species lists for birds and fish are available and comprehensive, the relative contribution of these resources is extremely difficult to assess. The earliest remains of a domesticated cat in Britain were identified at Gussage All Saints and the individual on Nornour is the size of a larger domestic cat (O'Connor 2010).

Assemblage quantification

The assemblages all demonstrate a broad level of faunal exploitation, with birds, fish and marine and terrestrial mammals exploited. Only the Romano-British settlement on Halangy Down meets the criteria for detailed analysis of the relative abundance of main food animals (i.e. 300 NISP; Hambleton 1999) and the complexities of recording and quantifying the more diverse assemblages of bird and fish bone preclude all but the most general statements on the economic role of animals. At Nornour Turk indicated that while sheep were the most abundant species, seal were more common than cattle; however, this data remains unqualified. Whilst detailed information on introductions, extinctions and management is difficult to define given lack of precision, the following section draws on all available information to write a narrative on faunal history.

Faunal history

Terrestrial species include both domesticated and wild stock, with cattle, sheep, pig and red deer the most common species. There is evidence for the exploitation of marine resources with seal, cetacean and fish remains identified. The emphasis on terrestrial resources, with a minor but persistent component of marine resources, is common to many coastal and insular sites in later prehistory. Attempts to identify the contribution

of marine foods to the insular post-Mesolithic diet suggest that these make up less than 20% of the total protein input; however, marine animals may have been an important source of other foods such as fats and oils. At Nornour, Turk (1978) linked the high proportion of seal bones, in particular their burning, to a reliance on seal blubber. Seals, mostly grey seals, were probably hunted during the autumn, when they come ashore to breed, whilst the sparse evidence for cetaceans, mostly smaller dolphins, suggests the occasional use of stranded animals, although they could have been actively hunted. In the past, as today, the use of boats to move between the islands would have been necessary and seafaring a way of life, providing plenty of opportunity for fishing, birding and the procurement of marine mammals.

In addition to the main food animals, a few other terrestrial species are present on the islands by this time. There are a few canid remains (Locker refers to fox-size animals) and deer bones but these are insufficiently characterised to argue for local breeding populations. Turk remained convinced of the presence of an early local deer population in the Bronze Age and identified some smaller red deer (Turk 1978, 100) as providing evidence of an indigenous population of great antiquity and possible evidence for the presence of roe deer (Turk 1971, 94). There is strong evidence for the translocation of deer to the Scottish islands from the Neolithic onwards (Mulville 2010) although they do not arrive in Ireland until the Bronze Age. The recent evidence for the introduction of fox to the Orkney Isles (Fairnell and Barrett 2007) may provide a clue as to what these small canids represent.

There are a few horse elements from Porth Killier (Turk 1991) and Nornour (Turk 1978). The presence of horse in the Bronze Age is of interest; this species is rarely found on British Bronze Age sites and this material would benefit from revisiting and dating. In general, the low diversity of terrestrial species reflects both the size of the landmass and the small size or of the recovered assemblages; for example, prior to the major excavations on the Uists, red deer populations were thought to have never existed and many rarer species (e.g. roe deer, badger, pine martin etc) were unrecorded.

The first substantial evidence for Scillonian faunal exploitation in the abundant Later Bronze Age assemblages fits into the general British pattern of insular exploitation, with a range of species present. Wild food procurement would have involved hunting, trapping and fishing to procure marine mammals, fish and birds, the collection of littoral resources (crustacea, mollusca, etc) and bird eggs. Hunting would have extended to any endemic herds of deer, although careful management would have been required to maintain herds on these small islands, despite any larger mass resulting from lower sea levels. The evidence for domestic stock management is somewhat sparse. Aging evidence is restricted to Halangy and Nornour, and with only older cattle and younger lambs noted, the assemblages remain too small to allow detailed reconstructions of any changes over time. The Scottish islands provide significant evidence for a high level of cattle neonatal mortality. This has been variously interpreted as a specialist dairy economy or as problems with stock rearing associated with the marginal climate. As such, detailed analysis of the Scillonian assemblages with their milder climate and much longer growing season would be of significant research potential to examine the effect of the environment on husbandry decisions in prehistory. Additionally, recent insular research has focused on mapping ecosystem dynamics, understanding food and foddering of livestock and understanding the impact of small island environments on animal size and genetic diversity. For all these questions the Isles of Scilly fauna have a pivotal role to play, and the analysis of faunal assemblages, human and faunal stable isotopes and pottery residues from the island assemblages forms part of the NERC Diversification and Sustainability in Ancient Coastal Communities: The Role of Marine Resources (DISARMR) research project (Evershed and Mulville).

The only indicators of Scillonian stock characteristics derive from the metrical data; both Turk and Locker identify stock that is smaller than contemporary mainland animals

(Locker 1983, 19). Locker found the sheep to be a similar size to the Shetland breed and Turk described the cattle as small and the pig as long-legged. This and the sparse data for other species - cat, dog and deer - require more research and need to be compared with the contemporary substantial metrical datasets now available (e.g. at the ADS).

The role of animals in prehistory is often expressed in their non-economic contexts. On Scottish islands articulated groups, heads or repeating elements are found deposited within tombs, houses, ditches and pits, and reflect mainland practise. The Isles of Scilly are unusual in that no articulated groups of animals have been recovered (apart from the single third century AD cat at Halangy Down). This may reflect the timing and nature of the excavations; for example, late Bronze and Iron Age material in the Hebrides is typified by under floor deposits and few Scillonian houses have been fully or recently excavated.

Shell

Limpet shells, often in large quantities, are found on most settlement sites in Scilly, from the prehistoric to the post-medieval period (Ratcliffe and Straker, 1996). There are two published studies of limpet shells, which usually make up the bulk of any domestic midden – Halangy Down, St Mary’s (Townsend 1967), and Samson (Mason 1984) – and two unpublished studies, Porth Killier, St Agnes (Light, forthcoming), and Higher Town, St Agnes (Law, in prep).

Evidence from Porth Killier suggests that heavy exploitation of marine resources took place in the Bronze Age. The majority of shells had the morphology associated with middle to lower shore habitats where limpets are more abundant, as well as being apparently tastier than upper shore specimens. It has been estimated that 400 limpets would be need to provide one person with enough kilocalories for one day and that 31,360 limpets would be needed to provide the calorific equivalent of one red deer carcase (Bailey 1978). Even for an extensive Danish shell midden of 2000m³, containing tens of millions of shells, it was shown that based on length of accumulation time and base area of the mound, which gives an estimated population size (Cook and Treganza 1950), for a community of 39 people, the shellfood contribution to the diet would be 1.8%, and for 25 people 2.7%. This suggests that in general shellfish were treated as a small but constant and reliable source of fresh protein to supplement diets (*cf* Light, forthcoming).

It has been suggested that limpets were used as fishing bait rather than food (Ashbee 1974; Turk 1984), but if this were the case why were limpets transported from the shore to inland locations and even the tops of hills? Although limpets have been valued in the past for bait, other options are considered more effective: mussels, marine worms and shore crabs; with the exception of mussels, these resources and more would have been available to early Scillonians (*cf* Light, forthcoming).

Authors writing on the archaeology of Scilly mention the vast numbers of limpets, estimated as 110,000 in one midden (Ashbee 1974). Excavation has revealed quantities of rotted shells which suggest that limpet shells may have been used for soil enrichment. In view of the large numbers present at Porth Killier and at other sites in Scilly (e.g. Mason and Hayton 1977) it seems likely that limpets at least occasionally formed part of the diet. The value of a foodstuff such as limpets lies in the reliability of the resource and ease of exploitation when more desirable sources of protein might be in short supply (*cf* Light, forthcoming).

5.3.7 Transport

There is no archaeological evidence of boats of any type from this period in Scilly; indeed there is virtually no primary evidence of sea-going craft from Britain. However, a relatively large number of craft (log and plank boats) have been found in rivers, lakes and estuaries in Britain (Ransley *et al* 2011). Collections of Bronze Age artefacts found in the sea at Salcombe and Dover may be indicative of Bronze Age shipwrecks.

A rim sherd of coarse Bronze Age pottery with a collection of incised lines on its outer face was found during excavations at Higher Town, St Agnes in 2009. These lines were drawn prior to the firing of the pot and have been interpreted by some as depicting a boat or ship with a sail, although the nature of the incised lines (Fig 5.7) is such that other interpretations are possible. If this is a Bronze Age depiction of a boat with a sail it is of international importance as there is no evidence of Bronze Age sails from Europe (Thomas 2010; Taylor and Johns in prep).

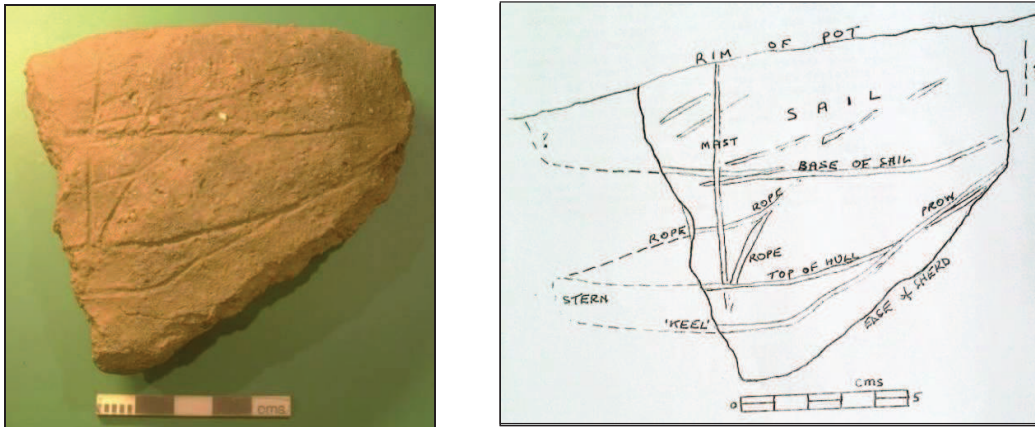


Fig 5.7 The St Agnes 'boatsherd': (left) a photograph of the outer face of the sherd and (right) an interpretation of the lines (Carl Thorpe).

5.3.8 Social relations

During the Early Bronze Age, social and kinship relations were materially manifested and played out through communal burial within entrance graves and the placement of individual burials beneath cairns. During the Later Bronze Age emphasis shifts from monuments to settlements, and social and kinship relations were played out through the continued occupation of a single locale (settlement). In other words, the social significance of burial monuments is transferred to the realm of the domestic: houses metaphorically become monuments. The significance placed upon the remains of ancestors and their places of interment is replaced by a new emphasis upon the places where ancestors once inhabited.

It is interesting to note that between the Later Bronze Age and the Later Iron Age archaeological evidence for burial practices disappears from the archaeological record. It must be presumed that during this period the disposal of the dead was carried out in a way (such as excarnation) that rendered them archaeologically invisible.

5.3.9 Ritual and religion

It is likely that cairns continued to be constructed and reused during the Later Bronze Age and that some of the cairns that comprise the large cairnfields located around the periphery of the islands might date to this period. However, as no excavation has taken place within one of these cairnfields, it is not possible to prove this interpretation.

A further method of burial that may be assigned to this period is suggested by Hencken (1952, 29), who hints at the existence of a Bronze Age urnfield when he refers to 'huge quantities of undecorated pots found and subsequently destroyed on the north-western side of Samson Hill, Bryher'; he also states that a 'further similar cemetery was found by Crawford on St Mary's' (1928, 29). Unfortunately, no further details of these 'urnfields' are available and the character and location of the pottery retrieved is unknown.

5.4 The Iron Age (c 800 BC – AD 43)

Few iron objects survive in the acid soils of Cornwall and Scilly, and pottery and the introduction of hillforts have traditionally been used to identify the beginnings of the local Iron Age. More recent evidence has made the division between the Bronze and Iron Ages less clear, since Cornish pottery formerly regarded as Early Iron Age could also belong to the Later Bronze Age and hillforts elsewhere in Britain are now known to have been constructed in that period (Quinnell 1986, 112-113).

5.4.1 Chronology

The majority of radiocarbon determinations for the Iron Age are from environmental samples. There are two Early Iron Age dates from a house exposed in the cliff face at West Porth, Samson, and two more from a house exposed in the cliff face at Halangy Porth, St Mary's (Ashbee 1983a, 22; Ratcliffe and Straker 1996, 67, 89). There are two Late Iron Age radiocarbon determinations from human bone from the Bryher sword and mirror burial (Marshall 2002-3, 23).

5.4.2 Landscape

The rate of loss of intertidal area increased in the Iron Age but the rate of loss of land declined significantly from what it had been during the Bronze Age and slowed continually after that, such that from the Iron Age onwards land area was very similar to that of today (*ibid*).

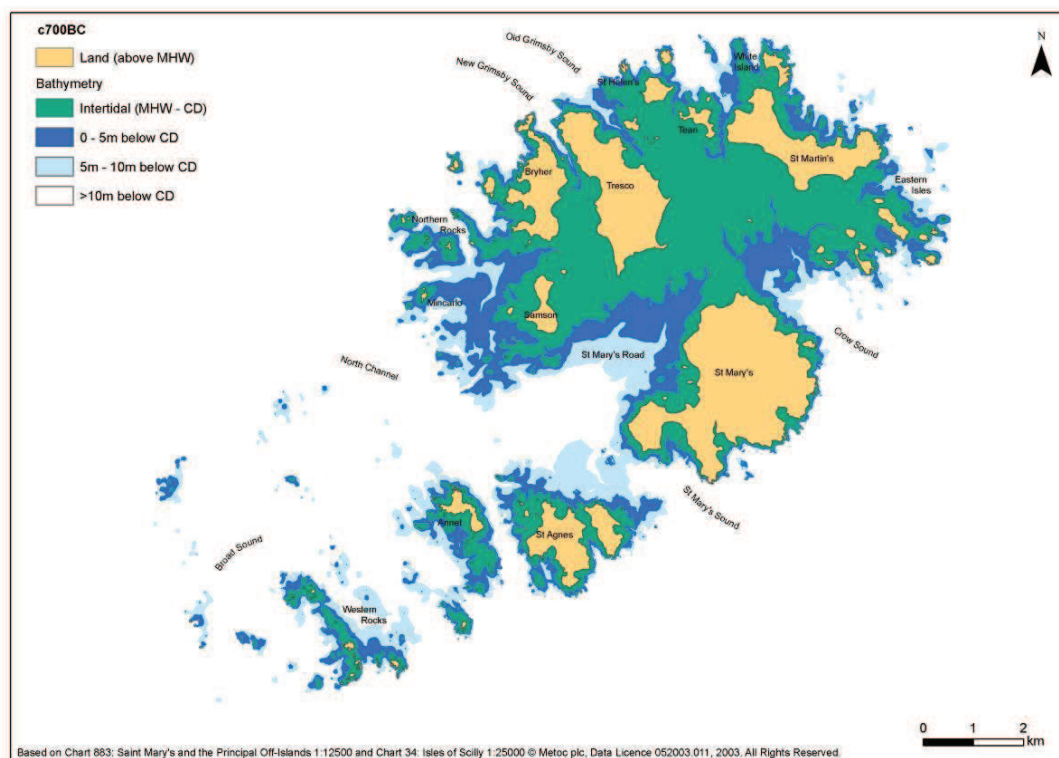


Fig 5.8 Inferred submergence model, c700 BC (based on data from the Lyonesse Project (Charman et al 2012); all details as for Fig 3.3

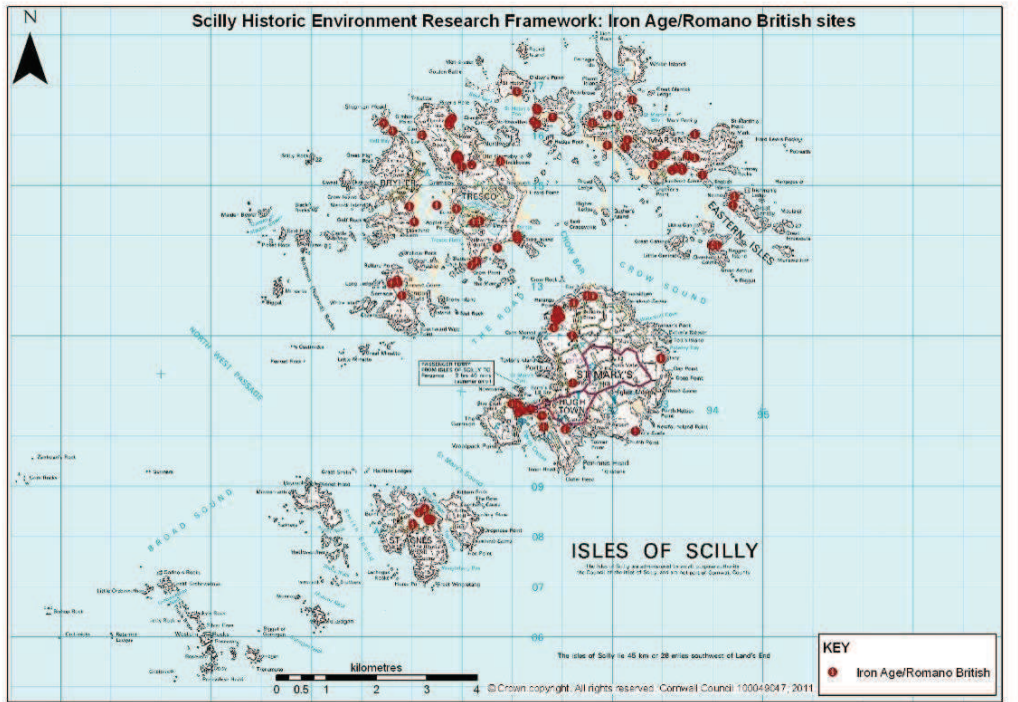


Fig 5.9 Distribution of Iron Age and Romano-British sites recorded in the Cornwall and Scilly HER



Fig 5.10 A reconstruction of the Iron Age/Romano-British settlement on Samson Hill, Bryher (reproduced by kind permission of Jane Stanley)

5.4.3 Settlement

The overall picture is one of continuity of earlier traditions throughout most of the first millennium BC but with some changes occurring after 500 BC. People still lived in open settlements of oval or circular houses (and in some cases perhaps the same houses themselves), farmed small rectilinear fields, used mainly stone tools and similar types of pottery. One of the most distinctive differences between Scilly and mainland Cornwall is the absence in Scilly of the 'rounds', or enclosed farming settlements, which dominated the Cornish landscape in the Late Iron Age and Romano-British period (cf Nowakowski and Johns forthcoming).

Excavated hut settlements at Halangy Down, St Mary's and Nornour indicate continuity between the Iron Age and Romano-British period in Scilly (Dudley 1967; Butcher 1978; Ashbee 1996). Though few other sites are securely dated it is likely that many of the recorded huts and field systems can be assigned to these periods.

The remains of an Iron Age - Romano-British settlement were investigated at Hillside Farm, Bryher, in the vicinity of the sword and mirror cist burial (Fig 5.10; Johns 2002-3). Remains included a stone-walled building, either a byre or shared animal - human habitation, on top of an approximately 10m wide occupation terrace. This was defined to the north (downslope) by a substantial stony lynchet and a settlement boundary made up of a 1m wide, double-faced stone wall with a dense, crushed, limpet midden infill, a construction method noted in other prehistoric Scillonian structures. After falling out of use, the building was infilled with domestic rubbish in the form of a sequence of limpet middens and redeposited burnt material. Another substantial stone building, c 8m in overall diameter, was suggested by geophysical survey results, and an evaluation trench showed this also became a repository for domestic rubbish after its abandonment. An auger survey revealed that midden deposits extend over an area of some 450 sq m in the vicinity of this settlement.

5.4.4 Field systems

One field system securely dated to the Iron Age, 382 cal BC – cal AD 2 (HAR-3485 2140 ±70), is the site at Bar Point, St Mary's, investigated in 1979-80 in advance of sand extraction (Evans 1984, 7-32). Fowler and Thomas (1979, 186) had carried out a preliminary survey which suggested a rectilinear pattern of narrow fields c 16m wide, and in one case only 13m wide, and 20m long. There were two types of boundary, those cutting across the contour were stone banks and those running along the contour were stone banks set on lynchets, which were staggered in contrast to the continuous cross-contour boundaries. There was evidence of cultivation but no trace of cultivation marks, except some shallow grooves in the base of one of the trenches. Phosphate analysis suggested that some fields were used to keep animals in and others were for arable cultivation. Although Fowler and Thomas had recorded one boundary still standing to a height of c 1.5m the investigated boundaries were of slighter construction.

The curvilinear pattern of fields surrounding the cist burials and Iron Age - Romano-British settlement at Hillside Farm, Bryher, is also likely to date from the Iron Age. It includes rectilinear and irregular stone-walled fields with lynchets along the contours. Most of the farmland here retained the ancient pattern until the end of the nineteenth century but had been sub-divided into linear bulb strips by the time of the 1908 Ordnance Survey 25in map (Johns 2002-3).

5.4.5 Cliff castles

There are the remains of two cliff castles in Scilly: Giant's Castle on St Mary's (Fig 5.11) and Shipman Head on Bryher, with possibly a third on Burnt Hill on St Martin's. Ashbee (1974 209-15, fig 46) suggests there were more such sites at Kallimay Point, St Agnes; The Hugh and Little Bay / Porth Seal, St Mary's, Blockhouse Point, Tresco, and Pernagie Point, St Martin's, and also points out that the term 'cliff castles', was likely to have been coined by Borlase during his 1752 visit to Scilly.

Such promontory fortifications are currently interpreted as socio-economic or ritual centres rather than simply defensive strongholds (e.g. Herring 1994). The three cliff castles on Scilly lie roughly equidistant from each other, on the edges of the island group and it is tempting to suggest that they reflect tribal divisions which existed in Scillonian society at this time.

There are no definite examples of hillforts in Scilly, although the Civil War battery on Mount Todden, St Mary's, may have re-used the site of such a monument.



Fig 5.11 Giant's Castle on St Mary's in the early twentieth century (© Gibson Collection)

5.4.6 The material world

Metalwork

There was virtually no evidence for Iron Age metalwork in Scilly before the discovery of the Bryher sword and mirror cist burial in 1999 (Fig 5.12). Within the cist were the fragmentary remains of a crouched human skeleton. In addition to a sword, which survived within a bronze scabbard, the grave goods included a mirror, shield fittings, a sword belt ring, a brooch and a spiral ring (all of copper alloy), together with a shattered tin object. There was also evidence for the grave having contained a sheepskin or fleece and woven textile incorporating goat and other animal hairs. This is the only known Iron Age grave to contain both a sword and mirror, raising interesting questions as to the gender significance of both these grave goods. The unique combination of metal objects will continue to be central to future discussions concerning the development of British Iron Age metalwork.

A long bone fragment from the burial was radiocarbon dated to 193-48 cal BC (OxA-12095, 2098 ±27); the metalwork typology narrows this range to the first half of the first century BC. The dates indicate that the Bryher mirror is the earliest known British decorated bronze mirror and has important national implications for the study of the development of insular Celtic Art in Britain (Johns 2002-3). The discovery has also led

to a reappraisal of British decorated Bronze mirrors; rather than simply being vanity aids buried with moderately wealthy females they have been reinterpreted as having symbolic properties associated with the translation of the soul to the 'Otherworld' (*ibid*).

The only other Iron Age ring - a bronze spiral finger or toe ring - was found on the spoil heap during the 1949 Porthcressa cist-grave excavations (Ashbee 1983, 120-1).



Fig 5.12 The Bryher sword and mirror (English Heritage)

Pottery

Middle and Late Iron Age

The South Western Decorated (SWD) ceramic style is now well established for the third to first centuries BC on the mainland, with a little initial material in the late fourth (Nowakowski and Quinnell 2011, 7.9; Quinnell 2011). This style appears to have been used at similar dates on Scilly. The main assemblage comes from the west area of Nornour (Dudley 1968). Small groups come from Cliff Fields, Tresco, and from Porth Killier (Quinnell 1991) and appear to be present in midden deposits adjacent to the cist cemetery at Porthcressa (Ashbee 1954). A few plain sherds from contexts associated with the cist burial at Hillside Farm, Bryher, are likely to be of this style, with associated radiocarbon dates indicating the second or first centuries BC (Quinnell 2002-3 a). No other sites have produced radiocarbon determinations. Henrietta Quinnell can not confirm the date of the SWD sherds suggested by Robinson (2007, 70) from O'Neil's unpublished excavation on Little Arthur. Neither can she comment on sherds reported from Giant's Castle (O'Neil 1949c, 9).

The house associated with Early - Middle Bronze Age ceramics at Halangy Porth was re-used in the Iron Age. A radiocarbon date covers the fifth to second centuries BC (Ratcliffe and Straker 1996, 89). Pottery published by Ashbee (1983a, fig 9) can be re-interpreted as a variant of SWD (no 3) and as large shouldered jars, probably to be seen as variants of the Plain Jar Group, just possibly from even earlier in the Iron Age. Ashbee (*ibid*) comments that similar sherds to those illustrated were present in the material previously excavated from the site by Gray. A second house, immediately adjacent to that discussed, was located in 1990 (Ratcliffe and Straker 1996, 89). This produced plain sherds of either PJG or SWD type and radiocarbon determinations

covering the seventh to fourth centuries and the fourth and third centuries from different hearth levels (Quinnell 1991). It should be made clear that the extensive settlement on Halangy Down above the Porth produced no Iron Age material, an observation based by Henrietta Quinnell on Ashbee's (1996) site report.

Petrographic work by Roger Taylor on the Bryher cist site identified fine granitic fabrics of a type almost certainly made on the Islands. A rapid scan of some of the Nornour material by Henrietta Quinnell in 2007 identified SWD sherd P57 as gabbroic (Dudley 1968, fig 6).

Recent work on the mainland has now established a start date for Late Iron Age Cordoned Ware in the later second century BC (Quinnell 2011; Quinnell in Gossip, forthcoming b). The style overlapped with SWD for about a century and continued, with a few changes, until the second century AD. On Scilly Cordoned Ware is found at Nornour, both in the west area and also in the top of some house infills in the east area. It was also found with SWD at Cliff Fields, Tresco (Quinnell 1991). Other sites with Cordoned Ware almost certainly date after the Roman conquest and are discussed below. Rapid examination of the Nornour assemblage by Henrietta Quinnell in 2007 identified no 60 (Dudley 1968, fig 7) as gabbroic. Most of the material appears to be made in local granitic fabrics. However, D F Williams identifies the fabric of bowl no 19 (Butcher 1978, fig 25) to be of a distinctive hard fabric containing only quartz and mica, which was probably not sourced in the Islands. This bowl belongs to Threipland's (1956) Type G, probably a drinking vessel. (The interpretation of this vessel by Robinson (2007, 62) as a Late Bronze Age carinated bowl is unlikely: this type of carinated bowl does not occur in the south west and the vessel is similar in all respects to Cordoned Ware Type G.)

Flint and stone

No settlement site of Iron Age or Roman date on Scilly is entirely without flint, but site formation processes on these settlements are not of the kind that allows a clear assessment of the likelihood of redeposition from earlier periods (*cf* Quinnell 2002-3b). There was extensive continued use of local stonework for tools similar to those described above in section 5.3.5.3.

5.4.7 Subsistence

There are few sites dated solely to the Iron Age: Hillside Farm, Bryher (Ingrem 2002-3), and the site on May's Hill, St Martin's (Turk 1984), continue into the Romano-British period.

Plant remains

Evidence for Iron Age crop husbandry is still very limited for Scilly but emmer and barley, including the naked form, continued as cultigens. At present there is no evidence for the cultivation of spelt wheat from Bronze Age or Iron Age sites, unlike other sites in southern Britain, and naked barley does not form part of these mainland assemblages. A limited range of arable weeds includes the acid-loving corn spurrey, fat hen, ribwort plantain and bedstraw (Ratcliffe and Straker 1996, 12).

Several shallow parallel grooves, interpreted as possible ploughmarks were found at the base of the soil during the excavations at Bar Point, St Mary's (Evans 1984, 25).

Animal remains

The potential of limpet middens for the recovery of food remains, particularly bird, fish and mammal bone and shell, is well known in Scilly at sites such as Porth Killier, Porthcressa and Tean (Ratcliffe and Straker 1996). The bone assemblages from the Hillside Farm middens provided the most useful information on diet, farming practice and exploitation of wild resources, although interpretation was limited by the small sample size. Breeding of sheep and/or goats could be demonstrated by the presence of neonatal bones and cattle and pigs were also kept. A wide range of birds and fish were

collected for food, interpreted as low-risk exploitation of inshore seabirds and fish. The finding of mature red sea bream, usually regarded as typical of offshore waters, raises the question of where this species was caught. The Scillonian batholith is surrounded by deep water, however, and it is likely that the former inhabitants of Scilly were able to catch a range of fish without the need to fish far offshore (Straker 2002-3, 58-60).

Animal hoof-prints dating to the Iron Age were found on a trackway during the excavations at Bar Point, St Mary's (Evans 1984, 23-25). These were of two main types, cloven and uncloven. The uncloven were probably those of ponies or small horses. The cloven hoof-prints were of several sizes, some being large cattle and some smaller and probably young cattle. Some of the very small ones may have been those of sheep or goats.

5.4.8 Transport

Ruts were found in the trackway revealed during the excavations at Bar Point, St Mary's (Evans 1984, 23-25). These were 50-100mm wide and 30mm deep with sloping sides and flat bottoms. It is possible that these were caused by 'slide cars' being pulled uphill by ponies whose hoof-prints had also been found.

There is no archaeological evidence of boats of any type from this period in Scilly. Two iron anchors have been found in Britain from this period, one complete with chain. They could be of Mediterranean origin but nevertheless are indicative of increased seafaring activity. Documentary and representational evidence shows increasingly sophisticated sea-going craft in this period in Europe, the gold model boat found at Broighter in Northern Ireland in 1896, for example, has a mast, oars and a yardarm. It is perhaps similar to the Veneti craft described by Caesar (Weatherhill 2005), although there is some debate as to whether the model shows a hide or plank boat (Ransley *et al* 2011).

The large oak trees required for plank boats may have become less available as woodland was cleared, and it is possible that the hide-covered boat, similar to the *currach*, comes into its own as the seagoing craft of choice in this period. Their lightness of construction, an advantage in relation to buoyancy and beaching, means that their survival in archaeological deposits is significantly poorer than that of plank boats (McGrail 2004).

5.4.9 Ritual and burial

Burial under cairns may have continued throughout the Bronze Age and Early Iron Age until the introduction of Porthcressa-type cist graves in the Late Iron Age (Thomas 1985, 133), although the majority of the dead were probably disposed of in some way, such as excarnation, that has not left any traces in the archaeological record,

Porthcressa-type cist graves

The Late Iron age and Romano-British south-western cist-burial tradition was identified through the chance discovery and excavation of a number of small cemeteries and isolated burials around the coasts of Cornwall and the Isles of Scilly, with a couple of examples in Devon, and was possibly the normative burial rite of the Dumnonii (*cf* Thomas 1966, 77). In Scilly these burials are known as Porthcressa-type cist graves after the type site on St Mary's where Paul Ashbee investigated ten cists and an uncisted burial in 1949-50 (Ashbee 1954; 1979).

Approximately 36 of these cist graves have been discovered at twelve sites in Scilly: Par Beach, St Martin's (Crawford 1928; O'Neil *nd a and c*); Old Man, Tean (Tebbutt 1934); Porthcressa, St Mary's (Ashbee 1954, 1979); Poynter's Garden, St Mary's (Dudley 1960-1); Green Bay, Bryher (Thomas 1977); the east side of Porthcressa Bay, St Mary's (Ratcliffe 1999); Halangy Porth, St Mary's (Ratcliffe 1996, 23); East Porth, Samson (Ratcliffe and Sharpe 1990); Lawrence Brow, St Martin's (Ratcliffe 1993, 12); Hillside Farm, Bryher (Johns 2002-3), Toll's Porth, St Mary's (Ratcliffe 1994, 13-14); and Lunnon Farm, St Mary's (Butcher 2002; Johns *et al* 2011). With the exception of the Lunnon Farm cists, all were in low-lying locations, below, just above or slightly

inland of the modern shoreline, having been revealed by coastal erosion, cultivation or modern development.



Fig 5.13 The Iron Age sword and mirror cist burial at Hillside Farm before excavation in October 1999 (photo: Cornwall Council)

Generally oval or rectangular in plan, and occasionally coffin- or D-shaped, the cists are set in grave pits and constructed of stone slabs placed on edge, coursed walling, or a combination of both building techniques. They are covered by stone slabs set at right angles to the main axis. Cist dimensions range from 0.9m to 1.6m in length, 0.5m to 1.0m in width, and 0.2m to 0.8m in depth. The majority are aligned north – south.

Where skeletal remains have survived in the acid soils, they represent the remains of crouched inhumation burials (with the body lying on its side). Grave goods often accompany these and include bronze brooches, pottery vessels, glass beads and, in one instance, an iron pin. The frequent occurrence of brooches suggests that they played a special role in the funerary rite and may have been used to hold together a shroud or, perhaps, everyday costume.

The sword and mirror cist burial at Hillside Farm is the richest south-western cist grave yet to be discovered (Fig 5.13). The sword and mirror link it to the wider British warrior and mirror burial traditions; these types of burial, which share similar cultural associations and distribution patterns, crosscut local burial traditions where they exist (Johns 2002-3).

Typological dates for most of the brooches and pottery recovered from the Porthcressa cemetery post-date the end of the first century AD. This led Ashbee to consider the graves to be wholly Roman in date and surmise that 'refugees' from the Cornish mainland may have imported the cist-burial tradition to Scilly sometime after the Roman conquest (Ashbee 1979, 78; 1986, 207). The radiocarbon determination and finds from the Hillside Farm cist showed that such cists originated in the Iron Age.

Statue menhir

An interesting decorated standing stone, found in a field wall on Chapel Down, St Martin's, which represents the face and upper torso of an anthropomorphic figure (Ratcliffe and Parkes 1989b, 259-60; Fig 5.14). The base of this stone has been broken

off from a larger stone that may once have stood upright upon the Down and it has been interpreted as a Romano-Celtic idol (Ashbee and Thomas 1990).



*Fig 5.14 The statue menhir from St Martin's
(© Rosemary Robertson)*

Fogou

In 2001 a fogou - an underground chamber-like passage - was discovered at Peninnis on St. Mary's. The curving passage is walled by granite slabs, roofed by five large capstones and is nearly five metres long, entered through a smaller low passage or 'creep'. Fogous were constructed during the later Iron Age and may have been used as safe refuges during raids, religious sanctuaries or cool storage areas for foodstuffs. Several are known in West Cornwall but this is the first to be discovered on Scilly.

5.5 Human osteological remains

The only Iron Age human bone from Scilly that has been analysed is from the Bryher sword and mirror burial (Mays et al 2002-3). Survival of bone was very poor and less than 150g of bone fragments were present; these were mainly long-bone and skull fragments. The surfaces of the long-bone fragments were heavily eroded; the skull fragments a little less so. The only long-bone fragment that was identifiable to skeletal element came from the distal part of a femur shaft. Tooth crown fragments were preserved, although only the enamel component survived; there was no dentine.

The burial was clearly that of an adult. Examination of the dental remains indicated a mandibular first molar crown at Brothwell's (1981, fig 3.90) wear stage 3, and a maxillary third molar crown at wear stage 2. This suggests an age at death of approximately 20-25 years.

It was impossible to identify the sex of the individual from bone morphology but an attempt was made to achieve this using ancient DNA; the results obtained proved to be non-diagnostic, probably due to poor survival of DNA, and it was therefore not possible to identify the sex of the individual.

Despite the severe diagenesis seen in the present case, analyses for nitrogen and carbon stable isotopes from long-bone fragments were successful. These provide evidence regarding protein sources in human diets. Since collagen turnover is slow, information is on long-term average diets.

In a north-west European context, carbon stable isotope values give an indication of the relative contribution of marine foods to dietary protein; the results indicated that the Bryher person obtained only a small proportion (perhaps a quarter or less) of his or her dietary protein from seafoods, despite the island location.

5.6 Scientific dating

5.6.1 Radiocarbon dates

The 61 radiocarbon determinations listed below in Figure 5.15 below have all been calibrated using OxCal 4.1. Previous modelling of dates has not been used and all are expressed at the full 95.4% confidence level, rather than to the period to which the date may be weighted (for example at 89%). This means that the calibrated dates in the tables may vary significantly from the publications where they appear.

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
HAR-239	3260 ±280	2300-840	Nornour	Charcoal (oak & larch) from lower midden in passage between houses 1 & 3.	Butcher 1978, 29-112
HAR-1715	3190 ±110	1741-1133	Little Bay, St Martin's	Charcoal from hearth F in House 2.	Neal 1983
OxA-3647	3220 ±70	1682-1323	Porth Killier, St Agnes	Charred seeds (<i>Hordeum sp.</i>) from layer 14 at top of midden in house exposed in cliff-section	Ratcliffe & Straker 1996, 67; <i>Archaeometry</i> 1995, 421-2
GU-5413	3250 ±50	1636-1422	Porthcressa, St Mary's	Shell (<i>Patella Vulgata</i>) from midden 3 in house exposed in cliff-face	Ratcliffe & Straker 1996, 77
OxA-26370	3276 ±29	1626-1423	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
HAR-3694	3100 ±100	1608-1056	Higher Moors, St Mary's	?Peat.	Scaife 1984
OxA-3648	3170 ±65	1610-1301	Porth Killier, St Agnes	Charred seeds (<i>Hordeum sp.</i>) from layer 14 at base of midden in house exposed in cliff-section	Ratcliffe & Straker 1996, 67; <i>Archaeometry</i> 1995, 421-2
OxA-26367	3246 ±30	1609-1447	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-4701	3165 ±55	1605-1304	Porthcressa, St Mary's	Charcoal (Rosaceae) from layer 3 midden house exposed in cliff-face	Ratcliffe & Straker 1996, 77; <i>Archaeometry</i> 1995, 421-2
OxA-26368	3215 ±28	1531-1422	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-26365	3157 ±29	1498-1391	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-26366	3145 ±29	1496-1323	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
OxA-26371	3146 ±29	1496-1323	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
HAR-457	2990 ±100	1442-934	Nornour	Charcoal bulk sample from midden in the lower fill of Building 9.	Butcher 1978, 29-112

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
SUERC-28999	3090 ±30	1430-1270	Crab's Ledge, Tresco	Lowermost sample with high saltmarsh pollen content. Bulk organic sediment (humic acid fraction)	Marshall et al 2012
HAR-460	3020 ±70	1426-1054	Nornour	Shell from midden in the lower fill of House 9	Butcher 1978, 29-112
Wk-19092	3045 ±42	1416-1133	Dolphin Town, Tresco	Potsherd residue, layer 16 in house 13	Taylor & Johns, 2009-10
OxA-26369	3066 ±28	1411-1266	Knackyboy Cairn, St Martin's	Cremated bone (human)	Mulville & Sawyer forthcoming
Wk-5691	2973 ±73	1405-1006	Porth Killier, St Agnes	Fill (150) in cist [163] below cairn [154].	Ratcliffe <i>et al</i> forthcoming
OxA-4700	2936 ±55	1370-978	Porth Killier, St Agnes	Charcoal (<i>Calluna</i>) from layer 5	Ratcliffe & Straker 1996, 67; <i>Archaeometry</i> 1995, 421-2
OxA-22580	2953 ±39	1310-1020	Crab's Ledge, Tresco	Below OSL sample. Bulk unidentified plant macrofossils	Marshall et al 2012
Wk -5687	2841 ±68	1249-838	Porth Killier, St Agnes	Pit [50]	Ratcliffe <i>et al</i> forthcoming
OxA-22578	2896 ±26	1200-1000	Crab's Ledge, Tresco	Uppermost sample with high saltmarsh pollen content. Bulk unidentified plant macrofossils	Marshall <i>et al</i> 2012
HAR-1726	2780±80	1191-799	Little Bay, St Martin's	Charcoal from hearth F in House 2	Neal 1983
OxA-5290	2755±60	1043-804	Bonfire Carn, Bryher	Charcoal (gorse broom) from layer 5 in house exposed in cliff-face	Ratcliffe & Straker 1996, 80
OxA-22579	2824 ±29	1060-900	Crab's Ledge, Tresco	Above OSL sample. Bulk unidentified plant macrofossils	Marshall <i>et al</i> 2012
OxA-5290	2755 ±65	1056-799	Bonfire Carn	Charcoal (Ericaceae from layer 5 as above	Ratcliffe & Straker 1996, 80
Wk-5689	2794 ±74	1191-806	Porth Killier, St Agnes	Hut [21]. C14 dates inconsistent with stratigraphy	Ratcliffe <i>et al</i> , forthcoming
SUERC-38232	3005 ±30	1322-1153	Higher Town, St Agnes	Carbon residue	Taylor & Johns, in prep
HAR-240	2690 ±90	1114-551	Nornour	Charcoal from fill of hearth 2 (NN71) from house 5	Butcher 1978, 66
SUERC-1046-895	2805 ±30	1046-895	Higher Town, St Agnes	Grain: wheat	Taylor & Johns, in prep
SUERC-34962	2745 ±35	976-814	Higher Town, St Agnes	Carbon residue	Taylor & Johns, in prep
Wk -5686	2641 ±718	976-544	Porth Killier, St Agnes	Pit [50].	Ratcliffe <i>et al</i> , forthcoming
BETA-301603	2720 ±30	920-810	Lower Moors, St Mary's	Decayed plant material	Perez forthcoming

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
OxA-3651	2570 ±65	841-417	West Porth, Samson	Charred seeds (<i>Hordeum sativum</i>) from layer 8 in house exposed in cliff-section	Ratcliffe & Straker 1996, 67; <i>Archaeometry</i> 1994, 363
SUERC-29002	2620 ±30	830-770	Bathinghouse Porth, Tresco	Lowermost sample with high saltmarsh pollen. Bulk organic sediment (humic acid fraction)	Marshall <i>et al</i> 2012
OxA-3650	2545 ±65	814-417	West Porth, Samson	Charcoal (<i>Ulex sp.</i>) from layer 8 in house exposed in cliff-section	Ratcliffe & Straker 1996, 67; <i>Archaeometry</i> 1994, 363
HAR-3724	2540 ±80	815-412	Higher Moors, St Mary's	Peat	Scaife 1984
Wk-5688	2533 ±79	809-413	Porth Killier, St Agnes	Hut [21]	Ratcliffe <i>et al</i> , forthcoming
SUERC-39454	2560 ±38	806-735	Lower Moors, St Mary's	Peat	Perez forthcoming
SUERC-39453	2481 ±38	769-48	Lower Moors, St Mary's	Peat	Perez forthcoming
SUERC-29001	2465 ±30	770-410	Bathinghouse Porth, Tresco	Above OSL sample. Bulk organic sediment (humic acid fraction)	Marshall <i>et al</i> 2012
SUERC-29000	2435 ±30	760-400	Bathinghouse Porth, Tresco	Uppermost sample with high saltmarsh pollen. Bulk organic sediment (humic acid fraction)	Marshall <i>et al</i> 2012
HAR-3723	2360 ±60	753-234	Higher Moors, St Mary's	Peat	Scaife 1984
OxA-4697 (CALIB 4.1)	2390 ±50	752-387	Halangy Porth, St Mary's	Charcoal (<i>Ulmus/Rosacae/Calluna</i>) from layers (5) and (6) from hearth [23] in house exposed in cliff-face	Ratcliffe & Straker 1996, 103
HAR-1313	2260 ±90	726-53	Halangy Porth, St Mary's	Charcoal from entrance of house exposed in cliff-face	Ashbee 1983a, 22; <i>Radiocarbon</i> 1990, 65
GU-5059	2180 ±100	409 cal BC- AD 49	Crab's Ledge, Tresco	Column VI from basal 20mm of upper peat. Of limited value due to high deviation?	Ratcliffe & Straker 1996, 128
OxA-4696	2250 ±50	398-202	Halangy Porth, St Mary's	Charcoal (<i>Ulmus Prunus</i>) from layer (4) from hearth [23] in house exposed in cliff-face	Ratcliffe & Straker 1996, 103
OxA-12095	2098±27	193-48	Bryher sword & mirror cist burial	Human bone	Marshall 2002-3, 23
OxA-10255	2100 ±35	341-40	Bryher sword & mirror cist burial	Human bone	Marshall 2002-3, 23
GU-5057	1980 ±80	182 cal BC - AD 220	Crab's Ledge, Tresco	Sample 2 from basal 10mm of exposed peat	Ratcliffe & Straker 1996, 128
HAR-3483	2140 ±70	382 cal BC - cal AD 2	Bar Point, St Mary's	Charcoal from ditch alongside field boundary	Evans 1985

Lab Ref	¹⁴ C age BP	Cal BC @ 95%	Site	Context	Reference
GU-5232	2140 ±60	372-42	Crab's Ledge, Tresco	Column VI from intertidal peat deposit	Ratcliffe & Straker 1996, 128
WK-5695	1940 ±130	351 cal BC – cal AD 385	Old Town Bay, St Mary's	Base of lower peat deposit. Of limited value due to high deviation?	Ratcliffe and Straker 1998
SUERC-32921	1980 ±30	180 cal BC – cal AD 10	Old Town Bay, St Mary's	Bulk: organic sediment including Phragmites stem & ?Monocot stem (humic fraction)	Marshall <i>et al</i> 2012
BETA-301601	2050 ±30	160 cal BC – cal AD 10	Lower Moors St Mary's	Decayed plant material	Perez forthcoming
GU-5056	1880 ±100	101 cal BC – AD 389	Par Beach, St Martin's	Sample 2 from top 10mm of intertidal peat	Ratcliffe & Straker 1996, 128. Of limited value due to high deviation?
BETA-301602	2000 ±30	50 cal BC – AD 60	Lower Moors St Mary's	Decayed plant material	Perez forthcoming
SUERC-32920	1980 ±30	50 cal BC – cal AD 80	Old Town Bay, St Mary's	Bulk: organic sediment including Phragmites stem & ?Monocot stem (humic acid fraction)	Marshall <i>et al</i> 2012
SUERC-38088	1965 ±35	50 cal BC – cal AD 130	Porth Coose, St Agnes	Humic acid, 22–23cm below surface of intertidal peat	Marshall <i>et al</i> 2012
SUERC-39448	19563 ±38	Cal AD 1 – 94	Lower Moors St Mary's	Peat	Perez forthcoming

Fig 5.15 List of Later Bronze Age and Iron Age radiocarbon dates

5.6.2 OSL dating

Optically Stimulated Luminescence (OSL) dating was carried out on submarine and intertidal deposits recovered during the Lyonesse Project in 2010. Six Late Bronze Age and Iron Age OSL ages were obtained (Roberts 2012).

Location	Lab no.	Context	Material	OSL Age	Calibrated date (95% confidence)
Bathinghouse Porth, Tresco	161/LPTR3-1	12–14cm below surface of intertidal sand-peat	Quartz	2630 ±150	930–320 cal BC
Crab's Ledge, Tresco	161/LPTR1-1	0.08 ±0.005m down core	Quartz	3340 ±190 BP	1720–950 cal BC
Lower Moors, St Mary's	184/LM10-28-277	271–277cm down core	Quartz	3130 ±410	1530–710 cal BC
Lower Moors, St Mary's	184/LM10-28-161	161–165cm down core	Quartz	3000 ±370	1360–620 cal BC
Lower Moors, St Mary's	184/LM10-28-217	217–221cm down core	Quartz	3050 ±280	1320–76 cal BC
Crab's Ledge, Tresco	184/LPTR-4A	0.19m down core	Quartz	1890 ± 110 BP	110 cal BC–cal AD 340

Location	Lab no.	Context	Material	OSL Age	Calibrated date (95% confidence)
Bathinghouse Porth, Tresco	161/LPTR3-1	12–14cm below surface of intertidal sand-peat	Quartz	2630 ± 150	930–320 cal BC
Crab's Ledge, Tresco	161/LPTR1-1	0.08 ± 0.005m down core	Quartz	3340 ± 190 BP	1720–950 cal BC

Fig 5.16 List of Later Bronze Age and Iron Age OSL Ages expressed as years before AD 2010, rounded to the nearest 10 years

5.6.3 Magnetic dates

Archaeomagnetism provides a date of last use for any feature that has been subjected to intensive heating so can provide a date of last use for settlement or industrial activity. Like radiocarbon dating, archaeomagnetic dating requires a calibration curve, known as a secular variation curve (SVC) in order to produce a date in calendar years. Three radiocarbon determinations (Jordan *et al* 1994) and an archaeomagnetic direction (Clark *et al* 1988) were collected during the excavations at Little Bay, St Martin's, in 1981. Figure 5.17 below provides details of the magnetic and chronological data recovered from this site as they will be incorporated into the archaeomagnetic master curve (Clelland and Batt nd).

Sample	Dec	Inc	Alpha-95	Previous archaeological date range	Data in the revised database
	353.4	66.2	3.1	700BC - AD43	1425 BC ± 325

Fig 5.17 Details of magnetic and chronological data from Little Bay, St Martin's (Clelland and Batt nd)

Magnetic samples were taken during the 1969-73 excavations at Nornour (Clark 1978, 66-67): SC 50-53 and SC 40-46 were taken from the burnt natural soil at the base of hearth 1 and from the contents of hearth 2 in House 6; SC 60-69 was obtained from a hearth under the east wall of Building 7. The angles of declination and inclination are given in the report but not dates in calendar years.