



DYFED ARCHAEOLOGICAL TRUST LTD



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CARDIGAN BAY COASTAL SURVEY



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1. INTRODUCTION

1.1 Brief and Objectives.

This Cadw funded project (Project No. 35074) is part of a wider strategy designed to complete a rapid survey of the entire Welsh coastline. This strategy has been developed against an increasing awareness of the archaeological potential of previously under surveyed coastal marginal land, and also to the threat to our coastal heritage and coastal archaeological resource from a number of directions.

This project was designed to carry out a desktop and field study of the Cardigan Bay coastline, from the mouth of the Dyfi estuary in the north, to Strumble Head in the south. This represents 210km of coastline, effectively the whole of the southern section of Cardigan Bay, including the coastlines of the county of Ceredigion and northern Pembrokeshire. The survey work was carried out during the latter half of 1995 and spring of 1996. The remainder of the Pembrokeshire and Carmarthenshire coastline will be covered by subsequent projects carried out by the Dyfed Archaeological Trust during 1996 and 1997.

The survey included the recording of new archaeological sites and an assessment of the condition of known sites. Another important aspect of the survey was the recording of differing types of coastline and assessing the threat posed to archaeological sites by erosion from the sea and other erosional forces.

A wide range of site types are encountered along this coastline, ranging from those associated with prehistoric settlement to others associated with post mediaeval coastal trade and fishing, but their common denominator is that they are threatened by a combination of natural and human agencies and this report is a timely statement on the extent and nature of these threats. To this end, the information gathered by the survey has been employed for the purpose of making recommendations for the future management of the archaeological resource, where appropriate.

1.2 Methodology

The desktop and field survey was carried out by two persons. Initially, a thorough examination of the Dyfed Archaeological Trust's Sites and Monuments Record (SMR) was made as well as a search of available aerial photographs relevant to the study area held at the Central Registry of Air Photography for Wales in Cardiff.

During field work, 1:10,000 OS maps were used to record coastal and archaeological features, with 1st and 2nd edition 1:2,500 maps used for areas such as ports and harbours, where more detail was required.

Fieldwork consisted of rapid coverage of the

coastal strip, with details of new and previously recorded archaeological sites, as well as the nature of the foreshore, coast edge, land edge and erosion class recorded in detailed written notes, photographs and sketches.

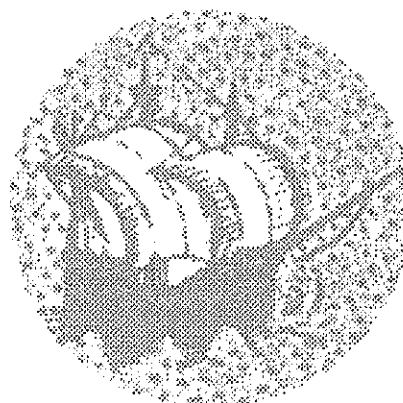
Following completion of the desk top and field work stages, prolonged absence through illness of the officer originally invested with this project necessitated a change in project staff for the compilation and editing of this report. This resulted in inevitable delays in the original project timetable.

1.3 Acknowledgments

The report authors wish to extend thanks to Cadw, for funding this project and for their patience when it became apparent that circumstances would not permit the original project deadline to be met.

The advice and expertise of several members of staff of the Dyfed Archaeological Trust was very much appreciated during the editorial stage of the production of this report. Firstly, Heather James and Don Benson, whose wide experience and knowledge of the archaeology of the west Wales coastline proved to be of great value. Thanks must also be offered to the project draughtsman Ian Darke and to Emyr Morgan, the Trust's development control officer, who supplied ground photographs (of the Aberarth fish traps) from his personal collection. Nigel Page kindly provided observations on the archaeological potential of shipwrecks and the future management of such sites.

We are also grateful to Dr. Martin Bell (St. David's University College, Lampeter) and Mr. Toby Driver, RCAHMS, Aberystwyth, who both contributed information regarding recent prehistoric finds along the Cardigan Bay coastline.



1.4 Summary.

This project has established that the southern section of the Cardigan Bay coastline is generally stable, but that there are localities where both natural erosion by the sea and human activity are threatening important archaeological sites.

There are very few areas of deposition along this coastline, these generally being confined to the major estuaries of the study area. Even the hardest rock coast edge is subject to gradual attrition by the sea. Long sections of the coastline are characterised by rocky coastal cliffs. Many of these are capped by glacial drift material which is subject to erosion, causing localised slumping of land at the cliff top which eats into areas of cultivated land, destroying field boundaries and some archaeological sites as it proceeds. Some coastal sections are characterised by boulder clay cliffs or bluffs which are much more susceptible to erosion, but fortunately these are generally limited to the mouths of minor coastal valleys or only occur in relatively short sections and therefore are only a problem in localised areas.

The land edge is the location of numerous archaeological sites, including many of prehistoric date through to those of 20th century origin. There are few 'new' landscapes, created by recent deposition of alluvial material, thus most of the land surface along the coast edge can be considered to have the potential to include archaeological material of all the main post-

glacial archaeological periods. In areas where blown sand has accumulated to form sand dunes, evidence suggests that archaeological sites of mediaeval and prehistoric date may be obscured.

This survey has added over 400 new sites to the regional SMR, dating from all periods from the mesolithic onwards. The vast majority of these are of post mediaeval date, and should be seen as important additions to the SMR database in view of a previous bias towards non-post mediaeval sites within the record.

In the face of the erosional threats to the coastal archaeological resource, management responses specific to a number of archaeological sites and site types have been made within the report. These recommendations will hopefully provide a means of either protecting sites from continued damage, or where that is impossible, at least ensure that a proper archaeological record is made of features and buildings before they are wholly destroyed.

Equally importantly, it is hoped that this report, in conjunction with others in the series commissioned by Cadw to cover the whole of the Welsh coastline, will draw attention to the coastal archaeological resource and ensure that its richness and variety is no longer overlooked. This may help avoid the unnecessary and unrecorded destruction of archaeological sites and historic buildings in future.

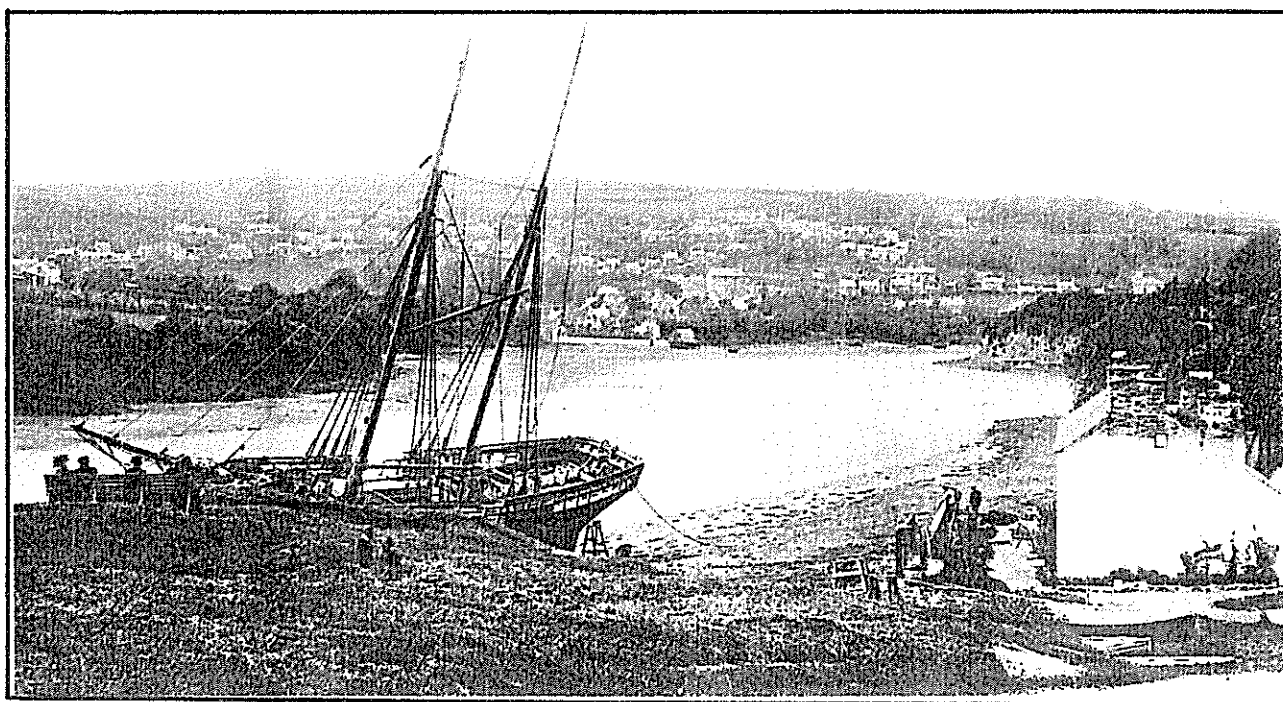


Fig.1; Netpool, Cardigan in the late 19th century (from Pritchard, 1907).

2. THE STUDY AREA

2.1 Definition of the study area

The study area was defined as the coastal strip and foreshore along the whole of the Cardigan Bay coastline south of the Dyfi estuary.

For the purposes of the study, the coastal strip was defined as all land within 150m of the mean high water mark, excluding built up areas such as towns and villages. The foreshore was defined as the intertidal zone between the mean high and low tide marks.

In river estuaries (other than the Dyfi estuary, which was excluded from the report), the boundary of the study area was taken to be the lowest existing bridging point of the river concerned.

2.2 Geology & Geomorphology

Geological factors have had a significant effect on the shaping of the Cardigan Bay coastline. North of Llangrannog the coastline is composed of rocks of Silurian age, including mudstones, shales and grits of the Llandovery series. These are often relatively soft rocks, hence much of the coastline in the northern half of the study area has a more gentle appearance than that of southern Ceredigion and north Pembrokeshire.

South of Llangrannog, the coast is generally composed of older and harder upper Ordovician rocks. Here a combination of mudstones, grits, greywackes and conglomerates produce a generally more rugged coastline, with extensive sections of high and rocky cliffs (Smith & Yonow, 1995, 13). The Pencaer peninsula, which forms the southern extremity of the Cardigan Bay coastline, is composed mainly of hard intrusive and extrusive igneous rocks of Ordovician age which give the coastal landscape here a particularly rugged character.

The most recent significant geological episodes are related to the periods of glaciation which affected the area during the Quaternary era. Undoubtedly, the landscape of what is now the Cardigan Bay coastline was very different at the end of the last Ice Age compared with its present form. Sea levels are thought to have been as much as 30m lower than at present, which would mean that an extensive tract of what is now Cardigan Bay would have been dry land until the close of the last period of glaciation (Cave & Hains, 1986, 3). As the glaciers gradually melted, from c. 10,000BC onwards, so sea levels rose, flooding this coastal plain and the mouths of river valleys which ran westwards from the Cambrian Mountains towards the sea. Eventually, the sea reached what were previously inland hills, and it is the erosion of these hills which has produced the cliffs so characteristic of the present coast edge.

Evidence of this rise in sea levels is recorded in the Borth area, where borehole evidence suggests that sea levels were certainly still rising from 6000BC until 4000BC; possibly at a reduced rate towards the end of this period (Cave & Hains, 1986, 118). The

submerged forest recorded on Borth beach was probably flooded by about 3000 BC, when it suggested the sand and shingle spit along the adjacent coast edge began to form thus protecting a larger area of raised bog on Cors Fochno from inundation (Cave & Hains, 1986, 117).

Glacial action has also had its effect on the coastline, with frequent evidence of glacial erosion and deposition seen along the length of the study area. Boulder clay and glacial till deposits are often exposed on the coast edge, capping the rock cliffs, and in some areas replacing them entirely. Many of the small river valleys which run to the coast edge were scoured by glacial action during the last ice age and then left choked with boulder clay, deposited as the ice retreated. The mouths of such valleys are now often subject to significant erosion from the sea, with these soft boulder clays now exposed to wind and wave action.

Alluvium and blown sand are also representative of more recent geological deposition, generally confined in their distribution to the larger estuaries, such as those at the mouths of the Dyfi, Teifi and Nyfer rivers, where active dune systems are found.

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 Recording archaeological sites

The importance of maintaining an accurate and up to date record of known archaeological sites means that desktop and field survey work such as that engaged during this project offer a valuable opportunity to enhance and extend the records held by the Dyfed Archaeological Trust.

Information is collated into the regional Sites and Monuments Record (SMR) where it is stored both on a computer database and in hard copy format. Each site is allocated an unique identification number known as a Primary Record Number (PRN). Throughout this report, the PRN of all sites mentioned in the text will be quoted.

Each PRN record includes all known details of a site, from its National Grid Reference number to details of its history, condition, ownership and status (i.e. whether or not it has statutory protection as a Scheduled Ancient Monument (SAM) or listed building). A description of the site is also usually provided if it has been visited in the field and sometimes a plan and /or photographs will be provided.

Over 400 new sites were added to the SMR by this survey. The condition of many of the 150 or more previously known sites recorded along the coastal strip was also checked as fieldwork progressed and a large amount of new survey and documentary information added to their records.

The vast majority of the new sites were of post mediaeval date, redressing an imbalance in favour of sites of earlier periods previously found in the SMR.

3.2 Evaluation of the Historic Landscape: Prehistory

In archaeological terms, the last Ice Age is poorly represented along the Cardigan Bay coastline. Although it is known that human communities were present in south Wales during the Palaeolithic period (500,000 - 9,000BC) a single Palaeolithic flint axe (PRN11443) found on the beach near Llansantffraid, Ceredigion alone represents these early periods. Its source is unfortunately unknown.

With the retreat of the ice from c.10,000BC onwards, the character of the landscape across Wales changed. Within 2,000 years the land was probably ice free and the landscape was increasingly a wooded one, with post-glacial birch forests covering much of the land, apart from the highest peaks and areas of coastal sand dunes.

It is this sort of landscape which probably existed in west Wales during the mesolithic period (c.9,000 - 5,000BC) when hunter-gatherer communities exploited the forests along the area which is now the Cardigan Bay coastline. A significant body of archaeological evidence now exists for the activities of these communities, much of it derived from chance finds along the coastal strip.

Flint artefacts and waste flakes of flint left by mesolithic hunters are relatively common finds along the whole of the Pembrokeshire and Ceredigion coast. When the Dyfed Archaeological Trust undertook the excavation of the coastal mediaeval town at Newport, many dozens of worked flint flakes were found beneath the mediaeval surface as well as a stone tranchet axe dated to c.7,000BC (Miles, 1995). This has been interpreted as evidence of a mesolithic camp site, where hunters prepared a variety of flint tools, such as arrowheads and scrapers.

Other so-called 'flint working floors' are recorded further north, such as those near Aberystwyth Harbour (PRN 8305) and at Clarach Bay (PRN 30900 & 30908), for example. The beach and sand dunes north of Borth are of exceptional significance to our understanding of the mesolithic period, for here numerous finds have been made, apparently derived from the submerged forest exposed on the foreshore (PRN 30898). These include an antler tool (PRN 30894), a flint pick (PRN30899) and numerous flint flakes (PRN 30907). The submerged forest and overlying peat deposits are themselves a valuable source of palaeo-environmental information.

Evidence of neolithic activity along Cardigan Bay coastline is, generally, poor. There are examples of fine neolithic chambered tombs around the Nyfer basin in north Pembrokeshire. However, only one of these falls within the study area (Carreg Coetan, Newport - PRN 1462). A relatively large number of neolithic stone axes have been found in Pembrokeshire and Ceredigion, several in coastal locations. There are also sites associated with the manufacture of stone axes during neolithic times in north Pembrokeshire, usually close to outcrops of igneous rock, such as on Carn

Meini on the Preseli Hills (PRN 1186).

Evidence of bronze age activity in the study area is mostly restricted to funerary monuments, such as round barrows, standing stones and cairns. The most significant concentration of bronze age sites in the study area was discovered to be north of Goodwick, on the Pencaer peninsula. Much of this area is already recognised to be an archaeologically important landscape by its inclusion in Cadw's Register of Historic Landscapes (Cadw, 1995).

The iron age is the earliest period for which significant evidence of settlement sites is known. Along the coastal strip there are several good examples of promontory forts dating to this period, often built on rocky headlands which jut out from the coastline. By the nature of their location, these coastal forts represent a class of archaeological site which is highly vulnerable to erosion by the sea. Some are currently being badly eroded, such as Castell Treruffudd, Moylegrove (PRN 1157) and Craig y Gwbert, Cardigan (PRN 7735).

These must be considered in the context of their possible relationship with other iron age forts and related sites further inland, for both Cardiganshire and north Pembrokeshire are dotted with forts belonging to this period (c.700BC - c.100AD), indicating widespread settlement and cultivation of the area by the late iron age. Where unenclosed land survives, such as in the Pencaer area (Strumble Head) or on the Preseli mountains, traces of iron age field systems and undefended settlements have been recorded.

Unenclosed land along the coastal strip is generally less extensive and fragmentary, but there are indications of similar features around Pendinas Lochdyn (PRN 7670) and also on the ridge of Penmoelciliau (PRN 32030), between Cwmtudu and Ynys Lochdyn, where a number of coastal and inland forts are concentrated and indications of a possible prehistoric field system recorded. Future, detailed survey of such coastal areas might well provide significant archaeological information of relevance to the prehistory of the region in general.

At present, little can be added regarding the archaeology of the Roman period in the study area. There is good evidence for the conquest and militarisation of inland Ceredigion, whilst recent discoveries relating to the Roman road from Carmarthen into Pembrokeshire promise to greatly enhance our understanding of the period in that county also. Evidence pertaining to this period is relatively scarce along the coastal fringe, but at the same time indicative of possibly busy coastal trade. Finds of Roman coins have been made along the Pembrokeshire coastline and, equally importantly, the excavation of inland hillforts have revealed sherds of Roman pottery and amphorae which originate from continental sources, strongly suggestive of a trading link between the west coast of Wales and the continent during the late iron age. This is the case at Castell Henllys, Nevern (PRN 952), where a small Romano-British settlement is being excavated over an

extended period (Mytum, 1986).

This is, perhaps, to be expected, for the Cardigan Bay coastline has historically been remote from the main centres of population and land based communication routes. The use of sea routes for trade and travel was an obvious way to overcome this isolation. How frequently the west coast was visited by continental traders during this period we cannot know, nor is there any archaeological evidence for the use of any of the Cardigan Bay ports by Roman military vessels. But, in view of proven Roman activity further inland, the suspicion is that such was the case and future research and excavation may yet provide such evidence. An earthwork site (PRN 32007) recorded on a headland near Fishguard during this survey, and likened in form to a Roman signalling station, may prove to be of great significance.

3.3 The Mediaeval Background

Despite the gaps in our understanding of the Roman period in the study area, there is now a considerable body of archaeological and documentary evidence to show that the Cardigan Bay coastline was a relatively busy environment from the early mediaeval period onwards.

In Wales, the centuries following the end of the Roman period are, quite appropriately, known as *Oes y Saint*, The Age of the Saints. This period lasted from the 5th to the 9th century and it was a time of often busy missionary activity along the sea routes along this western coast - from Scotland, Ireland, Cornwall, Brittany, north west England and northern Spain.

The legacy of this period in west Wales is immediately recognisable in the place names and church dedications of Ceredigion and north Pembrokeshire. Brynach Gwyddyl, an Irish saint is commemorated at the sea side church of Cwmyreglwys; Tydycho, a Breton, is said to have founded a monastery at St. Dogmael's and is remembered in the Welsh name of that village *Llandudoch*. In Ceredigion, the name of Llangrannog village commemorates Carantoc, a seafaring saint who to whom churches are also dedicated in Brittany and north Cornwall (Jenkins, 1982, 3).

The activities of these early missionaries have also left a valuable archaeological legacy, for a number of important early Christian sites are located along the Cardigan Bay coastline. The churchyard of the now ruinous church at Cwmyreglwys (PRN 1585), was surveyed by the Dyfed Archaeological Trust in 1981 when a new sea wall was constructed and stone lined cist burials of early mediaeval date were recorded (unpublished survey notes are held in the Detailed Record File of the Dyfed Archaeological Trust's SMR). This type of stone lined coffin has been recognised at inland churchyards and other sites which have been excavated by the Dyfed Archaeological Trust in recent years. At the time of writing, partial excavation of Eglwyswrw churchyard is producing such cist graves (Ramsey, forthcoming, PRN 30852).

The likelihood of similar archaeological evidence surviving at coastal churches such as Mwnt Church (PRN 5324) and Penbryn parish church, on Llanina Point (PRN 5656), must be considered quite high.

Apart from those churches which remain visible in the landscape, many early Christian sites have been abandoned for centuries and now only survive as archaeological sites. Several are known along the Cardigan Bay coastline, with three good examples clustered around Strumble Head. These include the sites of two early mediaeval chapels (PRN 2612 & 10101) and a possible early monastic site located on Ynys Meicel (PRN 13345), which it now shares with the Strumble Head lighthouse.

Later mediaeval activity along the coastline is more varied in its character and we can also draw on documentary evidence to increase our understanding of the period. A range of settlements and military sites are known, mostly associated with the period of the Norman conquest, but we also have some clues as to the economic exploitation of the coastline and its' adjacent landscape.

Amongst the finest mediaeval sites in the study area must be counted the Norman castle at Aberystwyth (PRN 559). Built in 1277, on a rocky promontory near the mouth of the Afon Rheidol, the castle succeeded an earlier, inland earthwork stronghold and protected the mediaeval borough town and harbour of Aberystwyth, which was the military and economic focus of this central section of Cardigan Bay.

Old Castle, Cardigan (PRN 1068), is a motte and bailey castle which has been tenuously identified as *Dingereint*, a pre-Norman stronghold which became the location of the first Norman castle to be built in Ceredigion (by Roger Montgomery in 1093). It is the forerunner of the stone castle which stands in Cardigan town, which became another Norman stronghold with borough status and a busy port.

Further south, the Norman borough town of Newport also has a possible earthwork castle close to the shore (PRN1468), possibly the forerunner of the stone castle built in 1191 by William Martin. Here, the Dyfed Archaeological Trust has been involved in the excavation of an area of the mediaeval town near the original castle site (Murphy, 1991). Several Burgess plots dated to the 14th century were uncovered and, here too, much valuable information relating to life and economy of the area in mediaeval period was discovered.

At Gwbert, near Cardigan, excavations by the Dyfed Archaeological Trust in the mid 1970's examined a mediaeval rubbish pit (PRN 4997) which may be associated with a mediaeval settlement buried beneath an adjacent area of sand dunes. The rubbish pit was eroding out of a low coastal bluff. It was found to contain well preserved animal bones, leather, wood and pottery which places it amongst the most important mediaeval sites excavated in west Wales (Barnie & Benson, 1975). This chance discovery on a relatively remote stretch of coastline indicates the archaeological potential of the coastal strip

Another aspect of mediaeval archaeology which is of relevance to the coastal strip is the preservation of mediaeval field boundaries and other evidence of cultivation, a valuable guide to the extent and nature of arable farming in the area throughout the mediaeval period.

At Llannon and Llansantffraid in mid Ceredigion there is an excellent example of a relict mediaeval strip field system (PRN 6438). The area was part of an estate owned by the Bishop of St. David's and conservative landlordism allowed the survival of the practice of subdividing arable land into long, narrow strips, shared out between tenants of the estate. Here the practice lasted well into the post mediaeval period, long after other communities had enclosed their lands into the type of hedged fields we are more familiar with today (Davies, 1973). Although now modified by modern agricultural practices, the mediaeval field boundaries are well documented and many are still visible in the landscape. Another such field system has been recorded at nearby Aberarth (PRN 6439).

On a wider scale there are frequent examples of surviving traces of ridge and furrow ploughing. These may in some instances be of mediaeval date. They are often found on land along the coastal strip, either outside the modern field system or on rough pasture land. The plough marks are clear evidence that attempts have been made to bring such areas into cultivation in the past, although to what degree such attempts succeeded is unknown.

3.4 The recent history of the Cardigan Bay coastline: A Summary.

In terms of both maritime activity and land use, our understanding of the post mediaeval period is greatly enhanced by the availability of documents, maps, prose, poetry and oral tradition.

From the mid 16th century onwards, surviving Port Books provide solid information of the type of coastal trade carried out along the Cardigan Bay coastline. The Port Books of Cardigan are available from this early period and record that only small fishing vessels were in use in Cardigan Bay at that time, fishing the huge shoals of herring present close to the shoreline. Fishermen of this period were undoubtedly only part time mariners, spending most of their year engaged in agricultural pursuits but making the most of the sea's produce to supplement their poor diet (Jenkins, 1982, 6).

It was upon this seasonal herring fishing that the growth of later commercial activity was based (Jenkins, 1982, 7). Nets, salt and casks were imported into the district by sea, chiefly from Ireland, but increasingly from England and France, to supply the Cardigan Bay herring fleet. A reciprocal export trade in salted herrings developed and this trade expanded during the 17th century, with goods as diverse as

cereals and slates being exported from Cardigan and north Pembrokeshire (Jenkins, 1982, 17). George Owen, writing in the opening years of the 17th century specifically notes the export by sea of roofing slates from coastal cliff quarries around Newport and Dinas to southern Pembrokeshire and Ireland (Miles ed., 1994, 83).

During the 18th century, acts of Parliament designed to encourage herring fisheries led to a boom in the fishing industry in Cardigan Bay (Jenkins, 1982, 9). Almost every creek along the coastline had its own herring fleet, the most important found at harbours such as Fishguard, Newport, the Teifi estuary, New Quay and Aberaeron.

Throughout the 18th century, there was a further general increase in trade and a widening in the range of commodities handled. By the last quarter of the century, there was also a busy shipbuilding industry along the Cardigan Bay coastline, from Borth to Fishguard, and seafaring or related activities were becoming the main occupation of men in coastal communities. Small natural harbours such as New Quay were by now being enhanced with the provision of purpose built quays to facilitate the landing of fish and goods.

During the first quarter of the 19th century commercial activity came increasingly to the fore and a number of purpose built stone harbour facilities were constructed, such as at New Quay, (1835 onwards) Aberaeron (1807 - 12) and Aberystwyth (1836 onwards; Dr. So, 1969, 325).

The 19th century saw the heyday of maritime activity in Cardigan Bay, with the herring fisheries of the Bay remaining successful until the last decades of the century and busy trading ports dotted along the coastline, such as Fishguard, Newport, St. Dogmael's, Cardigan, Aberporth, New Quay, Aberaeron, Aberarth, Aberystwyth and Borth.

Many small vessels were engaged in the busy trade of carrying coal and limestone to the creeks and inlets of the Cardigan Bay coastline, for burning in coastal limekilns which supplied the farmers of north Pembrokeshire and Ceredigion with lime fertiliser. Passenger ships left Cardigan for destinations in the North America, and many locally owned ships and locally based captains and crews made the trans-Atlantic journey, engaged in a profitable trade.

Despite the spread of reliable rail and road links to towns such as Fishguard, Cardigan and Aberystwyth, and a loss of trade and seamen to the great ports of north west England and South Wales as the century drew to a close, this busy trade survived into the early 20th century. However, by the late 20th century only the modern port at Fishguard handles passengers and goods. The largest of the 19th century harbour facilities, such as at Newport, Aberaeron and Aberystwyth remain busy with leisure craft. A small inshore fishing fleet also survives, mainly concerned with catching lobster and shellfish, which are landed in small quantities at ports such as New Quay and Aberystwyth (Smith & Yonow, 1995, 54).

There are several significant types of site relating to the trading heritage of the Cardigan Bay coastline which are visible in the modern landscape. Many of the creeks, bays and ports of the study area retain fine 19th century lime kilns, which were important sources of agricultural lime fertiliser and lime whitewash. These were supplied with coal and limestone from south Pembrokeshire or elsewhere in south Wales. This was one of the busiest aspects of coastal trade around west Wales throughout the 19th century (see Moore-Colyer, 1992).

The increase in trading activity led to an increase in the numbers of mishaps at sea, with frequent losses of fishing and trading vessels recorded along the west Wales coastline throughout the 18th and 19th centuries (Bennett, 1981). In response to this problem, the late 19th century saw the establishment of effective lifeboat and coastguard services along the coastline, and many late 19th or early 20th century buildings associated with these services remain (although they are much under appreciated as historic features).

Whereas most fishing was carried out from inshore fishing vessels, the use of fish weirs known as *coredau* was popular on some sections of the coastline, particularly between Aberystwyth and Aberaeron. In plan, the *cored* is a simple V - shaped or semi-circular stone wall, designed to create artificial pools of water on the intertidal strip as the tide fell, trapping fish, which could then easily be collected at low tide. Although disused since the 1930's, relatively well preserved *coredau* are still visible on the fore-shore at places such as Aberarth.

On the coastal land edge, the 19th century saw an increase in the size and population of the main towns along the Cardigan Bay coastline, a development which was in many ways related to the increase

in coastal trade and the employment offered in seaman-ship or associated trades. As previously mentioned, this growth is seen in the surviving harbour and port facilities along the coastline.

Changes were occurring in rural coastal areas also. By the late mediaeval period the type of collective, openfield agriculture represented by the type of strip field systems previously noted at Llannon, was in decline and large estates were being amassed by individual landowners. By the latter half of the 18th century, increasing population required increasing agricultural output and pressure was felt to extend the margins of cultivated and grazed land into that marginal land which survived.

Along the coastal fringe this led to the enclosure of some of the waste land which had not been cultivated in the mediaeval period. This process is more usually associated with the enclosure of upland wastes by Acts of Parliament in the late 18th and early 19th centuries, but it also applied to areas of coastal hills and unenclosed coastal strip. Some indication of the extent of coastal enclosure can be gained by comparing the unenclosed lands shown on the earliest OS maps (the 1 inch to 1 mile series of 1830) with modern maps (such as the 1:25,000 Pathfinder series).

Some of the land reverted to its rough state subsequently, some has remained under cultivation, but the earthwork boundaries which delineated the post-mediaeval field systems of the study area are useful indicators of the extent and rate of coastal erosion. In some areas they survive above the coast edge, in others they have been lost to erosional forces and have been replaced by modern wire fences. Those areas which escaped 19th century enclosure, such as Cemaes Head in north Pembrokeshire are now havens for flora and fauna unsuited to the agricultural landscape.



Fig.2: From Blaeu's Map of Cardiganshire, 16th century. Note the absence of Aberaeron and New Quay, neither of which had developed at this time.

4. ENVIRONMENT & HERITAGE: THE PROMOTION AND PROTECTION OF SITES

The Cardigan Bay coastline is by now widely recognised for its natural beauty, the richness of the flora and fauna of its land edge and its wealth of sea life. It is also recognised that both land and sea based ecological systems and animal and plant communities are sensitive to human activity and pollution, and positive attempts have been made in recent decades to identify those areas of greatest importance and safeguard their future.

The legacy of human activity along the same coastline is in itself a fragile and threatened resource, yet it often has a much lower profile. A recent report on the management of the Cardigan Bay coastline and (Smith and Yonow, 1995) only identified six sites of archaeological or historic interest along the coastline included within the study area of this report. This is a serious under-representation of the historical value of the Cardigan Bay coastline. As has been previously noted, this survey alone has added over 400 newly recorded archaeological sites to the regional SMR. Many of these sites are important clues as to how our coastal landscape has been exploited and shaped by previous generations, and an understanding of this human influence is in many ways important to our understanding of the present and future of this sensitive environment.

4.1 Tourism, Education & Heritage Promotion.

Archaeological and historic sites offer the raw material which can be used to interpret, understand and promote a landscape. Increasingly, the preservation and promotion of historic sites has implications for strategic economic planning in rural Wales, for tourism has developed to be one of the most important industries supporting the economies of both Ceredigion and North Pembrokeshire.

Tourism, traditionally focused on the coastal strip, is certainly not a modern phenomenon, for 'holidaymakers' were visiting the Cardigan Bay coastline during the 19th century, when coastal villages such as New Quay or Newport began to acquire reputations as good bathing resorts.

The importance of tourism to the local economy is recognised in present times by a plethora of initiatives and projects designed to attract visitors and keep them in the locality for as long as possible. Sections of the Ceredigion coast have been defined as Heritage Coastline and promoted to the general public (see *Ceredigion's Coastal Heritage*, Ceredigion District Council, 1983). The Pembrokeshire Coastal Path gives full access to the coastal strip for walkers and a

number of key sections and locations along its course have been earmarked for particular attention by a series of guide books and pamphlets (e.g. John, 1990). Also in Pembrokeshire, organisations such as Menter Preseli have been established to help local community councils and other groups identify and develop heritage themes to attract visitor interest.

These strategies have enormous implications for the coastal strip, for recent decades have seen an increase in visitor numbers and a parallel increase in the number of leisure facilities and holiday villages which have been established with easy access of the coast. New Quay, for example, has large caravan parks located immediately adjacent to the coastline; Aberaeron is bordered on the north by extensive caravan sites; Clarach Bay has its own holiday village. In north Pembrokeshire much work has been carried out by the Pembrokeshire Coast National Park around the quay at Parrog, Newport, whilst at Aberystwyth, the old harbour, with its wharves, warehouses and lime kilns has been radically altered by housing developments associated with the creation of a new marina. Each of these examples, and others which are listed elsewhere in this report, have implications for the character of the coastal environment and, of immediate relevance, for the archaeological resource of the coastal strip.

However, there are areas where appropriate and carefully considered development can help enhance and protect historic sites and at the same time create new attractions which can be of benefit to both tourism and the educational sector.

It is well established that many areas of natural beauty or ecological importance can be preserved whilst still allowing public access, providing that interpretative facilities and site management ensure that damage is not sustained because of visitor pressure. This is the case in many of the National Nature Reserves and SSSI's located in the study area. The same is equally true of ancient monuments and historic buildings, and there are indeed examples of individual sites and buildings having been identified for such use. Carreg Coetan Cromlech, Newport (PRN1462) and the Mercantile Warehouse, Cardigan (PRN 5301) are two such examples (although the encroachment of housing developments around the former is perhaps unfortunate).

It is clear that there are many localities along the length of the Cardigan Bay coastline which have historic sites or heritage themes which have potential for development. An obvious heritage theme is the maritime tradition of the area, ranging from fishing and trading to shipbuilding and associated crafts. It is a rich theme which is relevant to virtually all of the coastal settlements in the study area, but one which is infrequently encountered on the ground.

Even where physical reminders are slight, map and documentary evidence can offer valuable interpretative material. (Maritime Heritage (Jenkins, 1982), gives a remarkable insight into the richness and variety of the material available).

A single example of a village with a rich heritage is that of Aberarth, which was a focus of mediaeval settlement and has a recorded relict mediaeval field system (PRN 6438). It is also documented that the monks of Strata Florida Abbey imported building stone through Aberarth and also owned a fishing weir at the mouth of the Afon Arth (Jones, 1981, 71). The adjacent shingle foreshore is covered with the remains of old stone built *coredau* or fish traps, the last traces of a fishing tradition which was undoubtedly rooted in the mediaeval period. In the 18th and 19th century fishermen, shipbuilders and shipowners lived in the village and lime was burnt in a series of kilns near the sea edge. The cottages of the village and the nearby parish church should not be forgotten, but the overall impression is of a small area packed with sites and features of historical importance.

Interpretation of such historic sites and themes can be provided through the publication of guide booklets or through permanent interpretative panels being established, in conjunction with a designated heritage trail. Suitable archaeological or historic sites can be incorporated into such an interpretation, bearing in mind the importance of maintaining the character and condition of such sites at all times (Aberarth has been designated as a Conservation Area; see Ceredigion District Council Local Plan, 1995).

Several larger coastal settlements still have harbours which retain old warehouses or associated buildings, and the possibility of transforming such a building into a maritime interpretative centre might prove an option.

Any resultant development can be environmentally friendly, informative, educational and enjoyable. It can be of interest to visitors and locals alike and, in the age of a National Curriculum which requires site visits for children studying historical themes, provide schools in the region with ideal venues for field trips (Welsh Office, 1991).

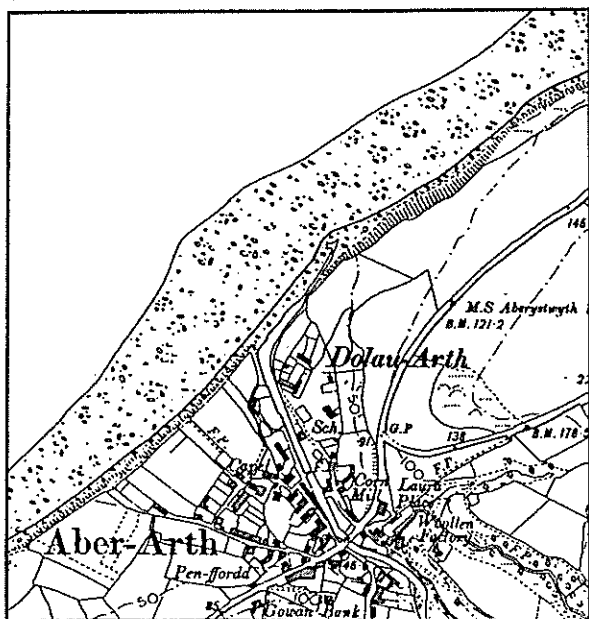


Fig.3; Aberarth in the late 19th century.

4.2 Designated sites of environmental and heritage importance.

4.2.1 Ceredigion

Four separate lengths of Ceredigion's coast are protected as Heritage Coasts. They cover some 22 miles in length and comprise one third of the County's coastline. From north to south they comprise:

Clarach - Borth (SN586842 - SN602886)
 Llanrhystud - Monks Cave (SN532702 - SN556746)
 Tresaith - New Quay (SN278517 - SN386605)
 Gwbert - Pen-peles (SN159501 - SN218524)

The designations were made in 1988 and a Management Study prepared in 1989. A list of Scheduled Ancient Monuments was included and a list of areas of archaeological interest. These were simply PRNs with grid references from the SMR, without any site details. They were not mapped and no management proposals specific to the archaeological resource were made. There have been a few consultations with Dyfed Archaeological Trust over the management of individual sites since.

In 1992 the Heritage Coast was extended by the designation of a Marine Heritage Coast from Tresaith to New Quay of 16 km coastal length extending seaward for 1 mile. Whilst archaeology is not specifically mentioned in the *Introductory Report: Ceredigion Marine Heritage Coast* the conservation of landscape aspects is included in the definition of its natural resources.

The relevant policies in the Ceredigion Local Plan are ENV3 (where heritage features of architectural, historical and archaeological interest are mentioned) & ENV11. The County proposes an Heritage Coast interpretation centre at Aberaeron. Management of the Heritage Coast is within the new Coast and Countryside section of Cyngor Ceredigion. There is a recognized need for a new Management Plan, but it has yet to be decided whether Heritage Coasts will be included in a wider Countryside Strategy document which the new Authority will be required to produce by Countryside Commission for Wales (CCW). Of the two proposed SACs (Special Areas of Conservation) from the Welsh List responding to the EC European habitats directive affecting this Report's coastal length, only Cors Fochno will require the input of archaeological data.

Outside the Heritage Coast areas the remainder of the Ceredigion coastline is designated as a Special Landscape Area. This extends about 1 mile inland of the coast, and the designation is derived from 'strategic landscapes' in the former Dyfed Structure Plan, 'the characteristics of which are to be conserved and protected' (Ceredigion Plan Policy ENV1). Within the built areas some sites and buildings of coastal interest and location are protected by listing or are within

conservation areas (Aberystwyth, excluding most of the harbour, New Quay harbour, Llangrannog, proposed Conservation Area, Aberarth, proposed, Aberaeron and Cardigan, small area of town quays and Bridge, and St Dogmaels).

The section of coastline surveyed in this report lies within cell 9 (Bardsey Sound to St David's Head) of the 11 major sediment cells around the English and Welsh Coast defined by Hydraulics Research, Wallingford. The Directorate of Highways, Property and Works are likely to be the lead body within Cyngor Ceredigion in the preparation of the Authority's Shoreline Management Plan but there will be close consultation with the Coast and Countryside Section. No timetable has yet been decided upon by the Authority for the preparation of the plan.

In 1993, the CCW took over the responsibility of providing a secretariat for the Heritage Coast Forum in Wales. There is no archaeological representative on the Welsh Heritage Coast Steering Group. There are 14 coastal sites of scientific interest (SSSI's) along the Ceredigion length of Cardigan Bay which contain archaeological sites and historic landscape features. The CCW has special responsibility for the Ceredigion Coast and has been appraised of this report and will be provided with a copy.

The National Trust own sections of Heritage and Marine Heritage Coast but no detailed archaeological survey of these holdings have been made. This Report therefore will be made available to the National Trusts' archaeologists in Wales.

4.2.2 Pembrokeshire Coast National Park

Although the Teifi estuary mouth is the boundary between Cyngor Ceredigion and Pembrokeshire Coast National Park, the heritage coast designation is continuous. This is unbroken down to and beyond Strumble Head, which forms the southern boundary of this Report area, apart from the man-made coastline of Fishguard Harbour. A long length of coastline from Strumble head southwards is designated as an SSSI, together with 4 other smaller lengths within the National Park included within this study area. Dinas Island and two other smaller coastal areas are owned by the National Trust.

There is close consultation and liaison between PCNP and Dyfed Archaeological Trust, since the Park has no archaeologist in post, nor does it maintain its own Sites and Monuments Record.

Shoreline Management Partnership were retained by Preseli District Council and South Pembrokeshire District Council to prepare Management Plans. These had only advanced to consultation stage through Scoping Documents at the time of reorganisation.

A possible development which could have a considerable impact on coastal archaeological sites in PCNP is the bid for millennium funding to purchase a continuous strip of land, one field depth in from the Coast Path. The Cadw Coastal Survey for this and future reports will be of considerable value in making detailed management recommendations for sites affected by this initiative.

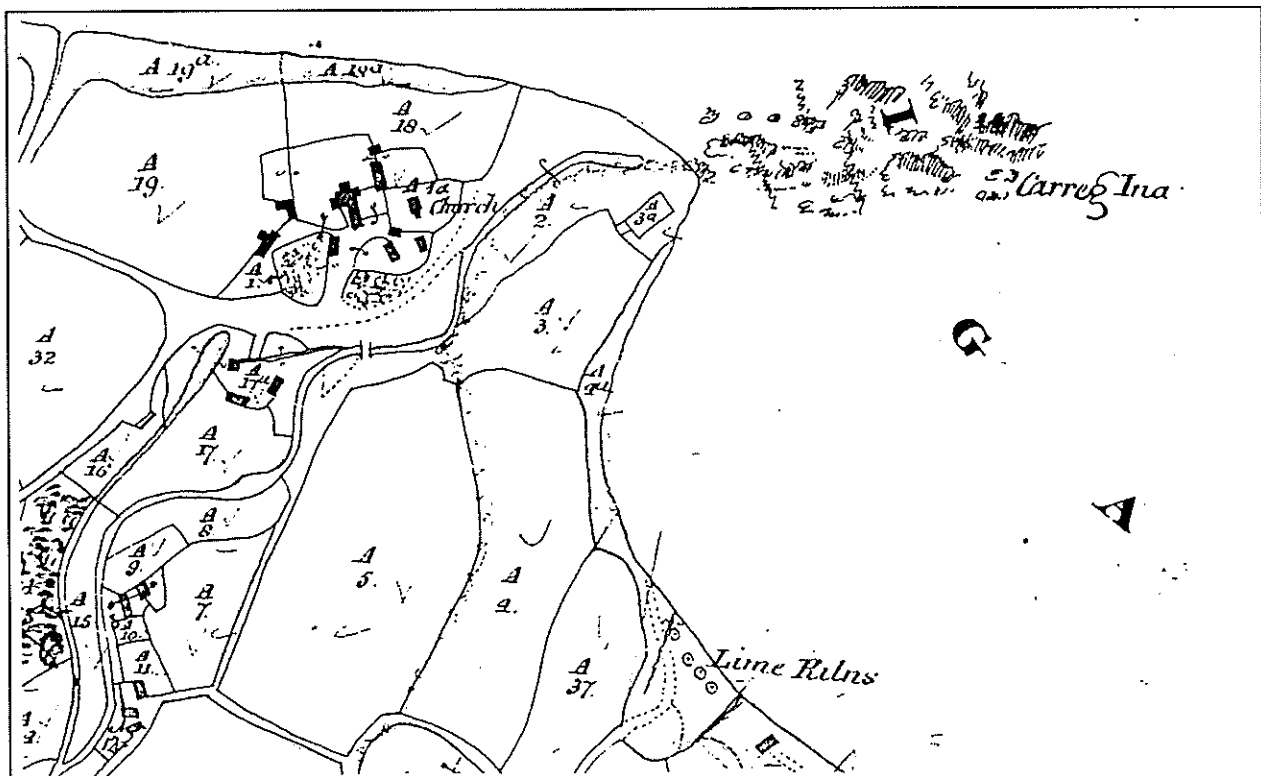
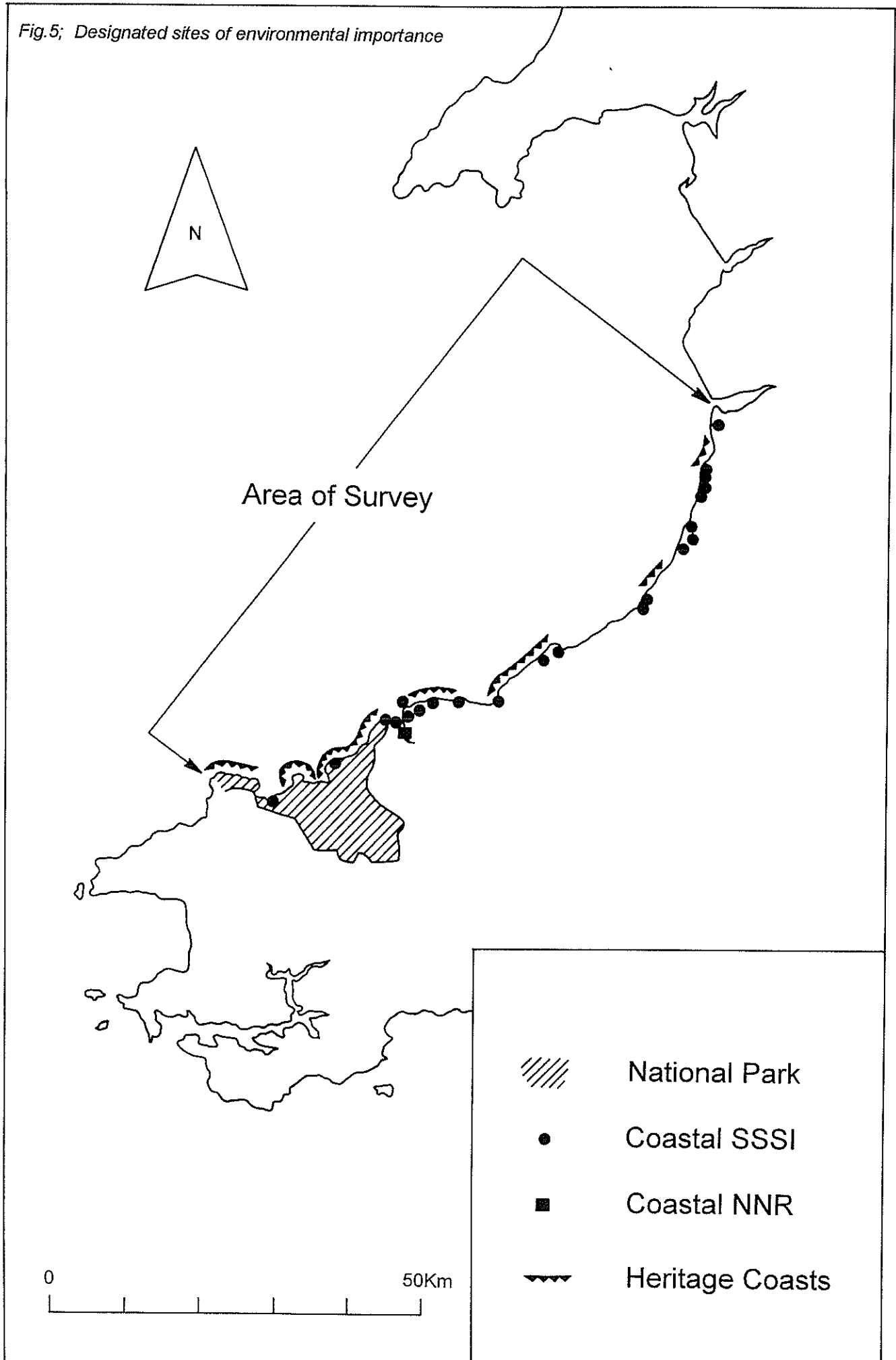


Fig. 4; Llanina Point as shown on the Llanina parish tithe map of 1841. The lime kilns east of the point (at the bottom of the illustration) have been lost to the sea.

Fig.5; Designated sites of environmental importance



5. EROSION & ARCHAEOLOGY

Field visits combined with map and documentary evidence indicate that there are some localities along the Cardigan Bay coast where archaeological sites are seriously threatened by coastal erosion.

Added to this threat is also that posed by human activity. This occurs in four main forms;

- i) erosion of the land surface by visitors, as observed on some sections of the coastal path
- ii) agricultural activity, particularly ploughing
- iii) through the redevelopment of sensitive areas. This includes ports and harbours some of which appear to have been drastically changed in recent decades, and also sites in open country which have been incorporated into tourism developments.
- iv) through inappropriate 'renovation' of historic features (a problem which particularly affects stone built lime kilns). Although usually done with the best intentions, a feature can lose its character and context when treated in this manner.

5.1 Coastal erosion

It is probably true to say that erosion by the sea is not, generally, a major problem on the Cardigan Bay coastline. A large proportion of the coastline is characterised by stone cliffs which are in the main relatively stable.

However, there is a gradual and inevitable erosion of even the hardest cliff edge, exposed daily to the power of wind and wave alike. Most often it is the upper sections of the cliff profile which are eroding, where rock is overlain by boulder clay or other glacial drift material. This is a commonly observed phenomenon, but the degree of severity varies widely, and probably varies from year to year in any given area. Only long term monitoring could assess which areas are in fact most threatened by this type of erosion.

Some soft rock cliffs, composed of softer shales for instance, are in themselves inherently unstable. North of Clarach Bay, for example, severe erosion of both the shale cliff and the overlying glacial drift is rapidly eroding the land edge, forcing the rerouting of the coastal path (see 8.1).

Cliffs composed entirely of boulder clay or other glacial drift are more liable to erosion when in direct contact with the sea. This is true at New Quay Bay, where the comparison of late 19th and late 20th century map evidence suggests that considerable land loss has occurred over the last century (Geraint Jenkins, 1982, 123, records the loss of dwellings in the Traethgwyn area, north of New Quay area during recent decades).

Wind erosion can also have a significant impact on loosely bonded glacial till bluffs, such as that found at Gwbert, Cardigan. Here wind erosion loos-

ened the sand and stone in the face of a low bluff and caused a gradual slumping which exposed an important mediaeval site (the bluff has now been protected by boulder sea defences - see 8.9).

It is necessary to draw attention to those archaeological sites most vulnerable to erosion from the sea.

5.1.1 Prehistoric sites.

In the case of prehistoric settlements, particularly promontory forts, more evidence of damage and erosion than was noted by Crane (1994) is now apparent.

In particular, erosion is now threatening the promontory forts of Ynys Lochtyn (PRN 1101), where sections of the cliff are becoming dangerously unstable (I. Darke, pers. comm., 1996) and Castell Bach, Penybryn (PRN 1368), where the fort's rampart has been cut through recently.

There is also erosion of low lying occupation areas at the promontory fort of Craig y Gwbert (PRN 7735). During the field visit it was observed that archaeological features, such as post holes, were being eroded at the seaward tip of the promontory.

The possible Roman signal station near Fishguard (PRN 32007) was being badly eroded at the time of the field visit, heightening the need for a rapid assessment of its true nature and function.

On a smaller scale, a possible bronze age round barrow (PRN 30912) recorded south of Aberaeron, is in an eroding cliff-top position. It was noted as being in a poor condition, but archaeologically important material may still be recoverable from the site.

5.1.2 Mediaeval sites.

There were no significant problems encountered with regard to mediaeval sites. One earthwork castle, Castell Cadwgan, Aberaeron (PRN 1867), has virtually been lost to the sea, with only a small section of the eastern defensive rampart of the castle remaining. Little more can be done other than to monitor these remaining defences for archaeological features as erosion progresses.

An area of relict mediaeval field system (PRN 6439) at Aberarth can be seen to have been much reduced since the 1840's. Several limekilns marked on the coast edge here on the 1840 parish tithe map have been lost to the sea and a number of field boundaries have also been lost.

5.1.3 Post mediaeval sites.

a) Breakwaters.

There are a large number of 19th century groynes and breakwaters marked on early OS maps which survive. Some are very badly damaged, but the rate of erosion of such features is unknown. This is true of 19th century breakwaters and groynes at locations such as Aberystwyth Harbour (PRN 30785) and on Borth beach (PRN 30761).

b) Military Sites.

Some of the relatively few significant military sites are threatened by the sea. St. Dogmael's Battery (PRN 31963), possibly of 18th century date, is partly collapsing into the Teifi estuary as its dry stone sea wall crumbles. Also on the north Pembrokeshire coast, the World War 2 gun battery on Penrhyn Ychen (PRN 32158) is in part collapsing, having been built directly above old slate quarries which are eroding more quickly than adjacent cliffs.

5.2 Man-made erosion.

Specific examples of damage being caused to archaeological sites by human activity were recorded during field visits and from anecdotal sources. It is important that these are listed here, for in some examples action may be required in the near future to avoid further damage or a repeat of such occurrences.

5.2.1 Sites of palaeo-environmental importance.

Erosion of the submerged forests of Cardigan Bay by natural forces is undoubtedly ongoing. However, it has been reported that sections of the peat are being cleared by machine by the local authority, apparently during the spring, in order to cosmetically improve the appearance of the beach (T. Driver, pers. comm., 1995). This practice must be considered a threat to an important archaeologically sensitive area and efforts are required to establish the nature and extent of the problem.

5.2.2 Prehistoric sites.

It was noted that potentially serious damage has been caused to the iron age promontory fort at Castell, Ceibwr (PRN 1043). A number of holiday chalets have been constructed within the area of the fort and some landscaping has also occurred.

5.2.3 Mediaeval sites.

At the Norman earthwork castle (PRN 1068) on Old Castle Point, near Cardigan, it was noted that recent ploughing and reseedling had been carried out within the bailey area.

5.2.4 Post mediaeval.

a) Ports and harbour facilities.

These features in particular may be in danger from unsympathetic renovation or development. At The Parrog, Newport, the whole of the harbour wall has been replaced with edge set slate slabs which one suspects are nothing like the original structure.

Unsympathetic renovation is a problem with old harbour buildings at Cardigan, whilst Aberystwyth Harbour has been recently subjected to partial infilling for a housing development which has left associated limekilns partly buried below ground level.

Aberaeron Harbour has also been radically altered. It is not known if, in any of these cases, a

record was made of features before their removal or alteration.

b) Limekilns.

Many of the coastal lime kilns of both Pembrokeshire and Ceredigion have been subject to recent destruction or restoration, the latter often involving some very unsympathetic rendering of the stonework and the removal of adjacent clinker deposits which may have been of archaeological interest.

The removal of old rendering and the opening of kiln crucibles often exposes the structures to the elements and causes increased deterioration. It is not known if any recording or monitoring of such work has ever been carried out.

c) Military sites.

The 18th century fort on Castle Point, Fishguard (PRN 32007), is currently being restored and it is not known what degree of archaeological monitoring control is being exercised on the work. The possibility that post-mediaeval archaeological features will be disturbed requires that some degree of monitoring should be carried out. It should also be borne in mind that an iron age promontory fort is suspected to underlie the post-mediaeval defences on the headland.

d) Coastguard and Lifeboat Installations.

Coastal erosion is not a problem which appears to particularly affect sites in this class at present, but some considerable threat is apparently posed by unsympathetic development or restoration. At the time of writing (May, 1996) plans have been passed by the Pembrokeshire Coast National Park which allow the demolishing of the RNLI lifeboat house at Cei Bach, Poppit Sands (PRN 32021) and its replacement by a modern structure. As one of a fine group of associated structures, the probable loss of this building must be regretted.

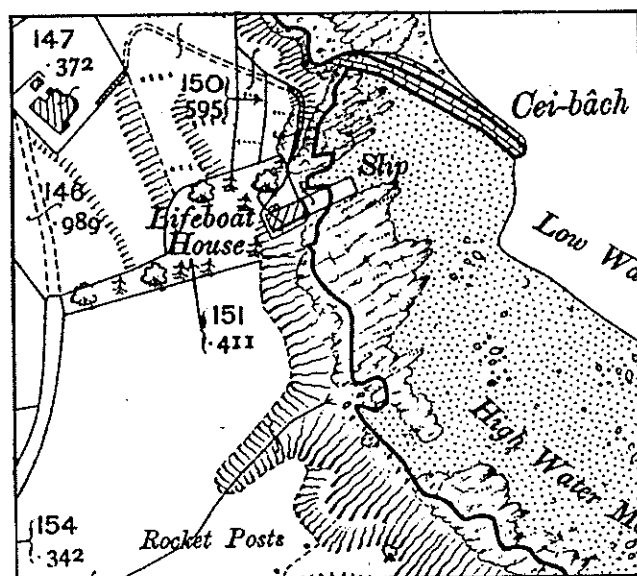


Fig. 6; Cei Bach lifeboat station in the late 19th century. The building in the top left corner is the coastguard station.

6. MANAGEMENT AND CONSERVATION RECOMMENDATIONS

Preceding sections have drawn attention to some of those sites identified by the survey as being of greatest archaeological significance and/or most threatened by erosional forces. It is necessary that recommendations for future action are made based upon these criteria.

6.1 Recommendations relating to prehistoric sites: Promontory Forts.

It was observed during the course of field visits to several iron age promontory forts that fresh erosion had occurred since the general survey of forts on the west Wales coast was carried out by Peter Crane of the Dyfed Archaeological Trust (see Crane, 1994).

Some of those now seen to be threatened by fairly serious erosion were thought to be stable in 1994. Such a rapid change in the relative stability of sites indicates that an ongoing programme of site monitoring will be required in the future, with regular site visits, possibly on an annual basis. Such a programme might give a clearer picture of which forts are indeed stable and which are subject to periodical but significant erosional damage.

The following promontory forts suffering erosion require more immediate attention;

6.1.1 Craig y Gwbert (PRN 7735); at least partial excavation is recommended where the occupation area inside the fort is now being eroded (see 8.9).

6.1.2 Castell Bach, Penbryn (PRN 1368); the detailed recording of a section of the rampart exposed by erosion is required and also an assessment of the condition of the site as a whole in view of this recent erosion (see 8.6)

6.1.3 Foel y Mwnt (PRN 1041); A detailed survey is required of this atypical promontory fort, which may not be of iron age date. A bank and ditch cut off the relatively large rocky headland with no apparent evidence of internal occupation (see 8.9)

6.1.4 Castell, Ceibwr (PRN 1043); This site appears to have been damaged by a holiday chalet development. An assessment of the degree of interference suffered by the site is required (see 8.10)

6.1.5 Roman signal station, Pwll Landdu (PRN32007) The identification of this site as a Roman signal station is a tentative one, but a further, more detailed assessment of the site is required in order to confirm or discount this theory. Erosion of the site is ongoing and it is recommended that such an assessment is carried out in the near future (see 8.12).

6.2 Other prehistoric earthworks & monuments.

Some of the field boundaries, clearance cairns, monoliths and a single, isolated hut platform, recorded during fieldwork, require more detailed surveying.

It would be impossible to detail each example here; where thought significant they are, in any case described in the relevant text of the gazetteer in Part Two of this report. All are also listed in the accompanying tables of sites provided for each section of the coastline (see 8.1 - 8.13). However, some general observations must be made here, and attention drawn to the most significant sites encountered.

6.2.1 Relict prehistoric field systems.

This survey has not positively identified any extensive areas of prehistoric field systems on unenclosed or unimproved land along the coastal strip. The question as to whether or not this should be taken to indicate that there are in fact no surviving prehistoric field systems in the study area cannot be readily answered, for fragmentary evidence of some possible prehistoric field boundaries and small areas of relict field systems were encountered. It seems that the relevant significance of such fragments cannot be decided upon at this stage and that much more fieldwork and aerial photography will be required before a more definite position can be taken. The following is a potentially important example recorded during this survey;

a) Penmoelciliau field system (PRN 32030); This is located on an area of coastal slope between Cwmtudu and Trwyn Crou, west of the hill of Penmoelciliau and the iron age hillfort of Gaerwen (which lies outside the study area).

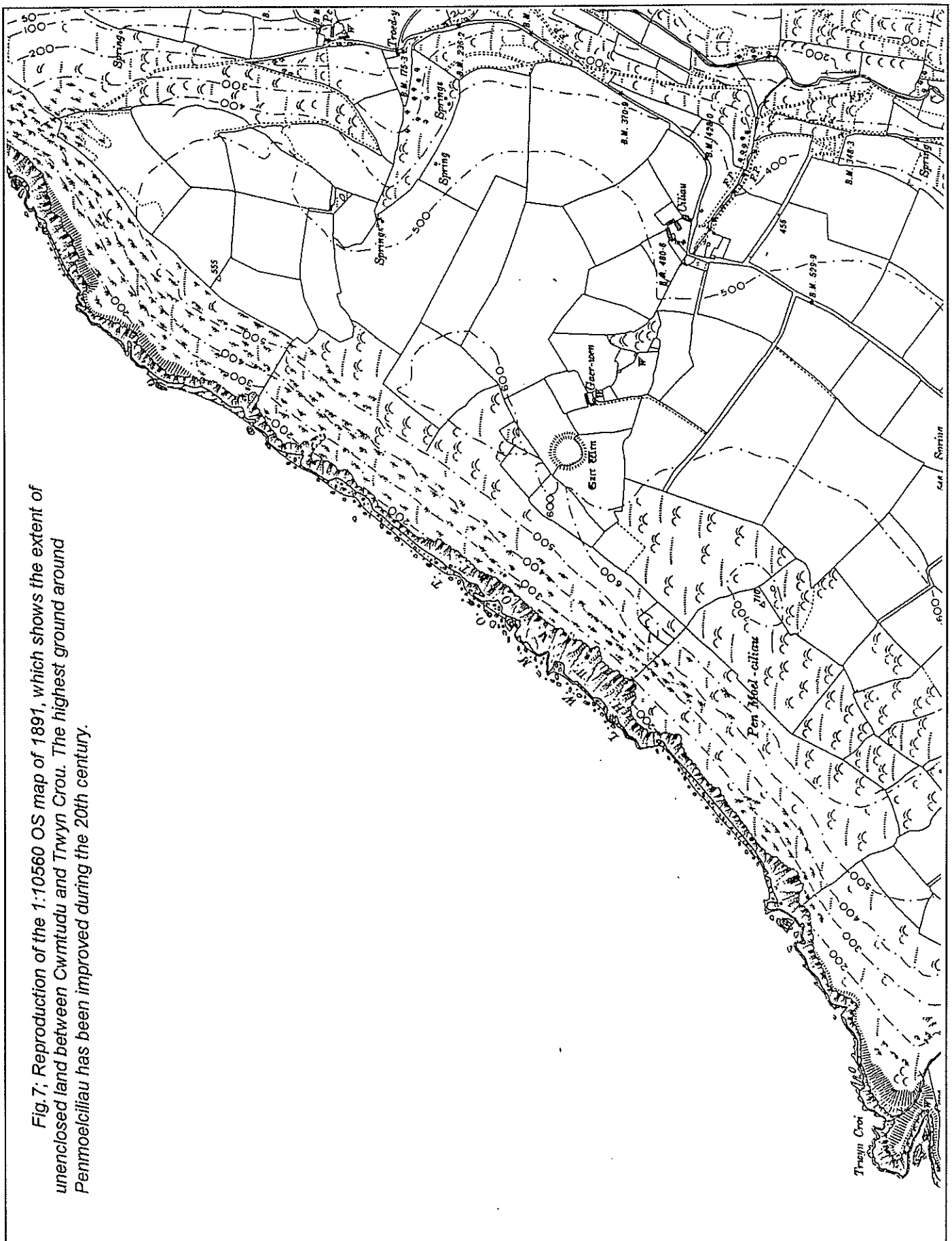
Several stretches of possible prehistoric field boundary were noted on this north west facing slope. Whether they are fragments of a more extensive field system, and whether they are in any way related to the Gaerwen hillfort was not determined. The area is an extensive block of unimproved land, c.200m x 3km in extent, which requires a more detailed survey, preferably during a period of low vegetation, for some gorse and bracken is present across the area.

Further south, a relict field system (PRN 7670) was already recorded near the hillfort of Pendinas Lochtyr (PRN 1363). The Lochtyr peninsula is an area which has several promontory forts and possibly related earthworks, situated 1km from the south western end of the strip of unimproved land described above. It is possible that the Penmoelciliau features are related to a wider iron age relict landscape dessicated by later human agricultural activity see 8.6).

6.2.2 Cairns and round barrows.

There were only a few new sites in this category recorded during fieldwork. The most significant are described here;

a) Cairnfield, Goodwick (PRN 32095); This is a



complicated area of apparently modern clearance features intermixed with earlier clearance cairns; at least three of these cairns were thought to be of bronze age date (PRN 32096, 32098 & 32104). A possible bronze age standing stone (PRN 32126) is located nearby, as well as an earthwork feature cut into a slope likened to a bronze age scoop grave (PRN32097). This group may well be the most significant concentration of prehistoric features recorded by the survey. It is certainly an area which requires a more detailed survey and assessment (see 8.12).

6.3 Sites of palaeo-environmental importance.

6.3.1 Borth Submerged Forest (PRN 30898);

Mention has been made previously of the environmental, geological and archaeological importance of the submerged forest and peat deposits on the beach at Borth. Action must be taken to discover the nature of peat stripping which has reportedly been carried out by the local authority in the past, with a view to ensuring that unnecessary damage is not caused to the exposed deposits.

The number of new find spots of important prehistoric artefacts recorded from documentary sources indicates that an organised programme of monitoring the foreshore is required along the length of Borth beach and also around the adjacent sand dunes at Twyni Mawr, Ynyslas (see 8.1)

6.4 Recommendations relating to mediaeval sites.

6.4.1 Holycross Church, Mwnt (PRN 5324).

Potentially the most significant site of mediaeval date encountered during the survey was the Holycross Church, Ferwig (PRN 5324). This small, isolated church is believed to be of 14th century date. It consists of a single chamber and single bellcote. Internally, part of the mediaeval rood screen survives.

The churchyard is rectangular in plan and the earth bank which encloses the cemetery may be of some antiquity, tentatively suggested to be an early mediaeval feature. A mound or barrow near the church (PRN 31490) is traditionally believed to be the burial site associated with a mediaeval battle, human bones were reported to be eroding out of the mound in the 19th century (Meyrick, 1905, 205).

A detailed survey of the church building will be carried out within the next year (1996-97) as part of Cadw's all Wales survey of church buildings. The churchyard enclosure and the burial mound are recommended for detailed survey also (see 8.9).

6.4.2 Long huts.

It is particularly interesting to note that several possible long hut platforms were recorded within the study area. In general, long hut platforms in west Wales are found further inland, particularly in the Cambrian Mountain block of Ceredigion. Their absence in lower areas can either be put down to the fact that they were never present away from areas of upland pasture or that those at lower altitude have been lost to a more intensive post mediaeval agricultural regime. One particular example (PRN 31447) south of Aberystwyth was thought to be associated with a fragmentary relict field system (PRN 31448), which may also be of mediaeval date and is recommended for detailed survey (see 8.2).

6.5 Recommendations relating to post mediaeval sites.

6.5.1 Fish weirs.

A site type of particular importance to the Cardigan Bay coastline are the *coredau* or fish traps, which take the form of stone built walls on the foreshore, designed to trap fish in artificial pools as the tide falls. The main area in which fish traps are found is on the shingle beaches between Aberaeron and Aberystwyth. Several definite or possible examples were recorded in this section (e.g. PRN 30939-40; see section 8.4). Further examples are recorded as far south as Poppit Sands and Fishguard, and documentary evidence suggests that others were once present between Aberystwyth and Borth.

As a site type they have a mediaeval ancestry. Fish traps at Llanarth are mentioned in a late 12th century grant by the Lord Rhys to the monks of Strata Florida Abbey. Another has almost legendary status; *Cored Gwyddno* is mentioned in the Mabinogion, said to have been located along the coast between Borth and Aberystwyth (Evans, 1995, 33). Whether existing remains are as early is doubtful, but the tradition of building *coredau* continued into the 20th century along the Ceredigion coast, some of those at Aberarth in use until the 1930's (Evans, 1995, 33).

There is a need for further survey work on the *coredau*, for more probably remain to be discovered. A series of aerial photographs taken by Chris Musson of the RCAHMW (AP No. 955200 42-45) show the ghosts of eroded *coredau* near Aberarth, indicating that some slight traces of older structures may survive, although dating any such structures is difficult in the absence of clear documentary or map evidence.

Certainly the survival of even much eroded *coredau* in the intertidal zone at least 60 years since they were last used, never mind constructed, is quite remarkable. Gaining an insight into the relative antiquity of such structures would require a recording of the oral tradition surrounding their use in the first half of the 20th century and monitoring the condition of dated constructions over an extended period to define the degree of erosion they are suffering.

The possibility of the reconstruction of an example (or the construction of an experimental *cored*) might be entertained. As the subject of an archaeological experimental, such a structure might provide useful results which could contribute to the question of dating and rapidity of erosion of *coredau* in general.

Detailed surveys of individual examples are required, for few have been adequately recorded, either in terms of their extent or details of the constructional techniques employed in building a fish weir.

6.5.2 Port and harbour facilities.

As previously noted, much more research could be directed at this aspect of coastal archaeology. While some structures within port and harbour areas are listed, more detailed survey of surviving features associated with the maritime and trading traditions of the ports is required. Conservation plans for some ports and harbours have been prepared to monitor developments within their vicinities and it is desirable that those areas not already protected in this manner are included in similar measures in future (see 4.2.1).

6.5.3 Limekilns.

An important aspect of the archaeology of the coast is the lime burning industry. While the majority have been recorded in a survey by R. Moore-Colyer (CBA, Report No. 79, 1992) others which had supposedly been destroyed or had not been recorded by Moore-Colyer have now been entered into the SMR by this survey.

While a system of classification has been developed, and a photographic record made, by Moore-Colyer (CBA Report No. 79, 1992), it is evident that a more thorough typological study and measured surveys need to be carried out. Variations such as those in drawing arch plan or construction (dressed stone or rubble) need more study. Also, the relationships between kilns and associated earthworks backing them may not have been fully appreciated in the past.

It is also important that any future conservation, renovation or demolition of kilns is carried out under archaeological supervision. The treatment of the kilns on the Parrog, Newport (see 8.11) is an example of the unrecorded removal and alteration of historic features which can hopefully be avoided in future.

6.5.4 Breakwaters.

The breakwaters, groynes and other sea defences of the Cardigan Bay coastline, built over the last 150 - 200 years, represent a major effort by private and civil engineers to stabilise eroding sections of the coastline and keep port and harbour entrances clear of shingle, sand and silt.

It is not known when groynes and breakwaters were first constructed on the Cardigan Bay coastline, but there is no doubt that they were built in conjunction with harbour and port developments in the early

19th century. One example is of a breakwater associated with four wooden jetties at Rho-wen, Aberystwyth, which was damaged by storms in 1846 and 1848 (So, 1970, 329).

Numerous examples of decayed pre-20th century structures were recorded during rapid field visits, but a programme of more detailed survey is undoubtedly required in order to assess the rates of decay which they are suffering.

A programme of desktop research should accompany any future fieldwork, in order that surviving records pertaining to the construction of coastal defences in Cardigan Bay might be accessed and light thrown on the dating of surviving examples.

Such a survey might also be able to arrive at a typology of the various types of groyne and breakwater structures encountered. Some excavation is also required in order to determine the nature of the substructures of the various types of groyne and breakwater encountered. It is possible that much of the structure of "eroded" examples actually survives buried in shingle or sand.

The conservation of interesting features *in situ* is probably unrealistic, but some well preserved sections could be removed to a museum or other location for display.

6.5.5 Quarries.

Quarries along the coastline have been opened to extract stone, gravel, sand and boulders (out of the boulder clay). Of particular interest is the evidence of extensive quarrying of the sea cliffs for slate on the north Pembrokeshire coast between Newport and Fishguard (see 8.11 & 8.12).

These represent a hitherto under-appreciated sector of the Welsh slate industry. George Owen described the working of such quarries and the export of their slate by sea in the early 17th century and 19th century sources such as Samuel Lewis (1848) testify to their continued existence. It is felt that they have been under-valued in recent works on the Welsh slate industry (e.g. Richards, 1991).

The main surviving evidence for the industry between Newport and Fishguard includes a large number of abandoned quarries typically consisting of ledges cut into the cliff face. Some vertical cliff sections also appear to have been quarried. Slates were often loaded straight onto waiting ships from the cliff edge, or from roughly built quays on the foreshore. Brian John (1995, 130) refers to the survival of "docks" in some places. These were built at the foot of the cliffs, where dressed slate was loaded onto coastal barges. No such features were recognised in the study area but a more detailed survey of the quarries and the adjacent coastline might identify these and other related features. Remarkably, some caves below the quarries were noted as still containing slate slabs stacked ready for shipment.

A programme of survey is required to analyse these quarries, including detailed desktop research to attempt to link the physical evidence with surviving

records relating to their ownership and operation. This may enable the dating of some quarries and give some idea of the relative age of some workings.

6.5.6 Military sites.

The only well known military work of the post mediaeval period is the 18th century artillery fort guarding Fishguard harbour (PRN 32007), which is currently undergoing restoration (see 5.1.2b)

However, two more military sites have been recorded during the study, on the north Pembrokeshire coastline are of particular interest. These are the probable late 18th or early 19th century site of St. Dogmael's Battery (PRN 31963) and the World War 2 coastal gun battery on Penrhyn Ychen, east of Fishguard (PRN 32158 - now standing within a caravan park).

The former is marked on both the 1st and 2nd edition 1:2500 OS maps, being named as the St. Dogmael's Battery on the latter, but has received very little attention; it was not previously recorded on the regional SMR. No information regarding its date or original purpose has been accessed during this survey and some research into its origins is required. Unfortunately the site is in a poor condition and there is a pressing need for a detailed survey to be carried out.

The latter site was included in a recent survey of military installations in Pembrokeshire (Thomas, 1994). However, a detailed survey of its surviving features is also required.

Both of the newly recorded sites may have potential for future partial restoration and interpretation.

6.5.7 Coastguard and Lifeboat Installations.

A category of buildings which are specific to the coastal strip but sometimes undervalued are the coastguard and lifeboat installations which dot the Cardigan Bay coastline. A relatively large number of buildings which come into this rather loose category have been recorded during the survey and their locations vary greatly. Lifeboat stations are necessarily located at harbours and in sheltered bays or estuaries, whilst coastguard stations and lookout posts can be found both in conjunction with a lifeboat installation or on relatively remote headlands and clifftop locations where good views of the coast can be obtained. The best examples can include a group of buildings, generally of late 19th or early 20th century date and one example of particular note is at Cei Bach, near Poppit Sands, where a purpose built stone quay serves the lifeboat station, with the coastguard station and coastguard's cottage nearby, as well as a rocket apparatus store (PRN 32021; 32019; 32020 & 32023 respectively).

It is recommended that a general survey of the coastguard and lifeboat installations of the Cardigan Bay coastline is undertaken. Such a survey could assess the threat to buildings and sites which fall within this category and identify examples worthy of statutory protection.

6.5.8 Wrecks.

Only one positively identified sunken vessel was identified, at Netpool, Cardigan (PRN 31945). A local informant, with a good knowledge of the Teifi estuary, claimed this to be the only such feature in the estuary. Doubt must be cast on the veracity of such a statement, for there are numerous recorded examples of vessels being lost in the estuary, and indeed along the whole coastline (Bennett, 1981).

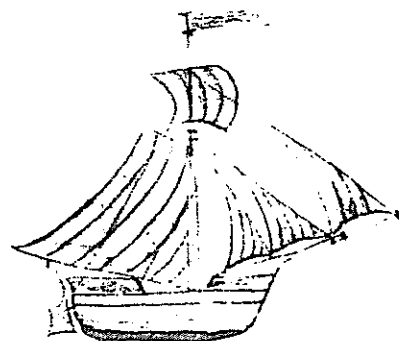
Several possible wreck sites were identified on aerial photographs just off shore at Borth (PRN 31466-69). All lie below the low water mark and their precise nature could obviously not be established by this study.

The confirmation of these as wreck sites will only be possible through underwater survey carried out by experienced divers. The Dyfed Archaeological Trust has been engaged in survey work with the co-operation of the Nautical Archaeological Society on Cefn Sidan, Carmarthen Bay (Nigel Page, pers.comm.), and their experience in this field makes them ideal partners for future projects.

There is a need for a great deal more research to be carried out into the location of wreck sites along the whole of the west Wales coastline, for their identification, survey and excavation can provide valuable archaeological information relating to the history of coastal trade in the region.

Although much has been written about the historical aspects of shipwrecks in the Cardigan Bay coastal area, details are rarely given as to the precise location of wrecks and almost nothing is known of the condition and survival of sunken vessels. Responsibility for the recording of wreck sites currently lies with the RCAHMS, but it seems that a pilot project involving the Dyfed Archaeological Trust and the Nautical Archaeological Society is required to assess the nature and frequency of wreck sites, both in inshore waters and in the inter tidal zone. Consideration might also be given to inviting a university college with a maritime archaeology department to take part in such a project.

A valuable first step towards such a survey would be a programme of aerial photographic recording of the coastline under conditions of low tide in order that wrecks near the coastline or within the inter tidal zone can be identified. At present, aerial photographic coverage of the Cardigan Bay coastline is variable in terms of quality and the state of the tide at the time of photographing.



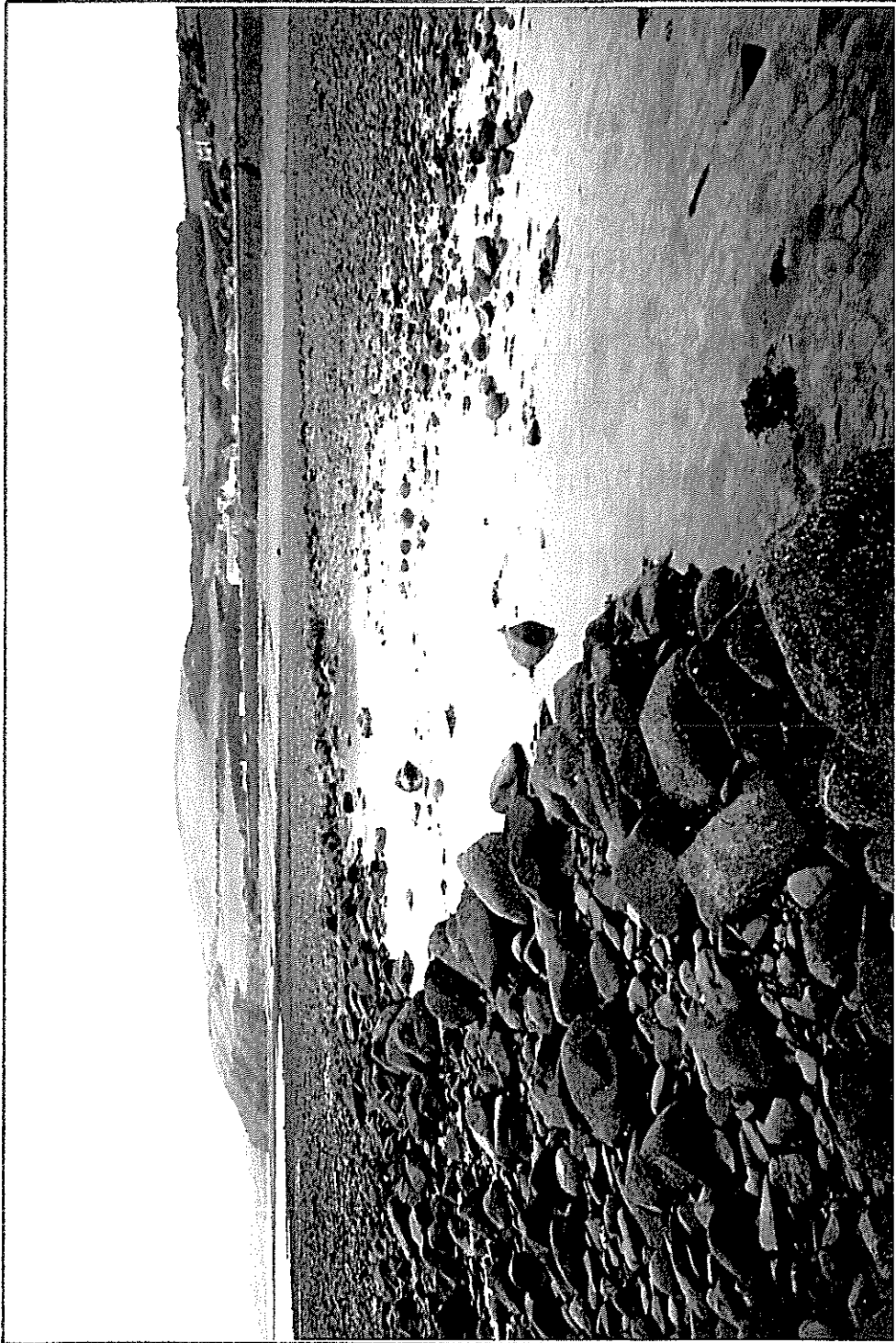


Fig. 8; A fish trap on the foreshore at Aberarth. Although reduced by sea action, the walls still present a sufficient barrier to hold some water at low tide (Photograph by Emyr Morgan).

7. RECORDING THE COASTLINE.

With a study area extending over 210 km of coastline, it is not surprising that a variety of coastal types were encountered. For the purposes of this report, the study area was divided into 13 sections of coastline. These sections are the basis for the maps included in the following gazetteer of archaeological sites and coastal types.

During fieldwork, it was endeavoured to record the character of each of these defined sections, therefore further sub-divisions of the coastline were made according to coastal type (Coast section Nos. 1 - 93; see Appendix 1). These coastal sections are described in some detail within the text of the report gazetteer and are numbered on the series of accompanying maps.

Categories used to describe coastal types were;

- i) Coast edge
- ii) Land edge
- iii) Foreshore type
- iv) Erosion

All are based on the model used by the Gwynedd Archaeological Trust in their survey of the coastline between Aberdaron Bay and Great Orme Head (GAT, 1995), although there are differences in approach (see 7.1 - 7.4 below).

7.1 Coast edge Type.

This includes 7 categories;

- 1. Man made
- 2. Mainly rock
- 3. Rock with drift cover
- 4. Drift; Boulder clay
- 5. Drift; sand/blown sand
- 6. Alluvial/marine mud
- 7. Other

It was decided not to distinguish between the various types of man made coastal edge, other than in the text of the report.

Much of the coast edge was found to be of rock or rock with drift cover cliffs, with relatively little blown sand and even less alluvium. Other coast edge types encountered includes areas of salt marsh found in some river estuaries.

7.2 Land edge type

Again fewer categories were employed than provided for in the Gwynedd model (the bracketed initials are the letter code used on the relevant maps).

- 1. Man made
- 2. Improved pasture/arable
- 3. Unimproved pasture/scrub
- 4. Coppice/woodland
- 5. Golf course
- 6. Other



Fig.9; Salmon fishing boats tied up at St. Dogmael's, c.1900 (from Pritchard, 1907).

It was decided to incorporate improved pasture and arable land into a single category (there appears to be very little arable along this coastline) and also merge unimproved pasture and scrubland into a single group, relying on descriptions in the report text to highlight variance in type.

Man made land edge was generally applied where built over areas, roads or port facilities backed the shore. Several golf courses were noted, whilst the "other" category included areas of sand dune, saltings and holiday villages and caravan sites. On reflection, it is felt that sites associated with the tourism and leisure industry, which fall into the "other" category in the report gazetteer, might have warranted a classification of their own. They are certainly more numerous than golf courses and potentially pose as big a threat to the archaeological resource; examples were noted of such developments interfering with archaeological sites.

7.3 Foreshore type

Again, fewer categories were employed and more dependence placed on textual description. Categories include;

1. Rock
2. Shingle/pebble/boulder
3. Sand
4. Mud
5. Mixed
6. Other

In general, shingle and pebble beaches were found to be most common along the central Ceredigion coastline, whereas most of the north Pembrokeshire coast and that north of Aberystwyth was characterised by a rocky foreshore with only intermittent sections of sand, shingle or pebble beach in coastal indentations and coves. Mud was found to be localised to small areas in river estuaries, but there are numerous examples of extensive sandy beaches, such as at Borth, New Quay, Cei Bach, Newport and Goodwick Sands, many of these of course being popular tourist attractions.

7.4 Erosion class

The fivefold classification of erosion levels used by Gwynedd Archaeological Trust was adhered to:

1. Stable
2. Slight
3. Medium
4. Major
5. Severe

There were relatively few examples of severe erosion, other than on a very localised level, although there were examples of significant archaeological sites being threatened by the sea. Pressure from a landward direction was also encountered, with examples of both human and animal activity eroding features, particularly along some sections of the coastal path.



Fig.10; Seine net fishermen in the Teifi estuary c.1900 (from Pritchard, 1907).

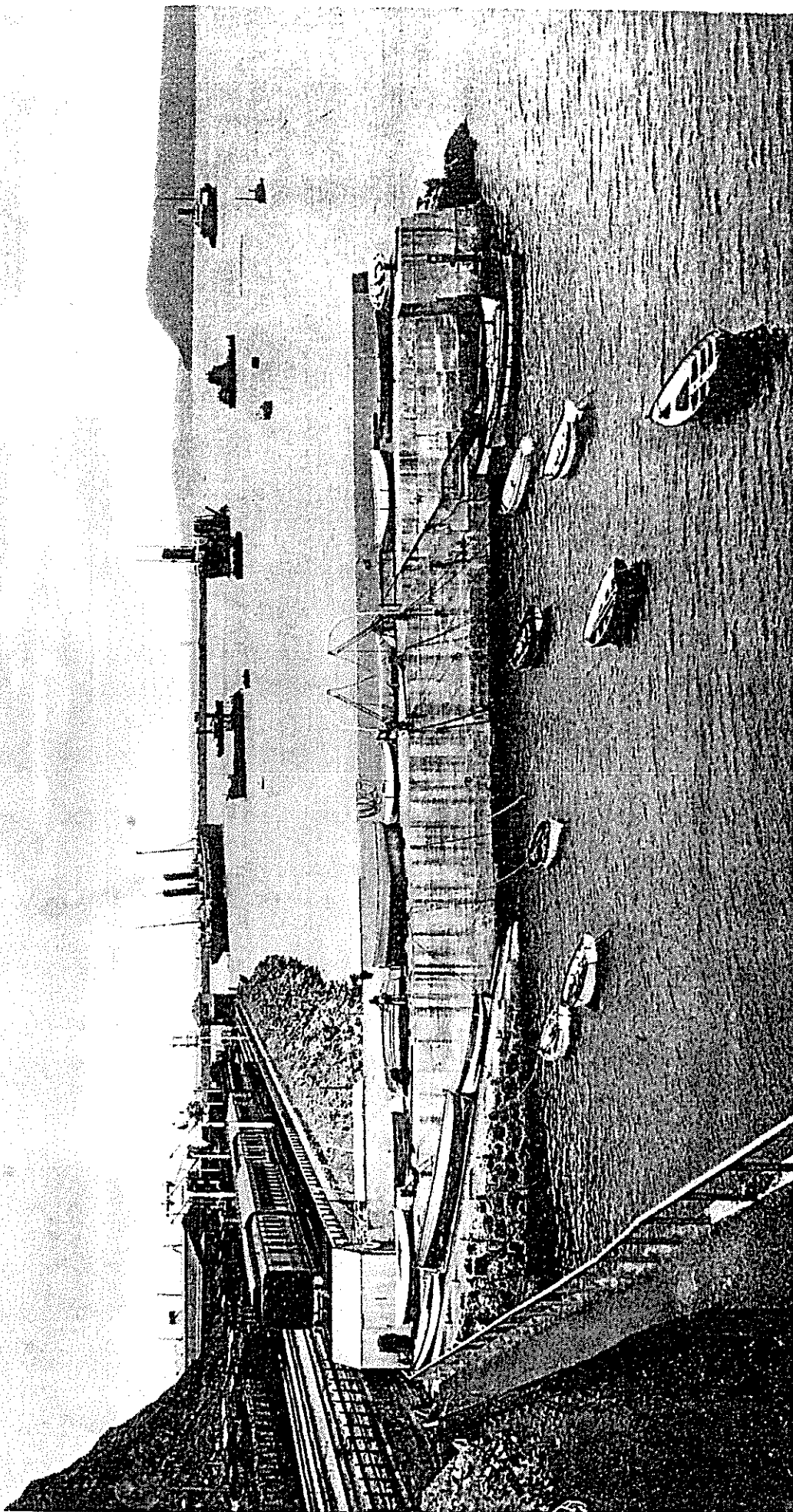


Fig. 11; A postcard of Fishguard Harbour in its heyday (1913).

8. THE GAZETTEER

The following gazetteer presents details of the survey data collated in respect of the 93 coastal sections defined by this survey. This information has been presented within the framework of 13 map areas which have been created for the convenience of report compilation and presentation.

The format for each of these 13 map areas is of a descriptive text, followed by a table of archaeological sites. Three maps are also included for each area, these illustrate the following detail;

- i) archaeological sites
- ii) coast edge and land edge types
- iii) foreshore type and erosion class

Within the gazetteer text the number allocated to each defined section of coast type will be bracketed within the relevant text (i.e. No. 1, No.2 etc). These numbers are also shown on the accompanying coast edge & land edge type maps.

KEY TO MAPS

The following symbols and abbreviations are found on the coastal maps include in the body of the following gazetteer:

COAST EDGE & LAND EDGE TYPE MAPS;

Coast edge type.

- | | |
|---------------------------|-------------|
| 1. Man made | ● ● ● ● ● ● |
| 2. Mainly rock | ○ ○ ○ ○ ○ ○ |
| 3. Rock with drift cover | ○ ○ ○ ○ ○ ○ |
| 4. Drift; Boulder clay | ● ● ● ● ● ● |
| 5. Drift; Sand/blown sand | ● ● ● ● ● ● |
| 6. Other | ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ |

Land edge type.

- | | |
|-----------------------------|-----|
| 1. Man made | MMS |
| 2. Improved pasture/arable | IP |
| 3. Unimproved pasture/scrub | SC |
| 4. Coppice/woodland | CO |
| 5. Golf course | GC |
| 6. Other | OTH |

FORESHORE TYPE & EROSION MAPS

Erosion type.

- | | |
|-----------|-------------|
| 1. Stable | ◇ ◇ ◇ ◇ ◇ ◇ |
| 2. Slight | ◇ ◇ ◇ ◇ ◇ ◇ |
| 3. Medium | ◇ ◇ ◇ ◇ ◇ ◇ |
| 4. Major | ◇ ◇ ◇ ◇ ◇ ◇ |
| 5. Severe | ◇ ◇ ◇ ◇ ◇ ◇ |

Foreshore Type.

- | | |
|---------------------------|-----|
| 1. Rock | R |
| 2. Shingle/pebble/boulder | SH |
| 3. Sand | SA |
| 4. Mud | MU |
| 5. Mixed | MIX |
| 6. Other | OTH |

KEY TO TABLES

Each section of the gazetteer includes a table of recorded archaeological sites. These are subdivided into 'Known sites' and 'New sites' simply in order to distinguish which sites have been added to the regional SMR by this survey. Each table has 8 categories, which are to a large degree based on the information entered into the Sites and Monuments Record (SMR) of the Dyfed Archaeological Trust. The categories are;

1. NGR. The National Grid Reference for each site is given here. Both 6-figure and 8-figure reference numbers are used, the latter usually given to sites which are found in built up areas.

2. PRN. As outlined in the earlier in this report, each archaeological site is allocated a Primary Reference Number when it is entered into the regional SMR. This number can be quoted if any enquiry is made regarding the site.

3. Description. This category generally gives only the site type (e.g. lime kiln; shipwreck) but in the case of more significant sites the site name is also given (e.g. Aberystwyth Castle). The terms used are generally derived from the glossary employed in the regional SMR.

4. Type. This is a further description of the site type, e.g. whether it is a building, a documented site, a site observed on an aerial photograph (AP) or an archaeological find. Some abbreviations are used, the most common being O.Struct. (Other Structure). This refers to any man-made structure which is not classified as a building e.g. a breakwater or a lime kiln. The terms are again derived from the regional SMR.

5. Period. This denotes the archaeological period of a site. In chronological order these are;

Palaeolithic	(50000BC - 9000BC)
Mesolithic	(9000BC - 4500BC)
Neolithic	(4500BC - 2500BC)
Bronze age	(2500BC - 800BC)
Iron age	(800BC - 100AD)
Roman	(100AD - 350AD)
Dark age	(400AD - 800AD)
Mediaeval	(800AD - 1500AD)
Post mediaeval	(1500AD - 1900AD)
Modern	(1900AD onwards).

There are two other terms used in this category;

General - reserved for sites which appear to belong to several periods or which are probably natural landform features.

Unknown - reserved for sites such as cropmarks observed on aerial photographs for which no date can be established without further research.

6. Condition. This category indicates the state of preservation of a site. The letter code system used is based on the individual site records held in the regional SMR. The values for each letter are;

A	-	Intact
B	-	In good condition
C	-	Damaged
D	-	Badly damaged
E	-	Destroyed
R	-	Restored
U	-	Unknown

Where a find spot is recorded no assessment of condition is given. Sites which was not located during fieldwork or has been entered into the record from an unchecked documentary source are generally given "unknown" status.

7. Importance. This category seeks to give an idea of the relevant significance of the sites included in the gazetteer. An objective analysis of the value of any individual site can be difficult to assess, for a site considered common and relatively unimportant in one location might be unusual and therefore more interesting elsewhere. Generally, the basis of this evaluation of significance has been derived from the information pertaining to each site held on SMR records and field notes. The numerical system used is interpreted thus;

0	-	Not significant
1	-	Unknown
2	-	Locally important
3	-	Regionally important
4	-	Nationally important

Sites which have been destroyed or are in a very poor condition are usually considered to be of no archaeological significance (although their documented existence may well be of significance in academic terms).

Those sites of unknown importance are mostly those such as cropmarks or earthworks of unknown purpose whose importance cannot be assessed until more information is available as to their date and function.

Listed buildings and Scheduled Ancient Monuments are classed as being of national importance.

8. Management.

This category includes general suggestions for future action regarding the management of sites. The majority of sites were not considered to be sufficiently important to warrant further survey work or any other form of archaeological response. Only a few were considered to require excavation, most of the significant sites are recommended for consideration as the subjects of more detailed surveying. Some significant site types are noted as requiring a more general programme of detailed survey work.

Fig.12; Location map of study area

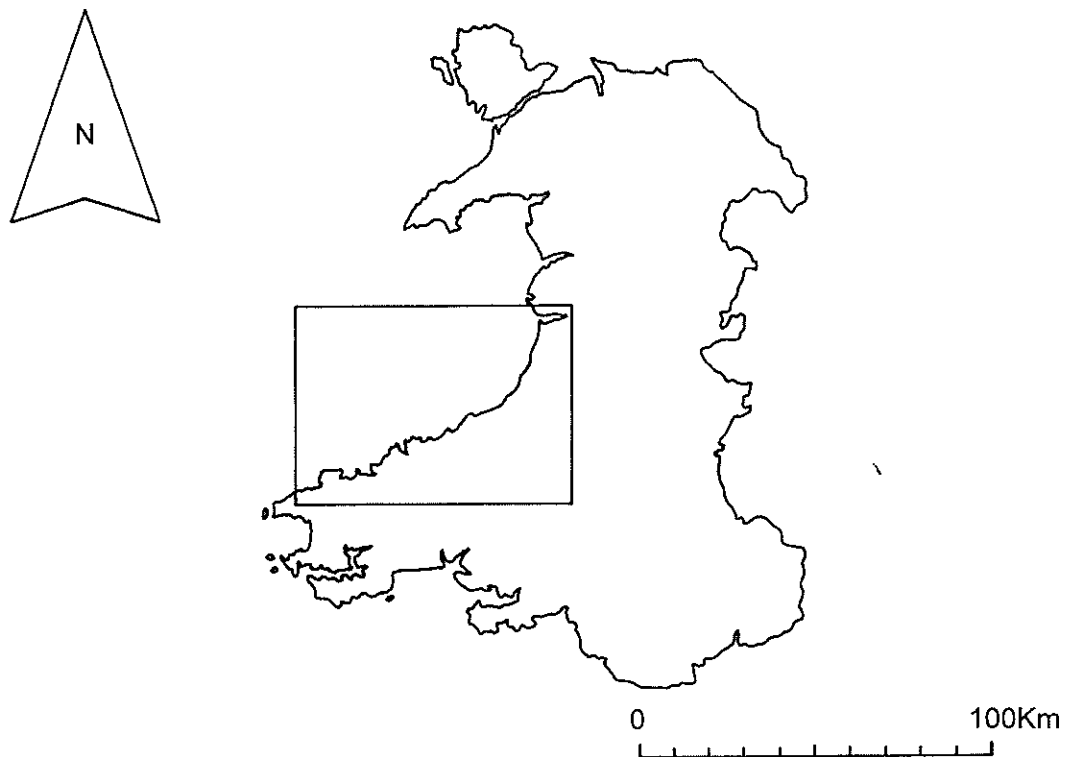
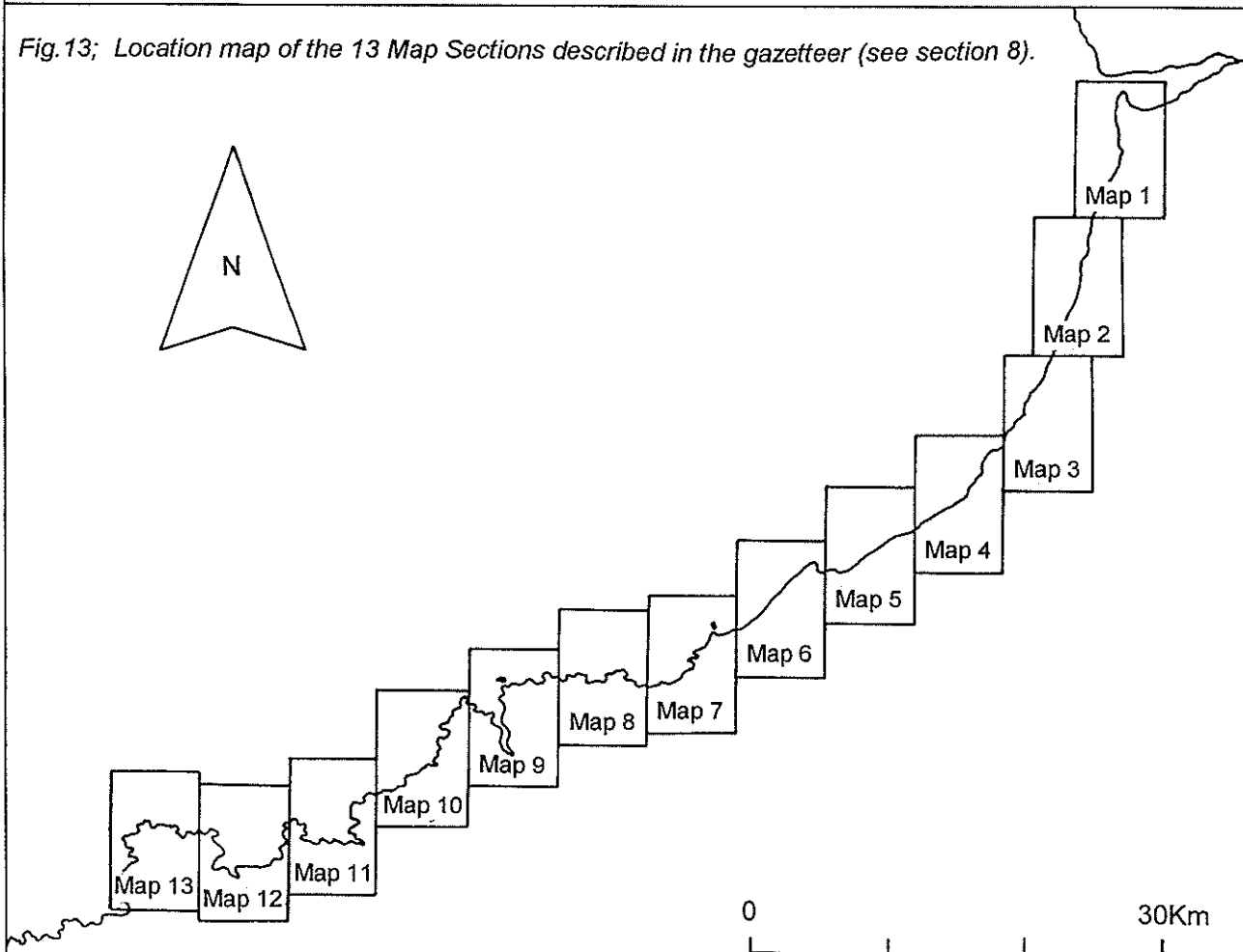


Fig.13; Location map of the 13 Map Sections described in the gazetteer (see section 8).



8.1 MAP 1:

Twyni Bach (SN605949) - Wallog (SN586850)

8.1.1 Coast type and erosion assessment.

The northern portion of this exposed stretch of coastline is characterised by a long, sandy foreshore between the mouth of the Dyfi estuary and Upper Borth - almost 6km in length. At Twyni Mawr and Twyni Bach, the coast is backed by an area of active sand dunes, a designated National Nature Reserve, which run southwards towards Ynyslas (No. 1). The dunes appear to have spread during the 20th century, leaving early 19th century sea defences (PRN 30791) several hundred metres inland, and indicating that depositional forces are at work on this northernmost tip of the study area. Indeed, there is some encroachment of a shingle storm beach into the dunes at Twyni Mawr also. From Ynyslas (No. 2 - SN607926) the area of blown sand narrows towards the south and gradually dies out, part of this area is used as a golf links.

Buried beneath the foreshore here is a submerged forest of considerable extent (PRN 30898), some 5km in length and usually c.200m wide, although only discontinuous patches are visible at any given time, depending on the amount of sand deposited on the foreshore. During fieldwork, two large patches were seen to be exposed between Borth and Ynyslas, each c.300m long x c.100m wide, and smaller exposures were also observed opposite Ynyslas.

The foreshore in front of Borth village includes a series of breakwaters (PRN 30761) and a long sea wall (No. 3), which continue southwards to Upper Borth. They appear to have stabilised the coast edge along this section and no significant evidence of erosion was recorded. A storm beach lies above the present sea defences for most of their length.

The land edge along this section of coastline is low lying, often below 5m OD. Nevertheless it includes the linear, seafront settlement of Borth and also the B4353 road, which runs close to and parallel with the coast from Borth to Ynyslas, following the line of 19th century (or possibly earlier) earthwork flood defences. The village and road are backed by the extensive raised bog of Cors Fochno, which extends up to 4km inland and much of which lies below 10m OD. It is undoubtedly an area which would be threatened by even a modest rise in sea level.

South of Upper Borth (SN606886), the nature of the coastline changes. The sandy beach and sea defences are replaced by a broad wave cut platform in front of rocky cliffs covered with boulder clay which is showing slight erosion in some places (No. 4). These cliffs continue towards Wallog where there is a short break in the cliff line and the beginning of another series of cliffs of slightly different character (No. 5). These cliffs show much more erosion, with quite serious slumping of the cliff top in places, the coastal path having been rerouted at more than one location and other sections in danger of imminent collapse.

At Wallog the foreshore includes an unusual natural shingle and boulder bank known as Sarn Gynfelyn (PRN 7418), which is over 200m long at low tide and juts out into the sea at a right angle from the coastline. A shingle foreshore is also seen at Clarach, where a holiday complex of caravans, chalets and shops is located on the land edge.

Between Clarach and Aberystwyth there are a series of higher rock and boulder clay cliffs (No. 7), which show less erosional damage.

8.1.2 Archaeology.

Finds of prehistoric artefacts previously recorded along the Borth - Ynyslas foreshore, derived from the submerged forest previously mentioned, make this one of the more important sections of the Ceredigion coastline in archaeological terms. The location of these deposits mean that the submerged forest, where exposed, is being daily washed over by the tides and is actively eroding. Tree stumps and roots were seen during the field visit. It is clearly an area which will yield further discoveries as erosion progresses and one which should be regularly monitored.

Finds of prehistoric artefacts have been made along the shore here over many decades and a number of these have been entered into the SMR for the first time, including a mesolithic flint pick (PRN 30899), other mesolithic flints found near Ynyslas (PRN 30907) and an antler tool (PRN 30894). A prehistoric hearth (PRN 30903) noted in peat exposed on the shore has also been recorded; samples taken from the surrounding peat were dated to 4000BP. Finds of an antler (PRN 11350) and part of an auroch skeleton (PRN 30904) also found on this shore serve as reminders of the value of the deposits to palaeoenvironmental studies.

Aside from the finds made on the foreshore, few other sites had been recorded in the area prior to this study. They include a possible bronze age burnt mound (PRN 14416), a stone group originally thought to be a possible damaged neolithic chambered tomb (PRN 558) but now discounted as such, and a relatively well preserved lime kiln near Wallog (PRN 8487).

Sites recorded during the course of the project are not numerous but include some which are potentially important, including four possible shipwreck sites noted on aerial photographs, positioned several hundred metres beyond the low water mark off the foreshore at Borth (PRN 31466 - 69).

Also recorded during fieldwork were some relatively intact World War 2 concrete observation posts around Ynyslas and Twyni Mawr (PRN 30798; 31450; 31465) which need a more detailed survey.

A series of earlier breakwater defences, of probable early or mid 19th century date are seen along the Borth foreshore. They are now in varying stages of erosion (PRN 31473 - 77) and warrant more detailed surveying.

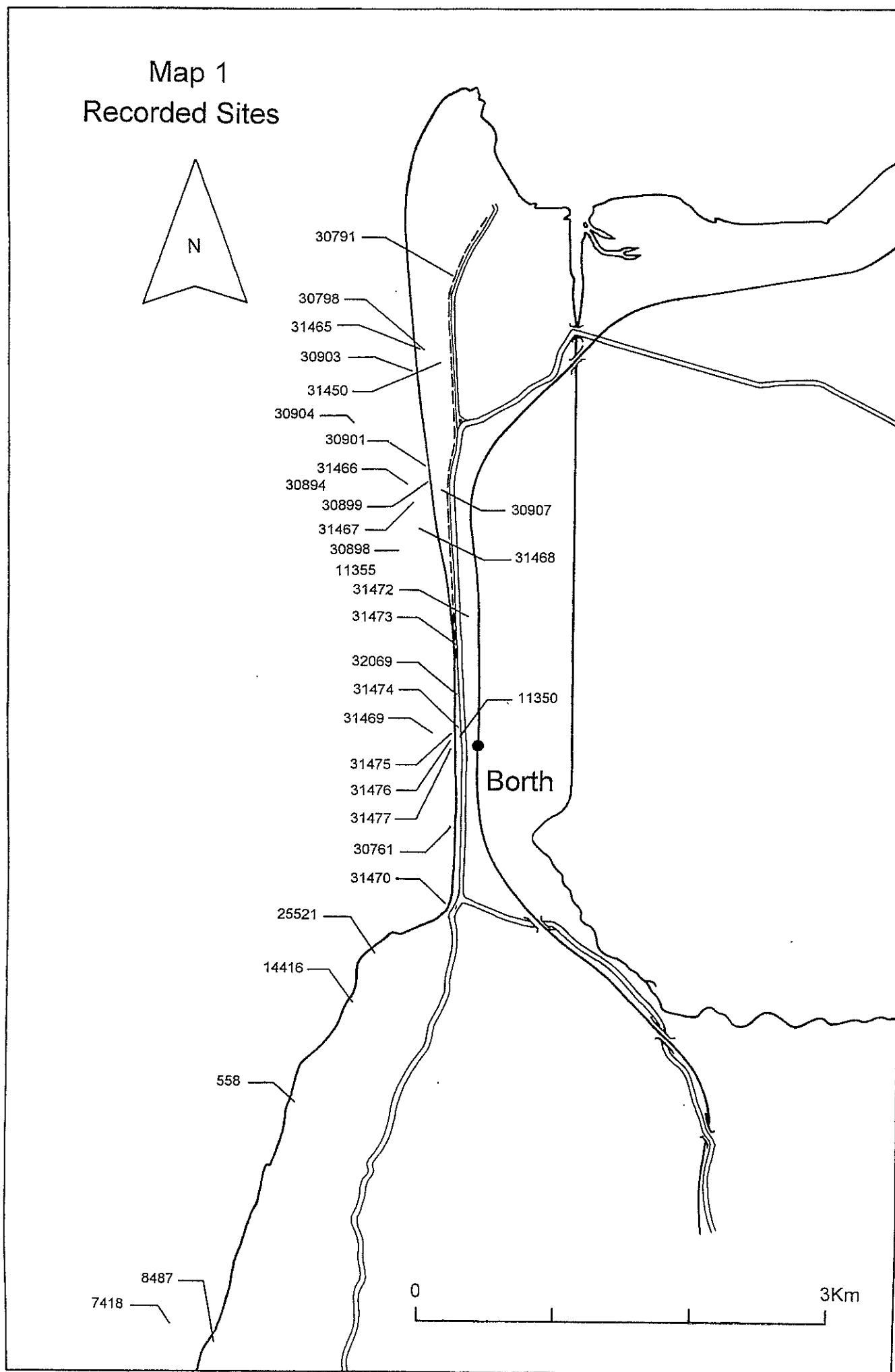
During the 19th century, Upper Borth was a busy port (PRN 31470), involved in trade and herring fishing, but no associated features were recorded.

TABLE 1- Map 1: Known sites.

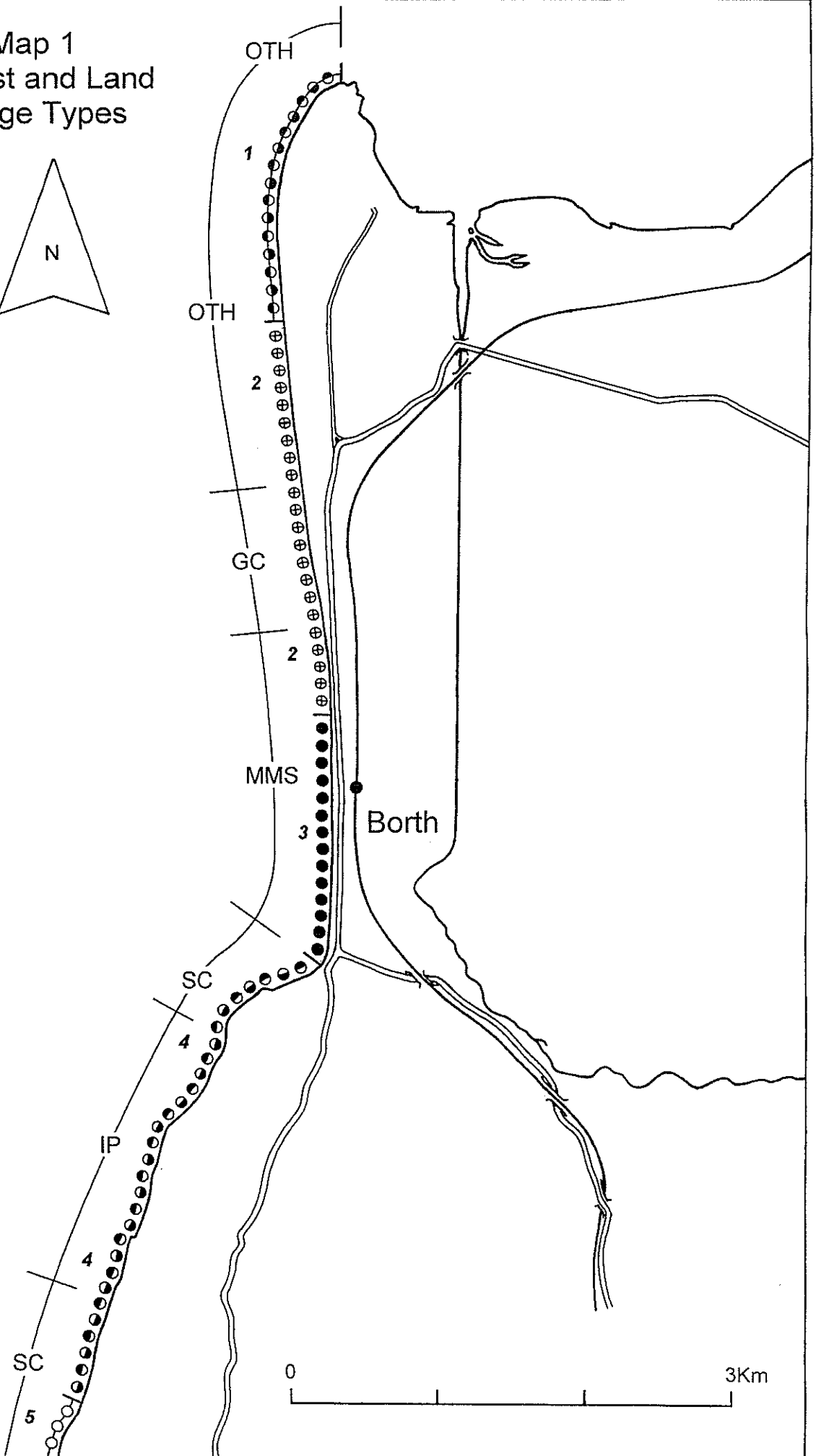
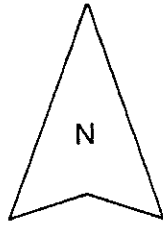
PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓558	SN59378678	Chambered tomb?	Stone group	Neolithic?	C	1	
✓1418	SN58508575	Natural causeway	Natural	General	C	-	
✓8487	SN58978570	Linekiln	O.Struct	Post med	B	3	
✓11350	SN608902	Antler	Find	Prehistoric	-	4	
✓11355	SN6092;6091;	Fish trap	Documents	Mediaeval?	U	1	
✓14416	SN600882	Unknown; Burnt mound?	Buried feature	Unknown	D	0	
✓25521	SN60168855	Memorial	Monolith	Modern	A	2	

Map 1: New sites.							
PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓30761	SN608895	Breakwaters	O.Struct	Post med	C	2	Survey
✓30791	SN6109940;	Sea defences	Earthwork	Post med	U	2	Survey
	SN607910						
✓30798	SN60629300	WW2 concrete hut?	Building	Modern	A	3	Survey
✓30894	SN6092	Antler tool	Find	Mesolithic	-	4	
✓30898	SN6092;6091	Submerged forest					
✓30899	SN6092	Flint pick	Find	Mesolithic	-	4	
✓30901	SN60549243	Leather shoe	Find	Post med	C	1	
✓30903	SN60459285	Hearth	Buried feature	Prehistoric	U	4	
✓30904	SN6092;6093	Auroch bones	Finds	Mesolithic	-	4	
✓30907	SN607920	Flints	Finds	Mesolithic?	-	4	
				Neolithic?			
✓31450	SN60669292	WW2 Obsv. post	Building	Modern	B	3	Survey
✓31465	SN60669300	WW2 Obsv. post	Building	Modern	A	3	Survey
✓31466	SN60369202	Shipwreck?	AP	Post med	U	1	Notify RCAHMW
✓31467	SN60449182	Shipwreck?	AP	Post med	U	1	Notify RCAHMW
✓31468	SN605917	Shipwreck?	AP	Post med	U	1	Notify RCAHMW
✓31469	SN60559015	Shipwreck?	AP	Post med	U	1	Notify RCAHMW
✓31470	SN608889	Port	Documents	Post med	-	3	Survey
✓31472	SN60909105	Drainage?	Cropmark	Post med	C	1	
✓31473	SN60769017;	Breakwater?	O.Struct	Post med	D	0	Survey
✓31474	SN60789019;	Sea defences	O.Struct	Post med	D	0	Survey
✓31475	SN60709015	Breakwater	O.Struct	Post med	C	2	Survey
✓31476	SN60909012	Breakwater	O.Struct	Post med	C	2	Survey
✓31477	SN60909004	Breakwater	O.Struct	Post med	D	0	Survey
✓32069	SN60779040	Sea defences	O.Struct	Post Med	D	0	Survey

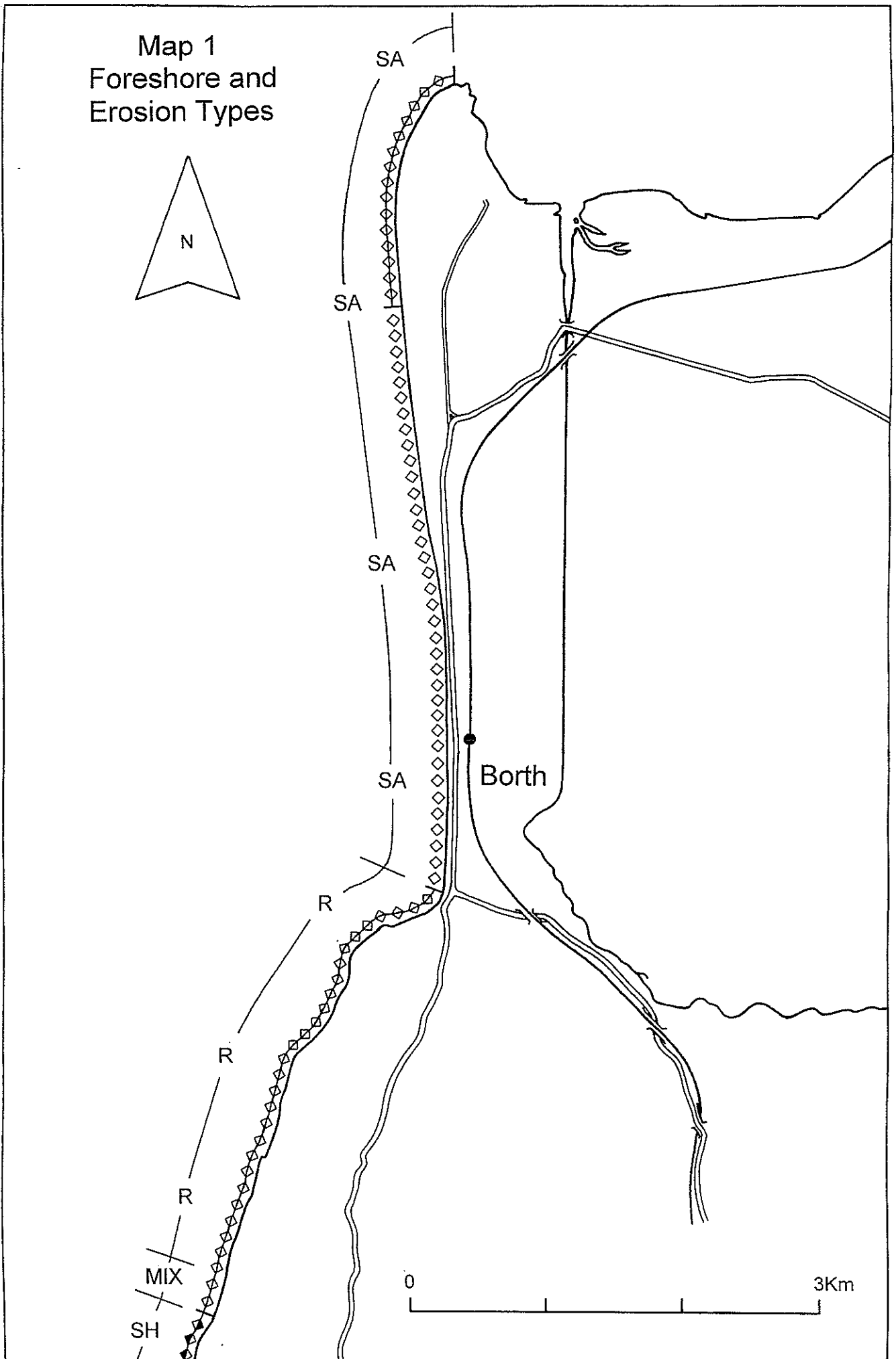
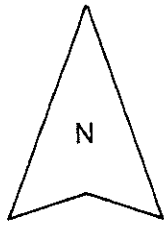
Map 1
Recorded Sites



Map 1
Coast and Land
Edge Types



Map 1
Foreshore and
Erosion Types



8.2 MAP 2:

Wallog (SN586850) - Blaenplwyf (SN557755)

8.2.1 Coast type and erosion assessment.

This section of coastline is generally composed of a rock cliff coast edge overlain by varying thicknesses of boulder clay, morainic drift or glacial head capping. However, there are some significant diversions from this pattern, for this section also includes Aberystwyth town and harbour, one of the longest stretches of man made coast edge in the study area.

South of Wallog (No. 5 continued), the sea cliffs are of rock with a glacial drift capping, fronted by a broad wave cut platform. The cliffs and wave cut platform give way at Clarach Bay (No. 6), where a relatively broad alluvial flood-plain runs down to the coast, fronted by a storm beach and a sand and shingle foreshore. Immediately south of Clarach the cliffs again pick up (No. 7), and are similar in character to those to the north, again with a wave cut platform on the foreshore.

At Aberystwyth the cliffs again decline and are replaced by a coastline much altered by man-made coastal defences, which extend southwards for some 2km south of the base of Constitution Hill (SN583825). a combination of breakwaters, sea wall and boulder dumps, have apparently successfully stabilised the coast in front of and adjacent to the town (No. 8). Documentary evidence points to significant coastal erosion prior to the 19th century near the castle, where a chapel of St. Mary was said to have stood until the 17th century, until being swept away by the sea (So, 1970, 329). Breakwaters marked on late 19th century OS maps near the pier and on Tanybwllch Beach have, interestingly, either been destroyed by the sea, or buried by shingle, for they are no longer visible on the shore. The foreshore here is mostly of shingle, but some rock platforms run into the sea, including those west of Constitution Hill and also below the rocky promontory (now very much built over) on which Aberystwyth Castle stands.

South of the mouth of the Afon Rheidol and Afon Ystwyth (both rivers now enter the bay at the entrance to Aberystwyth Harbour), a man-made construction fashions a further 0.75km of coastline; the coast edge above Tanybwllch Beach (No. 9) being formed by a road based on a 19th century tramway bed (PRN 30788), built to carry stone for the construction of a new harbour at Aberystwyth. The survival of this feature suggests that there has been no appreciable erosion of this section of the coast edge over the last century. The foreshore here is of shingle.

South of Tanybwllch beach relatively low coastal cliffs resume, generally of 20 - 30m in height. These have a rock base overlain initially by a thick boulder clay capping which thins south of Cwm Ceirw (SN563765). The northern section of these cliffs (No.10) is suffering some locally severe erosion of

both the rock cliff and the boulder clay capping, whilst some slippage of the boulder clay capping is evident further south (Nos. 11 & 12).

8.2.2 Archaeology.

Very few archaeological sites had been previously recorded along this coastline, although they include a prehistoric stone axe factory discovered near the present coast edge, at the site of the Tanybwllch Isolation Hospital, Aberystwyth. Several of the sites previously known were either documented sites which have been lost (such as the mediaeval monastic grange at Morfa Bychan PRN 6800), or find spots, such as a mesolithic flint floor (PRN 8305) and a prehistoric flint core (PRN 10580) from the Aberystwyth area.

Aberystwyth Castle (PRN 559) is probably the most significant single archaeological or historic site along this part of the coastline. It has been subject to an extensive programme of excavation and consolidation in recent years (Browne et al.).

The restored Cliff Railway on Constitution Hill (PRN 25143), and Aberystwyth Pier (PRN 7804) can also be counted as being amongst the more important surviving sites of historic interest in the area and recall the importance of tourism to the area from the 19th century onwards.

New sites recorded during this study include sites such as minor quarries (e.g. PRN 30786 - 87) and sea defences (e.g. PRN 30795) which are of local interest only. However, several sites of a wider interest were also identified or recorded and each have been noted as requiring further survey work. These include a lime kiln (PRN 30759), one of many along the Ceredigion and Pembrokeshire coastline which survive as relics of the once important limestone and coal trade along the West Wales coast and which are collectively of regional importance. Another site which belongs to a regionally important group is a possible fish trap or *cored* (PRN 31444) identified in the shingle beach south of Morfa Bychan. A third site of interest is a mediaeval or post mediaeval long hut platform noted above Tanybwllch Beach (PRN 31447) which may be associated with an eroded lynchet (PRN 31448).

The historic town of Aberystwyth and its associated harbour are clearly rank amongst the most important and influential historical developments along the north Ceredigion coastline and a cluster of features associated with the harbour have been recorded.

The harbour is divided into an outer and inner basin (PRN 32543 & 32547), with a smaller, secondary inner basin (PRN 32551) added to the northern side of the main inner harbour. The harbour area has been much altered in recent years, now serving primarily as a port for leisure craft. However, there are numerous surviving features and buildings associated with the heyday of the harbour as a busy trading and fishing port.

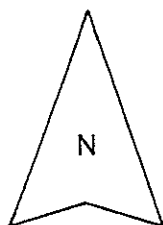
TABLE 2 - Map 2: Known sites

PRN	NGR	Description	Type	Period	Condition	Importance	Management
559	SN579815	Aberystwyth castle	Building	Med	D	4	
560	SN579815	Roman coin	Find	Roman	-	4	
6800	SN56647712	Grange	Building	Med	E	0	
7804	SN581818	Pier	O.Struct	Post med	C	4	
8305	SN58028066	Flintworking floor	Finds	Mesolithic	-	3	
9789	SN580818	Chapel	Documents	Mediaeval	U	1	
10580	SN584827	Flint core	Find	Prehist	-	3	
11676	SN579806	Brass buckle	Find	Mediaeval?	-	3	
16133	SN58458236	Quarry	Earthwork	Post med	U	0	
25143	SN583825	Railway; Station	O.Struct;	Post med	R	4	

Map 2: New sites

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30759	SN56727778	Limekiln	O.Struct	Post med	C	3	Survey
30785	SN57928088	Breakwaters	O.Struct	Post med	C	2	
30786	SN58026079	Quarry	Earthwork	Post med	C	2	
30788	SN580805	Tramway	Earthwork	Post med	C	2	
30789	SN58176008	Mill race	Earthwork	Post med	U	2	
30790	SN58038130	Sawmill	Documents	Post med	E	0	
30793	SN58478258	Unknown platforms	Earthwork	Post med	C	2	
30794	SN58258187	Slipway	O.Struct	Post Med	B	2	
30795	SN58328234	Sea defences	O.Struct	Post med	C	2	
30796	SN58378262	Quarry	Earthwork	Post med	D	0	
30797	SN58558290	Switchback railway	Documents	Post med	E	2	
30893	SN58218119	Limekiln	O.Struct	Post med	C	3	
30900	SN5883,5884	Flints	Finds	Prehistoric	-	3	
30908	SN586843	Flintworking floor	Finds	Prehistoric	-	3	
31444	SN55737557	Fish trap?	O.Struct	Med; Post med	B	3	Survey/monitor
31446	SN573785	Quarry	Earthwork	Post med	B	2	Survey
31447	SN57747963	Long hut?	Earthwork	Med; Post med	B	3	Survey
31448	SN57717963	Field/lynchet	Earthwork	Med; Post med	C	2	
32543	SN579808	Harbour	O.Struct	Post med	C	3	General survey
32547	SN581811	Harbour	O.Struct	Post med	B	3	General survey
32551	SN58108132	Harbour	O.Struct	Post med	B	3	General survey
32559	SN579806	Hospital	Building	Post med	D	2	

Map 2
Recorded Sites



30908
30900
30797
10580
25143
30796
30795
30794
7804
9789
32551
559/560
30790
30893
30785
32543
11676/32559
30788
31447
31448
30793
16133
32547
30786
8305
30789

Aberystwyth

31446

30759

6800

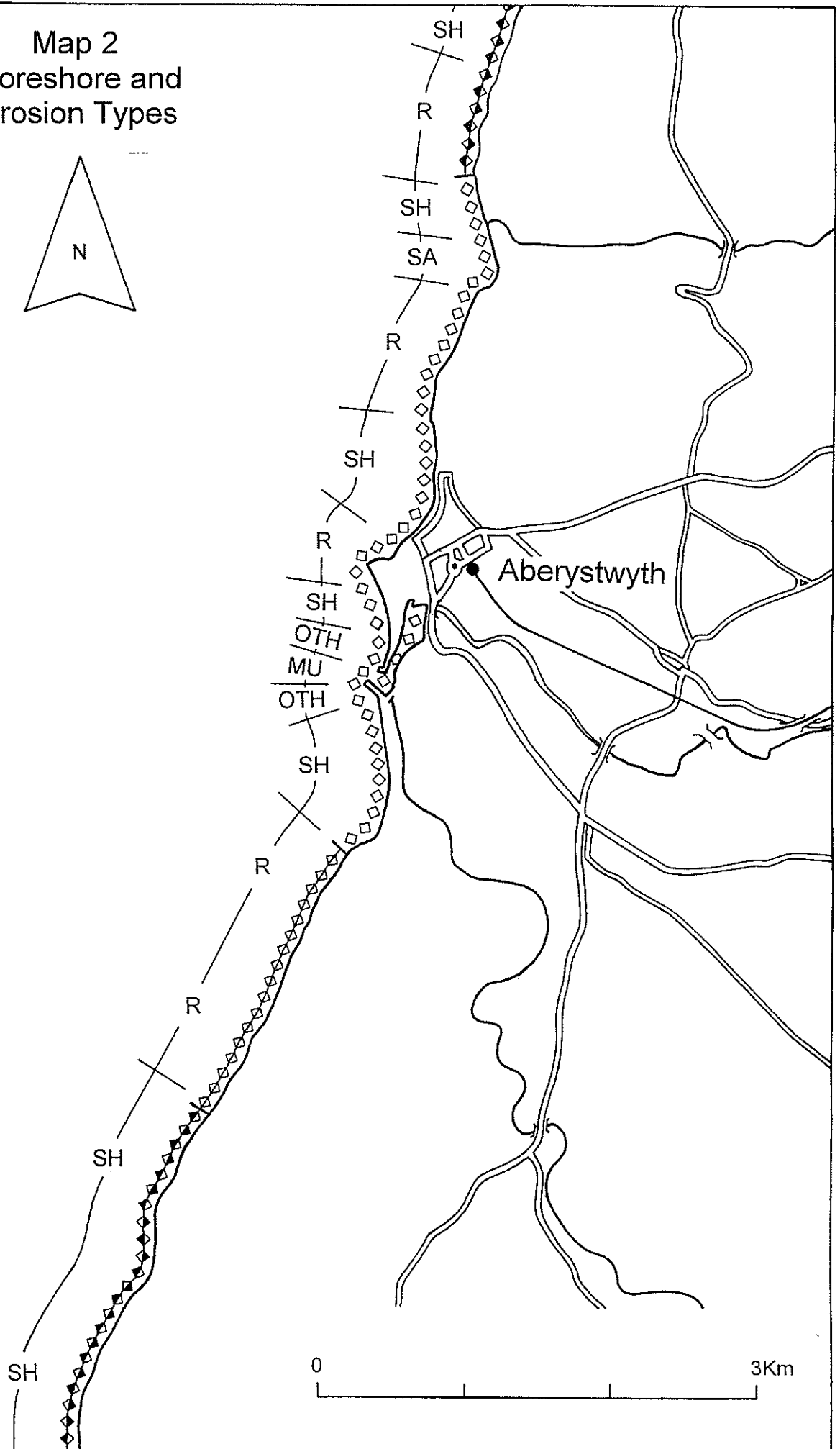
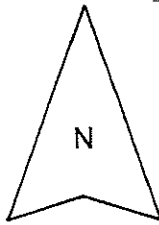
31444

0

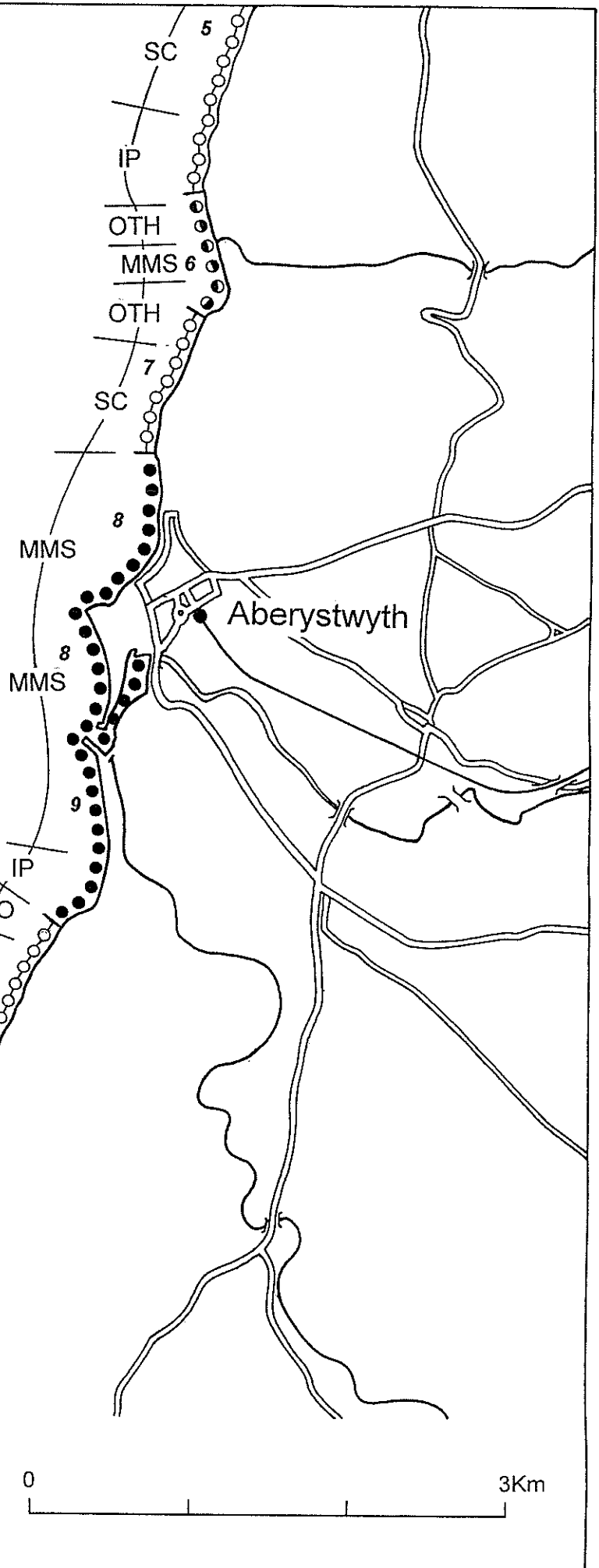
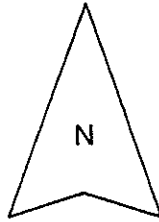
3Km



Map 2
Foreshore and
Erosion Types



Map 2
Coast and Land
Edge Types



8.3 MAP 3

Blaenplwyf (SN557755) - Llanrhystud (SN524694)

8.3.1 Coast type and erosion assessment.

The coast edge along this section of coastline is generally of rock covered with a drift capping, with

the exception of the area either side of the mouth of the Afon Wyre, from where a long section of boulder clay cliff begins (No. 14), continuing southwards

At the northern end of this section the drift capped cliffs and shingle foreshore described on Map 2 continue from Cwm Ceirw to Mynachdy'r Graig (No. 12), with slippage of the boulder clay still evident at some localities, although the post mediaeval field boundaries survive. This section is backed by improved pasture land, but south of Mynachdy'r Graig the land edge is of rough pasture, generally on relatively steep coastal slopes.

A much rockier coastline is found south of Mynachdy'r Graig (No. 13), with a wave cut platform fronting stone cliffs which have only a thin drift cover. Towards the south these cliffs become increasingly indented, with a series of steep headlands having formed, with and some shallow caves seen in their bases, such as at Twll Twrw (SN 555744). Although some localised erosion of the drift cover is again apparent, the rock cliffs here appear relatively stable.

Nearer Carreg Ti-pw (SN534707) erosion of the coast edge is more evident, with locally quite severe slippage of the boulder clay capping, cutting back to the post mediaeval field boundaries. Some erosion of the rock cliff is also occurring. These cliffs are fronted by sections of wave cut platform and some shingle and beaches.

South of Carreg Ti-pw the cliffs decline and the rock component disappears, leaving a lower boulder clay cliff fronted by a pebble/shingle beach (No. 14), which continues southwards beyond the mouth of the Wyre as mentioned above. The rough pasture along the land edge also gives way to improved pasture from here southwards to Llanrhystud, as the landscape and coast edge take on a much gentler character. The village of Llanrhystud is probably of mediaeval origin and it is likely that within recent historic times the lower, flatter ground which borders the coast to the south of the village was arable land.

8.3.2 Archaeology.

This short section of the Cardigan Bay coastline included very few recorded archaeological sites prior to this survey. In fact only one record in the DAT SMR was found to be located within the study area, a find of possibly Roman pottery (PRN 4832) from Twll Twrw or The Monk's Cave, Llanddeiniol. The proximity of The Monk's Cave to Mynachdy'r Graig

Farm (translated as "The Monastery of the Rock"), are strongly suggestive of a mediaeval or even dark age ecclesiastical foundation in this vicinity.

Despite the presence of a relatively long section of unimproved pasture behind the coast edge, where the likelihood of survival of archaeological features might be considered relatively high, the number of new sites added to the SMR during the course of the project is small. The most significant new sites are two probable fish traps (PRN 30933 & 31445) the former built on the shingle beach near Llanrhystud and the latter on a similar foreshore near Mynachdy'r Graig. Stone built fish traps are encountered relatively frequently along the Ceredigion coast as a group they are in need of further surveying and recording.

A cairn marked on recent OS maps (PRN 31443) was found on inspection to be a clearance feature of probable post mediaeval date. The only other sites recorded were a pond (PRN 31442) and two breakwaters (PRN 30758 & 31431), all of post mediaeval date. The breakwaters are located to the north of the mouth of the Wyre, apparently intended to stabilise the shingle beach in an area subject to some erosion.

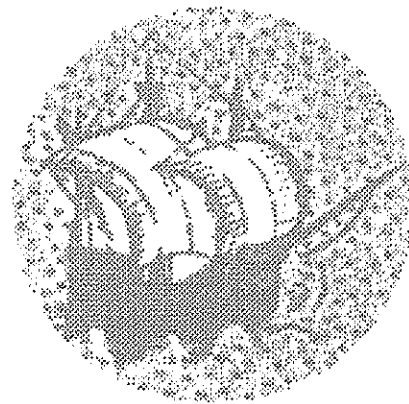


TABLE 3 - Map 3: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓4832	SN555744	Pottery	Finds	Roman?	-	3	
Map 3: New sites.							
PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓30758	SN53147014	Breakwater	Boulder bank	Post med	B	2	
✓31431	SN55323593	Breakwater	Earthwork	Post med	C	2	
✓31442	SN69973302	Pond	Pond	Post med	B	2	Survey
✓31443	SN5556017300	Cairn	Cairn	Post med	C	2	
✓31445	SN55317341	Fish trap?	V-shaped wall	Med/Post med	B	3	Survey/monitor
✓31445	SN55687539						

+14290 Road Barrow.

30933 S.D. Fish Trap.

31439

31440

31438

31437

31436

31435

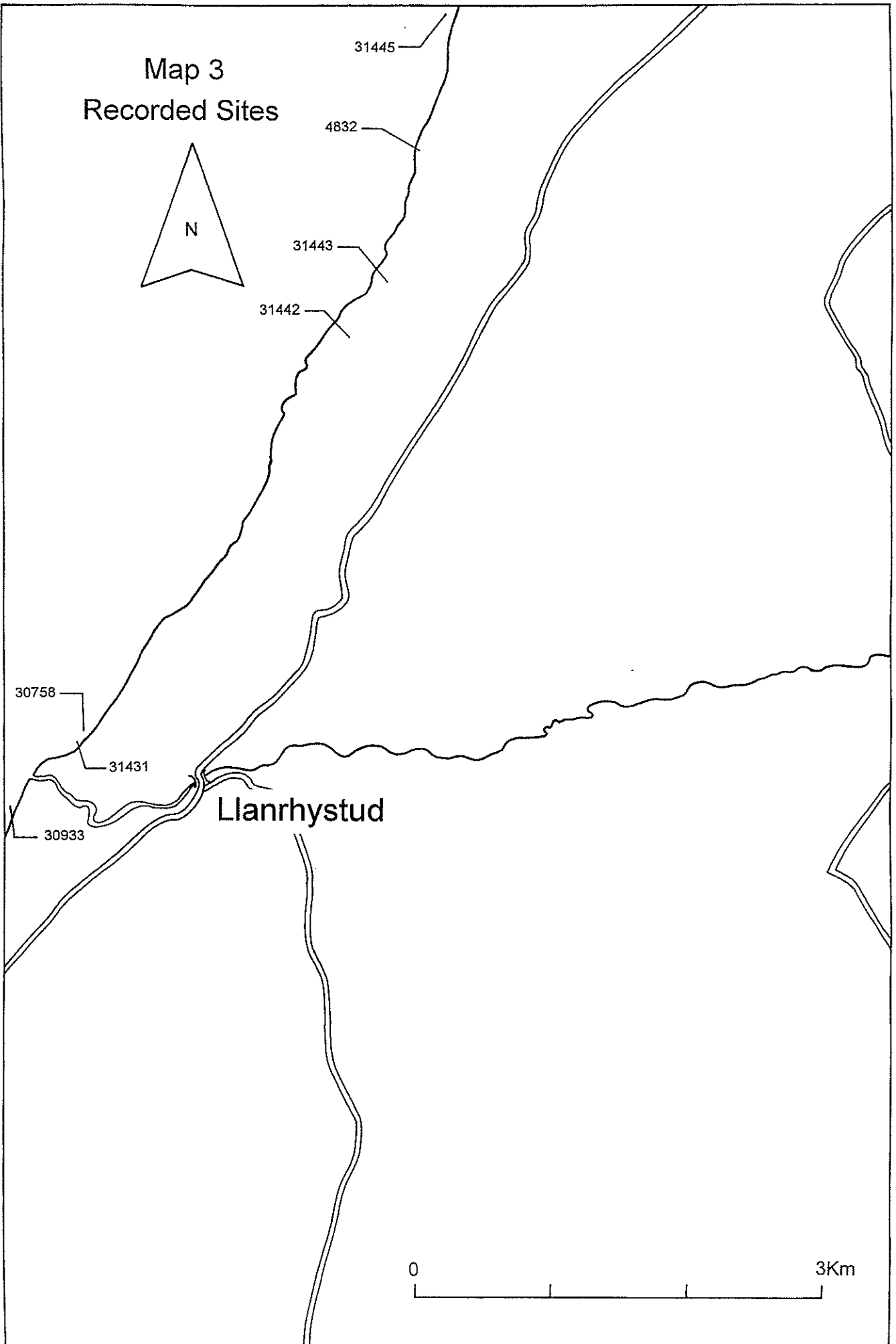
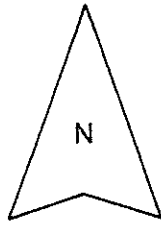
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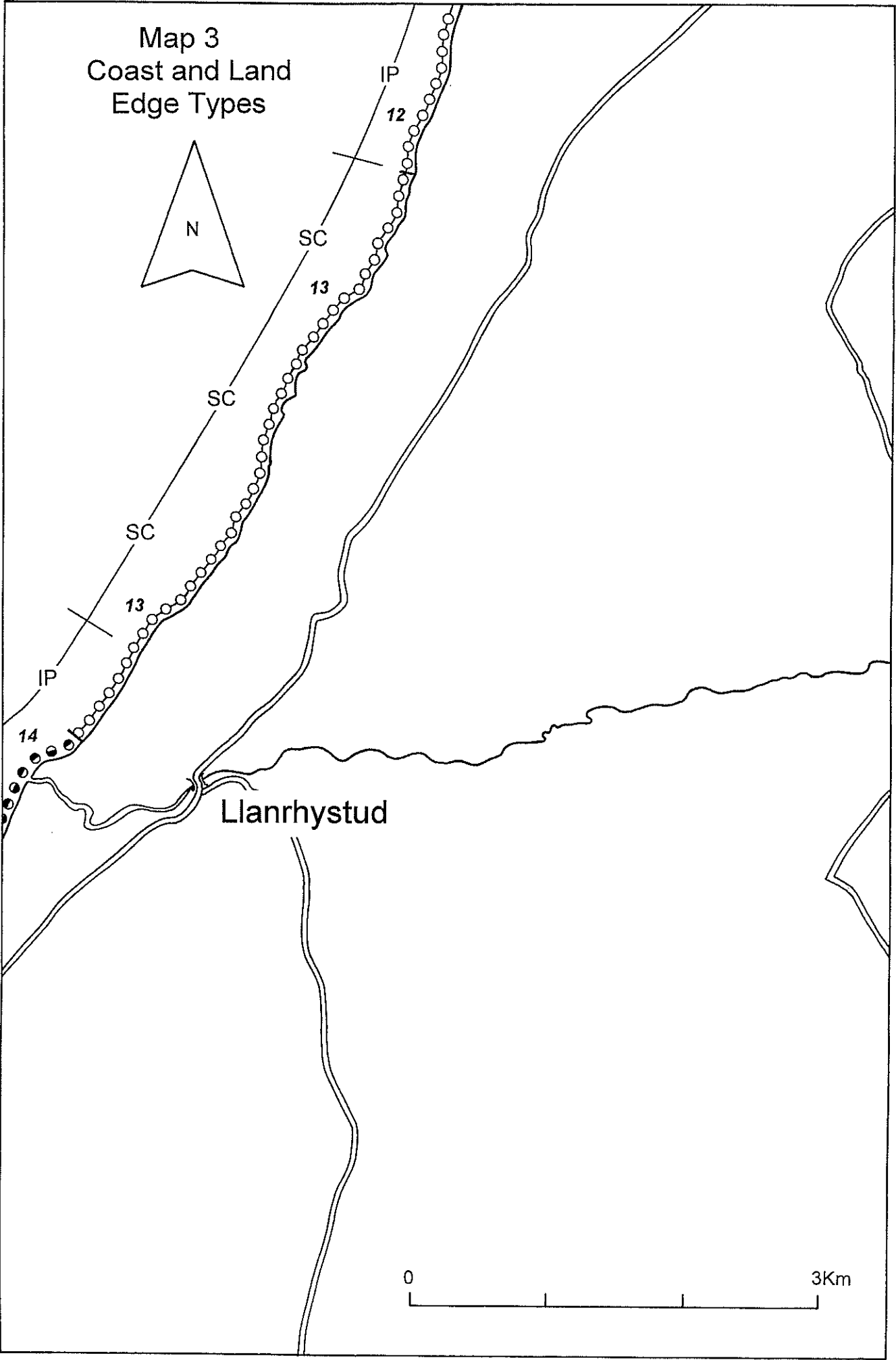
31433.

31441

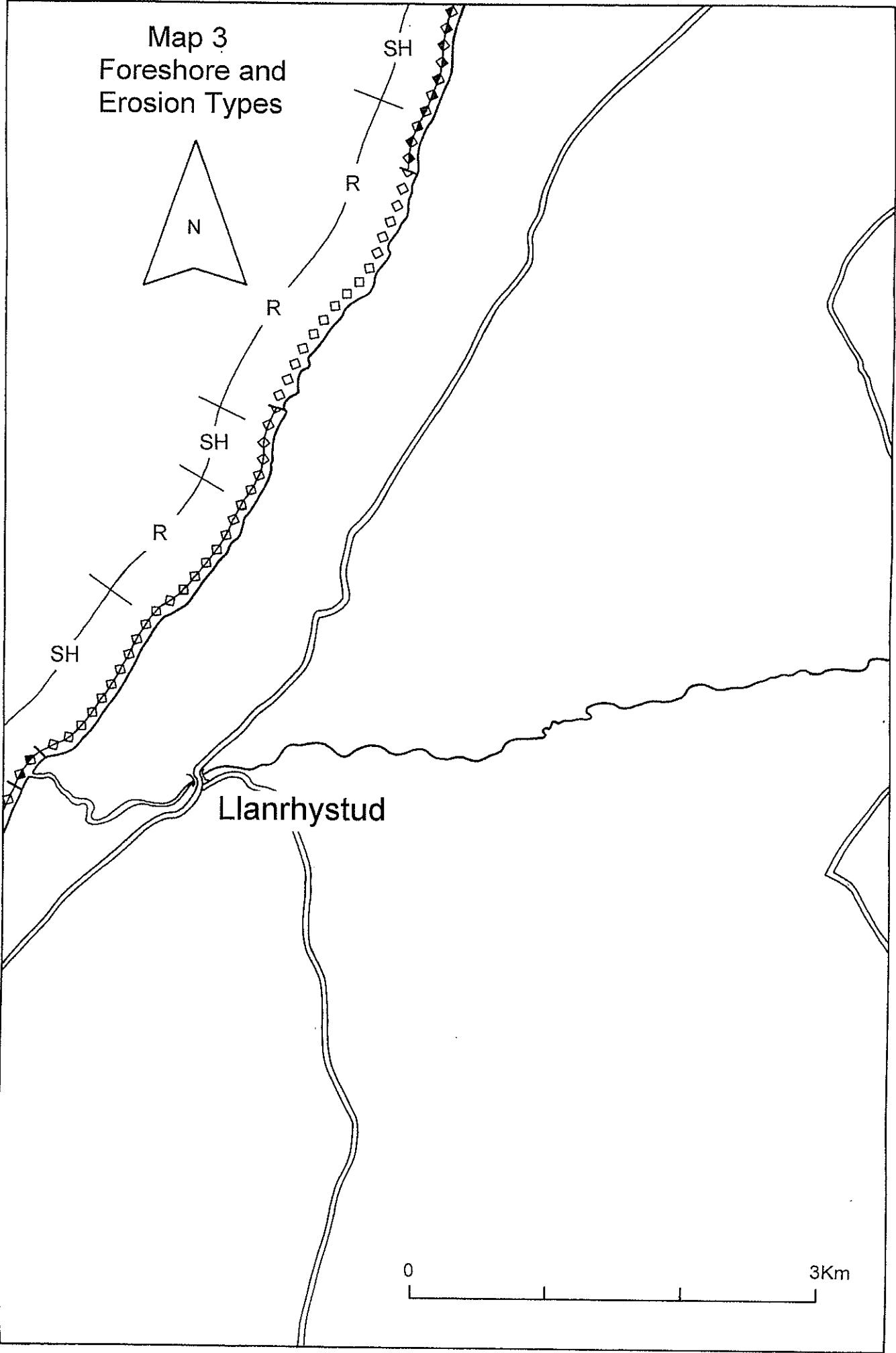
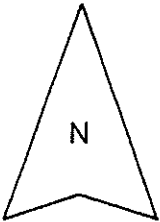
31432.

Map 3 Recorded Sites





Map 3
Foreshore and
Erosion Types



8.4 MAP 4:

Llanrhystud (SN524694) - Aberaeron (SN460634)

8.4.1 Coast type and erosion assessment.

This section of coastline includes an area of low lying coastal strip which runs south from Llanrhystud to Morfa Mawr (No. 14; continued from Map 3), much of which is below 10m OD. This includes part of the village of Llansantffraid, for which a relatively small rise in sea level could pose problems. Another area of low lying coastal strip begins at Aberarth (No. 16), and this runs further to the south towards the coastal town of Aberaeron.

These areas of low ground have a coastal edge which is generally of boulder clay, fronted by a shingle/pebble beach, apart from approximately 1km of sand beach immediately south of Morfa, Llanrhystud. At some localities storm beaches have encroached onto the land behind the coast edge, particularly south of Llanrhystud. The land edge on the lower ground is generally of improved pasture, although some arable was also noted. It is worth noting here that an extensive relict mediaeval strip field system is recorded at Llanon/Llansantffraid, and a smaller example at Aberarth, indicating that the coastal strip here has been well cultivated since at least mediaeval times (see below).

The two blocks of low ground are separated by the short ridge of Clochtyddiau Pridd, which rises to over 100m and has a steep seaward slope, covered by bracken and gorse. This is fronted by rock cliffs above a shingle beach (No. 15), with a short section of wave cut platform exposed at Graig Ddu (SN492650).

Erosion is a problem at several locations, most notably from the northern side of the mouth of the Afon Arth southwards towards Aberaeron (No. 16). Major erosion is occurring along the low boulder clay cliffs of this section and 5 lime kilns marked near Aberarth on the 1841 Llanddewi Aberarth parish tithe map have been lost, as well as one marked on the 1888 1st edition 1:2500 OS map (PRN 19582).

The stone cliffs (No. 15) north of this section are generally stable, but where the low boulder clay cliffs resume at Morfa Mawr (No. 14), erosion is again a problem, with medium levels of erosion noted, locally severe, as at the mouth of a minor stream which flows into the sea near Morfa Mawr.

Efforts have been made to stabilise the eroding coastline since the last century. Groynes, breakwaters and sea walls have been constructed along the coast between Aberaeron and Aberarth. At Aberarth itself large artificial sea defences have been built (No. 16a), including a breakwater on the west of the river estuary and a sea wall on the south eastern side. These efforts appear to have stabilised the shore below the village. Several breakwaters are also to be found along the foreshore at Llansantffraid (see below).

8.4.2 Archaeology.

A number of significant archaeological sites and finds are associated with this section of coastline. The find spot of a palaeolithic flint axe (PRN 11443) is recorded near Llansantffraid village, whilst a number of limekilns (PRN 19582 & 25514) and fish traps (PRN 11354 & 25518) can be considered to belong to groups which are collectively of regional importance and each of these sites require further surveying and recording.

A possible relict mediaeval field system (PRN 6439) is recorded between Aberarth village and the coast, but no trace appears to survive on the ground. However, a more impressive and extensive mediaeval strip field system is recorded at Llannon and Llansantffraid (PRN 6438) and this is still visible in the modern field system, although modified in recent decades.

The efforts made to stabilise the coast edge by the construction of breakwaters and groynes at a number of locations over the last century and a half or longer are represented by a number of probably 19th century breakwaters identified on early OS maps. These now survive in an eroded condition and have been recorded and given PRN's. They include a group between Llansantffraid and Llanrhystud (PRN 30752 - 57) and another set of groynes and an associated sea wall east of Aberaeron (PRN 30770).

Other man made features recorded along the foreshore were a number of possible mediaeval or post mediaeval fish traps (PRN 30939-41; 31429 & 30933). These *coredau* are suffering from the depredations of the sea, with their walls collapsing or being gradually covered by shingle. Each requires further survey and recording. *Coredau* are relatively numerous along this section of coastline and it is possible that others in the north eastern part of this area may have been missed due to high tides obscuring the foreshore during field visits.

Several cropmark and earthwork sites of unknown nature and period were also identified during desktop study and fieldwork (PRN 30930; 30934; 30937; 31430). The find spot of a neolithic stone axe was also recorded (PRN 30897), co-incidentally within a few hundred metres of the find spot of the palaeolithic flint axe mentioned above.

Aberarth has a long history as a minor port for trade and fishing. It was used in mediaeval times (PRN 30928) to import building stone used in the construction of the abbey at Strata Florida (*Ceredigion*, Vol. 1, 30 & 37). Later it served as a port and shipbuilding centre (PRN 30929), declining during the early 19th century as Aberaeron developed better harbour facilities. Although Jenkins (1982, 105) lists limekilns, a coal yard, a fishing weir and a busy shipbuilding industry here in the early decades of the 19th century, no features associated with the village's trading history were recorded during the field visit.

TABLE 4 - Map 4: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓4808	SN5065	Mill?	Documents	Post med?	-	1	
✓6439	SN477639	Field system	Topog; Documents	Med/Post med	D	3	Conservation area. Advise Local Authority
✓11354	SN4663;4763	Fish trap	O.Struct	Med/Post med	C	3	Survey/monitor/conserv
✓11443	SN517683	Flint axe	Find	Palaeolithic	-	3	
✓19582	SN50536654	Limekiln	O.Struct	Post med	C	3	Record
✓25514	SN4763;4764	Limekiln	O.Struct	Post med	E	0	
✓25518	SN506668	Fish trap	O.Struct	Post med	C	3	Survey

LINE 16-18.

Map 4: New sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓30752	SN50386652	Breakwater	O.Struct	Post med	C	2	Survey/monitor
✓30753	SN50716690	Breakwater	O.Struct	Post Med	D	0	
✓30754	SN51736872	Breakwater	O.Struct	Post med	C	2	Survey/monitor
✓30755	SN52416861	Breakwater	O.Struct	Post med	C	2	Survey/monitor
✓30756	SN52276879	Breakwater	O.Struct	Post med	C	2	Survey/monitor
✓30757	SN52336895	Breakwater	O.Struct	Post med	U	0	
✓30767	SN46166315	Unknown	Documents	Unknown	E	0	
✓30768	SN46506355	Unknown	Documents	Unknown	E	0	
✓30770	SN65966341	Breakwater/Sea wall	O.Struct	Post med	D	0	Survey/monitor
✓30897	SN514682	Stone axe	Find	Neolithic	-	3	
✓30926	SN46776360	Breakwater	O.Struct	Post med	C	2	Survey/monitor
✓30927	SN46776360	Breakwater	O.Struct	Post med	C	2	Survey/monitor
✓30928	SN478641	Port of Aberarth	Documents	Med;Post med	-	3	
✓30930	SN47606380	Unknown	Cropmark	Unknown	U	1	
✓30931	SN49236497	Trackway	Earthwork	Post med	B	2	
✓30932	SN49676536	Clearance	Stone spread	Post med	B	2	
✓30934	SN52176852	Unknown	Cropmark	Unknown	-	1	
✓30935	SN52106853	Breakwater	O.Struct	Post med	D	0	Survey/monitor
✓30936	SN51876836	Breakwater/Wharf?	O.Struct	Post med	C	2	Survey/monitor
✓30937	SN50066581	Unknown	Cropmark	Unknown	-	1	
✓30938	SN52016846	Banks & hollows	Natural?	Unknown	C	1	
✓30939	SN51206834	Fish trap?	Stone wall	Med/Post med	C	3	Survey/monitor
✓30940	SN58205106	Fish trap?	Stone wall	Med/Post med	C	3	Survey/monitor
✓30941	SN67625090	Fish trap?	Stone wall	Med/Post med	C	3	Survey/monitor

FISH TRAP

31429

31430

30929

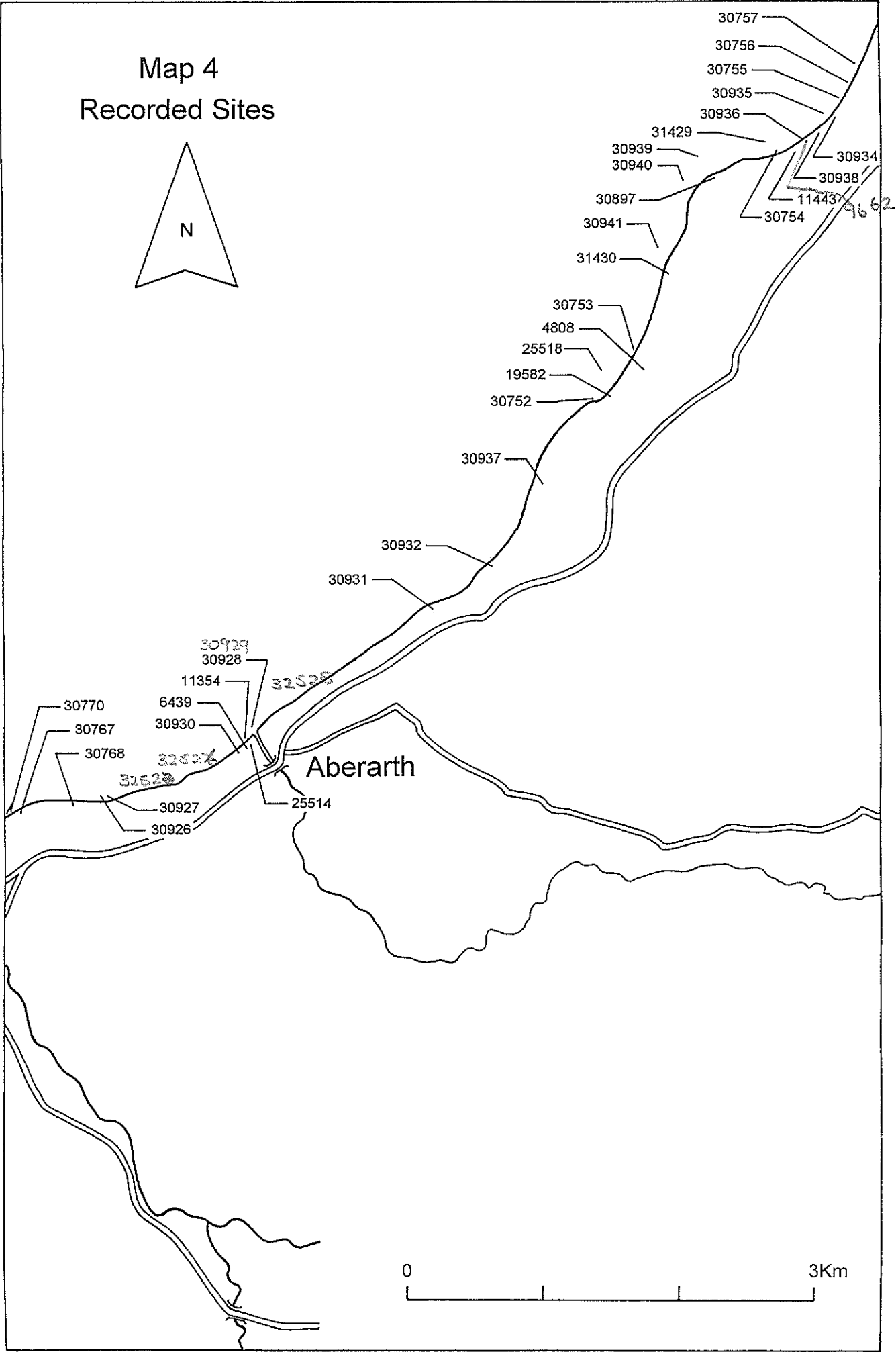
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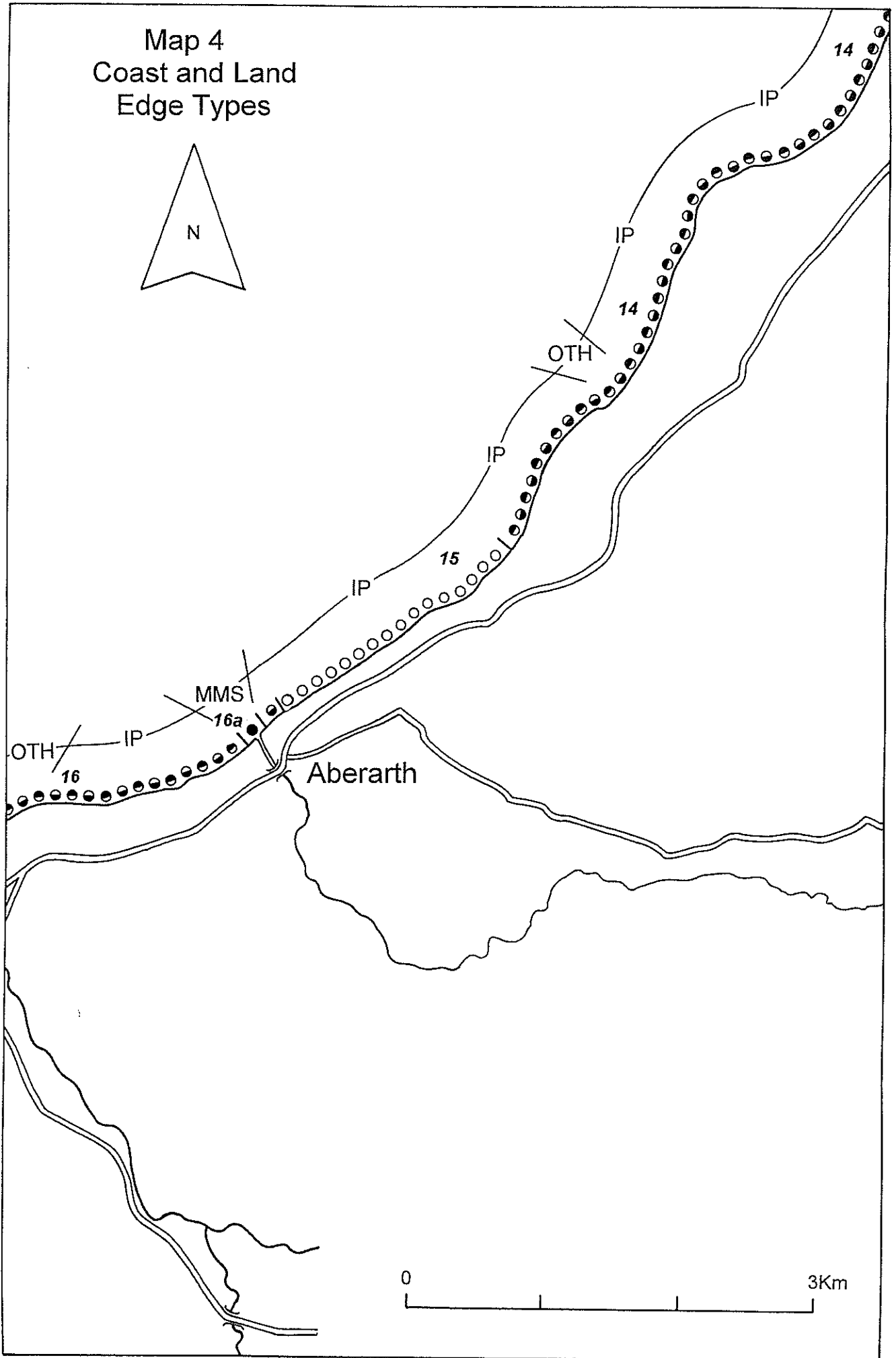
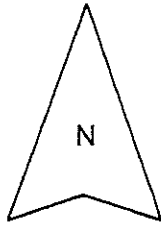
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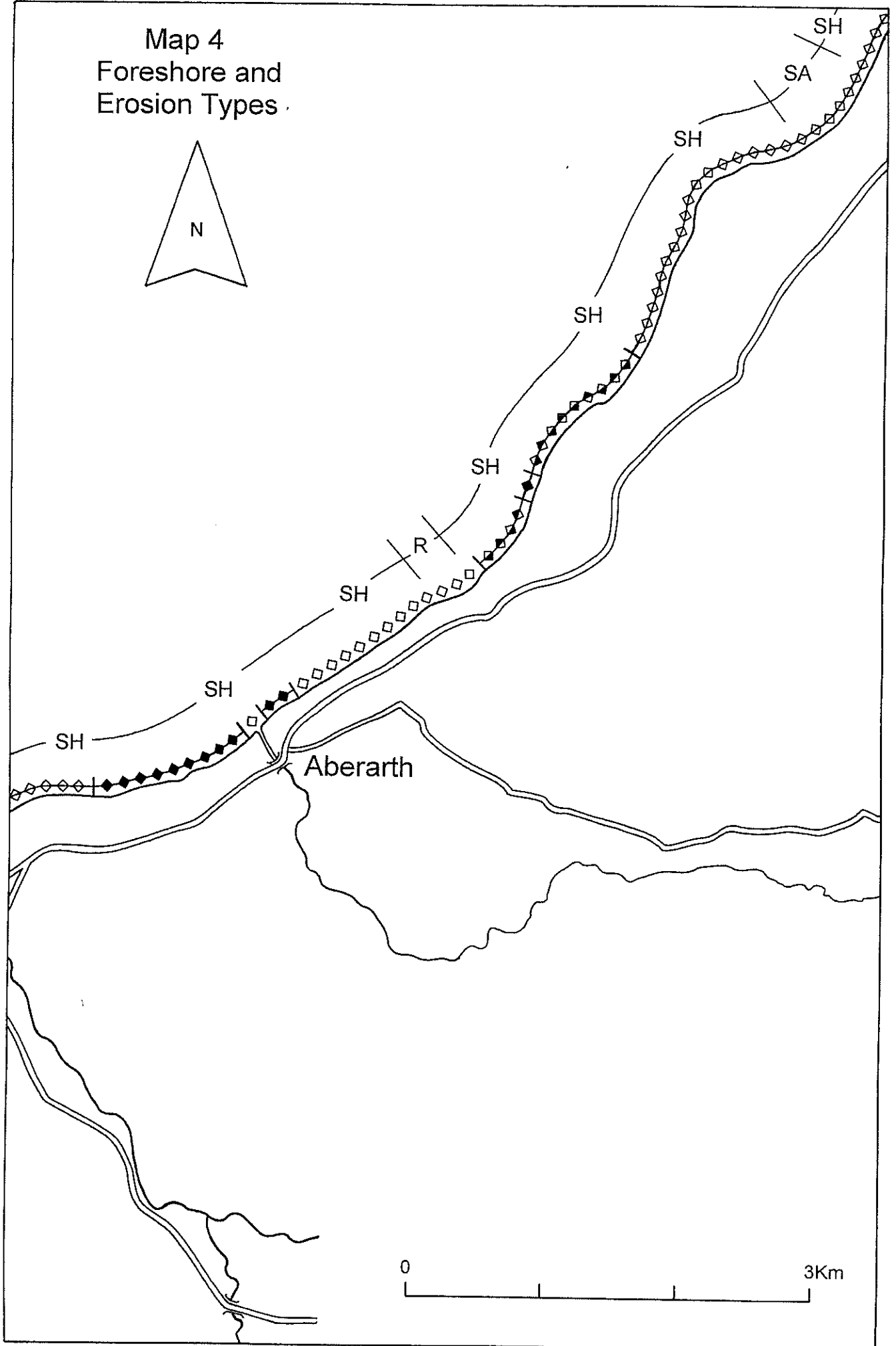
Map 4
Recorded Sites



Map 4
Coast and Land
Edge Types



Map 4
Foreshore and
Erosion Types



8.5 MAP 5:

Aberaeron (SN460634) - New Quay Bay (SN400595)

8.5.1 Coast type and erosion assessment.

This section runs southwards from the coastal town and harbour of Aberaeron to the eastern side of New Quay Bay. The north eastern end of the section is a continuation of the drift coast edge and shingle beach described on Map 4 (No. 16). It is backed by a combination of improved pasture and caravan sites and includes the slight remains of the mediaeval earthwork Castell Cadwgan (PRN 1867) which has been badly eroded by the sea. The shingle foreshore continues southwards towards Aberaeron and several breakwaters have been constructed in front of a sea wall, the beginning of a section of man-made coast edge (No. 17) which includes the town's harbour complex. Some 19th century breakwaters survive in a rather dilapidated condition, partially buried under shingle.

South of the harbour entrance the coast edge alternates between short sections of fairly low drift and rock cliffs (Nos. 18 - 22), averaging between 20 and 30m in height. The former are generally suffering medium erosion (grade 3), whilst the latter are mostly stable. The foreshore along this section is of shingle or pebble beach, with occasional wave cut platforms in front of the rock cliffs. The land edge is generally characterised by unimproved pasture, often on steep coastal slopes and much of it overgrown. There are occasional short stretches of improved pasture, such as seen either side of Gilfach yr Halen (SN435612) or behind New Quay Bay. On Llanina point (SN405598) a small area of coppiced woodland reaches down to the coast, one of only a very few coastal woods found along Cardigan Bay.

From Cei Bach (SN411597) onwards, the coast edge is of drift cliffs (Nos. 23 - 26), stabilised along two short sections by man-made defences (Nos. 23 & 25). In both cases sea defences have been provided to stabilise shores subject to moderate/major erosion (grade 3 - 4), locally severe. At Cei Bach (No. 23) the sea has eroded lime kilns on the coast edge, whilst at Llanina point (No. 25) serious slumping of the boulder clay cliffs has occurred, a problem which continues to threaten most of the eastern half of New Quay Bay, where foreshore loss measurable in tens of metres can be seen by comparing 19th century OS maps with more modern editions. The foreshore at Cei Bach is of sand, giving way to shingle around Llanina point and then a mixture of sand and shingle bands in New Quay Bay.

8.5.2 Archaeology.

A relatively small number of archaeological sites were previously recorded along this section of coastline. One of the most significant of these is the mediaeval earthwork castle known as Castell Cadwgan (PRN 1867), north east of Aberaeron which has been almost completely eroded by the sea, with only its

eastern defences surviving. Erosion of the site is ongoing and future monitoring is required in case archaeologically important features become exposed.

Other notable sites include a hut circle (PRN 26606) of possible prehistoric date near Cei Bach beach, which requires more detailed survey and monitoring and St. Ina's, Llanina (PRN 5656), a parish church rebuilt in the 19th century on a site with mediaeval or possibly dark age origins. It is situated on a headland at the eastern end of New Quay Bay where erosion of the coastline and along the mouth of a minor stream which flows into the sea just north of the church means that the churchyard is now as little as 20m from the high water mark on its north eastern side and future erosion may threaten the site.

Sites added to the SMR as a result of desktop research and fieldwork carried out during this project are generally of local interest only, often post mediaeval sites recognised from documentary or map evidence, such as breakwaters or lime kilns shown on early OS maps, but now either badly damaged or destroyed. One limekiln at Aberaeron Harbour (PRN 30771), and its associated charging ramp, survives in relatively good condition and is in need of further recording.

A number of sites of uncertain or possible prehistoric date were also identified in the field. These include two possible round barrow sites (PRN 30912 & 30920), although the former was in very poor condition and the latter may be a post mediaeval clearance cairn. A standing stone located in a caravan park (PRN 30916) was found to be a modern landscaping feature, being an old gatepost erected at a new site, not a prehistoric feature.

Three earthwork sites of unknown period were recorded (PRN30769; 30911 & 30918), the first two being of uncertain function and significance, whilst the latter is a platform of unknown purpose cut at the top of the coastal slope just south of Aberaeron, possibly of modern origin.

The most important settlement along this section of coastline is Aberaeron. It was one of the more important ports along the Cardigan Bay coast through the 19th century, good harbour facilities were constructed here between 1807 and 1812, including stone piers either side of the mouth of the Afon Aeron which prevented the accumulation of shingle in front of the river estuary, a problem which had previously hampered access (Jenkins, 1982, 20). The new harbours meant that Aberaeron captured much of the shipping trade and shipbuilding industry which was previously centred on nearby Aberarth.

The inner and outer harbour (PRN 32535 & 32541 respectively) and number of associated features survive, such as piers, quay walls, lime kilns and harbour buildings. A specific programme of survey work is required in order to fully record and interpret the whole complex.

TABLE 5 - Map 5: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓1867	SN45986340	Castle	Earthwork	Mediaeval	D	3	Monitor for artefacts etc.
5656	SN405598	Church	Building	Post med	A	4	
8198	SN426606	Hut circle	Earthwork	Bronze age?;	C	3	Survey/monitor
				Iron age?; Roman			
10670	SN40125947	Healing well	O.Struct	Mediaeval	U	1	
25507	SN40945975	Limekiln	O.Struct	Post med	D	0	

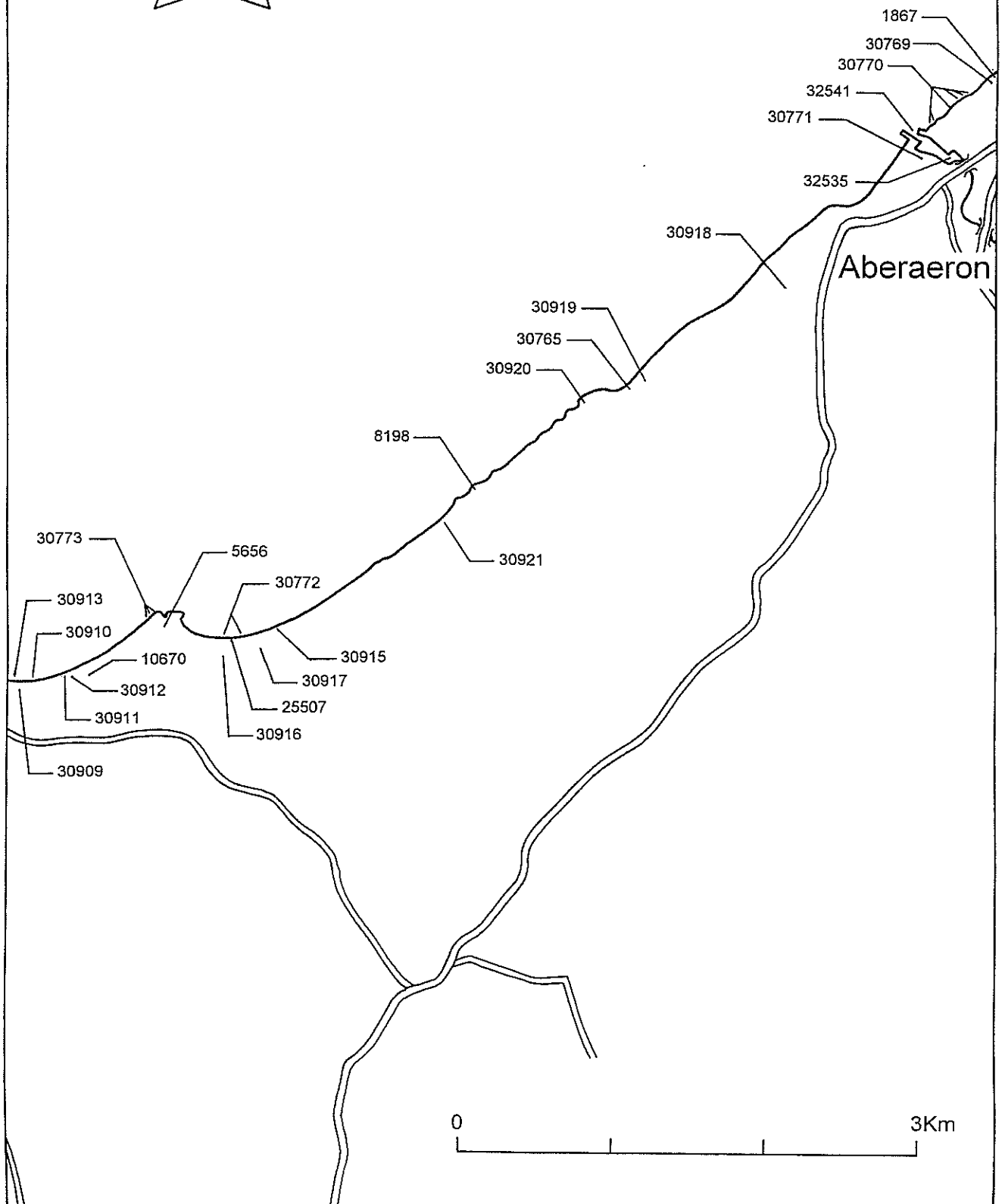
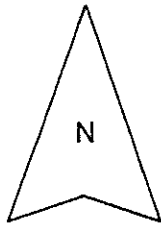
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Map 5: New sites.

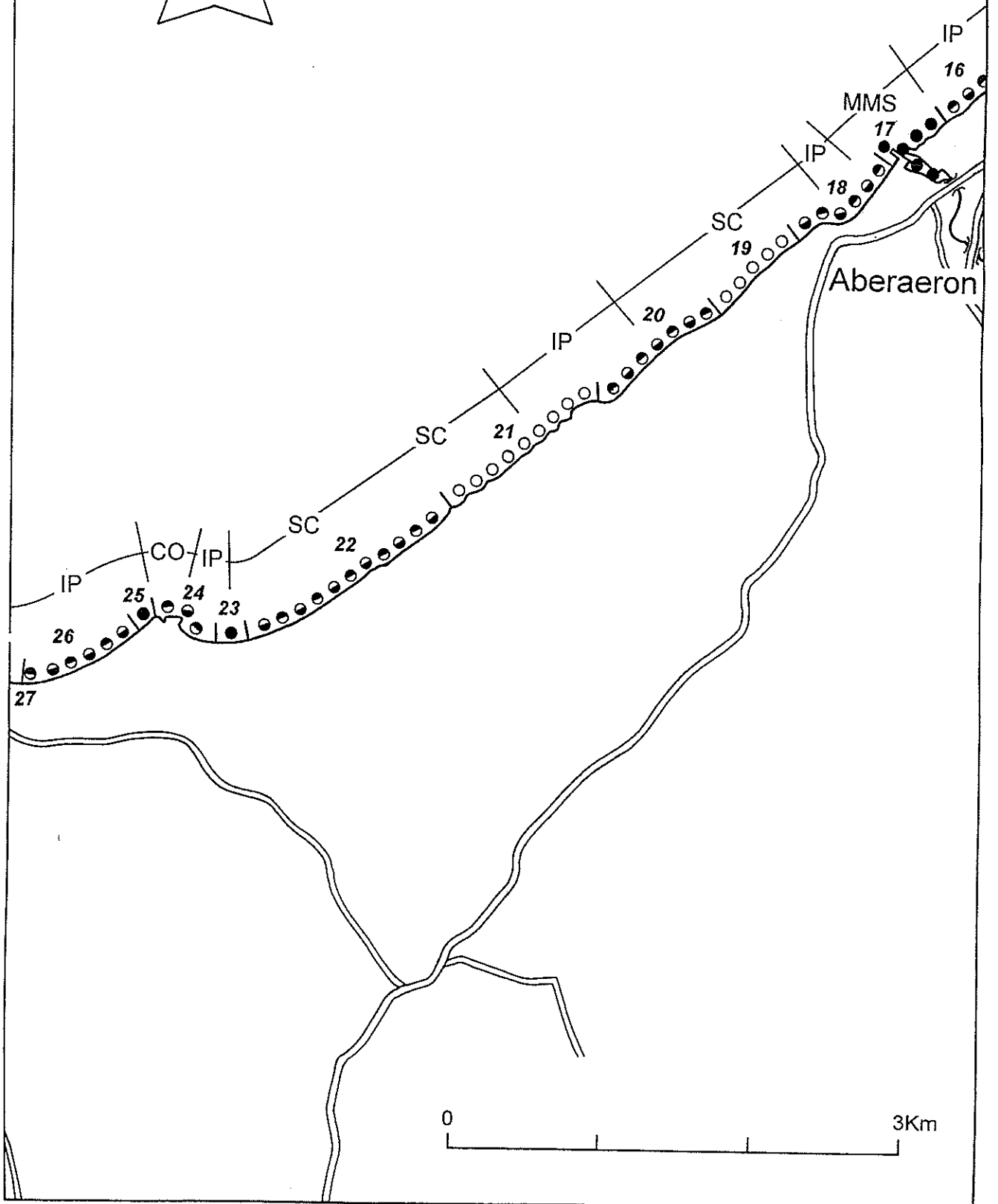
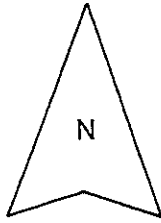
PRN	NGR	Description	Type	Period	Condition	Importance	Management
30765	SN42586071	Limekiln	Documents	Post med	E	0	
✓30769	SN45926336	Unknown	Earthwork	Unknown	C	1	
✓30770	SN65956341	Breakwater	O.Struct	Post med	D	0	Survey/monitor
✓30771	SN45456291	Limekiln	O.Struct	Post med	B	3	Survey
30772	SN40895973;	Breakwater	Documents	Post med	E	0	
	SN40925973;						
	SN41005975						
30773	SN40475991;	Breakwater	Documents	Post med	E	0	
	SN40435987;						
	SN40405984						
✓30909	SN39575940	Building platform?	Earthwork	Post med	B	2	Monitor
✓30910	SN39635947	Jetty	O.Struct	Post med	B	2	Survey/monitor
30911	SN39905943	Unknown	Earthwork	Unknown	C	1	
30912	SN39945907	Round barrow?	Earthwork	Bronze age	D	0	
✓30913	SN39515952	Tile?	Find	Med/Post med	-	1	
30915	SN41305983	Limekiln	O.Struct	Post med	D	0	
30916	SN40905957	Standing stone?	Monolith	Bronze age?;	B	1	
				Post med			
30917	SN41135963	Trackway?	Earthwork	Post med	D	0	
✓30918	SN44626204	Platform	Unknown	Unknown	B	1	
30919	SN61474386	Quarry	Earthwork	Unknown	B	1	
30920	SN43326130	Round barrow?;	Earthwork	Bronze age?;	B	1	
		Clearance cairn?		Post med			
30921	SN42406050	Quarry	Earthwork	Post med	B	2	
✓32535	SN45706292	Aberaeron inner	O.Struct	Post med	B	3	General survey
		harbour					
✓32541	SN45446300	Aberaeron outer	O.Struct	Post med	B	3	General survey
		harbour					

32536

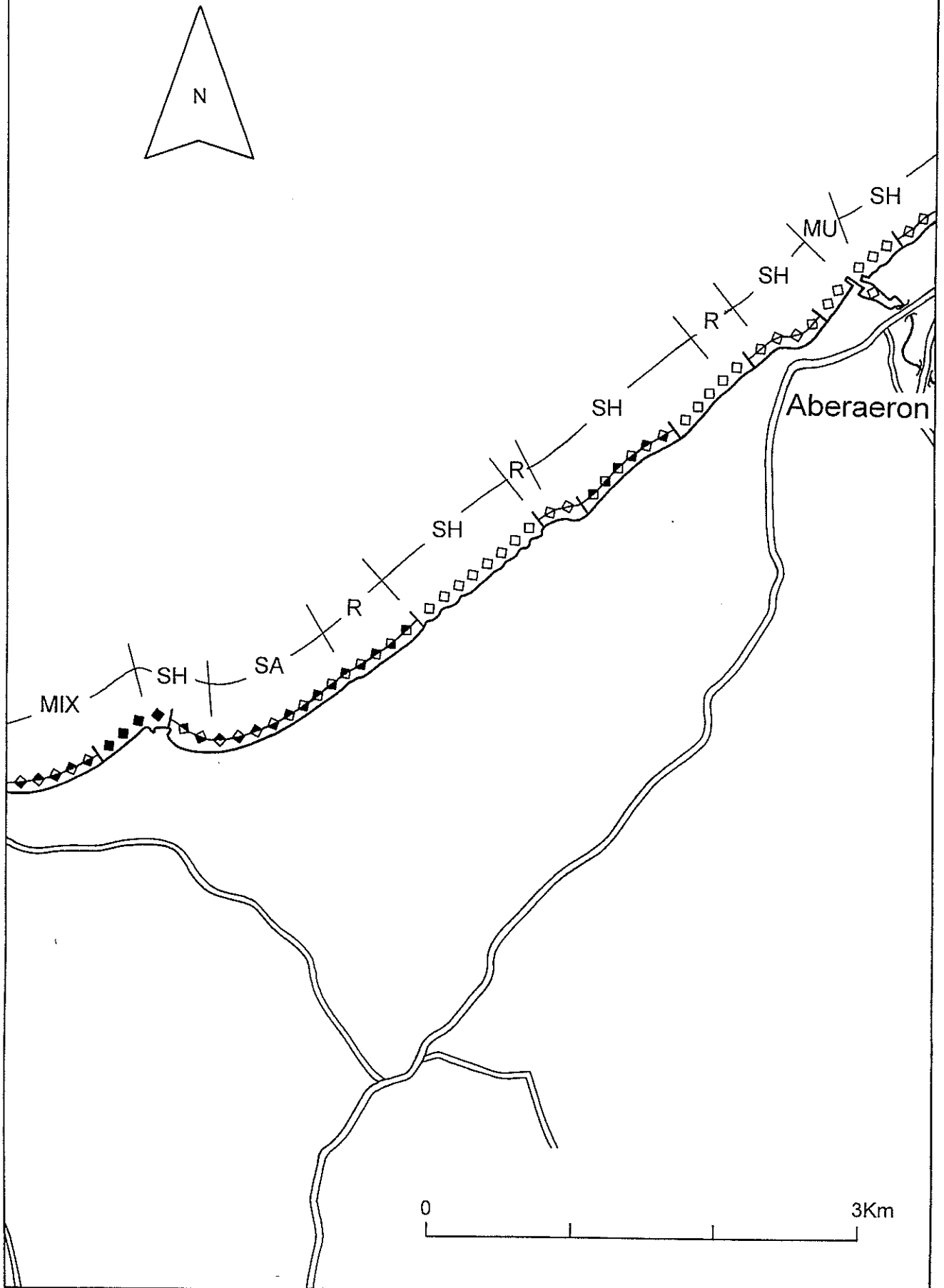
Map 5 Recorded Sites



Map 5
Coast and Land
Edge Types



Map 5
Foreshore and
Erosion Types



8.6 MAP 6:

New Quay Bay (SN400595) - Trwyn Crou (SN330555)

8.6.1 Coast type and erosion assessment.

This section begins with a continuation of the sand/shingle beach at the eastern side of New Quay Bay (No. 27). The boulder clay cliff above this shore is relatively unstable, with some serious slumping of the cliff occurring. As mentioned previously, map evidence indicates that some land loss has occurred across the bay edge over the last century.

A shingle beach continues westwards until it gives way to a sandy foreshore in front of New Quay harbour (No. 28), a popular bathing beach. North of the harbour shingle resumes, giving way to a wave cut platform on New Quay Head. Apart from some slight erosion immediately north of the pier, the coast is stable from the harbour northwards. The shore along the bay is backed by a combination of large holiday villages, some woodland and the seafront town of New Quay, which extends for 1km from the harbour northwards onto New Quay Head.

With the exception of man-made sections at New Quay and Cwmtudu (Nos. 28 & 34), this section of coast is almost all composed of low rock cliffs with a thick drift capping (Nos. 29, 31, 33 & 35), usually 20-30m in height. These are generally stable or only suffering some minor slippage of the boulder clay cover at the cliff top, although examples of more intense erosion (grade 3) occur at Craig Coubal (SN371592), at Castell Bach (SN359579) (where an iron age promontory fort (PRN 1355) is being damaged) and also either side of the bay at Cwmtudu (SN3557).

The only exceptions from the general pattern are seen at some of the small creek mouths along the coast south of New Quay Head, such as at Traeth y Coubal (No. 30) and Penygraig (No. 32), where the cliffs are broken by minor valleys choked with boulder clay, each suffering locally severe erosion.

The foreshore along this section is of alternating stretches of wave cut platform and shingle/pebble or boulder beaches. The shingle is largely accumulating in the coves or more sheltered indentations along the coast, whilst the headlands are in general much rockier with narrow wave cut platforms. The land edge is largely of scrub and unimproved pasture, sometimes on steep, overgrown coastal slopes, particularly between Cwmtudu and Trwyn Crou (No. 35).

8.6.2 Archaeology.

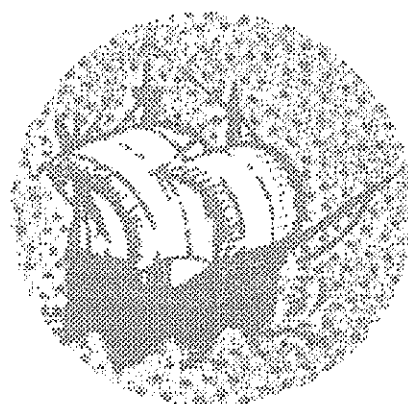
This section of coastline includes the iron age hillfort of Castell Bach (PRN 1355), an unquantifiable part of which has been lost to the sea. The site suffers

continuous and serious erosion as the boulder clay capped cliff on which it is located recedes eastwards. Some visitor erosion is also evident. The extent of erosion is such that the excavation of the surviving interior and defences must be regarded as a priority.

Although Castell Bach is the only surviving iron age fort recorded along this section of the coastline, the place name Penycastell (PRN5770), north of New Quay, suggests the possibility that another such site may once have existed in the area and has either been destroyed or is unrecognised in the modern landscape.

The only other significant sites recorded in the area prior to this study were the natural harbour of Cwmtudu (PRN 20927) and a partly restored 19th century limekiln which is located there (PRN25506). Cwmtudu was a landing place for culm and limestone, delivered to kilns which supplied lime fertiliser to local farms. Some shipbuilding also occurred here in the late 18th and early 19th centuries. By the end of the 19th century Cwmtudu had ceased to be used by coastal traffic, although a brief resurrection of the culm trade occurred in the 1920's (Jenkins, 1982, 61).

Most of the new sites entered into the SMR following this survey are of post mediaeval date.



century OS maps, and some of those on New Quay Head (PRN 18110-11) were associated with the quarrying of stone for use in the construction of the harbour at New Quay (PRN 30776) in the mid-19th century.

New Quay is the most important coastal settlement in this area. The first man made quay, built of stones and wooden stakes, was constructed during the first half of the 18th century (recorded as *New Key* by Lewis Morris in 1848: Jenkins, 1982, 10). A rapid increase in commercial activity through the 1820's led to a new stone pier being built after 1835. This pier survives today. This development made New Quay one of the principal ports of the Ceredigion coastline and it served as a trading and fishing port of some significance until the early 20th century. It is now mostly used by leisure craft, but a small number of fishing vessels still operate. A number of features associated with the harbour complex itself were recorded, including former warehouses, other buildings and quays.

As a small port, Newquay was the the location of a number of minor defences and lookout stations during World War 2. Several features, including a possible slit trench (PRN 31910) were noted during fieldwork. One earthwork feature of uncertain nature

(PRN 31911), located on the headland north of New Quay and near the Coastguard Lookout post (PRN 31913), was thought to be either a wartime "foxhole" or possibly a scoop grave of bronze age date. An earthwork building platform (PRN 32035) of unknown date lies some 20m west of this feature.

A number of other earthwork features were recorded at various locations along the coastal land edge, including several field boundaries of possible prehistoric date (PRN 32029; 32031 & 32034). The first two of these may be fragments of a potentially more extensive prehistoric or mediaeval field system on a steep slope overlooking the coast between Cwmtudu and Ynys Lochtyr, which includes several features below the hilltop at Penmoelciliau (PRN 32030). Gaerwen, a small iron age hillfort (outside the study area), is located on this ridge, but any association with the possible field system remains to be proven. The area of rough pasture which covers the western flank of the ridge extends inland for over 200m and is over 3km long. It undoubtedly requires a more detailed survey.

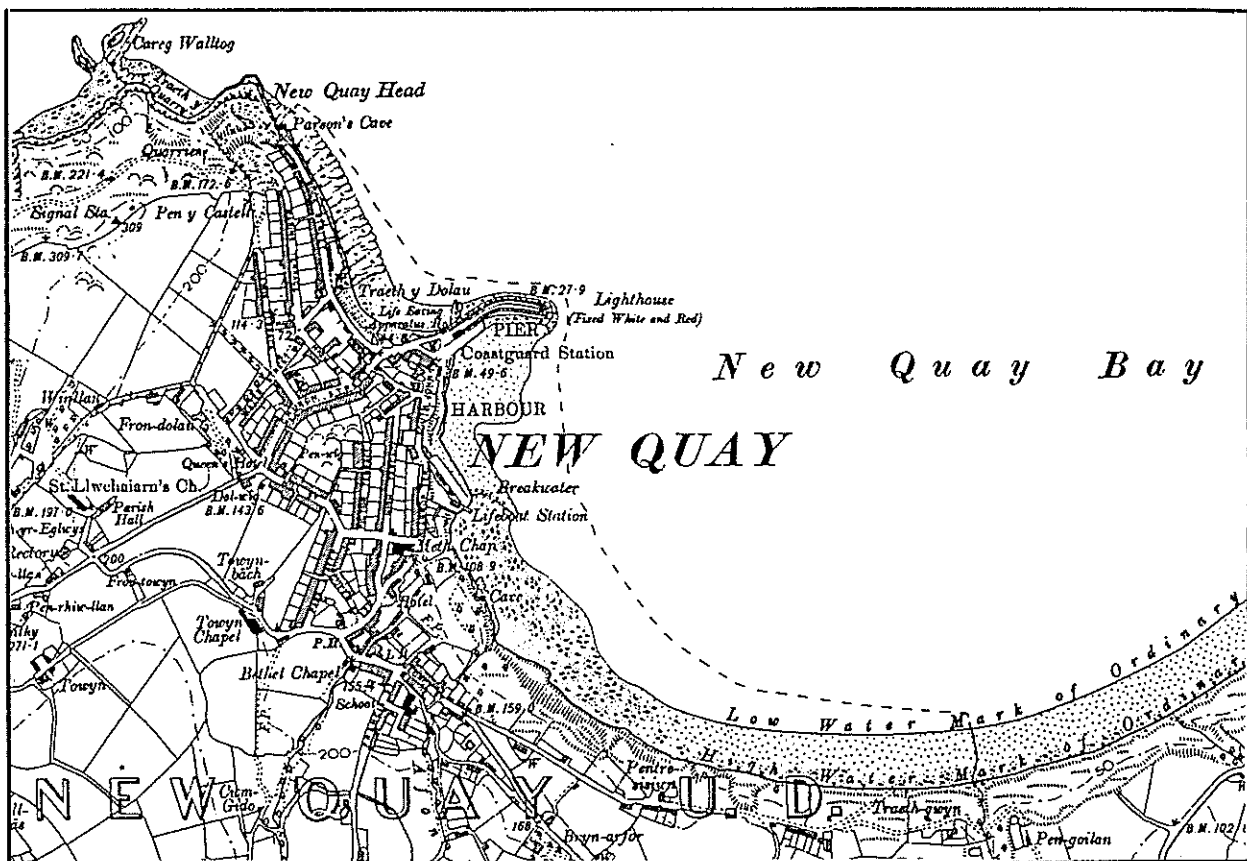


Fig.14; Newquay Bay in the late 19th century.

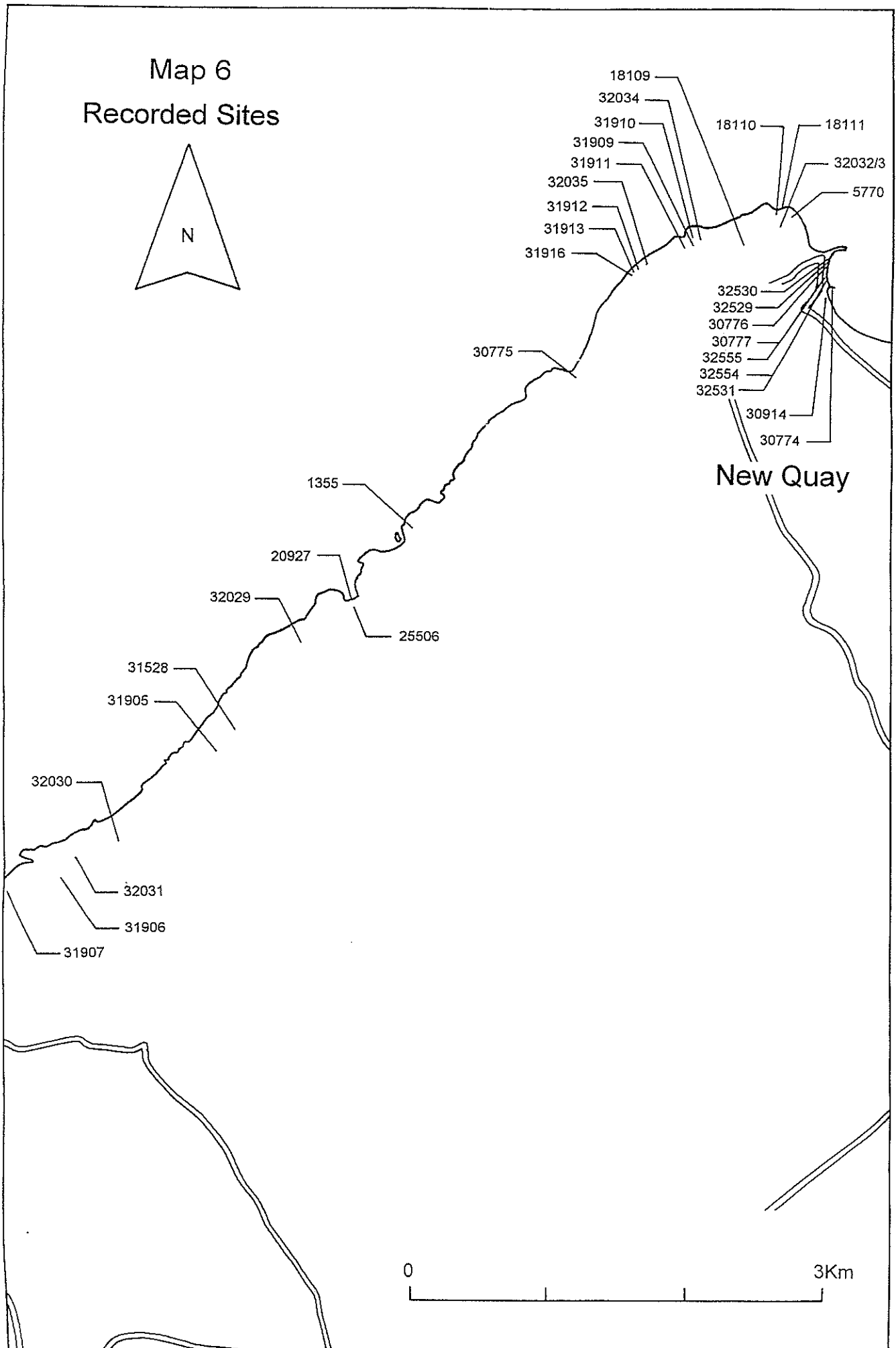
TABLE 6 - Map 6: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
✓1355	SN36045809	Hillfort	Earthwork	Iron age	B	4	Excavate
✓5770	SN387603	Castell	Place name	Unknown	U	1	
✓18109	SN38416007	Quarry	Earthwork	Post med	U	0	
✓18110	SN38646040	Quarry	Earthwork	Post med	U	0	
✓18111	SN38686045	Quarry	Earthwork	Post med	U	0	
✓20927	SN354576	Harbour	Landform	Post med	-	2	
✓25506	SN35595751	Limekiln	O.Struct	Post med	U	3	

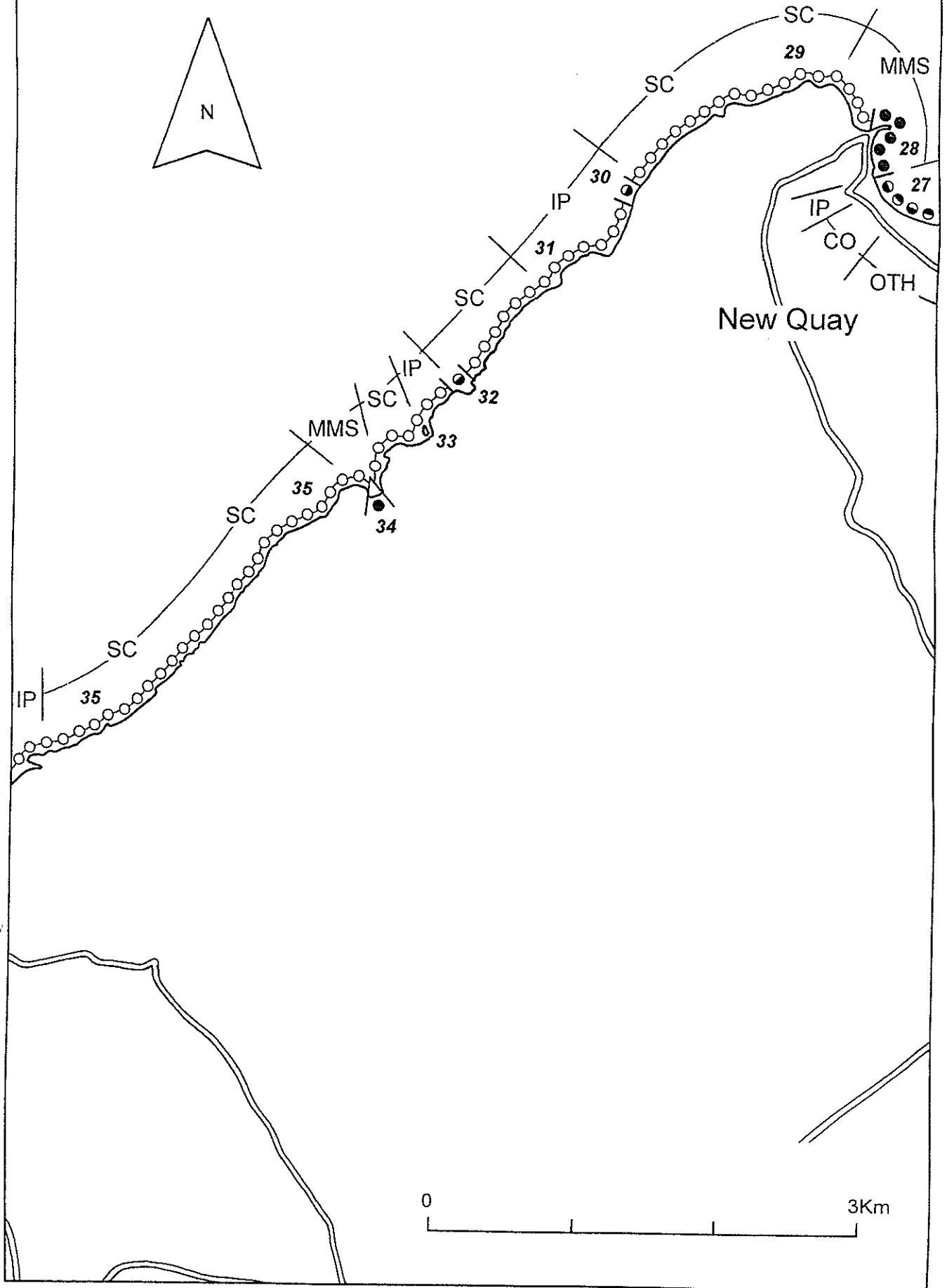
Map 6: New Sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30774	SN39095988	Quay	O.Struct	Post med	E	0	
✓30775	SN37255918	Quarry	Earthwork	Post med	U	2	
✓30776	SN39006000	New Quay Harbour	O.Struct	Post med	B	3	General survey
✓30777	SN39035990	Warehouse	Building	Post med	R	4	
✓30914	SN39035981	Mooring post	O.Struct	Post med	B	2	Survey
31528	SN34645656	Field clearance	Stone spread	Post med	B	0	
31905	SN34575640	Quarry	Earthwork	Post med	C	2	
31906	SN33505546	Spring/drain	O.Struct	Post med	A	0	
31907	SN33105515	Ridge & furrow	Cropmark	Med?/Post med?	D	0	
✓31909	SN38066020	WW2 feature	Earthwork	Modern	B	2	Survey
✓31910	SN38086018	WW2 slit trench?	Earthwork	Modern	B	2	Survey
✓31911	SN38056017	Foxhole?/Scoop grave?	Earthwork	Modern?;	B	2/3?	Survey
				Bronze age?			
✓31912	SN37696060	Quarry	Earthwork	Post med	B	2	
✓31913	SN37676004	Coastguard lookout	Building	Post med	R	2	Survey
✓31916	SN37676004	Quarry	Earthwork	Post med	B	2	
✓32029	SN35155720	Field boundary?	Earthwork	Unknown	C	2	Survey
✓32030	SN33895574	Field system	Earthwork	Prehist?/Med?	C	3	Survey
✓32031	SN33615563	Field boundary	Earthwork	Prehist?/Med?	C	2	Survey
✓32032	SN38506030	Signal station	Building	Post med	C	2	
✓32033	SN38506030	WW2 structure	O.Struct	Modern	D	0	
✓32034	SN38106020	Field boundary	Earthwork	Unknown	B	2	
✓32035	SN37846010	Building platform	Earthwork	Unknown	B	2	
✓32529	SN39006102	Warehouse	Building	Post med	R	3	Survey
✓32530	SN39026101	Warehouse	Building	Post med	R	3	Survey
✓32531	SN38996006	Harbour building	Building	Post med	R	2	Survey
✓32554	SN39015988	Lifeboat station	Building	Post med	R	3	Survey
✓32555	SN39006000	Coalyard	Documents	Post med	D	0	

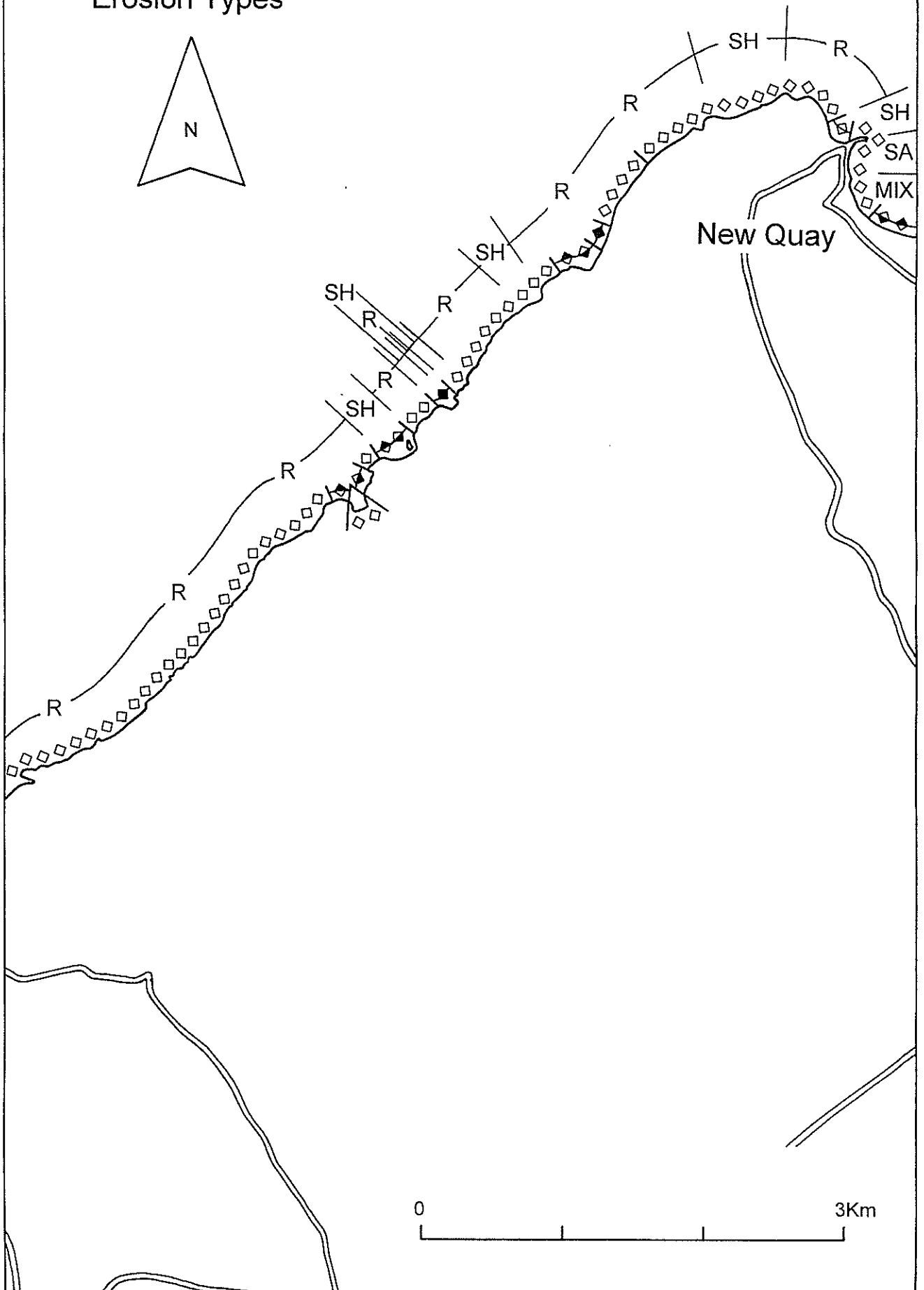
Map 6
Recorded Sites



Map 6
Coast and Land
Edge Types



Map 6
Foreshore and
Erosion Types



8.7 MAP 7:

Trwyn Crou (SN330555) - Aberporth (SN265515)

8.7.1 Coast type and erosion assessment.

This stretch of coastline includes some particularly noteworthy features, especially the rocky peninsula at Lochtyn, which juts out from the coastline and is separated only at high tide by a narrow channel from the islet of Ynys Lochtyn.

The coast edge on the eastern side of this section is a continuation of a series of rock cliffs with a boulder clay capping (No. 35) seen on Map 6. These cliffs become higher on the peninsula, reaching up to 40m OD, and are relatively stable, being fronted by alternating stretches of rock wave cut platforms and shingle beach east of the Lochtyn headland. West of Ynys Lochtyn erosion increases, being generally medium (grade 3) but locally more severe, with the boulder clay cover slumping quite badly on the headland and to the west. Here, some sand and shingle is seen on the foreshore, most notably at Llangrannog (No. 36), a small cove breaking the cliff line where the valley of Nant Hawen reaches the coast. The valley itself is choked with boulder clay.

West of Llangrannog, the high rock cliffs with drift cover resume (No. 37), reaching up to 50m in height. The boulder clay cover at the cliff top is again suffering medium or major levels of erosion as described above, particularly between Llangrannog and Traeth Penbryn. In places, natural terraces in the boulder clay give a stepped appearance to the coast edge, whereas elsewhere there are often steep and overgrown coastal slopes above the cliffs, which are backed by alternating blocks of improved and unimproved pasture.

A break in the cliff line again occurs at Tresaith (No. 38), where sea defences provide a man-made coast edge in front of a small hamlet which has become a small holiday village, with caravan parks on either side of the river mouth. Tresaith has a sandy beach, and the bay once served as a locally important natural harbour.

West of Tresaith a rockier coastline is seen (No. 39), with generally low but steep rocky cliffs rising up to c.20m OD above a rocky foreshore. These cliffs are backed by a small section of wooded land edge west of Tresaith, and then improved pasture.

8.7.2 Archaeology.

A number of significant archaeological sites are known along this section, such as the iron age hillforts of Ynys Lochtyn (PRN 1101), Pendinas Lochtyn (PRN 1363) and Castell Bach (PRN 1368). Also at Ynys Lochtyn, there is evidence for the existence of a dark age monastery (PRN 7531) and a linear earthwork of unknown date and purpose (PRN 1104). The iron age sites of Castell Bach and Ynys Lochtyn

are both subject to some erosion, albeit relatively minor at present, and it is felt that both are in need of detailed recording.

Another possible iron age enclosure is also known to the east of Tresaith (PRN 2104), but like Pendinas Lochtyn it is set well back from the present coastline and not presently threatened by erosion by the sea.

Other earthwork features recorded on the SMR include an site of unknown nature and period (PRN 1377) and a possible relict field system (PRN 7670) on rough pasture land east of Pendinas Lochtyn fort. A cropmark site of unknown nature and date (PRN 1378) has also been recorded above the wooded slopes to the south of Llangrannog beach.

Two 19th century limekilns were also known. That at Penbryn has been destroyed by the sea (PRN 23237) whilst the other, at Tresaith is in good condition (PRN 25216) and should be fully surveyed and recorded. The surviving kiln is one of relatively few reminders of the former busy sea trade carried out along the Cardigan Bay coast. This section of coastline has three small natural harbours, Llangrannog (PRN 32169), Tresaith (PRN 32558) and Penybryn (PRN 32028).

Llangrannog developed as a port from the late 18th century onwards, and by the late 19th century had two limekilns and several warehouses, one of which dealt in earthenware goods imported from north east Wales. Penbryn was in essence a convenient landing place where boats could be beached to allow the offloading of cargoes such as coal and limestone. No settlement has ever developed above Traeth Penbryn, although as early as the 16th century it is known to have been used as a landing place by herring fishermen (Jenkins, 1982, 23). Tresaith developed as a port during the second half of the 19th century, with culm and limestone being imported to charge its single lime kiln. However, by 1900 Tresaith had achieved popularity as a holiday resort and was for a time known as "the second Brighton" (Jenkins, 1982, 24).

There were no significant new sites recorded during fieldwork or desktop research. Several small quarries were recorded near the coastal edge (e.g. PRN 30782 - 83) and the locations of two now lost limekilns at Llangrannog also noted (PRN 30778 - 79).

Traces of a relict field system (PRN 32027) of unknown date and importance was possibly the most significant new feature encountered, situated on a slope of rough pasture overlooking Penbryn beach. An earthwork of unknown type and period was also noted above the edge of the coastal slope east of Tresaith beach (PRN 31526).

One interesting place name was recorded east of Pendinas Lochtyn, where a headland known as *Caer Glwyd* (PRN 32168) may once have been the location of an iron age promontory fort. There is now no physical trace of any defensive earthworks and if such a site ever existed it must have been completely destroyed by erosional forces.

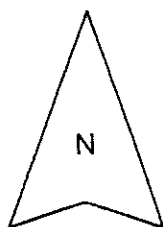
TABLE 7 - Map 7: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
1101	SN314553	Ynys Lochtyn Hillfort	Earthwork	Iron age	C	4	Detailed survey
1104	SN314551	Unknown	Earthwork	Unknown	U	1	
1363	SN3155485	Pendinas Lochtyn Hillfort	Earthwork	Iron age	C	4	
1368	SN30255352	Castell Bach Hillfort	Earthwork	Iron age	C	4	Detailed survey
1377	SN30815400	Unknown	Earthwork	Unknown	U	1	
1378	SN30825391	Unknown	Cropmark/ Natural	Unknown	U	2	
2104	SN28655174	Defended enclosure	Earthwork/ Cropmark	Iron age/Roman	D	3	
7531	SN314556	Monastery?	Documents	Dark age?	U	3	
7670	SN317547	Field system?	Earthwork	Unknown	D	1	Survey
18062	SN311542	Quarry	Earthwork	Post med	U	2	
23237	SN293524	Limekiln, Penbryn	Documents	Post med	U	2	
25216	SN278515	Limekiln, Tresaith	O.Struct	Post med	B	2	Survey

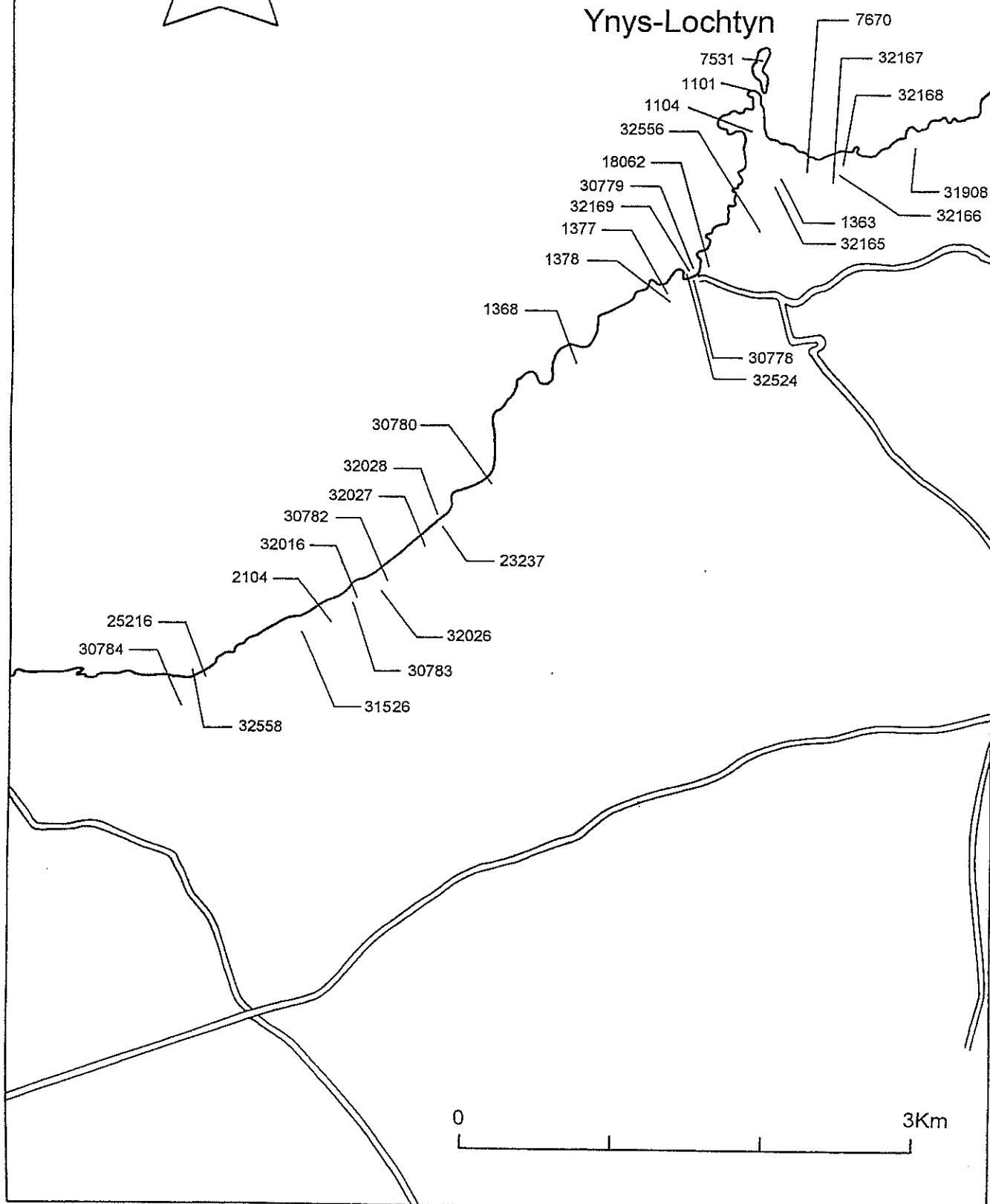
Map 7: New sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30778	SN31075416	Limekiln, Llangrannog	Documents	Post med	E	0	
30779	SN31115419	Limekiln, Llangrannog	Documents	Post med	E	0	
30780	SN29705278	Quarry	Earthwork	Post med	U	2	
30782	SN28965216	Quarry	Earthwork	Post med	U	2	
30783	SN28685168	Quarry	Earthwork	Post med	B	2	
30784	SN27695124	Quarry	Earthwork	Post med	D	0	
31526	SN28405172	Unknown	Earthwork	Unknown	B	1	
31908	SN32505503	Quarry	Earthwork	Post med	B	2	
32016	SN28745299	Hollow	Landform?	Unknown	-	0	
32026	SN28955206	Pond	Earthwork	Post med	A	2	
32027	SN292523	Field system, Penbryn	Earthwork	Unknown	U	1	Survey
32028	SN293524	Port of Penbryn	Documents	Post med	-	3	Survey
32165	SN315548	Lookout post	O.Struct	Modern	U	2	
32166	SN31925474	Quarry	Earthwork	Post med	B	2	
32167	SN31935480	Quarry	Earthwork	Post med	B	2	
32168	SN32005500	Caer Glwyd Hillfort?	Place name	Iron age?	-	1	
32169	SN310542	Port of Llangrannog	Documents	Post med	-	3	Survey
32524	SN30975420	Mooring ring	Documents	Post med	E	0	
32556	SN31475450	Sand pit	Earthwork	Post med	D	0	
32558	SN277516	Tresaith Harbour	Topog.	Post med	B	3	Survey

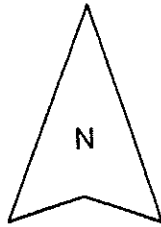
Map 7
Recorded Sites



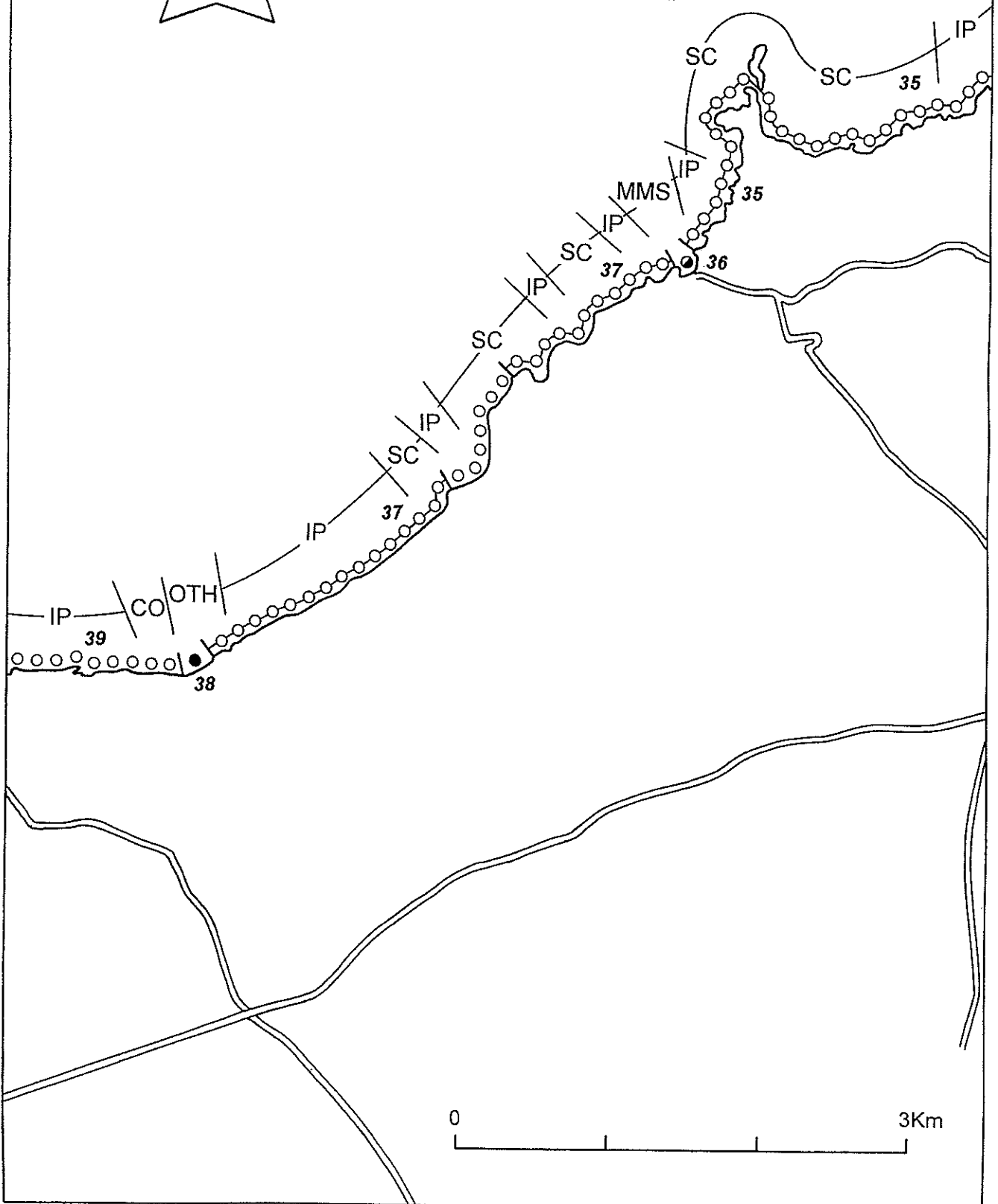
Ynys-Lochtyn



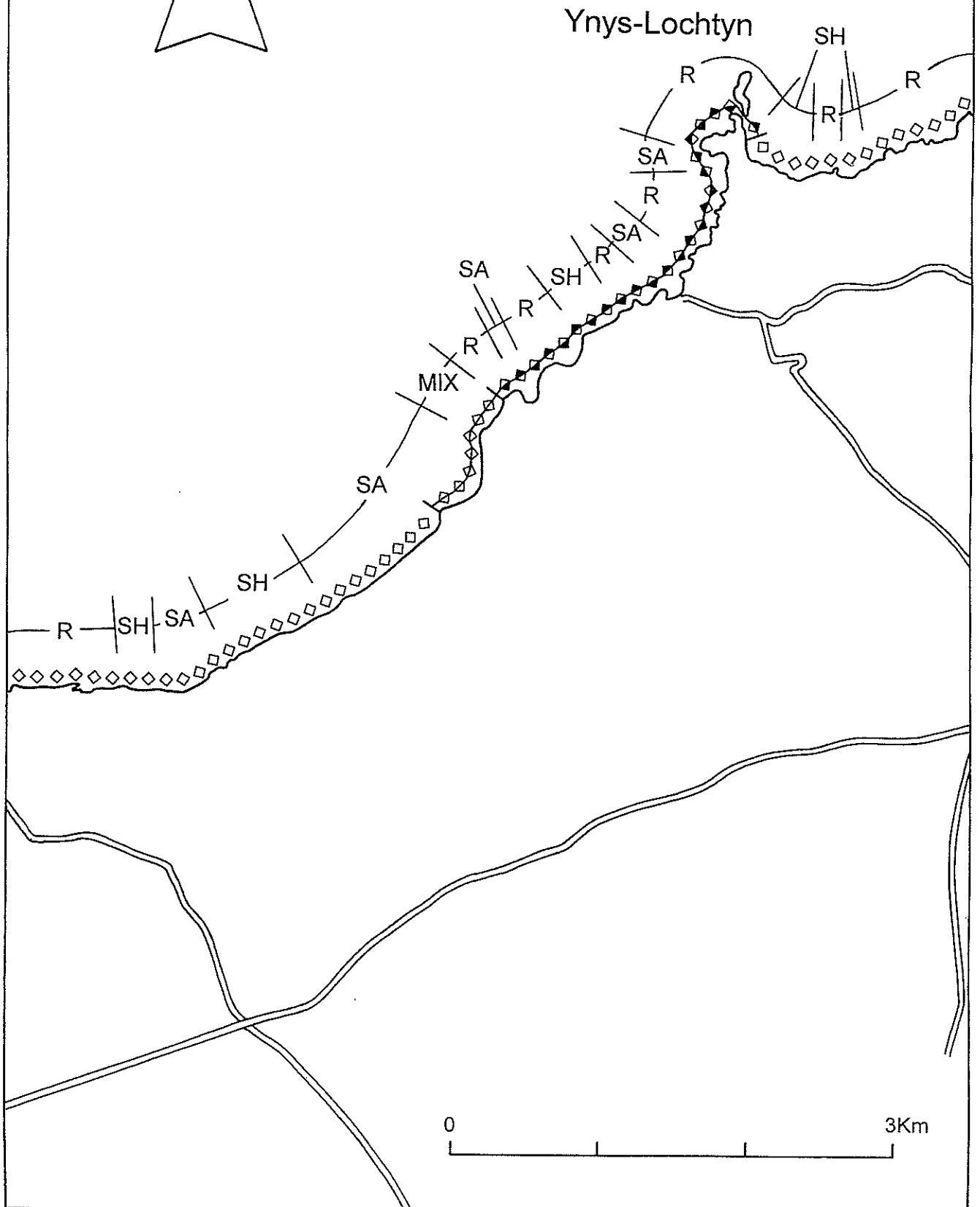
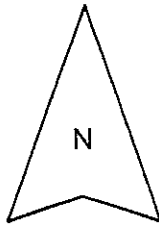
Map 7
Coast and Land
Edge Types



Ynys-Lochtyn



Map 7
Foreshore and
Erosion Types



8.8 MAP 8:

Aberporth (SN265515) - Foel y Mwnt (SN200521)

8.8.1 Coast type and erosion assessment.

This section of the Cardigan Bay coastline is one of the most stable encountered, showing little change since the 1st edition 1:2500 OS map of 1888.

This is largely due to the rocky nature of the coast here, for with the exception of the man-made sea defences at Aberporth harbour (No. 40), the whole section is composed of hard rock cliffs. Nevertheless, the coast is not uniform.

At the east of the section the low rocky cliffs from Tresaith to Aberporth continue, as described on Map 7 (No. 39), backed by a combination of improved pasture and housing estates and fronted by a broadening wave cut platform which forms the eastern side of the entrance to the bay at Aberporth.

The bay itself is small, with a broad sandy foreshore at low tide, below man made harbour and sea defences (No. 40) and some natural rocky outcrops. The land edge varies from rough pasture/scrub to built-over areas where the village reaches down to the shore.

West of the bay the cliffs resume (No. 41), again averaging c.20 - 25m in height and being largely rocky, above a wave cut platform, apart from Cribach (SN251521) where two small bays have sand and shingle foreshores. Pencribach Head is the location of RAE Aberporth and access to the headland is restricted. It is however, one of the more interesting headlands of this coastline in that an unusually large parcel of woodland (c.1km x 100m) survives above the cliff edge at Allt Goch (SN2452). A smaller woodland is encountered on the coastal slope above Cribach Bay also. West of Pencribach Head this series of fairly steep, but stable, rocky cliffs and narrow wave cut platforms continue towards the Teifi estuary, with a land edge of alternating parcels of improved and unimproved pasture land.

8.8.2 Archaeology.

This is a relatively inaccessible and rocky section of coastline, with the exception of the area around the harbour, village and RAE base of Aberporth. Very few sites of archaeological interest were previously known here. A documentary reference to a mediaeval settlement (PRN 10952) on Pen Peles headland being the most important.

A relatively large number of new sites were recorded during the course of this project, though few are of any significance. Several are concentrated around the harbour at Aberporth (PRN 31453). These include three documented 19th century lime kilns (PRN

31454 - 55 & 31457), all now lost, and a documented wharf which has also disappeared (PRN 31456). Two World War 2 features survive in the vicinity of the harbour including a pill box (PRN 31451).

Aberporth was noted as a herring fishing port during Tudor times, and became more involved in coastal trade by the 18th century (Jenkins, 1982). During the 19th century limestone and coal were imported to charge as many as 6 lime kilns above the beach, all now lost. The bay is divided into eastern and western beaches, and the wharf (PRN 31456) was located between them, as were several limekilns and possibly a coalyard and warehouses. Despite the fishing and trading tradition of Aberporth, few associated features seem to have survive, although a detailed survey of the harbour area and reference to documented histories, old photographs and oral tradition might prove illuminating.

Other sites noted during fieldwork include only a few earthwork sites of uncertain character and period, such as a cropmark (PRN31464) and a possible field system (PRN31480).

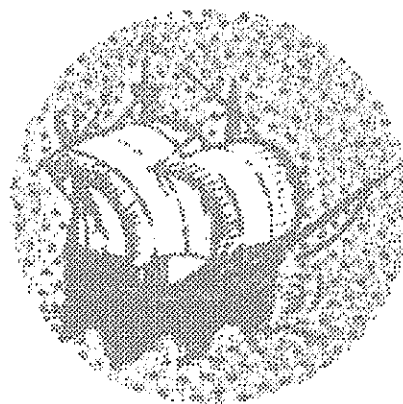
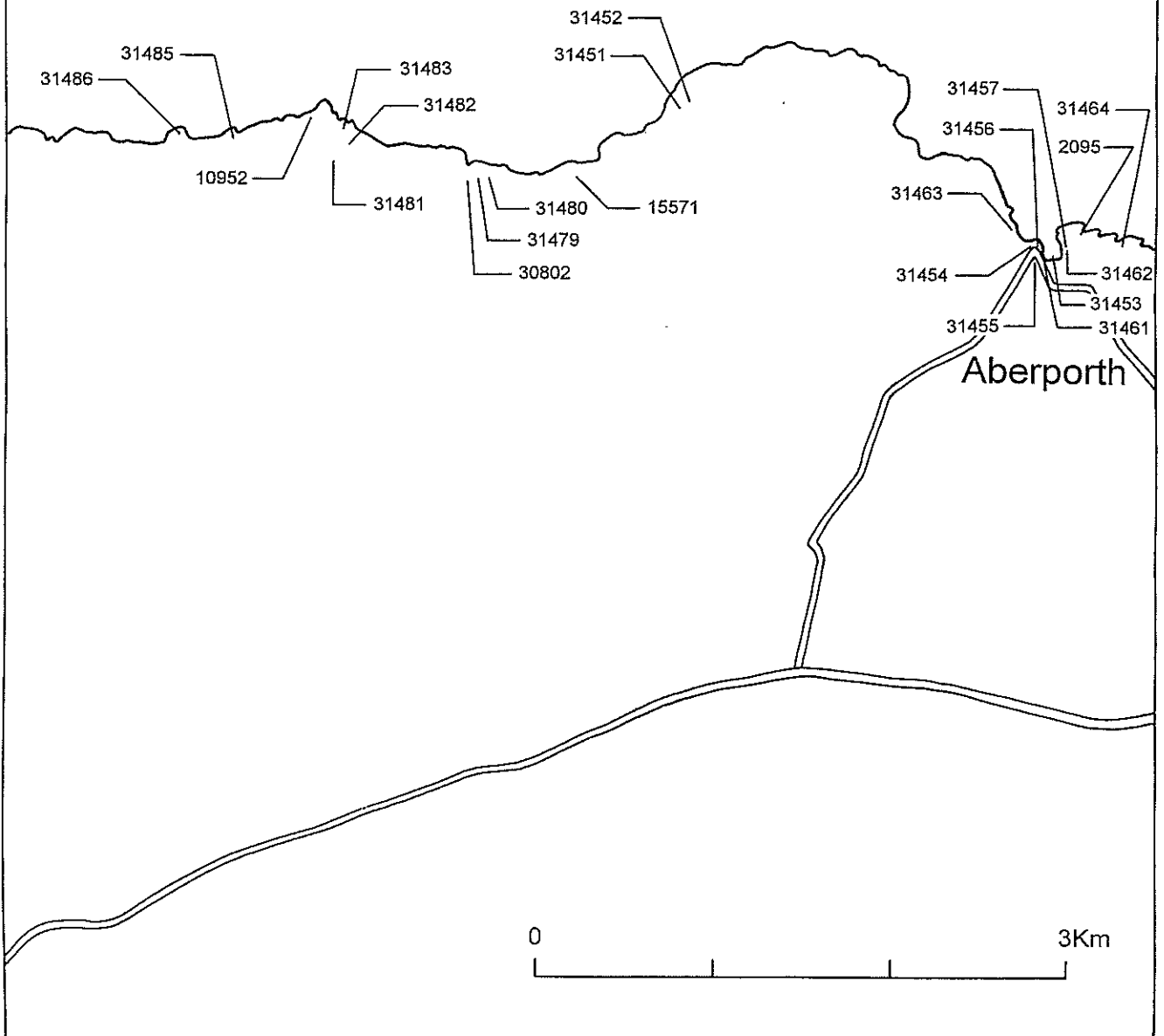
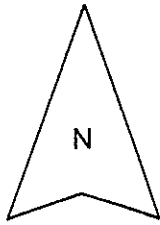


TABLE 8 - Map 8: Known sites.

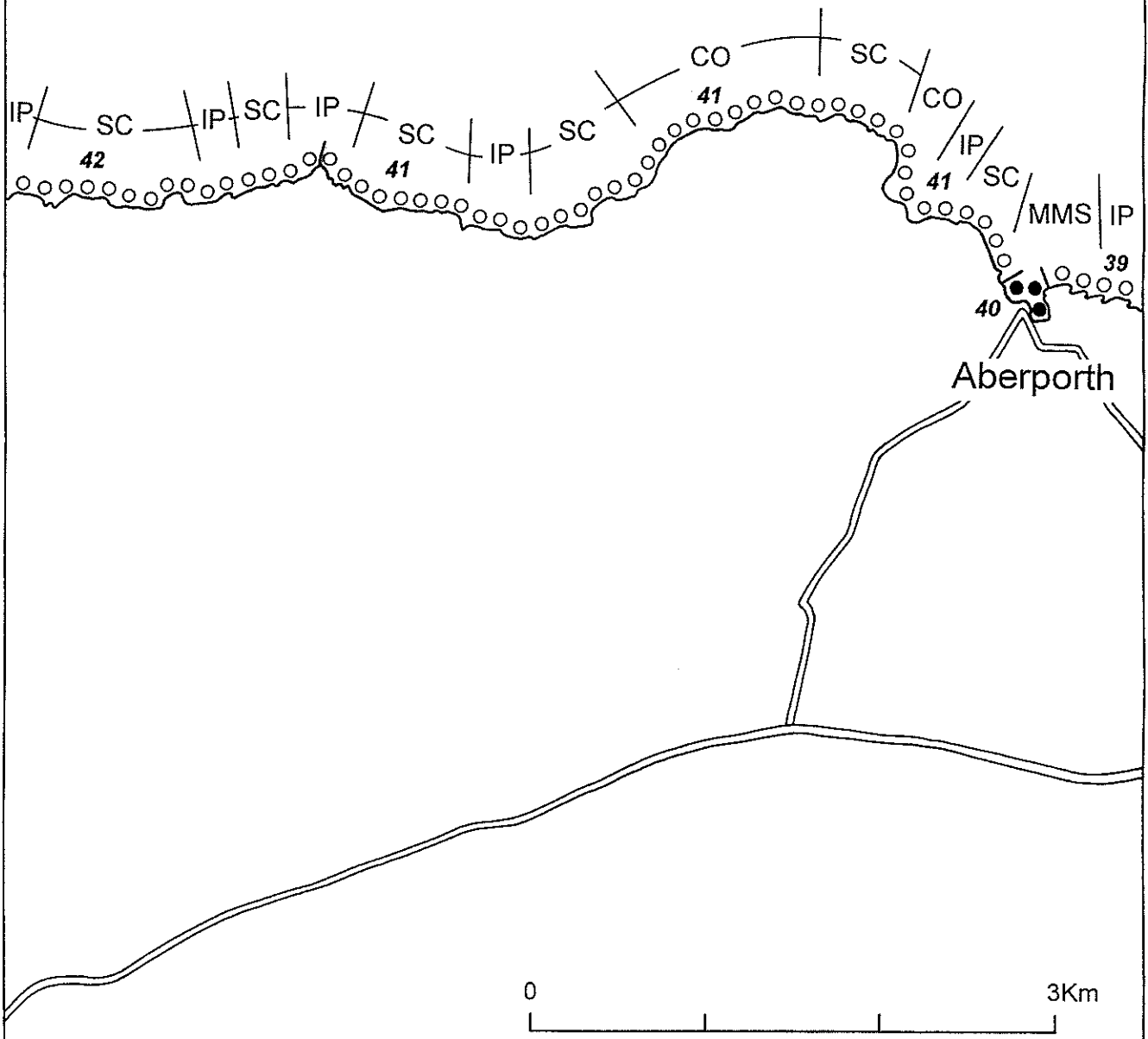
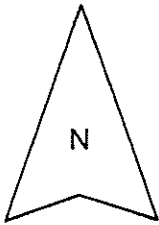
PRN	NGR	Description	Type	Period Condition	Importance	Management
2095	SN26155165	Hillfort?	Place name	Unknown	U	1
10952	SN21825233	Settlement	Documents	Mediaeval	U	1
15571	SN23195187	Quarry	Earthwork	Post med	C	2

Map 8: New Sites.						
PRN	NGR	Description	Type	Period Condition	Importance	Management
30802	SN22635180	Quarry	Earthwork	Post med	B	2
31451	SN23885233	Hollow	Natural?	Unknown	-	1
31452	SN23915236	Hollow	Natural?	Unknown	-	1
31453	SN258515	Port of Aberporth	Docs; O.Struct	Post med	B	3
31454	SN25835154	Limekiln	Documents	Post med	E	0
31455	SN25835149	Limekiln	Documents	Post med	E	0
31456	SN25855153	Wharf	Documents	Post med	E	0
31457	SN26015158	Limekiln	Documents	Post med	E	0
31461	SN25855148	Pill box?/Obsv. post	Building	Modern	A	2
31462	SN26015155	WW2 feature	O.Struct	Modern	C	2
31463	SN25685163	Dwelling	Building	Post med	A	2
31464	SN26325163	Unknown	Cropmark	Unknown	U	1
31479	SN22725182	Quarry	Earthwork	Post med	B	2
31480	SN22805190	Field system?	Earthwork	Post med	B	2
31481	SN21985185	Quarry	Earthwork	Post med	D	0
31482	SN22035189	Dwelling	Building	Post med	E	0
31483	SN21095211	Dwelling	Building	Post med	E	0
31485	SN21345213	Unknown mound	Earthwork	Modern?	B	1
31486	SN21005205	Unknown	Place name	Unknown	-	1

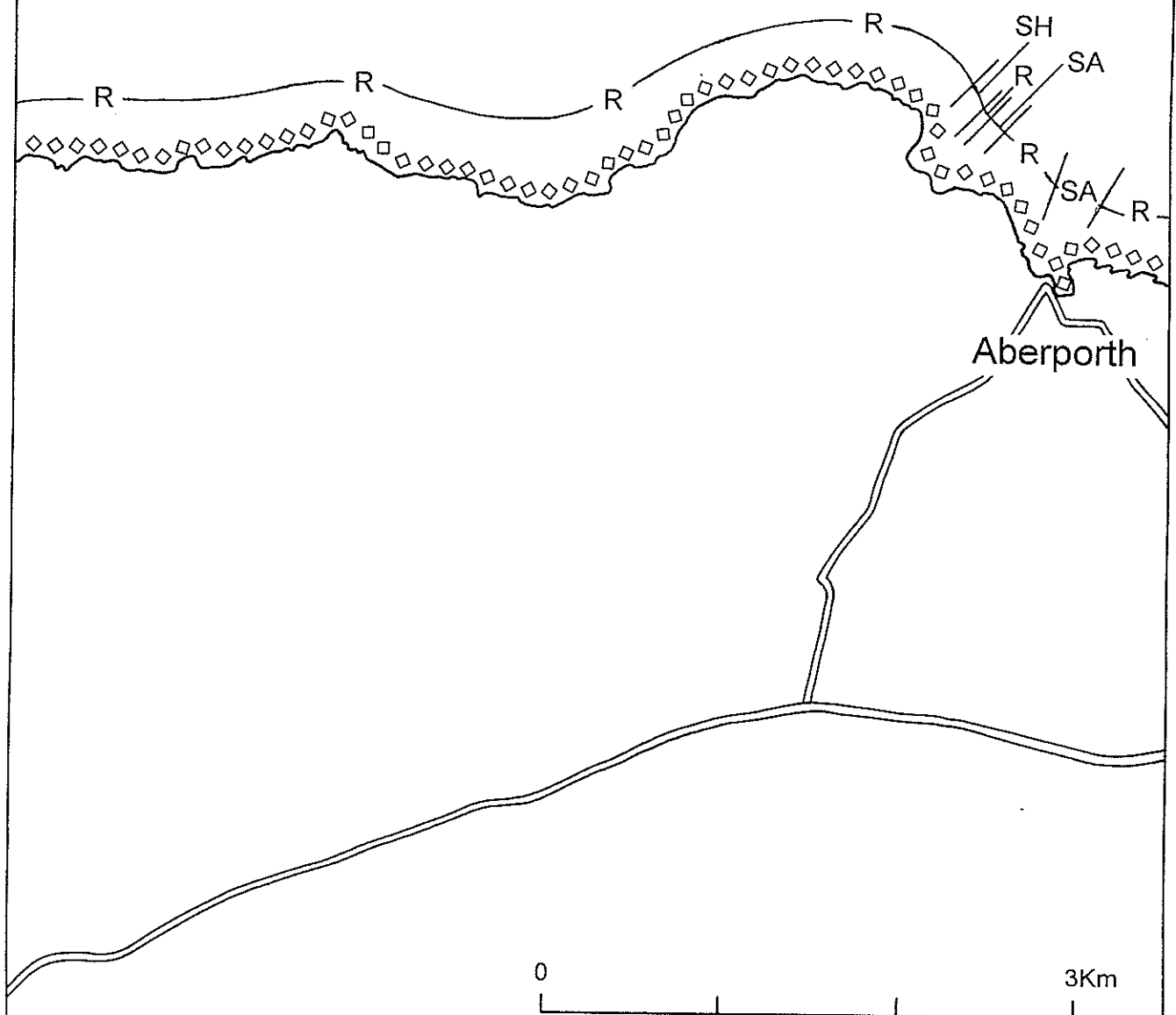
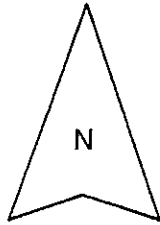
Map 8
Recorded Sites



Map 8
Coast and Land
Edge Types



Map 8
Foreshore and
Erosion Types



8.9 MAP 9:

Foel y Mwnt (SN200521) - Cemaes Head (SN134498)

8.9.1 Coast type and erosion assessment.

This is almost certainly the most complicated and varied section of the Cardigan Bay coastline. It includes areas of hard rock cliffs, sand dunes, salt marshes and several sections of man-made defences. For the sake of clarity's it will be sub-divided into more easily comprehended sections.

a) Foel y Mwnt to Gwbert.

This section begins in the east with a continuation of the hard rock cliffs and wave cut platform (No. 42) which run from Aberporth towards Mwnt. These cliffs form the headland of Foel y Mwnt, but on the southern side of the promontory a boulder clay cover to the cliffs becomes apparent for a short distance (No. 43). The cliff then declines and the sandy beach at Traeth y Mwnt is backed by a low, boulder clay coast edge (No. 44). Along the southern side of the bay the cliff line is resumed, initially as rock covered with boulder clay (No. 45), but the drift peters out rapidly and a rocky cliff continues westwards (No. 46), though declining in altitude towards the mouth of the Teifi Estuary. Closer to Carreg Lydan point (opposite Cardigan Island), the cliffs are less than 20m in height and once again the boulder clay cover is re-established. This rock and drift cliff (No. 47) continues around Carreg Lydan point and forms the eastern side of the Teifi estuary as far south as Gwbert, where it give way to man-made defences. Here too, the rocky foreshore is replaced by a sand and shingle foreshore.

Between Foel y Mwnt and Gwbert, erosion levels are generally only slight, although at two particular locations more severe levels of erosion were observed. These were at Traeth y Mwnt, where grade 3 erosion of the boulder clay edge and cliff tops was noted and, more seriously, at Craig y Gwbert, where ongoing and severe erosion of an iron age promontory fort (PRN 7735) was recorded.

b) Gwbert to Bridgend, Cardigan.

The section of man-made defences (No. 48) south of Gwbert is a boulder dump above a sand and shingle beach. It is backed by an area of rough pasture which is part of Towyn Warren, a more extensive area of blown sand which is of archaeological significance, being the site of a suspected deserted mediaeval settlement investigated by the Dyfed Archaeological Trust in the mid 1970's. In recent decades this area has partly been incorporated into a golf course and also an area of sand and gravel quarrying. To the south is the sandy headland of Pen yr Ergyd (No. 49), which is backed by an active dune system. This is succeeded by another section of man-made boulder defences, with some sea wall sections

(No. 50) which were apparently built hastily in the late 1970's to stop erosion which was threatening the Cardigan to Gwbert road, which runs parallel to the coast for a short distance. From Nant y Ferwig (SN168480) onwards the coast edge is of a low rock cliff with a boulder clay capping (No 51). This is mostly backed by improved pasture, although in some places the sloping bluff is wooded. This bluff continues south to the Netpool, from where the riverside is mostly man-made (No. 52). This section includes both the Netpool and the Mwldan areas of Cardigan, which were the focus of trade and shipping activity during the 19th century. It also includes Cardigan Bridge and the Bridgend area, on the south side of the river, where industries such as lime burning and iron working were formerly located.

The foreshore along this section is of sand and shingle, giving way to river mud from the Netpool to the bridge. There is very little evidence of erosion from Nant y Ferwig to the bridge, apart from slight slippage in the boulder clay on the bluff north of Netpool.

c) Bridgend to Cei Bach.

The characteristics of the St. Dogmael's side of the river and estuary are as complicated as those of the opposite shore.

A mud foreshore is evident between Cardigan bridge and St. Dogmael's, with firstly a low rock and boulder clay bluff (No. 53) and then a boulder clay bluff (No. 54), forming the river edge to St. Dogmael's. Behind the river edge are built-over areas at Bridgend and St. Dogmael's, separated by some improved pasture.

From the turn in the river opposite Old Castle point the village of St. Dogmael's hugs the river edge, and sections of stone wall have been constructed in the past to stabilise the river course (No. 56). North of the village a low rock and drift bluff (No. 57) runs northwards, but it is interrupted by another section of sea wall (No. 58) which soon gives way to a low lying salt marsh (No. 59) which continues for 1km towards Poppit Sands. The foreshore along this section of the river estuary is generally of mud as far as the salt marsh, and the whole section is stable.

Poppit Sands (No. 60) is an area of active sand dunes, fronted by an expanse of often treacherous sands which extend north eastwards across the estuary, forming a sand bar which has historically made access to the estuary dangerous for shipping.

Behind the dunes a low boulder clay cliff rises, developing a rock base and gaining height beyond Trwyn Carreg Ddu, which defines the northern side of Poppit Sands, beginning a long cliff section (No. 61) north to Cemaes Head. These cliffs are fronted by wave cut platforms, with some shingle or boulder beaches in places, such as the shingle beach at Cei Bach (SN 143491), where a small harbour has been constructed to serve the coastguard and lifeboat stations here.

8.9.2 Archaeology.

This coastline includes the ports of both Cardigan and St. Dogmael's, and as one might expect, a relatively large number of sites were recorded prior to this survey. This number has been substantially increased during the course of the project.

a) Foel y Mwnt to Gwbert.

What can best be described as an atypical promontory fort (PRN 1041) is located on Foel y Mwnt headland itself. The rocky headland is cut off by a single bank and ditch but there is no evidence of occupation on the headland. The site may not in fact be of iron age date and its purpose is unknown, possibly relating to animal husbandry.

The small parish church at Mwnt, located less than 100m from the beach of Traeth y Mwnt, is one of the most significant historical sites along this section. The present church (PRN 5324) stands within an enclosed cemetery of possible dark age origins (PRN 31488). Near the church there is a large mound (PRN 31489) variously interpreted as a bronze age round barrow or an early mediaeval battlefield burial site. Human bones are said to occasionally erode out of the mound, making the latter explanation perhaps more likely, although it may also be part of an early Christian burial site. Future monitoring and a full survey of the church, churchyard and the mound are recommended.

Traeth y Mwnt was formerly a landing place (PRN 31491) for limestone and culm which supplied the lime kiln on the shore (PRN 25470). The kiln survives in good condition.

West of Mwnt there are few sites of interest, apart from occasional small quarries, and a possible hut platform of unknown date (PRN 31497). At Craig y Gwbert, however, several notable sites are found, including an iron age promontory fort (PRN 7735), a lime kiln (PRN 7736) and a find spot of prehistoric flints (PRN 31940). During the field visit it was observed that some archaeological features associated with the iron age fort are now eroding out of the seaward tip of the promontory. Turf and soil are being removed, some post holes with fills still in them are apparent in the eroded area. This site needs to be monitored and if this erosion continues then excavation must be a priority. The lime kiln is also suffering some erosion and requires surveying before more damage is done.

A possible iron age fort near the Gwbert Hotel (PRN 8899) was discounted as such, in accord with Crane (1994, 23).

b) Gwbert to Bridgend, Cardigan.

There are several areas of interest along this section. Firstly, in the area north east of Pen yr Eryd, a mediaeval rubbish pit (PRN 4997) was noted in the early 1970's. It was exposed by the erosion of a low glacial till cliff near the coast edge and the site was excavated in 1975 (*Archaeology in Wales*, 1975). It proved to be one of the most important mediaeval sites

in west Wales, for the pit contained leather, animal bones, worked wood, a rare pottery assemblage, which included almost complete vessels, and even a number of worn shoes. These materials have been dated to the 13th century. The buried mediaeval land surface was also exposed and traces of plough-marks and even ox hoofprints were recognisable. It is strongly suspected that the rubbish pit is associated with a deserted mediaeval settlement believed to be buried under the nearby sand dunes. This may be the vill of Geratiston which is mentioned in mediaeval sources as being located in the Ferwig area. William Rees (*Map of South Wales and the Borders in the XVI Century*, 1932) suggests that the Welsh stronghold of Dingeraint (PRN 12382) stood near the shore here: the parallels between the names Geratiston and Dingeraint are obvious, but not in themselves conclusive.

Further down the estuary a cropmark of unknown date and nature was recorded (PRN 30805) and still further south is the location of the Old Castle (PRN 1068), a mediaeval earthwork forerunner of the stone castle which stands in Cardigan town. The headland on which it stands is stable, but note was made of recent ploughing and reseeded within the bailey area and future monitoring of the site is needed. A 19th century limekiln (PRN 30807) on the same headland was visited and some erosion to its base noted, as well as damage to the eastern edge of the kiln. Future monitoring and survey of the kiln is advised.

East of the Old Castle headland the area known as Netpool marks the beginning of the main trading and industrial area of Cardigan town. A possible sunken vessel was noted in the river bed here (PRN 31945), below an apparent wharf (PRN 31946) built in front of some small stone cottages which have the appearance of fishermen's cottages.

Upstream from the Netpool is Mwldan, the heart of the historic port of Cardigan (PRN 31944). Cardigan was by far the most important port on the Cardigan Bay coastline from mediaeval times until the 19th century. By 1830, nearly 300 ships were registered at Cardigan. Foreign and domestic goods were handled at a series of wharves between the Mwldan brook and Cardigan bridge and an associated industrial sector included iron foundries, lime kilns and a brickworks. Cardigan also had a relatively large and important ship building industry, focused on the Netpool (PRN 17441), and almost 150 ships were built here between 1782 and 1877 (Jenkins, 1982, 117-20).

A number of features relating to the commercial activity of the port survive and have been recorded. Three main wharves survive; Lloyd's Wharf (PRN 31957 - 58), Teifi Wharf (PRN 31960) and the Mercantile Wharf (PRN 32009 - 10). Each retain their stone walling and some warehouses and other buildings also remain, most notably the old Mercantile warehouse and stores (PRN 5301), now partly used as a heritage centre. A number of these buildings have listed status, but it seems desirable that a future detailed

survey of the whole port area be made to ensure the accurate recording of surviving features.

Spanning the river between the Teifi and Mercantile wharves is Cardigan Bridge (PRN 5303), the lowest bridging point on the Teifi. Parts of an earlier timber structure (PRN 8506) of possible mediaeval date have been seen in the river here.

c) Bridgend to Cei Bach.

The western side of the Teifi estuary has many sites of archaeological and historic interest. The port of St. Dogmael's (PRN 31986) lies only just over 1km to the east of the port of Cardigan.

A number of features associated with former coastal trade were recorded for the first time at Pinog, St. Dogmael's, including a former boat yard and landing place (PRN 31985), a warehouse (PRN 31986 - now used by Jewsons builders merchants) and a possible boathouse (PRN 31991). A 19th century lime kiln (PRN 20648) was already recorded here. This may well have been the main focus for trading activity on this side of the Teifi estuary.

Another small landing place is recorded below Alexandria Gardens, west of Pinog (PRN 31984), once used for beaching and repairing fishing vessels. Further to the west, an old coastguard station, The Watch House (PRN 31981), stands in good repair, and nearby is another small landing place (PRN 31879) which may once have served to offload material for a now lost lime kiln (PRN 30806).

North of this point, below the Webley Hotel, one of the most important sites recorded during this study was found. This is a probable late 18th or early 19th century gun battery (PRN 31963), named as the St. Dogmael's Battery on the 2nd edition 1:2500 OS map of 1906. The site was mostly obscured by scrub at the time of the field visit. Although it is evident that no buildings survive, it was not possible to ascertain what does remain on the site and further survey work is required. A massive sea wall is evident, some 5m high by 60m long, made up of two component sections set at slightly different angles. It is a dry stone wall, the 20m northern section has narrow stone steps to the water edge on its face, whilst the 40m long southern section has collapsed in part, exposing its internal construction. Some of this collapsed wall has been

restored by a concrete capping, possibly indicating a partial reuse of the site during World War 2 (PRN 31964).

A survey of the whole site is urgently required, preferably during conditions of low vegetation in order to ascertain the characteristics of surviving remains within the battery enclosure. The crumbling sea wall here also needs urgent recording.

At Poppit Sands, there is a cluster of earthwork sites and find spots relating to earlier periods. Three bronze age burnt mound are recorded here (PRN 11761; 14227 - 28) and a neolithic flint scraper (PRN 11343) is also recorded nearby. During a field visit earthwork evidence was noted in a field bordering on the sands for at least one hut platform (PRN 32024) and other undulations in the surface which might represent a more extensive area mediaeval or early post mediaeval settlement. This site requires further surveying. On the nearby small promontory of Trwyn Carreg-ddu, another hut platform (PRN 31525) and some evidence of ridge and furrow plough marks (PRN 31524) were noted. On the sandy foreshore in front of this headland a mediaeval or post-mediaeval stone built fish trap was recorded (PRN 32025).

The final concentration of sites of interest occurs around the small natural harbour of Cei Bach (PRN 32022), which is the location of the Poppit Sands lifeboat. A stone pier forms the northern side of the cove, adding to the shelter provided by the promontory of Trwyn yr Olchfa. There are several buildings associated with the lifeboat base, including the lifeboat house (PRN 32021) (which remains in use), a coastguard station (PRN 32019) and a coastguard's cottage (PRN 32020). A 19th century rocket apparatus store is located east of the cove (PRN 32023).

At the time of editing this report, some controversy has arisen due to plans by the RNLI, accepted by the National Park, to demolish the existing lifeboat house and replace it with a modern structure, unsympathetic to the nature of other buildings in the group. The unprotected status of many RNLI stations and coastguard installations is of concern, for unless already listed, they are unlikely to be considered of architectural or historic importance and are vulnerable to destruction or unsympathetic restoration. A specific survey of buildings in this category is required.

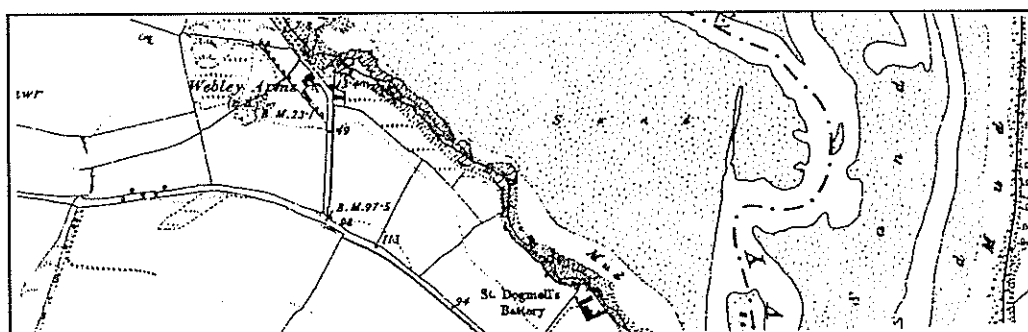


Fig.15; St. Dogmael's Battery as shown on the 1st edition 1:10560 OS map of 1891.

TABLE 9 - Map 9: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
1041	SN193520	Foel y Mwnt	Earthwork	Unknown	B	1	Survey
1058	SN142491	Cemetery	Documents	Dark age?	U	3	
1068	SN16424640	Old Cardigan Castle	Earthwork	Mediaeval	B	4	Monitor
4997	SN16264899	Gwbert rubbish pit	Finds	Mediaeval	-	3	
5300	SN17814577	Warehouse	Building	Post med	R	4	
5301	SN17794577	Mercantile Warehouse	Building	Post med	A	4	
5303	SN17774581	Cardigan Bridge	O.Struct	Post med	R	2	
5324	SN194520	Holycross Church, Mwnt	Building	Mediaeval	B	4	
7735	SN159502	Craig y Gwbert Hillfort	Earthwork	Iron age	C	4	
7736	SN15895022	Limekiln	O.Struct	Post med	B	3	
8506	SN17764584	Cardigan (timber) bridge	Finds	Med?/Post med?	-	2	
8899	SN161499	Hillfort?	Earthwork	Iron age?	U	1	
11343	SN14624879	Flint scraper	Find	Neolithic	-	3	
11761	SN14804863	Burnt mound	O.Struct	Prehistoric	C	3	
12382	SN161489	<i>Dingereint?</i>	Documents	Mediaeval	U	1	
		Fortified dwelling					Excavation of eroding features
14227	SN14764881	Burnt mound	O.Struct	Prehistoric	C	3	
14228	SN14824882	Burnt mound	O.Struct	Prehistoric	C	3	
17441	SN174461	Netpool Shipyard	Documents	Post med	-	3	
20415	SN161466	Quarry	Earthwork	Post med	U	2	
20648	SN16524606	Limekiln	O.Struct	Post med	E	0	
25469	SN16554638	Farmstead	Building	Post med	U	1	
25470	SN19425179	Limekiln	O.Struct	Post med	B	3	

Map 9: New sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30804	SN19335176	Quarry	Earthwork	Post med	B	2	
30805	SN16924863	Unknown	Cropmark	Unknown	U	1	
30806	SN16324681	Limekiln	O.Struct	Post med	E	0	
30807	SN16514634	Limekiln	O.Struct	Post med	B	3	Monitor
30808	SN17714577;	Limekiln	O.Struct	Post med	D	0	
	SN17734576						
30809	SN17734573;	Limekiln	Documents	Post med	E	0	
	SN17754574;						
	SN17764576						
30810	SN14174924	Quarry	Earthwork	Post med	C	2	
30811	SN14064925	Quarry	Earthwork	Post med	C	2	
30812	SN16874826	Sand pit	Earthwork	Post med	D	0	

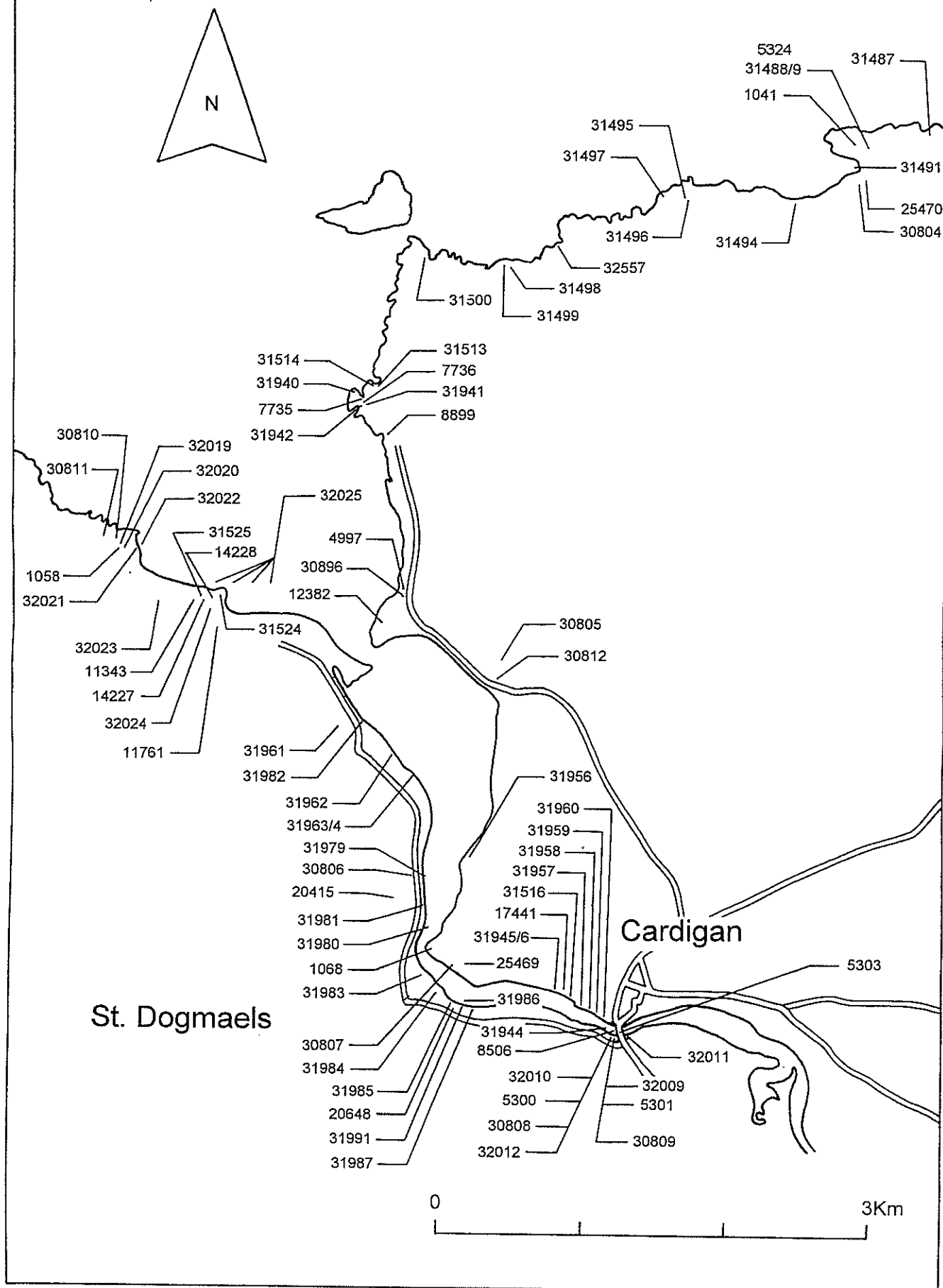
Map 9: New sites (cont.).

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30896	SN16414621	WW2 features	Earthwork	Modern	C	2	
		Golf bunker?					
31487	SN19985215	Field boundary	Earthwork	Unknown	C	1	
31488	SN19505202	Enclosed cemetery	Earthwork	Dark age	B	3	Survey
31489	SN19545200	Round barrow	Earthwork	Bronze age?;	B	3	Survey
				Dark age?			
31491	SN194519	Landing place	Documents	Post med	-	3	
31494	SN19005161	Quarry	Earthwork	Post med	C	2	
31495	SN18155157	Bridge	O.Struct	Post med	B	2	
31496	SN18195154	Quarry	Earthwork	Post med	B	2	
31497	SN18045171	Platform	Earthwork	Unknown	B	2	
31498	SN17095109	Quarry	Earthwork	Post med	C	2	
31499	SN16975110	Dwelling?	Earthwork	Post med	D	0	
31500	SN16375120	Mound	O.struct	Modern	C	2	
31513	SN16035030	WW2 foxhole?;	Earthwork	Modern?	C	2	
31514	SN15990503	Unknown	Earthwork	Unknown	C	1	
31516	SN17504603	Gasworks	Building	Post med	R	2	
31524	SN14904885	Ridge & furrow	Earthwork	Med?/Post med?	D	0	
31525	SN14704885	Platform	Earthwork	Unknown	C	2	
31940	SN15855029	Flints	Find	Prehistoric	-	3	
31941	SN15885020	Unknown	Stone wall	Unknown	C	1	General survey
31942	SN15875027	Ridge & furrow?	Earthwork	Post med	C	2	
31944	SN177458	Port of Cardigan	O.Struct	Post med	C	3	General survey
31945	SN17294608	Shipwreck	O.Struct	Post med	D	1	
31946	SN17264611	Wharf?	O.Struct	Post med	C	2	
31956	SN16704704	Bank	Earthwork	Unknown	C	2	
31957	SN17584594	Lloyd's Wharf	O.Struct	Post med	R	3	General survey
31958	SN17614593	Lloyd's Wharf	O.Struct	Post med	R	3	General survey
31959	SN17684589	Wharf	O.Struct	Post med	R	3	General survey
31960	SN17744590	Teifi Wharf	O.Struct	Post med	R	3	General survey
31961	SN15804793	Unknown	Cropmark	Unknown	-	1	
31962	SN16124770	Field boundary	Earthwork	Unknown	B	2	
31963	SN16304704	Battery	Building	Post med	D	4	Urgent survey
31964	SN16304704	WW2 feature	O.Struct	Modern	D	3	
31979	SN16384684	Landing place	O.Struct	Post med	B	2	

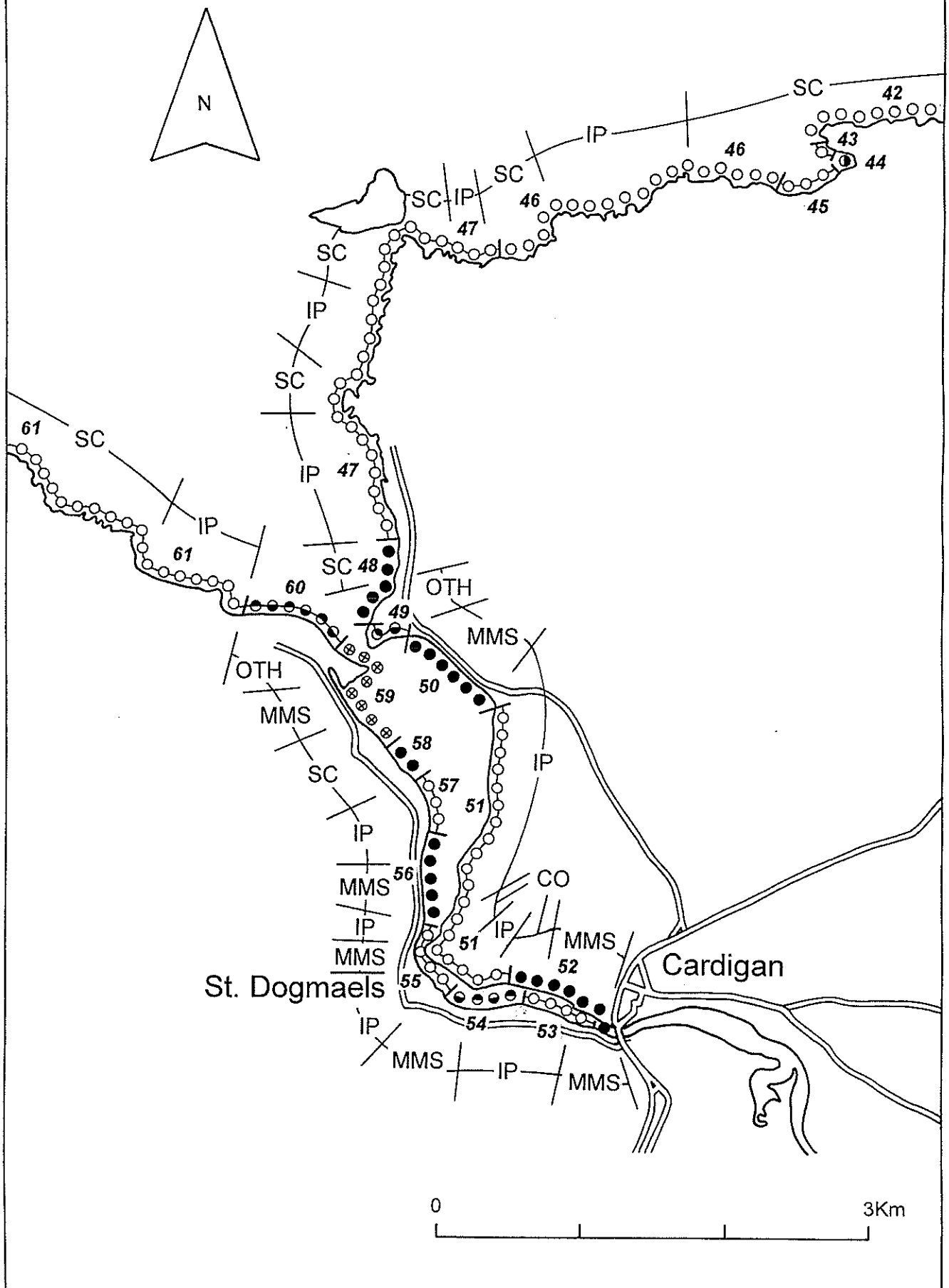
Map 9: New sites (cont.).

PRN	NGR	Description	Type	Period	Condition	Importance	Management
31980	SN16494656	Ferry	Documents	Post med	-	2	
31981	SN16364664	Coastguard station	Building	Post med	A	3	
31982	SN15904797	Quay	Documents	Post med	E	0	
31983	SN16344627	Building platform	Earthwork	Med?/Post med?	B	2	Survey
31984	SN16394623	Landing place	O.Struct	Post med	D	2	Survey/Record in detail
31985	SN16514609	Pinog Boat yard; Landing place	Landform	Post med	B	2	
31986	SN16614600	Port of St. Dogmaels	Documents	Post med	-	3	
31987	SN16654597	Jewson Warehouse	Building	Post med	B	3	General survey
31991	SN166460	Pinog Boathouse?	Building	Post med	A	2	
32009	SN17754579	Wharf	O.Struct	Post med	R	2	General survey
32010	SN17704578	Wharf	O.Struct	Post med	A	2	General survey
32011	SN17804578	Public house	O.Struct	Post med	A	2	
32012	SN17734575	Quarry	Earthwork	Post med	B	2	
32019	SN14284918	Cei Bach; Coastguard station	Building	Post med	A	3	
32020	SN14314916	Cei Bach; Coastguard cottage	Building	Post med	A	2	
32021	SN14384914	Cei Bach Lifeboat house	Building	Post med	A	3	
32022	SN14424928	Cei Bach Harbour	O.Struct	Post med	B	2	General Survey
32023	SN14424876	Cei Bach Rocket Apparatus Store	Building	Post med	A	2	
32024	SN14804870	Settlement? Hut platform	Earthwork	Med?/Post med?	C	2	Survey
32025	SN502491	Fish trap	O.Struct	Med?/Post med?	B	3	Survey
32557	SN17285130	Quarry	Earthwork	Post med	D	0	

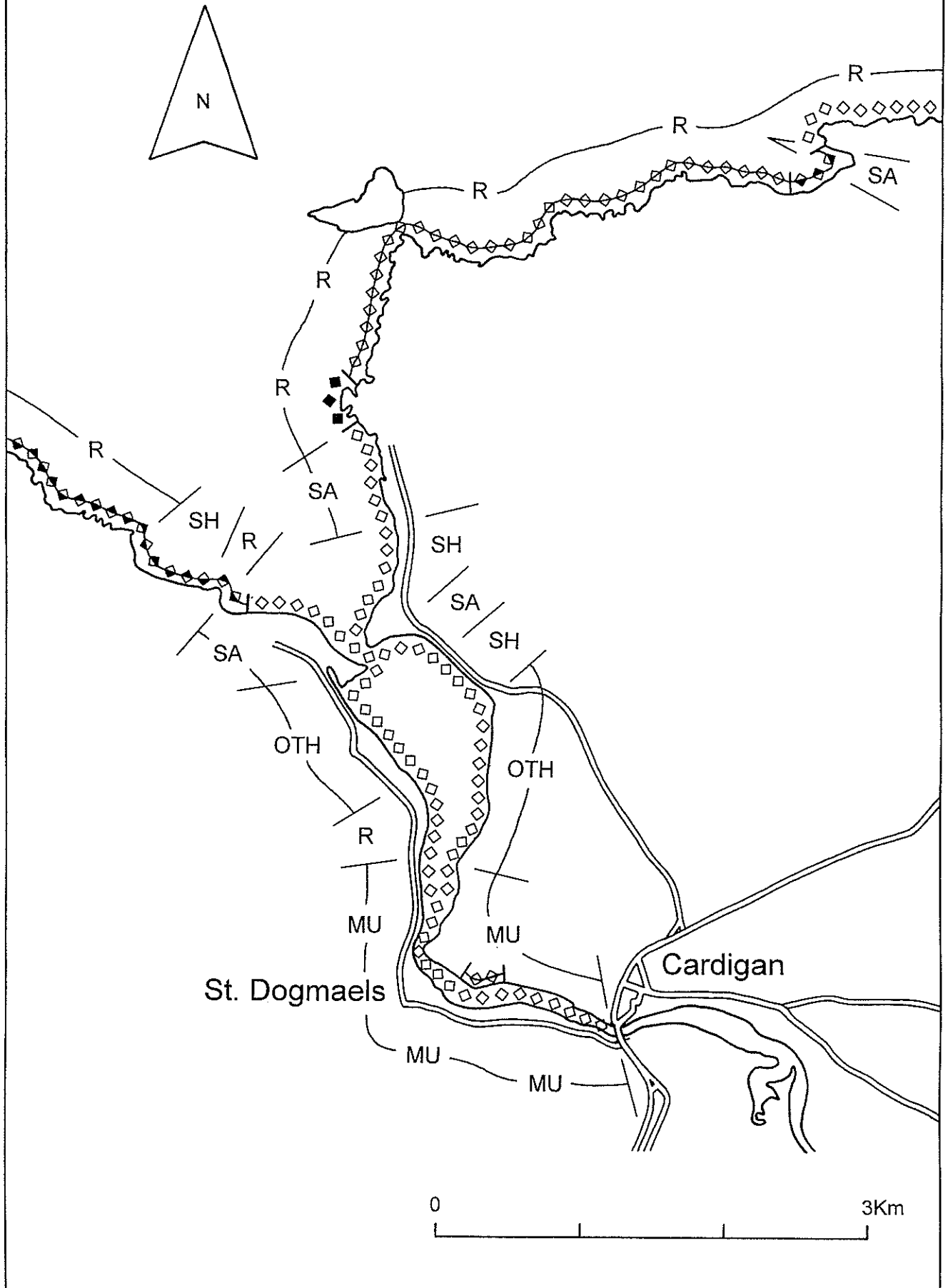
Map 9
Recorded Sites



Map 9
Coast and Land
Edge Types



Map 9
Foreshore and
Erosion Types



8.10 MAP 10:

Cemaes Head (SN134498) - Gerddi Bach (SN070434)

8.10.1 Coast type and erosion Assessment.

This section of the north Pembrokeshire coastline is characterised by a long series of rock cliffs with a boulder clay capping, which begin on the eastern side of at Cemaes Head (Nos. 61 - map 9 & 63) and continue southwards to the Nyfer estuary (see Map 11). There are few interruptions to the cliff line, apart from occasional minor stream valleys such as at Penygraig (SN121477), Ceibwr (No. 62) and Cwm Penwern (SN 101450).

The foreshore is mostly rocky, with either sheer cliffs to the water's edge or rough wave cut platforms, but some of the broader indentation along the coast have shingle, pebble and boulder beaches, such as at Traeth Godir-goch (SN127493) and Traeth Cell Hywel (SN0843). The small cove at Ceibwr also has a shingle beach.

Most of this coastline is subject to slight erosion, with more severe erosion presenting problems at only a few places, such as at Penygraig, where the boulder clay, which infills the valley and overlies adjacent cliffs, is slipping badly. Grade 3 erosion is also evident along a fairly long stretch of coastline above Traeth Cell Hywel.

The land edge along the whole section is of alternating blocks of improved and unimproved pasture. Areas of unimproved pasture are often found at the top of steep coastal slopes, and their overgrown with brambles, gorse or bracken. Behind Cemaes Head there is a large area of unenclosed land which has probably remained uncultivated during historic times.

8.10.2 Archaeology.

A small number of archaeological sites were known along this section of coastline before this study. They were primarily prehistoric sites, including the iron age coastal promontory forts of Castell Treruffudd (PRN 1157) and Castell (PRN 1043) and a bronze age burnt mound (PRN 11345). Find spots of prehistoric flints on Cemaes Head (PRN 11344) and a flint axe (PRN 1042) at Ceibwr were also known.

The condition of both the promontory forts has given cause for concern in recent years (e.g. Crane, 1994), particularly Treruffudd, where landslides have made much of the fort perilous and effectively inaccessible. Castell is suffering reduction from a different source, with the recent construction of holiday cottages and garden landscaping damaging the landward side of the fort. It appears that some fresh

erosion, which has occurred since Crane's visit in 1993/4, has also exposed the stone capping of the inner bank at the coast edge.

There is no doubt that Crane (1994, 8) was correct in urging that the excavation of the remaining accessible part of Treruffudd should be a matter of urgency, but it now appears that further monitoring of Castell is also required in the face of recent developments on the site.

A significant number of new sites were added to the SMR during this study. Over half were small quarries along the top of the coastal slope (e.g SN 31918-33).

Probably the most significant new additions to the SMR are the small natural harbour at Ceibwr (PRN 32084), and its 19th century lime kiln (PRN 32038) which once supplied the Moylegrove area.

Other sites added include possible prehistoric field boundaries (PRN 32037 & 32041) and a coast-guard lookout post (PRN 31518). The latter is recommended for surveying, perhaps as part of a wider survey of coastguard and lifeboat facilities along this coastline.

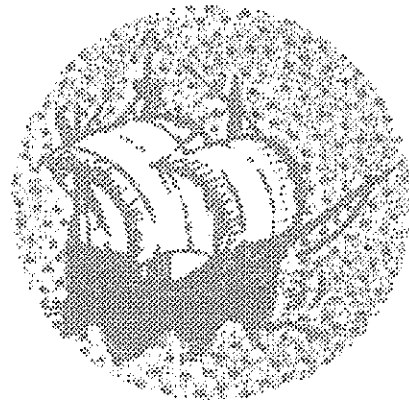


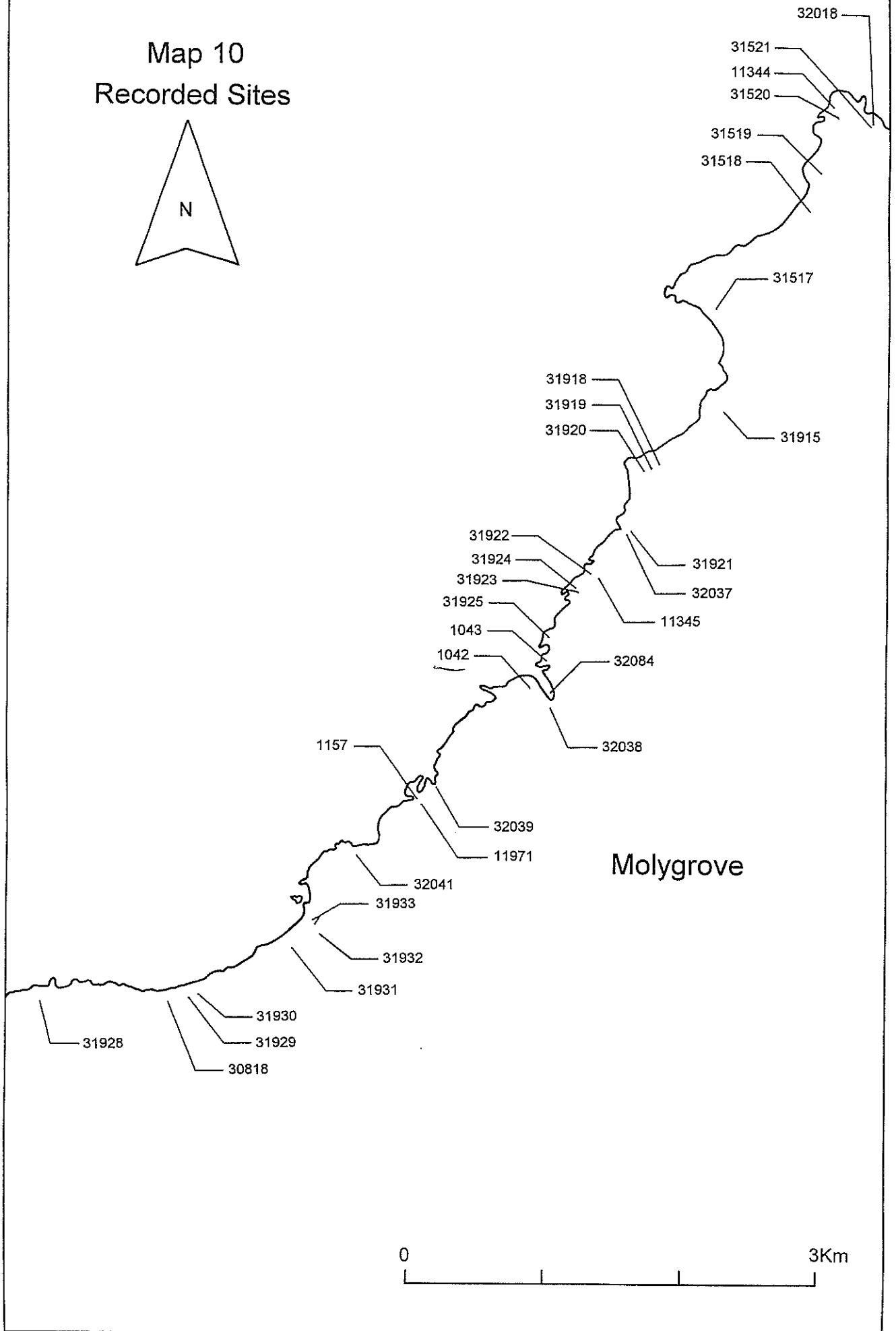
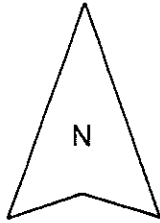
TABLE 10 - Map 10: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
1042	SN108457	Flint axe	Find	Prehistoric	-	3	
1043	SN11024594	Castell Hillfort	Earthwork	Iron age	C	4	Monitor erosion
1157	SN10044486	Castell T'reruffudd Hillfort	Earthwork	Iron age	C	4	Excavate urgently
11344	SN13114999	Flint flakes	Finds	Prehistoric	-	3	
11345	SN11424684	Burnt mound	O.Struct	Prehistoric	C	3	
11971	SN10214496	Healing well	O.Struct	Med/Post med	U	2	

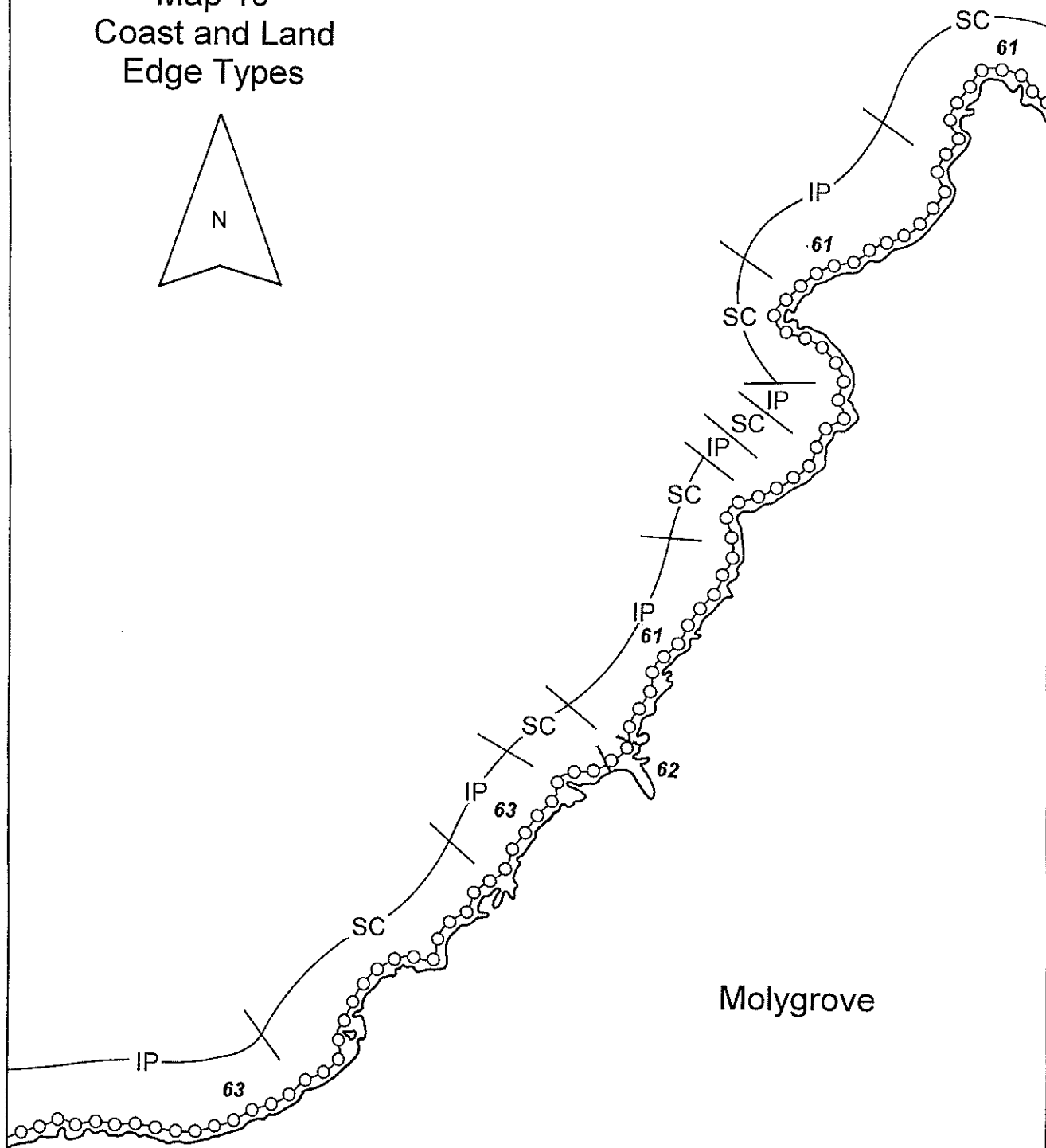
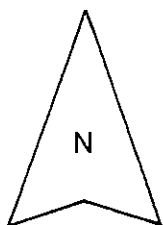
Map 10: New sites

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30818	SN08154331	Quarry	Earthwork	Post med	C	2	
31517	SN48501207	Platform	Earthwork	Unknown	B	1	Survey
31518	SN49281299	Coastguard lookout	Building	Post med	B	2	General survey
31519	SN49521303	Quarry?, Natural?	Landform?	Post med	-	0	
31520	SN13114989	Field boundary	Stone wall	Prehist?/Post med?	D	1	
31521	SN13404972	Field boundary	Earthwork	Prehist?/Med?	B	2	
31915	SN12294772	Platform	Landform?	General	B	0	
31918	SN11884735	Quarry	Earthwork	Post med	B	2	
31919	SN11844734	Quarry	Earthwork	Post med	B	2	
31920	SN11804733	Quarry	Earthwork	Post med	B	2	
31921	SN11624690	Quarry	Earthwork	Post med	B	0	
31922	SN11344652	Quarry	Earthwork	Post med	B	0	
31923	SN11284644	Quarry	Earthwork	Post med	B	2	
31924	SN11264645	Quarry	Earthwork	Post med	B	2	
31925	SN11074612	Quarry	Earthwork	Post med	B	2	
31928	SN07334331	Quarry	Earthwork	Post med	B	2	
31929	SN08324333	Quarry	Earthwork	Post med	B	0	
31930	SN08504345	Quarry	Earthwork	Post med	B	2	
31931	SN09144367	Quarry	Earthwork	Post med	B	0	
31932	SN09334384	Quarry	Earthwork	Post med	B	2	
31933	SN09304396	Quarry	Earthwork	Post med	B	2	
32018	SN134498	Ridge & furrow	Earthwork	Med?/Post med?	C	2	
32037	SN16604688	Field boundary	Earthwork	Post med?	B	2	Survey
32038	SN11021060	Limekiln, Ceibwr	O.Struct	Post med	C	3	Monitor
32039	SN10194504	Prospecting Mine	Documents	Post med	E?	0	
32041	SN09604449	Field boundary	Earthwork	Post med	B	2	Survey
32084	SN11004570	Ceibwr harbour	Documents	Post med	-	3	

Map 10
Recorded Sites

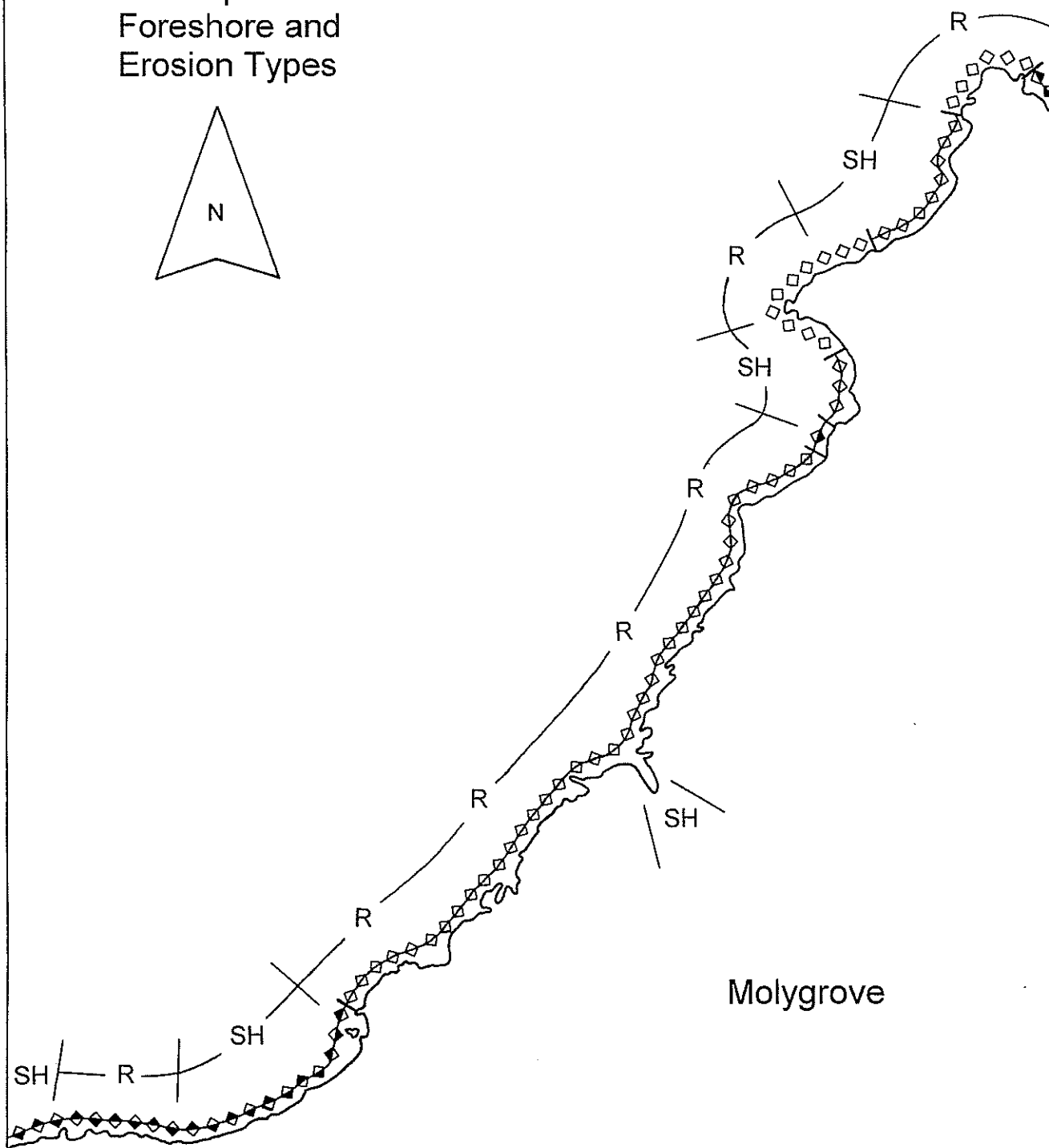
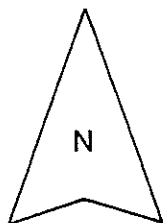


Map 10
Coast and Land
Edge Types



0 3Km

Map 10
Foreshore and
Erosion Types



0 3Km

8.11 MAP 11.:

Gerddi Bach (SN070434) - Dinas Head (SN005413)

8.11.1 Coast type and erosion assessment.

This map covers a varied coastline, ranging from rock and boulder cliffs to active sand dunes, man-made defences and coastal salt marshes.

The eastern part of the section is a continuation of the rock and drift cliffs described on Map 10 (No. 63). They are fronted by rocky wave cut platforms, with some shingle and boulder beaches in coves and a combination of improved and rough pasture at the land edge. The erosion level is generally of Grade 2/3.

These cliffs average a height of over 50m OD, reaching 80m around Penybâl headland. However they decline quite rapidly along the eastern side of Newport Bay, to the beach at Newport Sands, where a section of boulder dump sea defences (No. 64) protects the coastal edge. This stable sea defence lies above a broad sandy beach and is backed by the western section of Newport Golf Course.

The sea defence gives way to an area of active sand dunes (No. 65), known as The Bennett behind the southern end of Newport Sands, and these dunes form the northern side of the entrance to the Afon Nyfer estuary. Further up the estuary the dunes are replaced by a short section of low rock and boulder clay bluff (No. 66) which is in turn replaced by a salt marsh (No. 67), which begins just west of Newport Bridge (PRN 21768). These are fronted by a mud foreshore at low tide and backed by some improved pasture and the eastern end of Newport Golf Course.

The opposite bank of the Nyfer is a salt marsh (considered an extension of No. 67 for the purpose of this report), again fronted with a mud foreshore at low tide and backed by some unimproved pasture.

West of this salt marsh is the area known as the Parrog, the eastern half of which (No. 68) was once the main focus of maritime trade in Newport Bay. The Parrog still has a stone built wharf and recently added stone and concrete sea defences above a shingle foreshore.

The western half of the Parrog is a small hamlet, with a number of dwellings along the land edge. This area has a rockier foreshore and coast edge, being the start of a series of cliffs which rise to the west. These cliffs (Nos. 69, 71 & 73) are mainly of rock, with only a patchy boulder clay cover and average c.25 - 30m in height. They are suffering medium levels of erosion, with the coast path eroded in some places. Below the cliffs lie a rock platform with some pebble and boulder beach deposited at the cliff base. They are mostly backed by improved pasture, with some sections of unimproved pasture.

The cliff line is interrupted by small coves at Aberfforest and Aberhigian (Nos. 70 & 72). Both have boulder clay coast edges at the head of sand and shingle beaches, with some woodland at the land edge

The cliff line is again broken at Cwmyreglwyns (No. 74), where a small natural harbour marks the eastern side of the neck of the extensive headland known as Dinas Island. Cwmyreglwyns has seen devastating encroachments by the sea in the past, most notably the great storm of 1859 which destroyed the parish church, the ruins of which stand on the land edge. A large sea wall now protects and stabilises the coast edge here. Survey and recording work of this area was carried out by the Dyfed Archaeological Trust when this sea wall was constructed.

North of Cwmyreglwyns the cliffs again rise gradually along the headland (No. 75). They are once more of rock with a drift cover. Medium levels of erosion are apparent along the eastern side of the headland, but on the northern point of Dinas Head the cliffs appear much more stable. Here they rise to a height of up to 100m, making Dinas Island one of the most prominent landmarks on this section of coastline. Below these cliffs is a foreshore of rock platforms, with some shingle beaches below the point. The land edge is of alternating blocks of improved and unimproved pasture

8.11.2 Archaeology.

A number of important prehistoric sites and find spots are known along this section of coastline, most notably the neolithic chambered tomb of Carreg Coetan (PRN 1462). There is also an iron age enclosure (PRN 1587) on a slope overlooking Cwmyreglwyns harbour.

Find spots of prehistoric artefacts recorded prior to this survey include a mesolithic flintworking floor (PRN 1466), neolithic stone axes (PRN 1589 & 11142) and an iron age spindle whorl (PRN 1586). The number and variety of the sites and finds in the area (including those further inland) suggest that it has been an area long favoured for human settlement and likely to provide further discoveries of archaeological significance in the future. An example of this is at the find spot of mesolithic flints mentioned above (PRN 1466), where a stone arrangement of uncertain nature and period was noted partly exposed in the nearby sand dunes (PRN 1467) (pers. comm., Dr. Martin Bell, SDUC, Lampeter).

More recent finds of mesolithic flintworking floors on the northern side of the Nyfer estuary (PRN 32044 - 46) have now been entered into the SMR.

Some important sites relating to the development of the historic settlement and harbour of Newport were also previously recorded, including the site of a mediaeval ringwork castle (PRN 1468) on the coastal edge on northern side of the village, and the old harbour on the Parrog (PRN 14348). In 1991, the Dyfed Archaeological Trust was responsible for the excavation of a number of mediaeval burgrave plots along Long Street, Newport which runs from the present village square northwards towards the coast (Murphy, 1991).

Newport was the most important settlement along this section of the coastline in early post mediaeval times with a busy trading port and local woollen industry until the 16th century (Miles, 1995).

During the 19th century, Newport developed into a busy trading and fishing port, being home to a small herring fleet. The quay walls surviving on the Parrog were built c. 1825. Here there was once a ship building and repair yard and coalyard (PRN 32053; 32062 & 31968 respectively); three limekilns were also supplied by sea (PRN 30824; 32057-58). A number of buildings were constructed along the quay, some of which survive, one warehouse now serving as the Newport Boat Club (PRN 32061). Some original slipways remain as well as some stone built cottages, which are probably contemporary with the quay development.

A programme of renovation has been initiated in the area by the Pembrokeshire Coast National Park, including work on the quay wall, sea defences and some of the buildings on the land edge. Concern has been expressed about the nature of some of this work. For instance the remaining traces of one limekiln (PRN 32058) were destroyed by landscaping and the old harbour wall was replaced by a complex series of stone, concrete and boulder defences. The surviving limekiln (PRN 30824) was under reconstruction at the time of the field visit.

The importance of coastal trade to the local economy, until the 20th century, is demonstrated by the presence of a number of other former landing places along this coastal section. Possible landing places and wharves were recorded further west along the Parrog (PRN 31967 - 68), and nearby is located the Newport lifeboat station (PRN 31966) and its associated landing place (PRN 31965). Another small landing place (PRN 31948) with a limekiln (PRN 25443), jetty (PRN 31947) and possible old storehouse (PRN 31949) were recorded just below Newport bridge on the Nyfer estuary. To these can be added the small natural harbour of Aberfforest (PRN 31954), which has a lime kiln (PRN 30825), as well as the harbour at Cwmyr-eglwys (PRN 32082).

Of particular interest and importance to the economic history of this area is the series of coastal cliff slate quarries which survive between Newport and Fishguard (e.g. PRN 32050 - 52). Slate produced at these quarries was largely exported by sea, and it was certainly an important local industry during the early 19th century and increased the trading status of Newport. A general survey of the physical evidence left by this now past industry is required (see also Map 12).

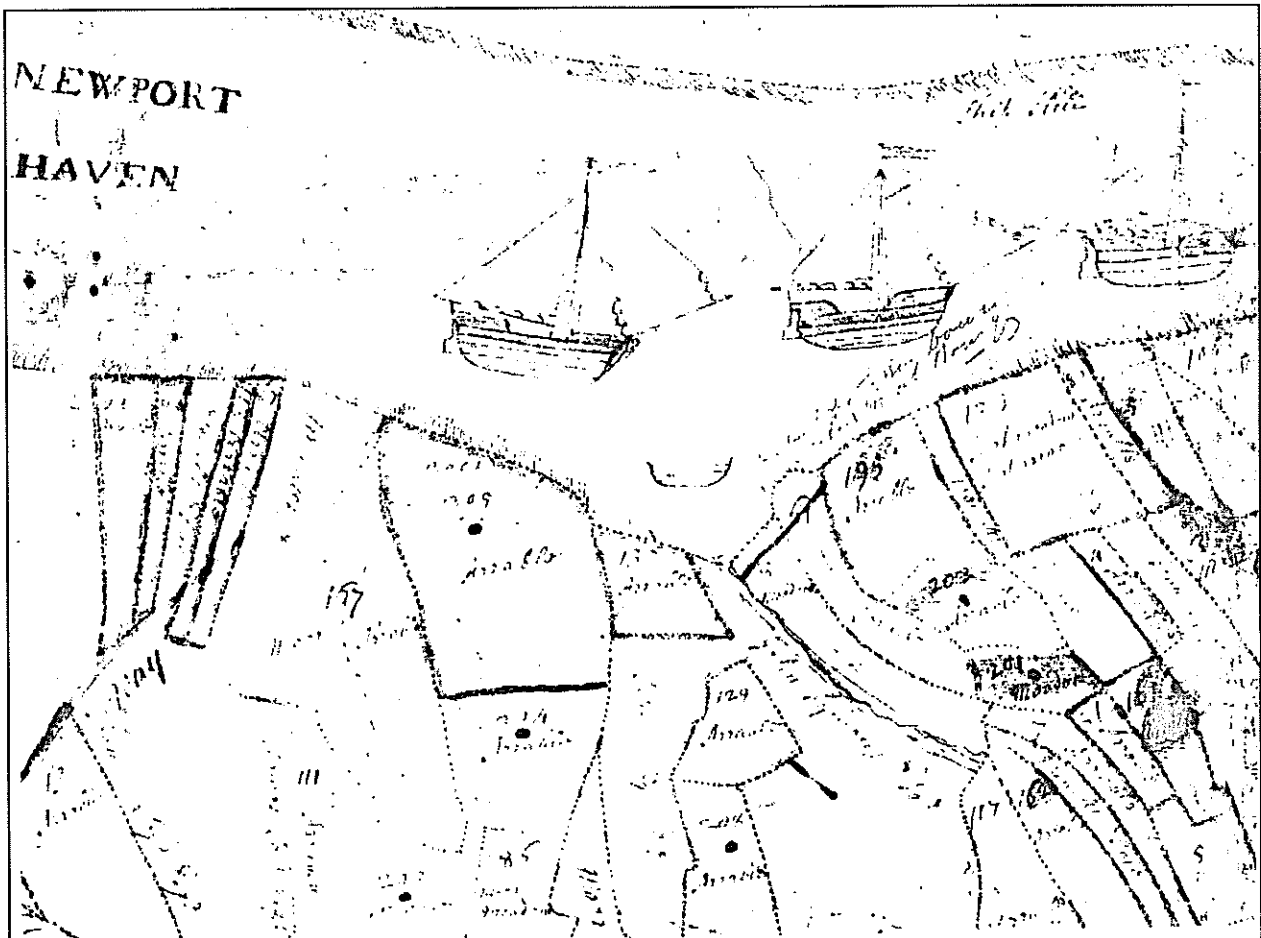


Fig. 16; The Parrog, Newport, shown on a Llwyngwair estate map of 1758. Note the surviving strip fields, remnants of the mediaeval field system associated with the nearby borough town of Newport.

TABLE 11 - Map 11: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
1462	SN06023935	Carreg Coetan Cromlech	O.Struct	Neolithic	C	4	
1466	SN06163945	Flintworking floor	Finds	Mesolithic	-	3	Monitor
1467	SN06163945	Unknown stone group	O.Struct	Unknown	U	1	Monitor
1468	SN05833950	Ringwork, Long Street	Earthwork	Mediaeval	D	4	Monitor/manage
1585	SN014401	Cwmyreglwyns Church	Building	Mediaeval	C	4	
1586	SN015401	Spindle whorl	Find	Iron age?/Roman?	-	3	
1587	SN01344019	Hillfort, Cwmyreglwyns	Earthwork	Iron age?	B	1	
1589	SN01484005	Stone axe	Find	Neolithic	-	3	
1590	SN05814245	Standing stone?	Monolith	Bronze age	B	3	
1591	SN05694253	Cairn	O.Struct	Unknown	D	1	
1596	SN05804240	Unknown	Earthwork	Unknown	C	1	
11142	SN035396	Stone axe	Find	Neolithic	-	3	
14348	SN052397	Newport Harbour (Parrog)	Documents	Med; Post med	R	3	
18818	SN06233975	Holy well	Landform	Dark age; Mediaeval	D	2	
21768	SN06373954	Newport Bridge	O.Struct	Post med	A	2	
25443	SN06133974	Limekiln, Afon Nyfer	O.Struct	Post med	A	3	Survey

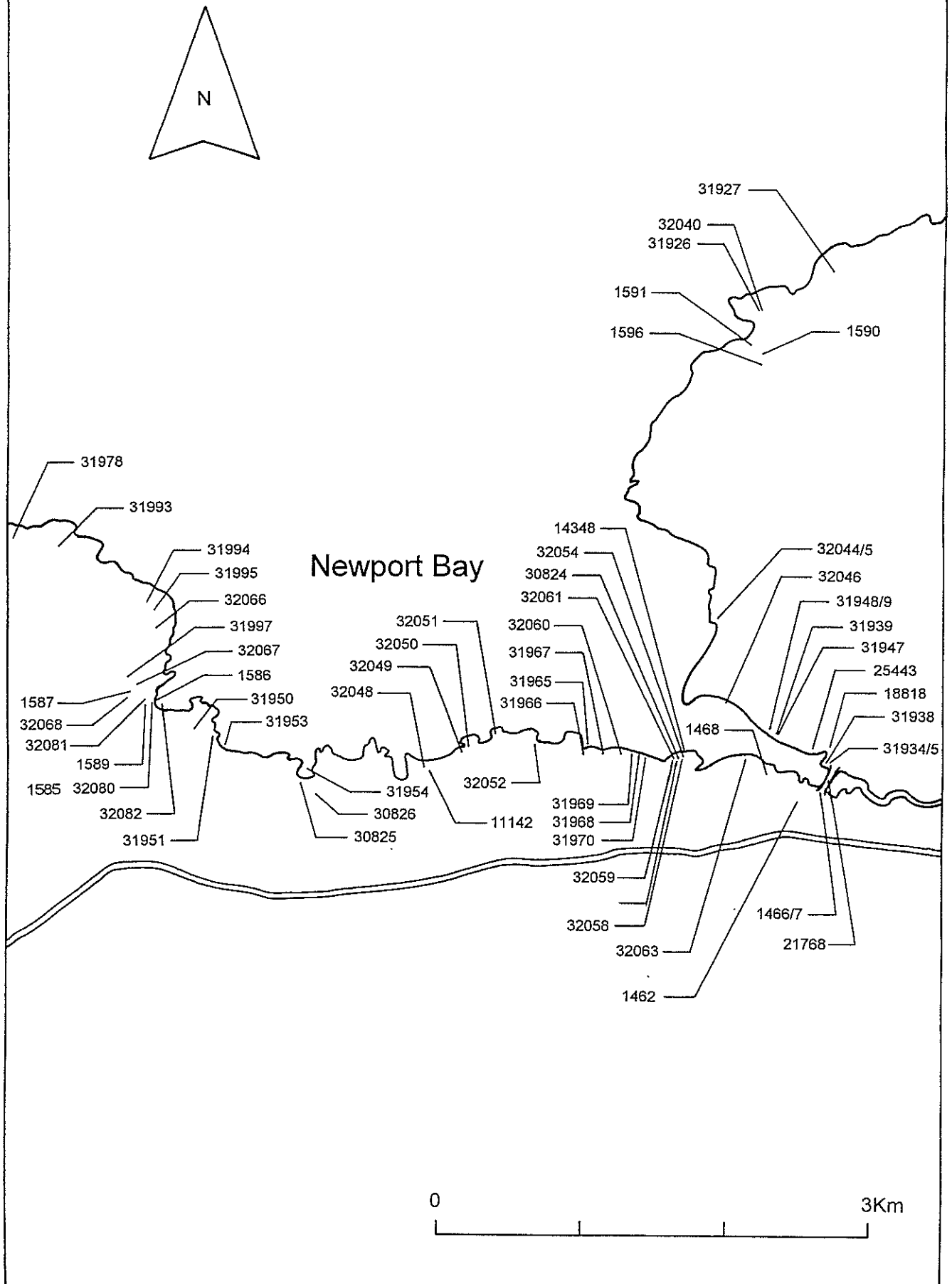
Map 11: New sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30824	SN05123964	Limekiln, Parrog	O.Struct	Post med	B	3	
30825	SN02543952	Limekiln, Aberfforest	O.Struct	Post med	B	3	
30826	SN02633941	Quarry	Earthwork	Post med	D	0	
31926	SN05774278	WW 2 building	Building	Modern	A	2	Survey
31927	SN06264308	Quarry	Earthwork	Post med	B	0	
31934	SN06303958	Bridge	O.Struct	Post med	B	2	
31935	SN06313959	Stile	O.Struct	Post med	B	2	
31938	SN06213957	Dwelling	Building	Post med	R	2	
31939	SN05773988	Dwelling; Storehouse	Building	Post med	R	2	
31947	SN05773988	Jetty	O.Struct	Post med	R	2	Survey
31948	SN05723996	Landing place	O.Struct	Post med	B	2	Survey
31949	SN05723996	Quarry	Earthwork	Post med	B	0	
31950	SN01783988	Standing stone?	Monolith	Bronze age?	B	1	
31951	SN01903983	Hollow	Natural?	Unknown	C	0	
31953	SN01993977	Slate quarry	Earthwork	Post med	B	2	General survey
31954	SN02503950	Aberfforest harbour	Landform	Post med	A	2	
32058	SN05183970	Limekiln	O.Struct	Post med	E	0	
31965	SN04503980	RNL/Landing place	Landform	Post med	A	2	General survey

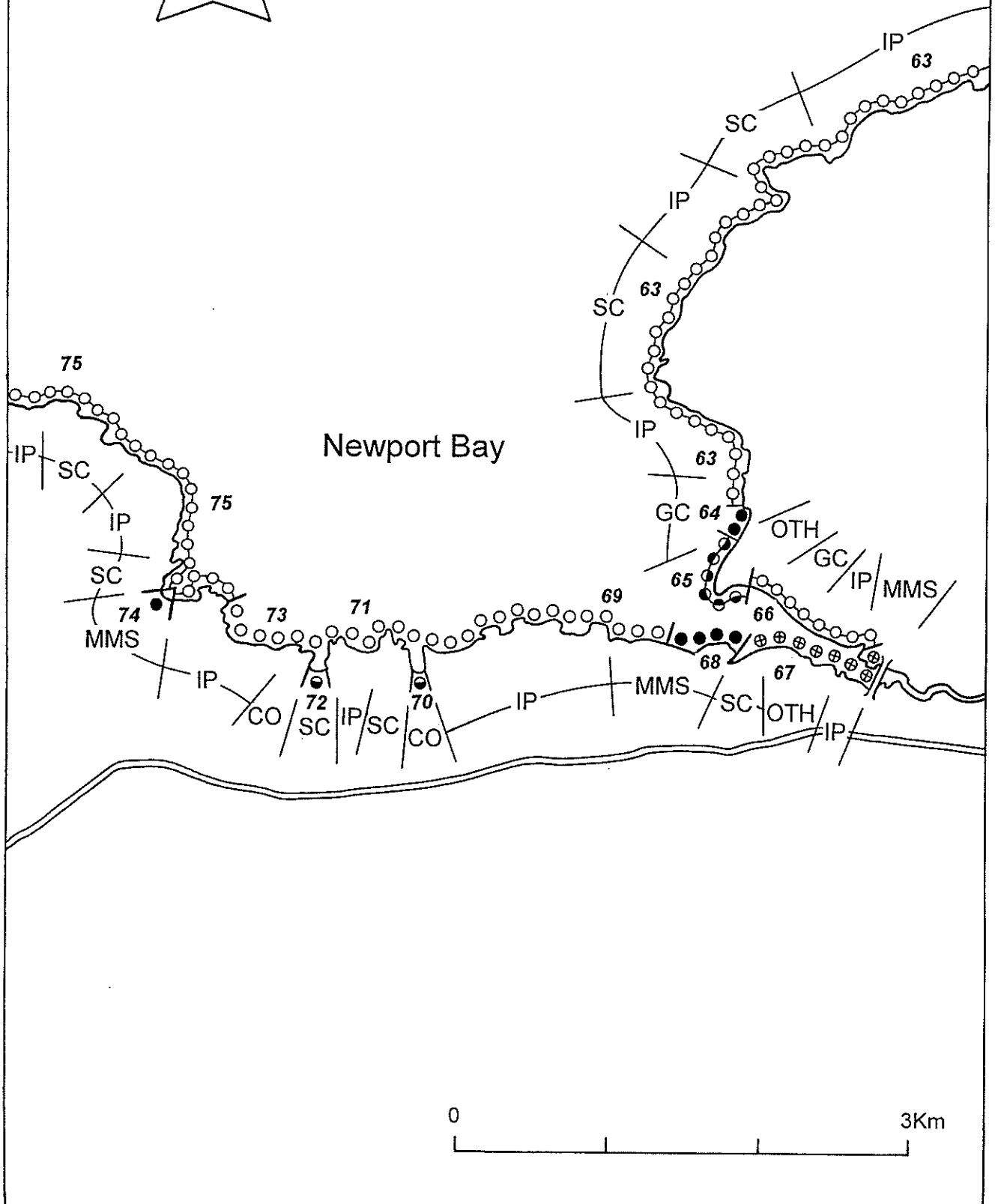
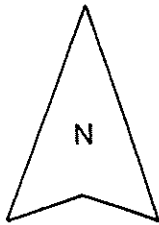
Map 11: New sites (cont.).

PRN	NGR	Description	Type	Period	Condition	Importance	Management
31966	SN04493973	Newport Lifeboat house	Building	Post med	A	3	Survey
31967	SN04633973	Wharf,Harbour?	O.Struct	Post med	C	2	Survey
31968	SN05003964	Wharf,Harbour	O.Struct	Post med	A	3	Survey
31969	SN04973967	Cannon	Find	Post med	B	2	Survey
31970	SN05043964	Well	O.Struct	Post med	A	2	
31978	SN00574116	Coastguard lookout	Building	Post med	D	0	
31993	SN00804112	Quarry	Earthwork	Post med	B	2	
31994	SN01534046	Quarry	Earthwork	Post med	B	2	
31995	SN01574073	Quarry	Earthwork	Post med	B	2	
31997	SN01380026	Quarry	Earthwork	Post med	B	2	
32040	SN05774278	Quarry?	Earthwork	Post med	C	0	
32044	SN05454070	Flint working floor	Finds	Mesolithic?	-	3	Monitor
32045	SN05454070	Unknown	O.Struct	Unknown	U	1	
32046	SN05084015	Flint working floor	Finds	Mesolithic	-	3	Monitor
32048	SN03503970	Slate quarry	Earthwork	Post med	B	2	General survey
32049	SN03703988	WW2 platform	O.Struct	Modern	B	2	
32050	SN03883989	Slate quarry?	Earthwork	Post med	B	2	General survey
32051	SN04113990	Slate quarry	Earthwork	Post med	B	2	General survey
32052	SN01433979	Slate quarry	Earthwork	Post med	B	2	General survey
32054	SN05203970	Quay	O.Struct	Post med	R	2	
32057	SN05183970	Limekiln, Parrog	O.Struct	Post med	E	0	
32058	SN05183970	Limekiln, Parrog	O.Struct	Post med	E	0	
32059	SN05143965	Life saving apparatus shed	Building	Post med	R	2	
32060	SN04893972	Slipway	O.Struct	Post med	A	2	
32061	SN05183971	Warehouse?	Building	Post med	R?	2	
32063	SN05503965	Saltings	Documents	Post med	D	2	
32066	SN01534055	Quarry?	Earthwork	Post med	U	2	
32067	SN01374020	Quarry	Earthwork	Post med	U	2	
32068	SN01324014	Quarry	Earthwork	Post med	U	2	
32080	SN01514006	Slipway	O.Struct	Post med	R?	2	
32081	SN01494007	Cist graves	Buried feature	Dark age	U	3	
32082	SN015401	Cwmyrghlws Harbour	Documents	Med,Post med	-	3	

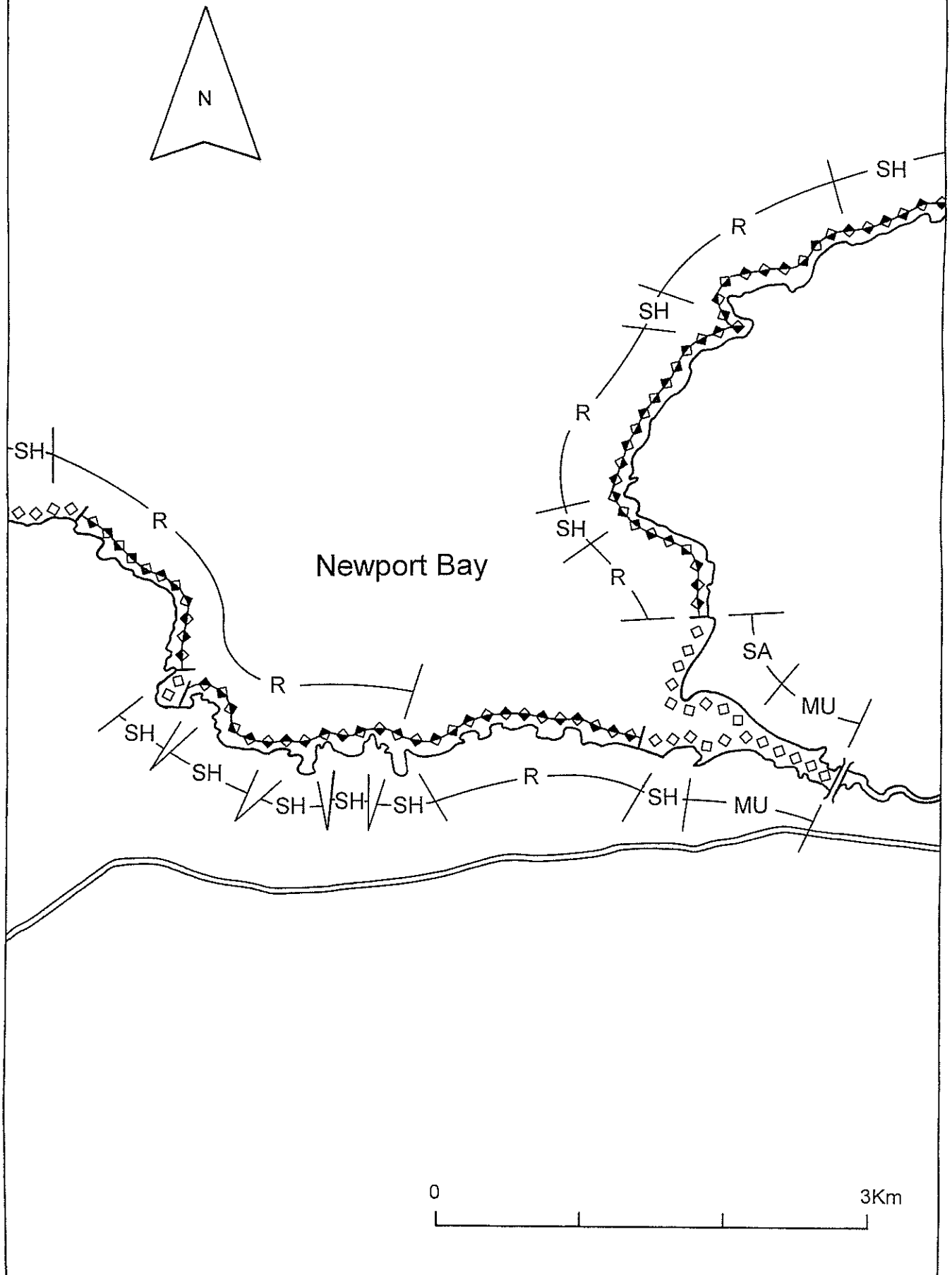
Map 11
Recorded Sites



Map 11
Coast and Land
Edge Types



Map 11
Foreshore and
Erosion Types



8.12 MAP 12.

Dinas Head (SN005413) - Penfathach (SM940404)

8.12.1 Coast type and erosion assessment.

This coast section begins on the western side of Dinas Head with a continuation of the series of stable rock cliffs overlain by boulder clay (No. 75) described for Map 11. As before, the cliffs are generally fronted by wave cut platforms, but are now backed by unimproved pasture and scrub, with the coastal slope often quite overgrown.

Although the cliffs reach upwards of 100m in height above Dinas Head, they decline gradually to the south and disappear at Pwll Gwaelod (No. 76), a small cove which forms the eastern side of the neck of Dinas Island. The cove has a sandy beach and above the beach is a man made boulder sea defence in front of a car park.

A short stretch of rock and boulder clay cliff (No. 77) rises steeply to c.35m in height from the southern side of the cove. It soon loses its drift cover and a section of rock cliffs (No. 78) proceeds westward, maintaining a height of up to 50m. At the Needle Rock (SN975379), the rock cliff is again capped with boulder clay (No. 79 & 81) and this continues to be so as far as the entrance to Lower Fishguard Harbour.

Below the cliffs the foreshore is mostly of wave cut platforms, although shingle, pebble and boulder accumulations are evident in most of the indentations along this section. The land edge, meanwhile, is of improved and unimproved pasture, with one large caravan park at Penrhyn Ychen (SN983383) proving an exception.

From Pwllgwaelod to this point there is ongoing erosion along most of the cliffs, of varying levels, but including some Grade 3/4 erosion of some of the steeper cliff sections around Aberhywel (SN990386) and Pwll Landdu (SN967377). Surprisingly, at the relatively deep indentation in the coast at Aber Grugog (SN984383) it was observed that the coast edge is stable, with the coastal path and post mediaeval field boundaries intact.

From Castle Point, at the entrance to Lower Fishguard harbour, the remaining coastline in this section is stable, generally being of hard rock or man-made coastal edge.

The rock and boulder clay cliff of section No. 81 actually continues around Castle Point but it is replaced by a man-made coast edge near Lower Town, where a late 18th century quay (No. 82) forms the eastern side of the harbour. The man-made coastal edge continues around the harbour, but on its western side another rock and boulder clay cliff rises (No. 83) continuing around Saddle Point and on to Goodwick Sands. This cliff is generally no more than 25m high and above it are located the streets and houses of the Penyraber district of Fishguard town. Goodwick Sands (No. 84) is a broad beach which has a

series of groynes and a sea wall constructed upon and above it. The land edge here is undergoing a radical facelift, with a great deal of building activity on the area behind the sea wall at the time of writing. It runs into the main harbour of Fishguard port (No. 85), the quay walls, piers and breakwaters of which make it one of the longest sections of man-made coast edge encountered.

On the northern side of the outer breakwater of the port complex, the natural coastline resumes with a low rock and boulder clay cliff (No. 86) behind a sand and shingle foreshore, backed by rough pasture and a small coniferous plantation. Beyond Pwll Hir the cliffs become increasingly rocky and rise to 25m or more in height, fronted by wave cut platforms and backed by rough pasture. This is the beginning of the rocky cliff series which characterises most of the Strumble Head coastline.

8.12.2 Archaeology.

A large number of sites have been recorded in this coastal section, a great number of them clustered around the harbour facilities at Lower Town and Goodwick, but also a number of coastal slate quarries and some possible prehistoric features above Goodwick.

Dinas Island.

Only a possible iron age promontory fort (PRN 1588) on Pen Castell was previously recorded here. Newly recorded sites include a number of minor quarries and some field boundaries of probable post mediaeval date. A possible bronze age stone pair was also recorded (PRN 31973) as well as some cultivation traces of unknown period (PRN 31974).

Pwllgwaelod - Castle Point.

This section of rocky coast includes the small natural harbour of Pwllgwaelod, with its sandy beach, east of which stands a well preserved 19th century limekiln (PRN 30827). This section is most notable for the clifftop slate quarries around Aber Hescwm and Aber Grugog, which are amongst the most spectacular along the coastline (PRN 32047; 32070 - 77). They were certainly working during the first half of the 19th century. Locally owned ships which carried passengers to North America often took local slate as ballast during this period (Miles, 1995, 63 & 75). In the 1840's slate was described as the principal trade of the district, along with limeburning (Lewis, 1848). During field visits it was noted that caves at the cliff base beneath some of the quarries still contain stacked slate slabs left in readiness for transport. The detailed survey and recording of these quarries is required.

Further west lies the World War 2 gun battery on Penrhyn Ychen (PRN 32159), built to protect Fishguard Harbour. It is partly incorporated into a caravan park and partly threatened by the erosion of the cliff and is in need of urgent survey and recording.

On Castle Point the late 18th century gun

battery (PRN 5015) is undergoing renovation. A possible iron age promontory fort is tentatively identified on the headland here (PRN 32157). Some monitoring of the renovation work here is needed.

On a less prominent headland east of Castle Point a small sub-rectangular earthwork enclosure of unknown period and function (PRN 32007) was noted. In terms of shape and size it was likened to a Roman signal station. Further survey and assessment is certainly required of this site, which is badly eroding at present.

Lower Town.

Another cluster of sites is found around the old harbour (PRN 32154) of Lower Town, Fishguard. The natural harbour here was in use in mediaeval times and became increasingly important during the 18th century (B. John, 22-3). Several features associated with the maritime tradition of the area survive, including old quays (PRN 20330 & 32128), fishermen's cottages and warehouses (PRN 20293 & 32153). There was also ship building activity here during the 19th century (PRN 32155).

A general survey is required of the harbour area and a subsidiary inlet at Slade (which had a saw mill and limekiln - PRN 30835 & 20118). Some redevelopment of this area might occur in the future; there is pressure for road improvements through Lower Town and this could affect the southern side of the harbour area.

Fishguard (Goodwick) Harbour.

Goodwick was originally a small fishing village and harbour (PRN 32140) typical of the those found along the Cardigan Bay coast during the 19th century. It had a small ship building industry (PRN 32139), a limekiln (PRN 32142) and coal and brick yards (PRN 32143-44) (not shown on Map 12).

Between 1902 and 1906 massive changes were wrought by the arrival of a reliable rail link and the construction of a large port facility (PRN 30849). A large section of the cliff north of Goodwick was excavated to create a flat area at the sea edge on which to construct a modern rail and port facility. This facility, in large part, survives today and is used by the modern passenger ferries which link Fishguard with the Irish port at Rosslare.

Numerous individual features pertaining to the early history of the port facility were recorded during a survey carried out by the DAT in 1994 (Ludlow, 1994). These included an engine shed (PRN 27971) and the railway station (PRN 27973).

More PRN's were allocated to many of the features along the sea edge as a result of this survey, including quays and the sea wall of the harbour (PRN 30847-48; 32133). The First World War flying boat station established here was also recorded, along with a slipway which might have been associated with its operations (PRN 32131-32). Other features were also identified from map research, such as the now lost cattle pens (PRN 32135).

Pencaer.

This area represents the eastern part of the Pencaer headland, beginning at the western end of the large northern breakwater (PRN 30842) which protects the port facility.

Here the most notable sites recorded during field work include a number of sites of possible bronze age date. These include clearance cairns (PRN 32096; 32098; 32104), two possible standing stones (PRN 32094 & 32126 - the former dubious) and a possible scoop grave (PRN 32097). This is easily the most important concentration of possible prehistoric sites in along the coastline surveyed. In some respects the proximity of these sites to Goodwick is not surprising, for it has traditionally been held that a great number of prehistoric sites were concentrated in the area, many being lost when the cliff was blasted away during harbour construction after 1902. A number of surviving scheduled monuments are found just inland along this stretch of coastline and it certainly appears that this is an area of significant archaeological importance where the survival of prehistoric field monuments is high.

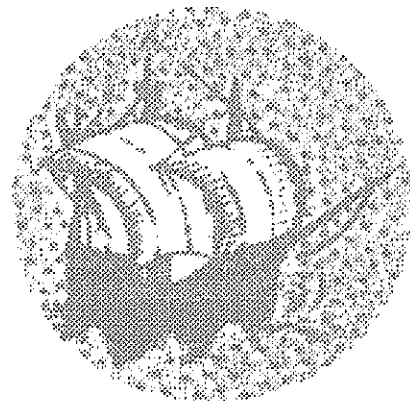


TABLE 12 – Map 12: Known sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
1588	SN00234005	Pen Castell Hillfort	Earthwork	Iron age?	B	1	
2550	SM953393	Perforated stone	Find	Prehistoric?	-	1	
5015	SM962378	Fishguard Fort	Building	Post med	C	4	Survey/monitor
17323	SM95913732	Cannon	Find	Post med	B	3	
17526	SM945382	Railway station	Building	Post med	C	3	Survey/record
17551	SM950400	Rabbit warren	Place name	Post med?	U	2	
17557	SM949376	Bridge, Lower Town	O.Struct	Post med	R	2	
18142	SM95003920	Gravel pit	Earthwork	Post med	B	2	
20118	SM95983720	Limekiln, Slade	O.Struct	Post med	B	3	
20330	SM961373	Quay, Lower Town	O.Struct	Post med	A	3	Survey
27970	SM96203911; SM93003500	Railway	O.Struct	Post med	A	3	
27971	SM953392	Engine shed	Building	Post med	B	3	
27972	SM952391	Customs House	Building	Post med	R	2	
27973	SM952390	Fishguard railway station	Building	Post med	R	3	
28278	SM948375	Gasworks	Building	Post med	R	2	

Map 12: New sites.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
30827	SN00573983	Limekiln, Pwllgwaelod	O.Struct	Post med	B	3	
30831	SM95753763	Quarry	Earthwork	Post med	C	2	
30834	SM95923725	Quarry	Earthwork	Post med	C	2	
30835	SM95933722	Sawmill, Slade	O.Struct	Post med	D	2	Survey
30837	SM94773735	Quarry	Earthwork	Post med	C	2	
30840	SM94623915	Lifeboat station	Documents	Post med	E	0	
30841	SM95003800	Harbour breakwater	O.Struct	Post med	R	2	
30842	SM95803929	Harbour breakwater	O.Struct	Post med	B	2	
30843	SM94593844	Gravel pit	Earthwork	Post med	C	2	
30844	SM94743848	Quarry	Earthwork	Post med	B	2	
30849	SM953387	Fishguard Harbour	O.Struct	Post med	B	4	
30847	SM94803840	Sea wall, F'guard Harbour	Documents	Post med; Modern	D	0	
30848	SM94903850	Quay, F'guard Harbour	O.Struct	Post med; Modern	R	2	
30892	SM94583812	Limekiln	Documents	Post med	E	0	
31971	SN00384018	Ridge & furrow	Earthwork	Med?; Post med?	B	2	
31972	SN00184044	Quarry	Earthwork	Post med	B	2	
31973	SN00184046	Stone pair?	O.Struct	Bronze age?	B	1	
31974	SN00204050	Cultivation traces	Earthwork	Unknown	B	1	Survey

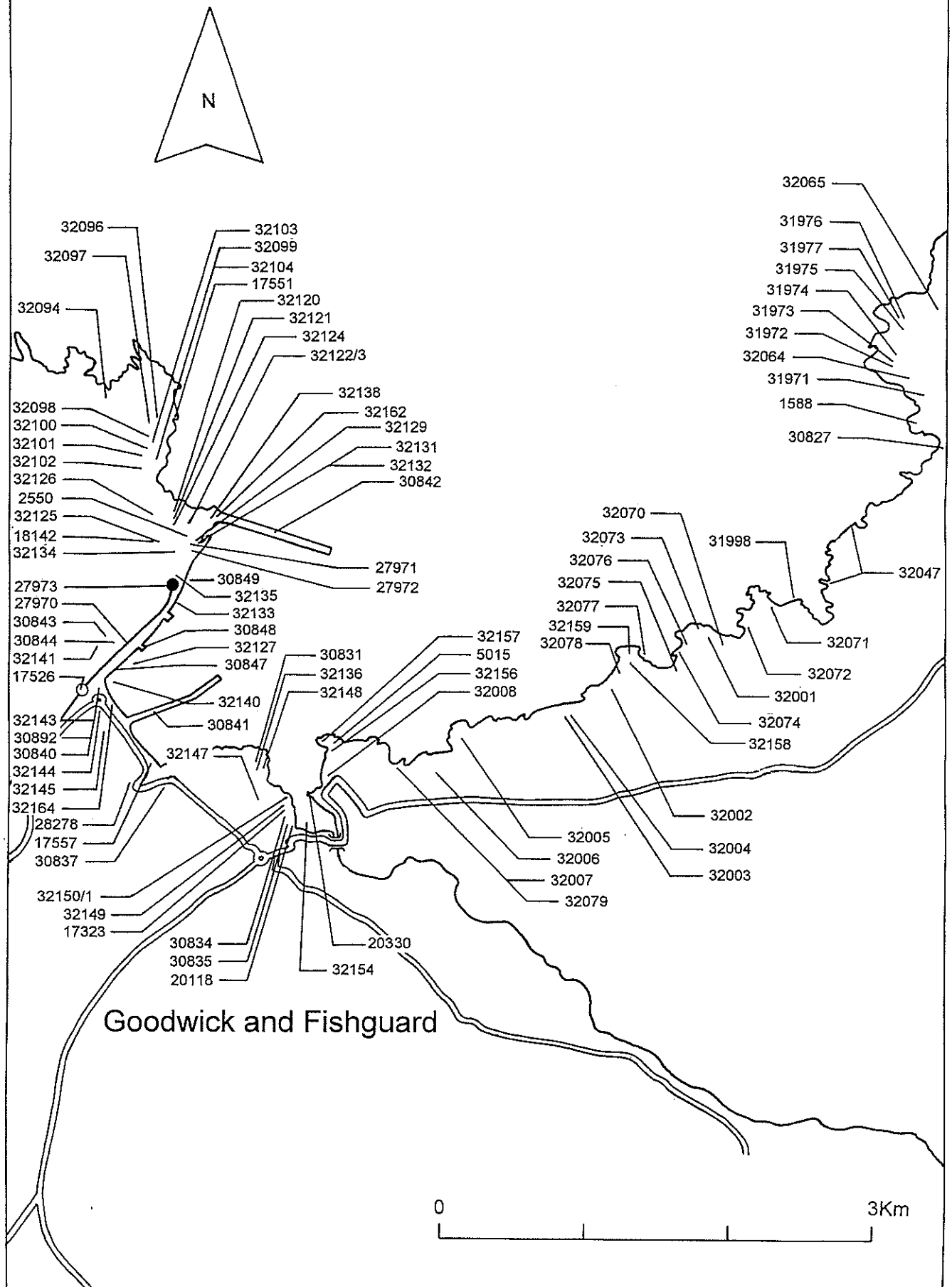
Map 12: New sites (Cont.).

PRN	NGR	Description	Type	Period	Condition	Importance	Management
31975	SN00194066	Foxhole?; Quarry/	Earthwork	Post med?; Modern?	B	2	
31976	SN00200077	Quarry	Earthwork	Post med	B	2	
31977	SN00160077	Quarry	Earthwork	Post med	B	2	
31998	SM99453878	WW2 feature	O Struct	Modern	B	0	
32001	SM98003856	Mound	Earthwork	Unknown	C	1	
32002	SM98183819	Slate quarry	Earthwork	Post med	B	2	
32003	SM97873801	Pond	O Struct	Post med	C	0	
32004	SM97933801	Gun emplacement?	O Struct	Modern	B	2	
32005	SM97083784	Field boundary	Earthwork	Prehistoric	B	2	
32006	SM96983767	Quarry	Earthwork	Post med	B	2	Survey
32007	SM96663763	Roman signal station?	Earthwork	Unknown	C	1	Survey/Assessment
32008	SM96243754	WW2 feature	O Struct	Modern	C	2	
32047	SM997393	Slate quarry	Earthwork	Post med	B	3	Survey
32064	SN00234036	Field boundary	Earthwork	Post med?	B	0	
32065	SN00444083	Field boundary	Earthwork	Post med?	B	0	
32070	SM98893855	Slate quarry	Earthwork	Post med	B	2	General survey
32071	SM99353873	Slate quarry	Earthwork	Post med	B	2	General survey
32072	SM99113862	Slate quarry	Earthwork	Post med	B	2	General survey
32073	SM98733859	Slate quarry	Earthwork	Post med	B	2	General survey
32074	SM98613844	Slate quarry	Earthwork	Post med	B	2	General survey
32075	SM98603831	Slate quarry	Earthwork	Post med	B	2	General survey
32076	SM98673849	Slate quarry	Earthwork	Post med	B	2	General survey
32077	SM98383843	Slate quarry	Earthwork	Post med	B	2	General survey
32078	SM98233830	Slate quarry?	Earthwork	Post med	B	2	General survey
32079	SM96663763	Submarine	Documents	Post med	E	2	General survey
		Telegraph office					
32094	SM94654020	Standing stone?	Monolith	Bronze age?	B	0	
32095	SM950400	Cairnfield	Earthwork	Bronze age	B	3	Survey
32096	SM95044017	Clearance cairn	Earthwork	Bronze age	B	3	Survey
32097	SM94964005	Scoop grave?; Foxhole?	Earthwork	Bronze age?	B	1	Survey
32098	SM94973988	Clearance cairn?; Round barrow?	Earthwork	Bronze age	B	3	Survey
32099	SM94993987	Cairn	Earthwork	Modern?	A	1	Survey
32100	SM94933978	Unknown	Earthwork	Unknown	A	1	Survey
32101	SM94903973	Defence post	O Struct	Modern	B	2	
32102	SM94893965	Cairn	Earthwork	Modern	A	0	

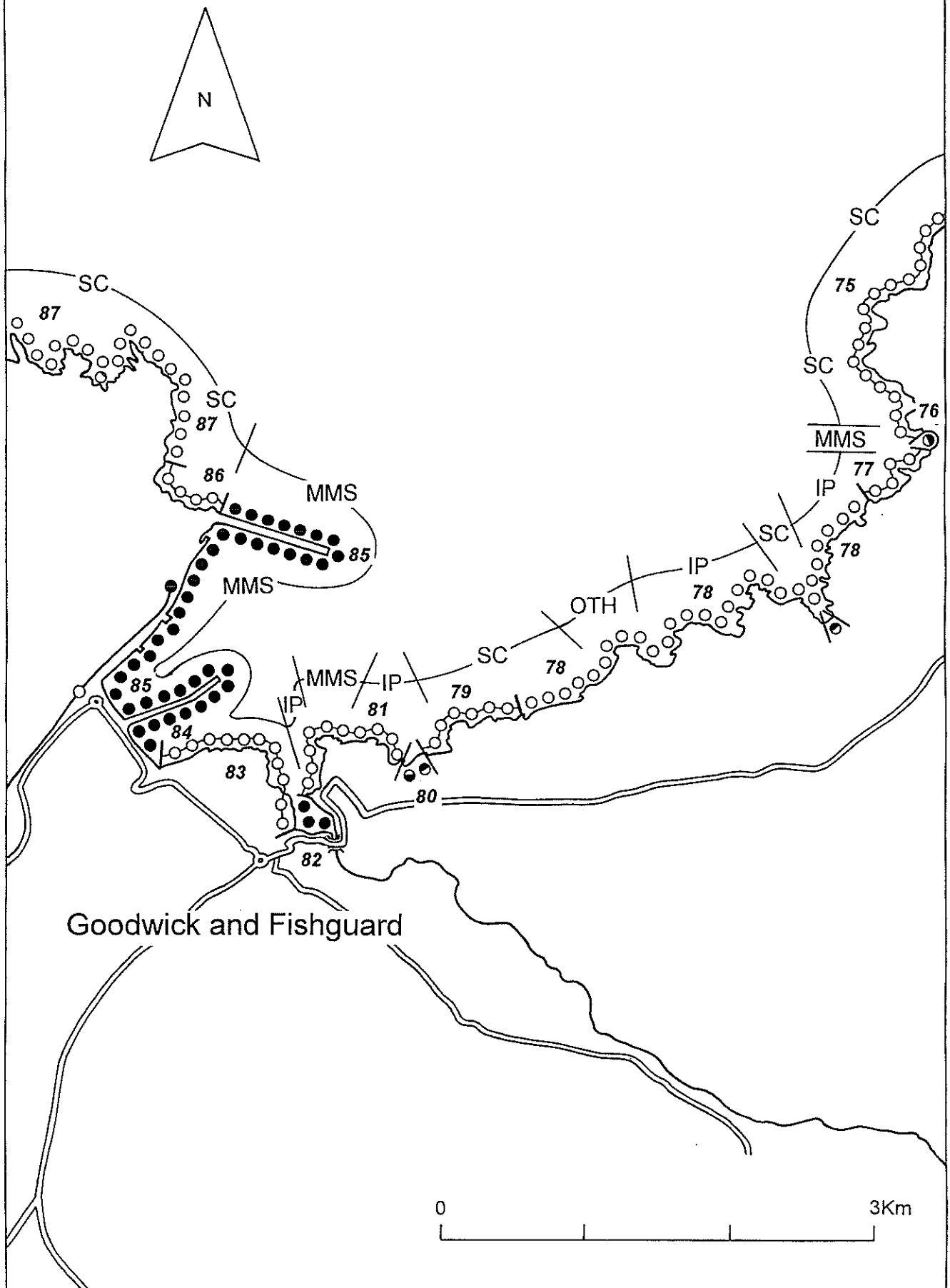
Map 12: New sites (cont.).

PRN	NGR	Description	Type	Period	Condition	Importance	Management
32103	SM95033977	Caim	Earthwork	Modern?	A	1	
32104	SM94993987	Clearance cairn	Earthwork	Bronze age	B	3	Survey
32120	SM91123941	Reservoir	O.Struct	Post med	C	2	Survey
32121	SM91123935	Reservoir	Earthwork	Modern	A	0	
32122	SM91193934	Magazine	Building	Post med	B	2	
32123	SM95223933	Observation post	Building	Post med	D	2	
32124	SM90003929	Pond	Earthwork	Modern	A	0	
32125	SM91053922	Magazine?	Building	Post med	A	2	
32126	SM95023938	Standing stone?	Stone slab	Bronze age?	B	1	
32127	SM94903840	Fish trap?	O.Struct	Post med	C	3	Survey
32129	SM95313917	Lifeboat station	Documents	Post med	E	0	
32131	SM95393923	Flying boat station	O.Struct	Post med	U	3	
32132	SM95393923	Slipway	O.Struct	Post med	C	2	
32133	SM95253900	Quay	O.struct	Modern	R	2	
32134	SM95173913	Unknown	Building	Modern	A	2	
32135	SM95223910	Cattle pens	Documents	Modern	E	0	
32136	SM95733757	Drill hall	Building	Post med	A	2	
32138	SM95403935	Marshalling yard	Documents	Modern	E	0	
32140	SM948382	Goodwick Harbour	Documents	Post med	-	3	
32141	SM94603843	Rocket shed	Building	Post med	E	0	
32143	SM94623812	Coalyard	Documents	Post med	E	0	
32144	SM94633808	Coal & brick yard	Documents	Post med	E	0	
32145	SM94703795	Railway embankment	Earthwork	Post med	C	2	
32147	SM95763743	Pond; Well	O.Struct	Post med	U	2	
32148	SM95763759	Coastguard lookout	O.Struct	Post med	U	2	
32149	SM95933738	Quarry	Earthwork	Post med	C	0	
32150	SM95963746	Landing place?	O.Struct	Post med	R	2	
32151	SM95963746	WW2 feature?	O.Struct	Modern	C	2	
32154	SM96103725	Fishguard Harbour	O.Struct	Med; Post med	C	3	General survey
32156	SM96223779	Searchlight battery?; Artillery battery?	O.Struct	Post med	C	2	
32157	SM96223779	Hillfort?	Earthwork?	Iron age?	C	3	
32158	SM983384	Penrhyn Ychen battery	Complex	Modern	R	3	Survey/Interpret?
32159	SM98253845	Slate quarry	Earthwork	Post med	C	2	General survey
32162	SM94813795	Defence post	O.Struct	Post med	B	2	
32164	SM9438	Military camp	Documents	Modern	E	0	

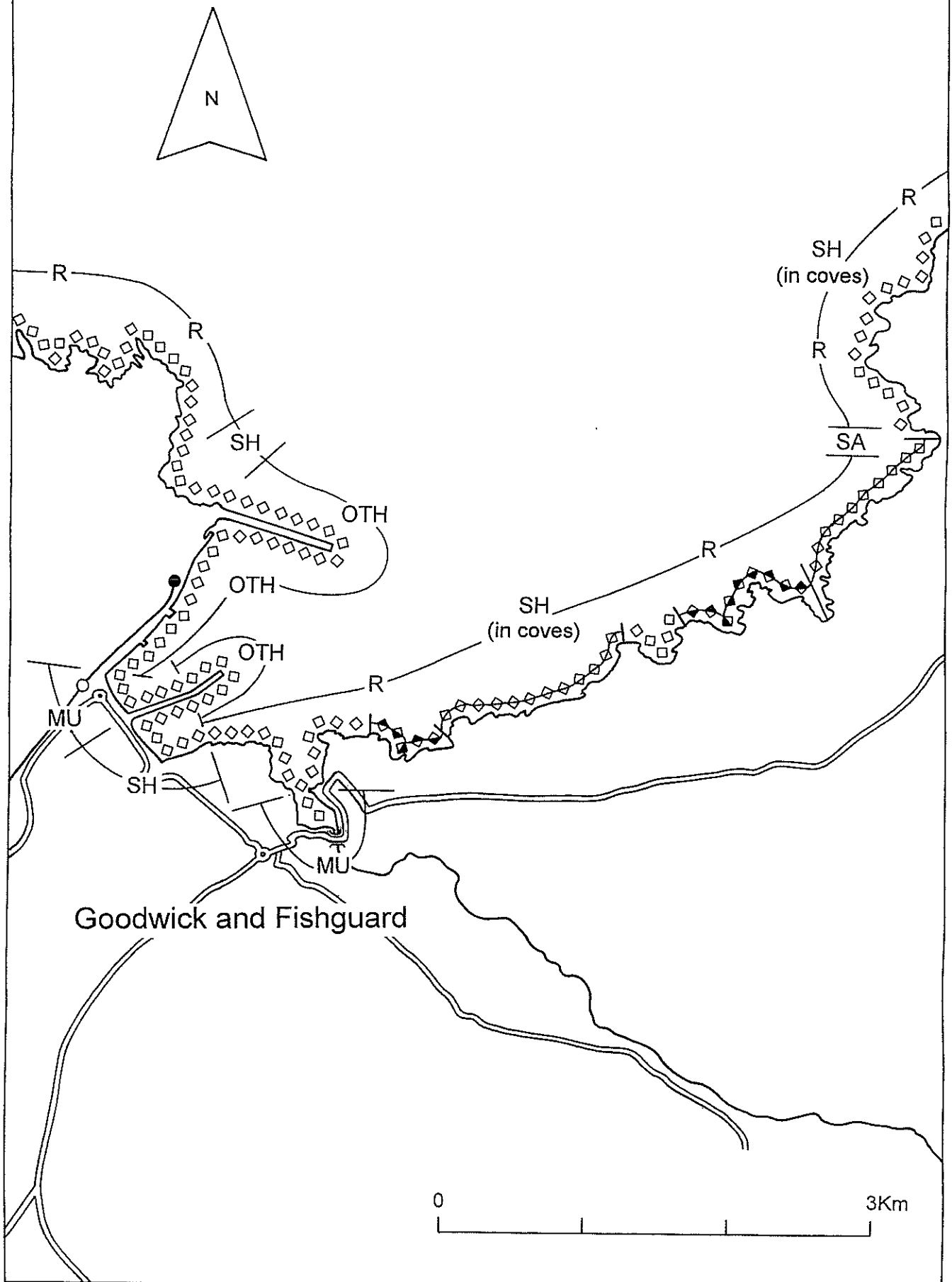
Map 12
Recorded Sites



Map 12
Coast and Land
Edge Types



Map 12
Foreshore and
Erosion Types



8.13 MAP 13:

Penfathach (SM940404)-Strumble Head (SM893412)

8.13.1 Coast type and erosion assessment.

The rocky cliff and foreshore (No. 87) described on Map 12 continues to the large cove at Aber Felin, where it appears to be overlain by a boulder clay cover (No. 88). From here to Strumble Head the coast edge is almost wholly made up of rock cliffs (Nos. 89, 91 & 93) apart from two small sections at the coves of Porth-sychan and Pwlluog where boulder clay capping is evident above the rock (Nos. 90 & 92). The cliffs are generally fronted by fairly narrow wave cut platforms, with occasional shingle accumulations, as at Pwlluog. The whole of this section is stable, with only minor, localised erosion.

Both improved and unimproved pasture form the coast edge, though post mediaeval field boundaries indicate past attempts at bringing most of the unimproved land into cultivation or grazing.

8.13.2 Archaeology.

Much of the Pencoed peninsula (Strumble Head) is included in Cadw's Register of Historic Landscapes, having been recognised for its important relict landscapes and superb range of individual prehistoric field monuments and settlements (Cadw, 1995). However, few archaeological sites were previously known along the coastal strip and few have been added by this survey.

Previously recorded sites included a number of sites associated with dark age ecclesiastical activity; including a documented mediaeval chapel site near Carreg Gybi (PRN 2612; the site of another dedicated to St. Degan at Pen Capel Degan (PRN 10101) and a third on the small islet of Ynys Meicel (PRN 13345), where earthwork traces of a possible monastic site survive and on which the Strumble Head lighthouse now stands (PRN 24467). A lime kiln, located in the small cove at Aber Felin (PRN 17502), testifies to former coastal trade even along this rocky and remote coastline, whilst at nearby Carreg-wastad Point a stone memorial (PRN 17505) marks this as the famed landing place of the French forces during the invasion of 1797.

Newly recorded sites are generally of only local importance, but two bronze age standing stones were recorded for the first time (PRN 32090 & 32091).

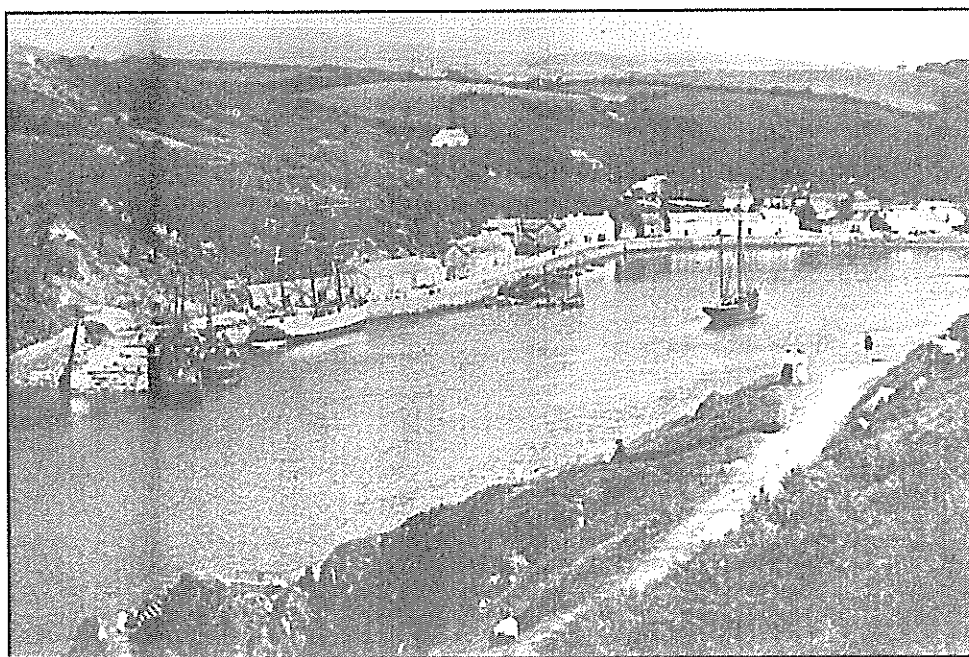


Fig.17; An early 20th century view of the harbour at Lower Town, Fishguard.

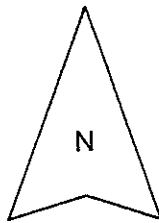
TABLE 13 - Map 13.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
2612	SM90894084	Chapel	Documents	Dark age?/Med	D	3	Monitor/Survey
4644	SM899413	Round barrow?	Place name	Bronze age?	-	1	
5004	SM92753995	<i>Caer</i>	Place name	Unknown	-	1	
5039	SM920406	Standing stone	Place name	Bronze age	-	1	
10101	SM903413	Celtic dedication, <i>St Degam</i>	Documents	Dark age?	-	3	Monitor/Survey
13345	SM89254121	Ynys Meicel	Earthwork	Dark age?;Med?;	B	3	Monitor/Survey
		Church?;Settlement?		Post med?			
17502	SM90554070	Limekiln, Aber Felin	O.Struct	Post med	C	3	Survey
17505	SM92624042	Carreg Wastad Monument	O.Struct	Post med	A	1	
17508	SM925402	Mill?	Place name	Post med	-	1	
24467	SM89244128	Strumble Head Lighthouse	Building	Post med	A	3	

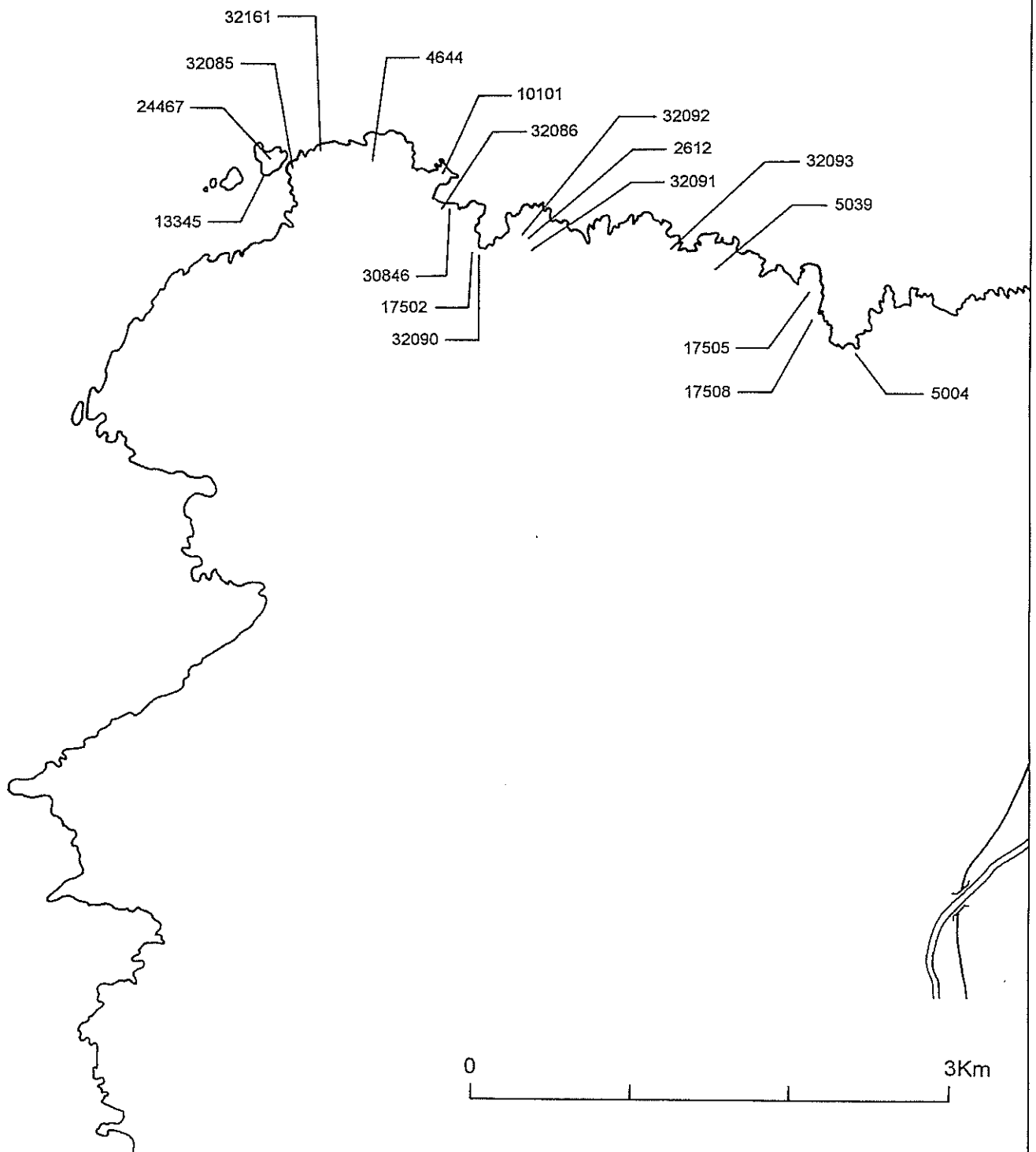
Map 13.

PRN	NGR	Description	Type	Period	Condition	Importance	Management
32085	SM89384123	WW2 features	O.Struct	Modern	C	0	
32086	SM90264098	Quarry	Earthwork	Post med	C	2	
32090	SM90534065	Standing stone	Monolith	Bronze age	B	3	Survey
32091	SM90884072	Standing stone	Monolith	Bronze age	B	3	Survey
32092	SM90844079	Scoop grave?;	Earthwork	Bronze age?;Modern?	C	1	
		Foxhole?					
32093	SM91774073	Dwelling	Building	Post med	D	2	
32161	SM89574132	Radar station?	Building	Modern	A	2	

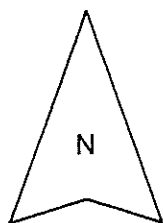
Map 13
Recorded Sites



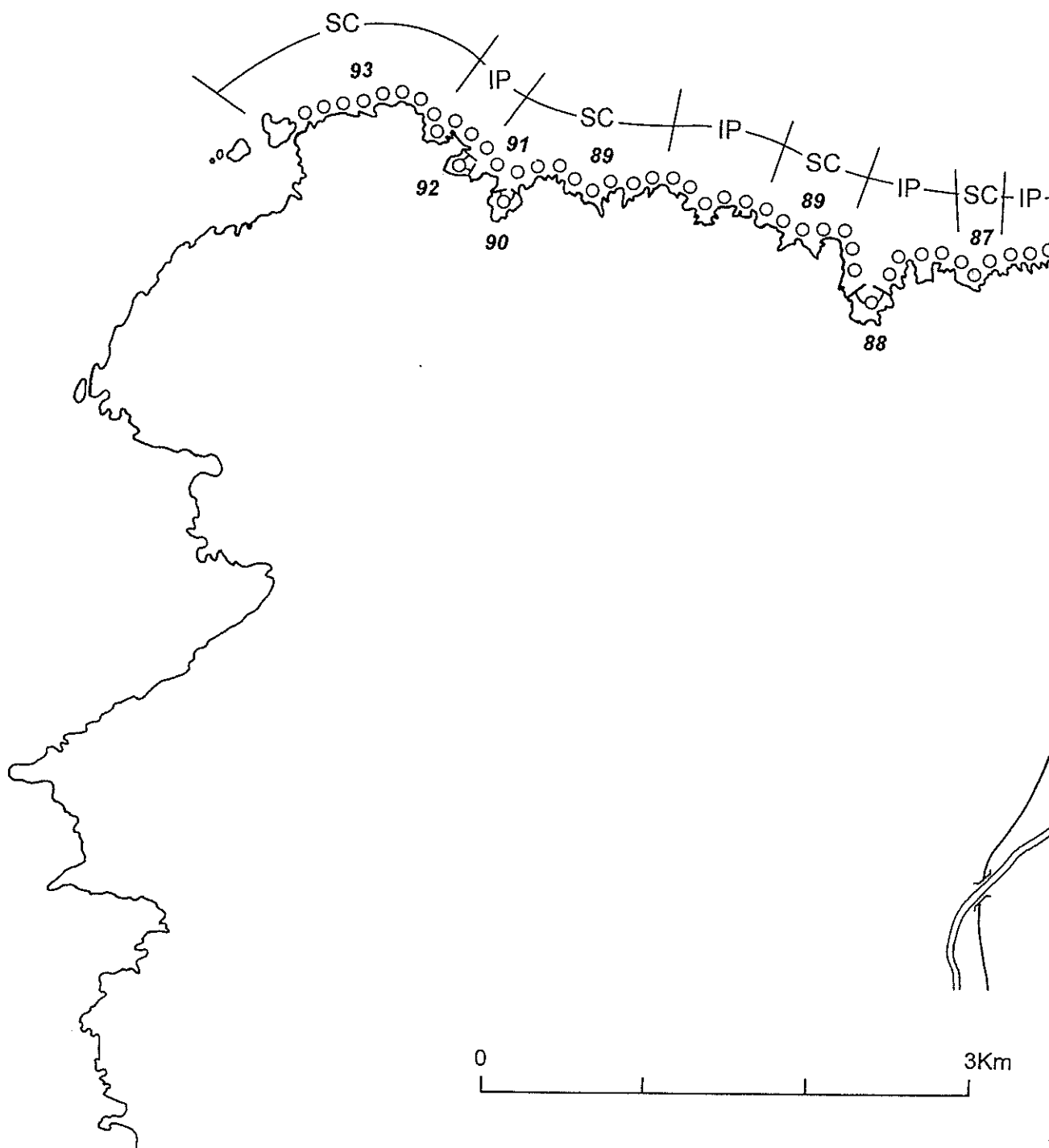
Strumble Head



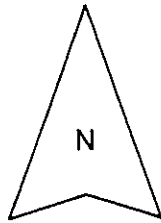
Map 13
Coast and Land
Edge Types



Strumble Head



Map 13
Foreshore and
Erosion Types



Strumble Head

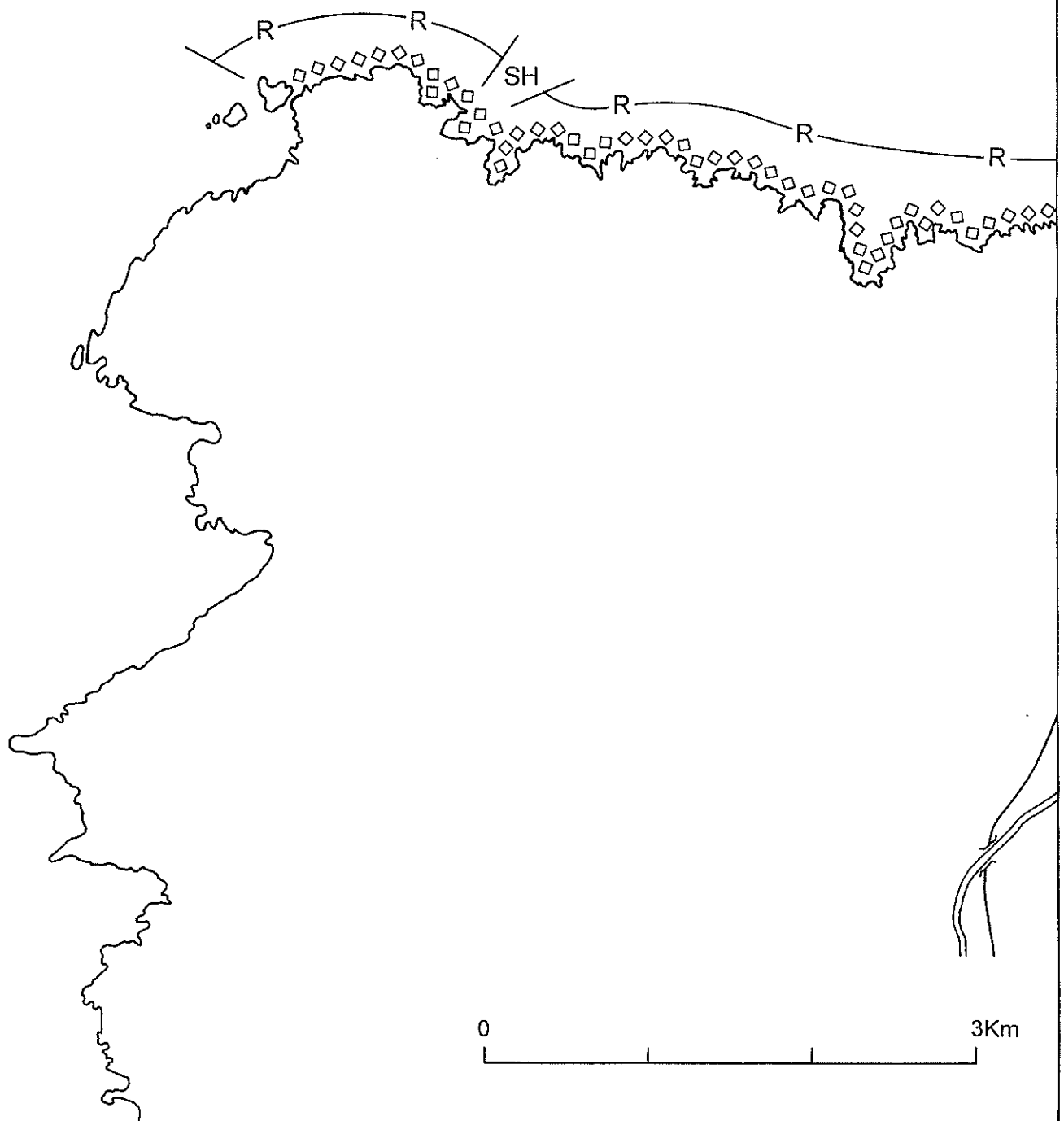


TABLE 14 - Features recorded at ports and harbours
(not shown on maps or listed in relevant tables).

Aberaeron

PRN	NGR	Description	Type	Period	Condition	Importance
32536	SN456629	Harbour building	Building	Post med	R	3
32537	SN457629	Slipway	O.Struct	Post med	B	3
32538	SN456629	Quay	O.Struct	Post med	B	3
32539	SN454630	Pier	O.Struct	Post med	B	3

Aberystwyth

PRN	NGR	Description	Type	Period	Condition	Importance
✓32544	SN579807	Pier	O.Struct	Post med	B	3
32545	SN579808	Jetty	O.Struct	Post med	B	3
32546	SN579807	Pillbox	Building	Post med	B	3
32548	SN580809	St. David's Wharf	O.Struct	Post med	B	3
32549	SN582811	Limekiln	O.Struct	Post med	C	3
32550	SN582813	Warehouse	Building	Post med	B	3
32552	SN580812	Quay	O.Struct	Post med	B	3
32553	SN580111	Fish warehouse?	Building	Post med	B	3

Cwm Tudu

PRN	NGR	Description	Type	Period	Condition	Importance
32036	SN3545	Shipyards	Documents	Post med	U	3

Fishguard Lower Town

PRN	NGR	Description	Type	Period	Condition	Importance
32128	SM962371	Warehouse	Building	Post med	R	3
32137	SM962371	Bridge	O.Struct	Post med	R	3

Fishguard (Goodwick)

PRN	NGR	Description	Type	Period	Condition	Importance
32139	SM948382	Shipyards	Documents	Post med	U	3
32146	SM945377	Bog	Landform	General	B	4

Llangrannog

PRN	NGR	Description	Type	Period	Condition	Importance
32520	SN310542	Shipyards	Documents	Post med	U	3
32521	SN310542	Coalyard	Documents	Post med	U	3
32522	SN310542	Coalyard	Documents	Post med	U	3
32523	SN310542	Warehouse	Documents	Post med	E?	3

New Quay

PRN	NGR	Description	Type	Period	Condition	Importance
32532	SN389600	Harbour offices	Building	Post med	R	3
32533	SN389600	Tramway	Linear feature	Post med	D	2

Newport

PRN	NGR	Description	Type	Period	Condition	Importance
32053	SN0539	Shipyards	Documents	Post med	U	3
32054	SN0539	Quay	Documents	Post med	E	3
32055	SN0339	Warehouse	Documents	Post med	E	3
32056	SN0539	Coalyard	Documents	Post med	U	3
32059	SN0539	Life saving apparatus shed	Building	Post med	R	3
32062	SN0539	Ship repair yard	Documents	Post med	U	3

TABLE 15 - Details of coastal types identified on gazetteer maps.

Number	Length	Coast edge type	Land edge type	Erosion grade	Foreshore type
1	1.62	Drift; Blown Sand	OTH	Slight	SA
2	2.72	Other	OTH;GC;MMS	Stable	SA
3	1.72	Man made	MMS	Stable	SA
4	3.52	Drift; Boulder clay	SC;IP	Slight	R;MIX
5	1.6	Mainly rock	SC;IP	Medium	SH;R
6	0.9	Drift; Boulder clay	MMS	Stable	SH;SA
7	0.92	Rock & drift	OTH;SC	Stable	R
8	2.12	Man made	MMS	Stable	SH;R;OTH;MU
9	1.13	Man made	MMS	Stable	SH
10	1.82	Rock & drift	CO;SC	Slight	R
11	1.6	Rock & drift	IP;OTH	Medium	SH
12	2.42	Rock & drift	IP	Medium	SH;R
13	4.9	Rock & drift	SC;IP	Stable;Slight	R;SH
14	5.64	Drift; Boulder clay	IP;OTH	Medium;Slight	SH;SA
15	2.08	Mainly rock	IP	Stable;Major	R;SH
16a	0.2	MMS	MMS	Stable	SH
16	2.23	Drift; Boulder clay	IP;OTH	Major;Slight	SH
17	0.47	MMS	MMS	Stable	SH;MU
18	0.82	Drift; Boulder clay	IP;SC	Stable;Slight	SH;R
19	0.72	Rock	SC	Stable	R;SH
20	1.05	Drift; Boulder clay	SC;IP	Medium	SH
21	1.11	Rock	SC;IP	Stable;Slight	R;SH
22	1.65	Drift; Boulder clay	SC	Medium	R;SA
23	0.22	MMS	IP	Medium	SA

Number	Length	Coast edge type	Land edge type	Erosion grade	Foreshore type
24	0.52	Drift; Boulder clay	CO;IP	Medium;severe	SH
25	0.15	Man made	IP	Severe	MIX
26	0.92	Drift; Boulder clay	IP	Medium	MIX
27	0.67	Drift; Boulder clay	CO;OTH	Medium;stable	MIX;SA
28	0.4	Man made	MMS	Stable	SA;SH
29	2.16	Rock & drift	MMS;SC	Slight;stable	R;SH
30	0.17	Drift; Boulder clay	IP	Major	R
31	1.8	Rock & drift	IP;SC	Medium;stable	R;SH
32	0.7	Drift; Boulder clay	IP;SC	Major	SH;R
33	1.02	Rock & drift	IP;SC	Medium;slight	SH;R
34	0.12	Man made	MMS	Stable	R
35	7.53	Rock & drift	SC;IP	Stable;medium	R
36	0.33	Drift; Boulder clay	MMS	Medium	SA
37	4.51	Rock & drift	SC;IP	Medium;slight; stable	R;SA;SH;MIX
38	0.24	Man made	OTH	Stable	SA
39	1.86	Mainly rock	IP;CO	Stable	SH;SA;R
40	0.4	Man made	MMS	Stable	SA
41	5.26	Mainly rock	SC;IP;CO	Stable	R;SH;SA
42	3.33	Mainly rock	IP;SC	Stable	R
43	0.1	Rock & drift	SC	Medium	R
44	0.33	Drift; Boulder clay	SC	Medium	SA
45	0.5	Rock & drift	SC	Slight	R
46	2.59	Rock & drift	IP;SC	Slight	R
47	3.71	Mainly rock	SC;IP	Stable;slight; severe	R;SA

Number	Length	Coast edge type	Land edge type	Erosion grade	Foreshore type
48	0.65	Man made	SC;OTH	Stable	SH
49	0.44	Drift; Blown sand	OTH	Stable	SH;SA
50	0.82	Man made	MMS	Stable	SA;SH
51	2.38	Rock & drift	IP;CO	Stable;Slight	OTH;MU
52	1.06	Man made	MMS	Stable	MU
53	0.54	Rock & drift	MMS;IP	Stable	MU
54	0.55	Drift; Boulder clay	IP;MMS	Stable	MU
55	0.64	Rock & drift	IP;MMS	Stable	MU
56	0.67	Man made	MMS;IP	Stable	MU;R
57	0.4	Rock & drift	IP	Stable	R
58	0.31	Man made	SC	Stable	OTH
59	1.03	Other	SC;MMS;OTH	Stable	OTH;SA
60	0.75	Drift; Blown sand	OTH	Stable	SA
61	9.24	Rock & drift	IP;SC	Stable;Slight; Medium	R;SH
62	0.22	Rock & drift	IP;SC	Slight	SH
63	10.95	Rock & drift	IP;SC	Slight;Medium	R;SH
64	0.3	Man made	GC	Stable	SA
65	0.68	Drift; Blown sand	OTH	Stable	SA
66	0.91	Rock & drift	GC;IP	Stable	SA;MU
67	1.32	Other	MMS;IP;OTH;SC	Stable	MU
68	0.51	Man made	MMS	Stable	SH
69	2.22	Mainly rock	MMS;IP	Medium	R
70	0.1	Drift; Boulder clay	CO	Medium	SH

Number	Length	Coast edge type	Land edge type	Erosion grade	Foreshore type
71	1.09	Mainly rock	IP;SC	Medium	SH;R
72	0.11	Drift; Boulder clay	SC	Medium	SH
73	1.42	Rock; Rock & drift	CO;IP	Medium	SH;R
74	0.1	Man made	MMS	Stable	SH
75	4.85	Rock & drift	IP;SC	Medium;stable	R;SH
76	0.23	Drift; Boulder clay	MMS	Stable;slight	SA
77	0.82	Rock & drift	IP	Slight	R
78	5.02	Mainly rock	IP;SC;OTH	Stable;slight; medium	R;SH
79	1.02	Rock & drift	SC;IP	Slight	R;SH
80	0.18	Drift; Boulder clay	IP	Medium	R;SH
81	1.34	Rock & drift	IP;MMS	Stable;Medium	R
82	0.66	Man made	MMS	Stable	MU
83	1.4	Rock & drift	SC;MMS	Stable	R;SH
84	0.34	Man made	MMS	Stable	SH
85	1.84	Man made	MMS	Stable	MU;OTH
86	0.79	Rock & drift	SC	Stable	SH
87	4.89	Mainly rock	SC;IP	Stable	R
88	0.63	Rock & drift	IP	Stable	R
89	3.79	Mainly rock	IP;SC	Stable	R
90	0.49	Rock & drift	SC	Stable	R
91	0.33	Mainly rock	SC	Stable	R
92	0.39	Rock & drift	IP	Stable	SH
93	1.6	Mainly rock	SC;IP	Stable	R

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