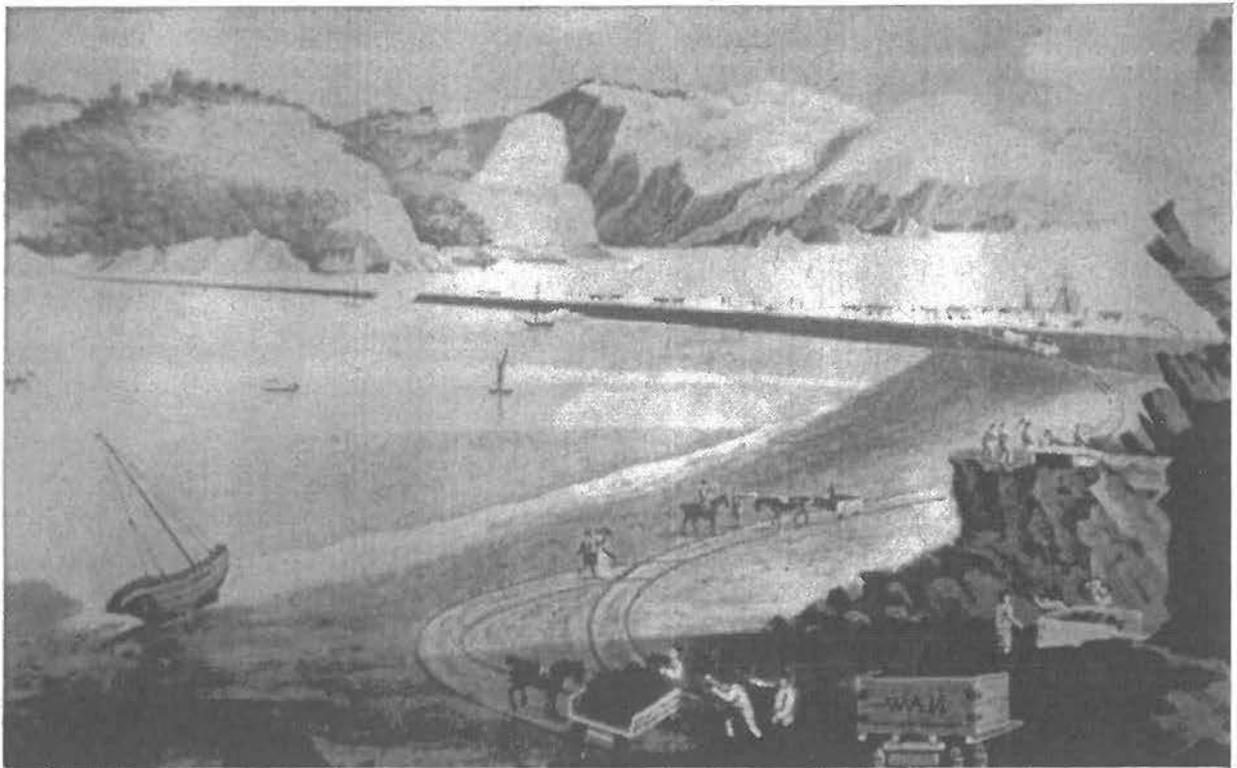


COASTAL EROSION SURVEY

Aberdaron to Aberdyfi (A1315)

1995-6



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Report 198

COASTAL EROSION SURVEY

Aberdaron to Aberdyfi

Prepared for Cadw: Welsh Historic Monuments

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"`The stonework,' said Teithrin, `is sapped and ruined: the piles are rotten, broken and dislocated: the floodgates and the sluices are leaky and creaky.'

`That is the beauty of it,' said Seithenyn. `Some parts of it are rotten, and some parts of it are sound.'

`It is well,' said Elphin, `that some parts are sound: it were better that all were so.'"

Thomas Love Peacock, *The Misfortunes of Elphin*

Bu dy gychod a'th hwyl-longau'n
Cerdded ar hyd llwybrau'r lli,
Ac yn llwythog tan eu byrddau
Farsiandiaeth Calfari

Gwenallt

Front cover: H.W. Billington's engraving of the construction of the Traeth Mawr Cob as it appeared in the autumn of 1810, drawn from Ynys y Tywyn and looking directly south. Fragments of the railway depicted here were unearthed at Porthmadog as part of the survey.

Two Contrasting Sections of the Llyn Coastline



Plate 1. Trwyn-y-Penrhyn - Precipitous rocky cliffs define the extent of agricultural activity.



Plate 2. Borth Fawr And Abersoch - Gabions and boulders protect the sand dunes that face onto a wide, sandy foreshore. Behind the dunes is a golf course.

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Standard abbreviations

- AWCR: Aberystwyth and Welch Coast Railway
BJC: Breese Jones Casson collection, CRO and DRO
CM/MW: Cymru a'r Môr/ Maritime Wales
CCW: Countryside Council for Wales
CR: Cambrian Railways
CRO: Caernarfon Record Office
DRO: Dolgellau record Office
GAT: Gwynedd Archaeological Trust
JMHRS: Cylchgrawn Cymdeithas Hanes a Chofnodion Sir Feirionnydd/ Journal of the Merioneth Historical and Record Society
MCMP 1990-1993: Merionnydd Coastal Management Plan 1990-1993
MCMS 1993: Meirionnydd Coastal Management Study 1993
RCAHM(W): Royal Commission on Ancient and Historic Monuments (Wales)
SMP: Shoreline Management Plans: a guide for coastal defence authorities
TCHS: Transactions of the Caernarvonshire Historical Society
UWB: University of Wales, Bangor

1 INTRODUCTION

This survey of the impact of coastal erosion on the archaeology of the coastline of the present (February 1996) county of Gwynedd has been funded by Cadw: Welsh Historic Monuments. It continues the survey carried out by Smith in 1993, which considered the coastline of Gwynedd from the Great Orme's head to Porth Cloch, near Aberdaron, a distance of 139km. The present survey considers the coastline from Porth Cloch to the railway bridge over the Afon Dyfi, a distance of 170km. The total coastline of Gwynedd, including the 200 km of Anglesey, but excluding estuaries above the first bridge and islands, is 509km. Therefore, whereas the 1993 survey considered 33% of the entire coastline, the present survey brings the total up to 60%

2 OBJECTIVES

This report contains the results of a Cadw funded project which was to carry out a desk- and field-study of the coastline of Gwynedd from Porth Cloch in Aberdaron Bay on Penllŷn to the railway bridge over the Afon Dyfi at Pennal

- a. To assess and map the scale of erosion
- b. To identify the effects of past and future erosion
- c. To record the condition of known archaeological sites and features
- d. To identify new sites
- e. To provide an environmental assessment of the coastline
- f. To suggest management strategies for particular archaeological sites and areas of potential.

3 SUMMARY

Much of the coastline was shown to be either stable or suffering only slight erosion, being composed of resistant rock or with man-made protection. Serious erosion of immediate significance was confined to quite small areas. However, some of the coast is low-lying, composed of soft glacial sediments and subject to the prevailing currents; here documentary evidence shows that there has been slow continuous retreat of the land-edge.

A considerable number of new archaeological features were recorded, mainly post-Medieval. The project identified a number of areas for future work, which are discussed in **11 Conclusions** and **12 Recommendations**, and in the case studies.

4 RESEARCH DESIGN

The area of study was defined as including not just the coast edge itself but in addition part of the dry land edge, taken as a strip 150m wide (from the coast edge) and the intertidal zone (fore-shore). As with the previous survey (Smith 1993, Gwynedd Archaeological Trust **Coastal Erosion Survey Aberdaron Bay to Great Orme (Report 79)** (GAT project 39) the coastline was defined as including tidal inlets as far as the first bridge across them. For this reason, no attempt was made to survey the Dwyryd above Pont Briwat, nor the Mawddach above Barmouth bridge.

It is intended that this study should continue the work initiated by Smith in 1993, and as such will, it is hoped, contribute to the process of resource planning and development control,

especially in view of both the anticipated rise in sea-levels and expansion in amenity use of the coast. With this in mind, it was designed as a rapid study of an extensive piece of landscape (170km), and it was not intended to produce detailed surveys of individual sites. The work involved identifying and recording earthworks, structures or artifacts within the coastal edge strip or eroding from soil exposures, recording the types of coast edge, foreshore or land edge use, quantifying erosion and assessing the condition of previously recorded features.

The archive of survey records will be retained by GAT.

5 METHODOLOGY

The desk-top study was carried out from September 1995 in the Sites and Monuments Record of the GAT, the National Monuments Record of the RCAHM(W), the offices of the Gwynedd Archives Service at Caernarfon and Dolgellau, and in the library and Department of Manuscripts of UWB.

The coast was flown, at low tide, on two occasions; from Porthmadog to Bardsey on 15 May 1995 from 3 pm for an hour and a half, and the Meirionnydd coastline on 21 November 1995 from 1:45 pm for an hour and a half, in a Cessna 172. Black and white photographs were taken with a Canon T90 50mm fixed lens using TMax 100 film. Colour slides were taken with a Pentax MS using a telephoto lens, and using Fuji Sensia 200 colour slide film.

A number of organisations were consulted in the course of the study. These included the Countryside Council for Wales, Dwyfor Borough Council, Snowdonia National Park and the University of Wales, Bangor. The Welsh Office agreed to send a copy of their own Coastal Survey, but this was not received. Copies of the final report will be sent to the relevant local authorities.

The field-work was carried out between October 1995 and January 1996 by two members of the Trust staff. Wherever possible and necessary, the field-walking was accomplished by one of the team walking on the cliff-top and the other walking as near the coast edge as possible. West of Pwllheli the coastline was for the most part walked in both directions. Between Pwllheli and Pennal the coastline was generally walked only in one direction, and the return journey was made by train to the starting point.

Features, coast types and erosion classes were noted directly onto 1:10,000 maps, enlarged up to 1:5,000 in particular cases and entered onto separate databases on return to the office.

The records use three descriptive types: *coast edge*, *land edge* and *foreshore*. *Coast edge type* describes the actual interface between the land and the tidal zone. The *land edge type* describes the land-use of the land immediately adjoining the coast edge. The *foreshore type* describes the intertidal area up to highest storm tide height at the coast edge.

Coast Edge Type This includes 12 categories:

- 1 Man-made wall
- 2 " " bank
- 3 " " mixed rubble dump
- 4 " " boulder dump
- 5 " " other
- 6 Mainly rock
- 7 Rock with drift cover
- 8 Rock to tide line with drift cover
- 9 Drift, boulder clay
- 10 Drift, sand/blown sand
- 11 Alluvial/marine mud
- 12 Other

The man-made types were merged into one category on the accompanying maps (below). Not all man-made coast edges were designed specifically for coastal protection - for instance, railway embankments - but since these have had to be maintained, as the Dyfi Junction to Pwllheli branch line is still in use for passenger traffic, erosion is thereby controlled.

Apart from man-made coast edges, the main distinction observed in the present report is between 'hard', *i.e.* made up of rock, and 'soft' coasts, *i.e.* made up of glacial or alluvial material.

Land Edge Type relates to land-use rather than physical type, ordered in terms of the extent of human interference.

- 1 Man-made structures
- 2 Arable
- 3 Improved pasture
- 4 Scrub/heath/rough pasture
- 5 Coppice/woodland
- 6 Other

Man-made structures can be any kind of building, road or structure. Arable use is infrequent and spasmodic and for the area investigated pasture is the most common land-use by far.

Foreshore Type This was recorded because it gives some clues as to the state of erosion - for instance, a mud foreshore shows a lack of erosion. It also shows the effect of post-glacial rising sea-levels. A steep rocky coast will change little as sea-level rises while a very shallow foreshore will change considerably. The following are the types used:

- 1 Rock
- 2 Boulder
- 3 Shingle
- 4 Sand
- 5 Mud
- 6 Marsh
- 7 Mixed
- 8 Other

Erosion class depended on a visual assessment of the condition of the coast edge, and is therefore not a strict quantification. The survey looked for immediately evident signs of erosion such as soil exposures, slumps, the presence and type of covering vegetation and the condition of land-edge field boundaries.

The following are the classes used:

- | | | | |
|---|--------|---|---|
| 1 | Stable | - | No erosion, accretion or man-made protection. |
| 2 | Slight | - | Some soil exposure but well vegetated and post-medieval boundaries largely intact. |
| 3 | Medium | - | Widespread soil exposure, intermittent slumping. Post-medieval boundaries largely gone. |
| 4 | Major | - | General soil exposure, frequent slumping, little vegetation, no post-medieval boundaries. |
| 5 | Severe | - | Widespread slumping, no vegetation, recent boundaries undercut. |

For the purpose of the database, sites were assigned to the categories *Prehistoric*, *Roman*, *Early Medieval*, *Medieval*, *Post-Medieval* and *Modern*. The distinction between *Post-Medieval* and *Modern* is preserved in order to mark features related to the industrialisation of the area from the end of the eighteenth century.

Erosion classification as allocated to sites is not a simple reflection of erosion classification as applied to the coastline; for instance, a feature or site inland of a stretch of eroding coast will have been allocated a lower erosion category than the adjacent coast if it is better protected.

6 DESCRIPTION OF SURVEY AREA

The total coastline of Wales is 1,600km long, of which the coastline of the part of Cardigan Bay that falls within the present (January 1996) county of Gwynedd measures 170km, measured from Porth Cloch. It is made up of a variety of different landscapes. Much of the Penllŷn coastline (that is, from the tip of the peninsula as far as Abererch) is made up of cliffs from Aberdaron as far east as Abersoch, though an important exception is the wide bay known as Porth Neigwl (in English, "Hell's Mouth" because of the threat it offered coastal vessels in the days of sail). Thereafter, and through Eifionydd, the pattern is of a gently undulating pastureland reaching to the coast-edge, interspersed with occasional outcrops of resistant igneous rock, as at Mynydd Tir Cwmwd, Criccieth, Graig Ddu and Ynys y Cyngar.

The pattern changes at Traeth Mawr/Traeth Bach, in the crook of Cardigan Bay, where the towns of Porthmadog and Penrhyndeudraeth now stand. The extensive inlet of Traeth Mawr was enclosed in the early nineteenth century, but Traeth Bach remains a tidal estuary as far inland as Maentwrog, though bridged near Talsarnau. The Mawddach and, at the southern limit of the survey, the Dyfi estuaries follow a similar pattern of tidal waters in steep-sided valleys, but the coastline of Meirionnydd differs from that of Llŷn and Eifionydd in that although the region as a whole is more mountainous, in many areas a broad coastal plateau extends from the foot of the mountains to the coast-edge. Only between Fairbourne and Tonfanau do the mountains drop sharply to the sea, though at Foel Llanfendigaid and at Aberdyfi this pattern is also marked to some extent.

Few features give precise indications of erosion. Coastal defences, such as pillboxes, often provide the best markers in that they mark the land-edge in 1940. Field boundaries can often be traced on tithe maps or estate plans, though these are rarely sufficiently accurate to allow close studies of erosion.

The type of erosion that this study has sought to identify is the erosion of a coastline by the action of waves and tide, not the longer term geological erosion or accretion of the coast consequent upon wind-direction, currents, geology, changes in sea-level and climatic changes. Some dramatic changes can take place even on a generally stable coast - as for example, the sudden shift of the Dwyryd to the north of Ynys Giffan on Christmas Eve 1816 (Lewis 1989 61) - and management of endangered archaeology should take these into account.

There are other erosion factors which particularly affect the coast. Sand erosion was noted at one point, near Llandanwg. Visitor and animal trampling tends to be more intense than inland. Much of the coast of Cardigan Bay has attracted the attention of developers, particularly in Eifionydd and Meirionnydd.

7 GEOLOGY

The region of the survey is essentially a region of Lower Palaeozoic rocks, displaying a sequence of Cambrian and Ordovician strata. Pre-Cambrian strata are evident in the region of Aberdaron (and Ynys Enlli is made up entirely of a mélange of fragments within a green schistose matrix from this sequence) but none underlies the coastline.

Rocks of Ordovician age underlie Porth Neigwl and are apparent to the east of Trwyn Pen Cilan (Smith and George, 1961, 26) and thereafter as far east as Criccieth. This section of the coastline forms a series of arcs made up of bays backed by shingle and sand dunes; the eastern extremities of these bays are marked by outcrops of igneous rock - granite-porphyrty at Llanbedrog, kertophyre at Carreg y Defaid, felsites at Pen Ychain, rhyolites at Criccieth Castle, dolerites at Carreg yr Imbill, Graig Ddu and Ynys Cyngar. A contemporaneous igneous rock is apparent at Llanbedrog.

The remainder of the coast as far as Tywyn forms part of the Cambrian system. The Ffestiniog

Beds become apparent at this point. The Harlech Dome formation dominates the geology of the area between Traeth Bach and Barmouth. Talsarnau is underlain by the Ffestiniog and Maentwrog Beds and by the Clogau shales, and south of Harlech as far as Barmouth the prevailing geology is Llanbedr slates, 700' thick near Llanbedr itself. At Barmouth Rhinog grits and Manganese shales are evident.

Only near Dyfi Junction does the Silurian system appear, in the Valentia series (Smith and George, 1961, 45).

8 DESIGNATED AREAS AND SITES

Gwynedd has a very high concentration of Designated Areas, many of which come into the area surveyed. These fall into the following categories:

a. Special Protection Areas

These are submitted by the Countryside Council for Wales and designated by the Secretary of State under the European Directive on the Conservation of Wild Birds. One such area fall within the length of coastline surveyed:

Glannau Aberdaron and Ynys Enlli, designated in 1992, covering 513 hectares.

b. National Nature Reserves in Wales

These are declared by the Countryside Council for Wales under the Wildlife and Countryside Act of 1981 for the purpose of conserving flora, fauna, geological or physiographical features deemed to be of national importance or providing opportunities for their study. Two such areas fall within the length of coastline surveyed:

Morfa Dyffryn (SH550250), covering 202.31 hectares

Morfa Harlech (SH560350), covering 883.86 hectares

c. European Habitats Directive (2ième Tranche)

One site within the length of coastline surveyed is a candidate for designation as a Special Area of Conservation:

Penllŷn a'r Sarnau/Lleyn Peninsula and the Sarnau

d. Sites of Special Scientific Interest

Thirteen Sites of Special Scientific Interest either fall within the length of coastline surveyed or in the immediate hinterland:

Glannau Aberdaron (SH167263), covering 358 hectares

Porth Neigwl (SH270273), covering 142 hectares

Porth Ceiriad (SH290252), covering 205.5 hectares

Cors Llyferin (SH311271), covering 31.4 hectares

Criccieth Coastal Section (SH507381), covering 4.7 hectares

Glanllynnau (SH459373), covering 42 hectares

Morfa Bychan (SH542365), covering 346.3

Morfa Harlech (SH560350), covering 1536 hectares

Morfa Dyffryn (SH550250), covering 506 hectares

Broadwater (SH582027), covering 263 hectares

Dyfi (SH635950), covering 2804.4 hectares

Craig y Don (SH611960), covering 0.2 hectares

Coed y Gofer (SH640967), covering 25.4 hectares

e. Areas of Outstanding Natural Beauty

The coastline of Llŷn from Dinas Dinlle to Carreg y Defaid (with the exception of Nefyn) is an Area of Outstanding Natural Beauty

f. Heritage Coast

The coastline of Llŷn from Dinas Dinlle to Penrhyn Du is a designated Heritage Coast

g. Snowdonia National Park

The coastline from Pont Briwat to the southern limit of the survey falls within the Snowdonia National Park, with the exceptions of the Llanaber-Barmouth-Fairbourne area and of the Tywyn area.

h. Marine Special Areas of Conservation

The whole of the area included within the present survey has been submitted as a Candidate MSAC from Porth Dinllaen to Aberystwyth by HM Government to the European Union in January 1996, which, if accepted, will make the northern part of Cardigan Bay a part of a suite of European sites designated under the European Habitats and Species Directive (ex info., CCW).

i. Scheduled Ancient Monuments

Of the features noted in the course of the survey, eight are Scheduled Ancient Monuments; these are the *Veracus* and *Senacus* stones at Aberdaron (PRN 1202 and 1571), Castell Pared Mawr hillfort (PRN 1235), Cilan Uchaf burial chamber (PRN 1238), Criccieth castle and additional area (PRN 1317 and 1328) and Harlech Castle (PRN 2908).

j. Listed structures

Only two structures are Listed within the features noted in the course of the survey, the Cob at Porthmadog (PRN 3490, GII) and the tollhouse at the Boston Lodge end (PRN 3491, GII).

k. Designated Historic Wrecks

The Tal y Bont shipwreck (PRN 363) is Designated Historic Wreck 17.

The greater part of the coast that falls within the present survey is a Heritage Coastline or is within a National Park, compared to 30% of the coastline of Wales as a whole (Cyngor Cefn Gwlad Cymru 5).

9 ARCHAEOLOGICAL AND HISTORICAL SUMMARY

9.1 Prehistoric to 400 AD.

The coastal survey has produced no evidence of man's presence in the periods preceding the end of the last glaciation, and thus the earliest archaeological remains are the flint scatters of Mesolithic date. The coastal distribution of many of these finds (although it must be remembered that in places the sea level was considerably lower than today) may reflect both usage of the coastal resources, and also a plentiful supply of game from the relatively open tree cover. It has also been suggested that the coastal lowlands would have been more heavily utilised in the winter months, when the interior uplands would have been less accessible (Jacobi 1980). No additional Mesolithic sites were found during the survey, but such finds are very dependant upon specific circumstances. The active erosion at sites such as Glanllynau,

Porth Ceiriad and Porth Neigwl, all sites of Special Scientific Interest for their importance to Quaternary geology, may, however, reveal finds of Mesolithic date if monitored regularly.

The Mynydd Rhiw stone axe factory may have been used as a source of useful stone during the Mesolithic period, as evidenced by a flake found at Aberffraw in a Mesolithic context (White, 1974). By the fourth millenium, however, activity had greatly increased, and whilst the output of Neolithic axes from Mynydd Rhiw was not great, and never approached that of the Graiglwyd factory, there was nevertheless a reasonable distribution throughout Wales, although none has been found in Ireland. Transport of the axes may have been along the tracks running east across Wales, marked in a later period by standing stones and cairns. The chambered cairns of Neolithic date, however, are mostly of Portal Dolmen type, and appear to share similarities with cairns in Ireland, particularly those near Dublin and Waterford (Lynch, 1969).

Sites and finds of the Bronze Age period would suggest a considerable expansion of activity in the uplands, combined with a continuation of activity along the coastal belt. Although the majority of the surviving cairns are inland, this may reflect their survival on marginal land as much as their original distribution, and a better guide to the location of mans activities at this time comes from the large number of bronze and stone implements and pottery vessels which have been found in coastal and upland areas alike.

The written record effectively opens with the work of the classical geographers. The westernmost point of Llŷn may be the *Ganganorum Promontorium* mentioned by Ptolemy in the second century AD (*Geographia* 2.3.2). The abundant evidence of Iron-age or Romano-British settlement in this area, in the form of hut circles, may well reflect not only the poverty of the soil for modern farming, but also its importance on early trade-routes. These sites have been described as "remote" (Smith 1993 7), much in the same way that Tudor administrators complained that St David's was remote; so they were if measured from London or most other modern centres of power, but in the context of patterns of movement and trade from the Bronze Age to the Medieval period - arguably, into the early twentieth century - they lay on a major north-south route, as well as on the rim of the Irish sea basin. The discovery of a Graeco-Italic anchor from the third or second century BC at Porth Felen, Aberdaron (Boon 1977) underlines the antiquity of sea-borne trade in these waters -- it is, for instance, highly likely that in the Bronze Age tin would have been imported from Cornwall to a smelter near the reserves of copper ore which were worked on the Great Orme and at Mynydd Parys (Timberlake 1988, 1989) and that the finished alloy would have been exported to the Mediterranean world.

It seems unlikely that the Roman occupation had much impact on the area; the great hillfort of Tre'r Ceiri seems to have been occupied in the Roman period, and overall it appears that native patterns of agriculture remained substantially unaltered, though at a more prosperous level than previously. Roman influence, however, may be seen in the configured plans of certain native sites, primarily enclosed hut groups (RCAHMW, 1964). Local centres of imperial authority lay inland or to the north (Jarrett 1969 *passim*), and their roads lay over the uplands of Ardudwy (Bowen and Gresham 1967 244-258). A Roman presence was established near where Tremadoc now stands, several miles from the sea after the construction of defensive-walls in the nineteenth century, but then on the shores of Traeth Mawr, near the farm still called Penamser ("end of the time [of the tide]"). The remains are considered to be those of a bath-house, though another possibility is that they are of a *mansio*, at the point where the ferry crossed the traeth (pers. comm., Dr MJT Lewis and RCAHM[W] 1960 259-260). A Roman fort was established at Pennal, near the southern limit of the survey, in which a tile of the Caerleon legion was found (Jarrett and Nash-Williams 1969 106).

9.2 400 AD - 1500 AD.

The post-Roman period, the era which gave birth to the Kingdom of Gwynedd, is one in which it is notoriously difficult to distinguish myth from history, and in which the archaeological resource offers only tantalising possibilities. For instance, the citadel in the hill-fort of Garn

Boduan, on the north side of Llŷn, may or may not date from this period and therefore suggest that it had been refurbished (RCAHM[W] 1964 22-24); the name Llŷn may or may not derive from the *Laigini*, the Leinster tribe who, it has been argued, settled there in the post-Roman period. Otherwise, there is scant place-name evidence for Irish settlement compared to, for instance, Pembrokeshire (Lloyd-Jones 1928 101) any more than there is for the Vikings four hundred years later (Charles 1938 237-8). Ecclesiastical organisation is marked from the fifth century, with the comings and goings of missionaries from Gaul and Ireland, reflected in the inscribed standing stones found in a number of coastal churches. At Aberdaron a *clas* was established, of which the *Senacus* stone may be a reflection - Senacus, a presbyter, lies *cum multitudinem fratrum*. From here pilgrims by the eleventh century, if not much earlier, embarked for the final stage of the pilgrimage to Ynys Enlli, in English Bardsey Island, the reputed burial place of Dyfrig and Deiniol (RCAHM[W] 1964 17). At Tywyn a stone of between the seventh and ninth century is the only Welsh-language memorial amongst the early Medieval inscribed stones of Gwynedd, and the earliest Welsh language document (Williams 1949 161-172). Tywyn is an example of an ecclesiastical centre which grew into a secular settlement; the monk Cadfan founded a monastery there in the sixth century which became a *clas* and around which a small town grew (Soulsby 259-60).

Of other secular settlements, several came into being through the fishing industry. Aberdyfi was noted as a centre of herring (*clupea harengus*) fishing by 1565 (Boyd 1988 316); Pwllheli, "the port and mart of Llŷn" (Lloyd 1991) had been chief vill of the commote of Cafflogion, and its economy, similarly based on its herring fisheries, was already flourishing on a small scale when it was granted Borough Status by the Black Prince in 1355 (Soulsby 1983 221), though it went into a decline after Glyndwr's rebellion. The earliest reference to Pwllheli occurs in the Edwardian extent of 1284; as at Llanfaes and at Nefyn, the bond *maerdref* had been superseded by a Borough, which consisted of twenty-one households and held two annual fairs. Its nucleus lay a long way from the present coastline, approximately at the point where High Street meets Pen y Lan (GAT report 167 Llys and Maerdref 48).

For all its trade, Aberdyfi was not considered to merit any fortifications either under the Princes of Gwynedd or after the Conquest, and it is unlikely that any were erected at Pwllheli. Two mottes, however, were constructed on coastal sites, at Abersoch and at Ffriwlwyd (Tomen Fawr), neither of them commotal centres, but the former at least may have been built to safeguard maritime trade. Whether they were constructed by the Normans, whose mark was felt in Gwynedd from the last decade of the eleventh century, or by a Welsh prince or lesser magnate, remains unclear (RCAHM[W] 1964 cxlii). Stone castles were erected by the Welsh princes on the coast of Cardigan Bay at Criccieth and at Castell Deudraeth.

The impact of the Edwardian Conquest was, and is, most strongly marked at Criccieth and Harlech. A settlement of sorts may have surrounded the Welsh castle at Criccieth (Soulsby 117-8) but Harlech appears to have been a new creation of the English (Soulsby 138-9). Both became Borough towns, part of what was essentially a unified system of defence, in which the military significance of a castle was paralleled by the economic and social function of the settlements, which enjoyed a near-monopoly of trade in their own regions, and encouraged a money economy. The Conquest is reflected in the Welsh name of Hell's Mouth, Porth Neigwl, when Sir Nigel de Lorreyne landed there to claim the lands of Nefyn and Pwllheli he had been granted by King Edward I (Lewis EA 1912 31).

9.3. 1500-1947

The modern period in Wales is marked particularly by two changes. One is the rise to power of a gentry class, native Welsh *uchwelwyr* though increasingly English in speech and manners, who effectively controlled their own *broÿdd* as squires, justices of the peace and parish clergy, until their decline set in with the agricultural depression in the late nineteenth century. The other is the way in which from the late eighteenth century to the beginning of the twentieth, extractive industries and their transport needs assumed importance.

The gentry left their mark in their *plasdai*, substantial and well-constructed houses in which

renaissance influence is manifest, such as Bodwrda near Aberdaron, which may in part date from the late sixteenth century (RCAHMW 1964 3-4), the seventeenth century Castellmarch in Llangŷan and Bodfel in Llannor (RCAHMW 1964 3-4, 59-61, 76-77), or the later Ynysmaengwyn in Tywyn (RCAM 169) and Nanhoron on Llŷn, built with prize money won in the Seven Years' War by its naval captain squire (Ellison 1996). The size and comparative opulence of these dwellings suggest something of the stability and prosperity of Welsh society in the centuries following the Act of Union, as well as of the broader world in which they moved. Accounts of their lives tend to involve the weighty prejudices of outsiders, for whom evidence of boorishness confirmed the inevitable penalty of a life led away from the centres of Augustan culture. Samuel Johnson, persuaded against his will to accompany Mrs Thrale to her birthplace at Bodfel, observed with relish how Jac Roberts, otherwise the Reverend John Roberts, MA of Brasenose College Oxford, was observed to be nursing a black eye after a fight with an exciseman over a young woman (Bristow 1995 117), and other travel descriptions dwell on the fondness of Merioneth squires for their glutinous home-brew (Pennant 1991 2 125). The nineteenth century nonconformist historiography of Wales, whilst still apt to speak with particular affection of a particular *hen sgweiar*, wrote them off as a alien class of High Tory time-servers; yet many were Welsh-speakers until the nineteenth century, and one of the most important collection of Medieval Welsh manuscripts was amassed at Peniarth, in the Dysynni valley.

The economy of the area in the early modern period remained almost entirely agricultural, and there was little growth in urban centres. Pwllheli and Tywyn were still small places, and Criccieth was summarily dismissed by travel writers. Leland in 1580 refers to it as "*two or three poore houses*" and Speed in 1610 ignored it altogether (Soulsby 1983 117-8), though the survival of a late sixteenth century house, Ty Mawr, formerly the Castle Inn, suggests that the town was not utterly stagnant. Until the mid-nineteenth century the lives of the labouring poor were spent in one or two room dwellings, which in Llŷn at least were often mud-walled and thatched; slated dwellings came late.

Spiralling corn prices during Bonaparte's wars brought prosperity to much of Llŷn, if not to the sheep-rearing areas of Meirionydd, and made possible some of the estate improvements which were a feature of the early nineteenth century (*e.g.* Hyde Hall 1952 305).

The vogue for improvements of this sort combined with the fashion for Romantic travel to produce one of the most remarkable monuments of nineteenth century Wales, namely the embankment at Traeth Mawr. The earliest proposals appear to date from much earlier - from 1625, when Sir John Wynn of Gwydir urged Sir Hugh Myddleton after he had completed an embankment in the Isle of Wight to direct his attention to the Traeth Mawr and Traeth Bach - "*I may saie to you what the Jewes saide to Christ - We have heard of thy greate workes done abroade, doe somewhat in thine own countrey*" (Pennant 1991 2 194). Despite the interest of Dutch engineers in 1719, it was not until the early nineteenth century that the work was accomplished, when the mile-long Cob was constructed by the Foxite M.P. William Alexander Madocks, between 1807 and 1811. This extraordinary venture, to which the poet Shelley contributed and at which the novelist Thomas Love Peacock sneered (Beazley 1967 *passim*), not only enclosed hundreds of acres of land, but also made possible the construction of the town and harbour of Portmadoc and ultimately, in 1836, the narrow-gauge railway which brought the slate down from the Blaenau quarries.

Other sea-walls and defences were constructed in the same period, such as at Talsarnau, authorised in 1806 and built in 1809-10 (Lewis MJT 1989 61). Other harbours also came into being, or earlier facilities were improved; Aberdyfi's facilities were extended in 1885 to cope with the slate and mineral trade from the Dysynni and Corris areas (Boyd 1988 318). Barmouth's harbour of 1802 reflects the growth of the woollen trade from the 1770s (Lloyd 1977 36). Even where industrial exports were comparatively unimportant, as at Pwllheli, the growth of population in the town and its hinterland called for improvement. Lewis Morris's map of 1746 shows an arm of the sea extending as far as the golf-course, but it could boast of a fine new harbour by 1815 (Lloyd Hughes 1972 33).

With these developments went a phenomenal increase in coastal trade, which was to keep local shipwrights busy for many years. In 1701 as in the reign of the first Elizabeth, surveys found only a single ship in the whole of the present (January 1996) county of Gwynedd; but ship-building had returned to Barmouth in 1750 and to Pwllheli in 1759. Both were destined to turn out vessels by the hundred until the nineteenth century. Pride of place, however, went to the Portmadoc-built vessels of the period 1891 to 1913, the "Western Ocean Yachts", known throughout the world for their grace and turn of speed. One recent historian has described them as "the ultimate development of the small wooden merchant sailing vessels in Britain" (Hughes, Eames, 12), the products, moreover, not only of shipyards and creeks in Traeth Mawr and Traeth Bach but also of local foundries, sail-lofts and rope-walks which existed cheek-by-jowl with the slate stacks on the quarries' wharves and the sidings of the Ffestiniog Railway. Though steam vessels had been a regular feature of the local maritime community from the 1830s (Lloyd 1991 34), powered vessels made remarkably little impact; "As at Appledore in North Devon, the community of Porthmadog until 1914 remained something apart, almost from before the industrial revolution in the manner of its economic activities and the tools it used" (Hughes, Eames, 11), nourishing a tradition which endured in parallel fashion not only in Devon but in North America, in the port of Arklow in Ireland, and, longest of all, in the Baltic (Lewis W, Eames 1979).

The first major blow to the seafaring trade was dealt in the 1860s, with the arrival of the national railway network, in the form of the Aberystwyth and Welch (*sic*) Coast Railway's Dyfi Junction to Pwllheli branch, which in its subsequent guises as the CR, the Great Western, B.R. and Regional Railways, has maintained a precarious existence ever since. This left the main Shrewsbury to Aberystwyth main line at Machynlleth, and connected with various other lines - one to Caernarfon at Afonwen, another to the important industrial region around Wrexham and Rhiwabon at Morfa Mawddach, and others, on the narrow gauge, to the slate districts. The oldest, and most important of these was the pre-existing Ffestiniog, which rapidly went over to steam haulage to forestall plans for an AWCN branch line which would take away all its traffic, and the youngest the Talylyn Railway, built specifically as a feeder to the standard gauge rather than directly serving a port. Two horse-worked systems, the Gorseddau and Croesor railways to Porthmadog, also constructed interchange sidings with the AWCN.

The railway added its meed of impressive engineering features, notably the Barmouth bridge, originally constructed in 1867 as a wooden 137-span bridge with an eight-span iron rolling section to allow vessels to pass. A centrally-pivoted swing bridge and four steel spans were installed from 1899, and the wooden structure was replaced by one of steel between 1906 and 1909 (Baughan 1991 159, 166).

If the railway did the coastal shipping trade harm, it was the first world war which dealt it a mortal blow; Germany was one of Ffestiniog's best customers for slate (a fact reflected in the names of Porthmadog ships such as the *Frau Minna Petersen* and the *Tony Krogmann*) and the industry never recovered from the collapse of this market. Coastal shipping of slate from the northern part of Cardigan Bay dwindled to almost nothing; when a ship called at Portmadoc in 1946 it was a nine days' wonder (Boyd 1975 250). Trade in other commodities declined; when that same year a load of seed potatoes from the Irish Free State was loaded at Aberdyfi, it was the last shipment in what had once been a regular traffic across the Irish Sea (Boyd 1988 317).

Terrible though the impact of the First World War on the local community and its economy had been, it was the Second World War which brought an active military threat to Gwynedd. Wehrmacht plans to invade Ireland underlined the fact that the area was strategically of great importance, and Luftwaffe bombing raids to the Midlands and to the towns of Lancashire took a route from French airfields to Dublin, where there was no blackout, then across the Irish Sea. A Royal Air Force presence had been established at Penrhos, near Pwllheli, before the war, a site which entered Welsh nationalist mythology as the scene of the arson attack carried out by the pacifists Saunders Lewis, the Reverend Lewis Valentine and D.J. Williams in 1936. Possibly because of the publicity their resultant trial and imprisonment generated, Penrhos became known to German Intelligence, and was bombed more often than the later airfields at

Tywyn and Llanbedr.

The most dramatic changes in the area's economy since the war has been the development of the tourism and leisure industry - though its origins may be traced to the eighteenth century, and it was already becoming important from the late nineteenth. Bathing machines were a feature of the Barmouth beach in the 1790s, and boarding houses had sprung up in the wake of the railway in the 1860s and 1870s at Aberdyfi, Barmouth, Porthmadog and Criccieth. The growing interest in golf in the late nineteenth century (a game enthusiastically taken up by local-boy-made-good David Lloyd George, who did much to popularise it within the area) led to the establishment of a number of links - Harlech, for example, dates from 1894 (Clayton 1979 29).

Some of these developments were on a grand scale; at Pwllheli the Marian y Mor or "West End" developments of the Cardiff businessman Solomon Andrews from 1896 included the re-use of the Madryn dower house at Llanbedrog as a skating rink with a horse tramway connecting it to the hotels (Andrews 1976 54-66).

A similar type of development took place at Fairbourne, again the brain-child of a businessman from outside the area seeking to diversify. Here McDougall of "Self-Raising Flour" fame began work in 1890 on a housing estate, served by a narrow gauge tramway (Boyd 1970 175).

More ambitious still, and longer in its evolution, is Clough Williams-Ellis' Italianate fantasy village and hotel on the peninsula between Traeth Mawr and Traeth Bach, first opened to the public in Easter 1926 (Williams-Ellis 1991 207). This perpetuates the taste for architectural whimsy pioneered locally by William Madocks - indeed, as Lewis Mumford perceptively observed in *The New Yorker*, "this is still the country of Thomas Love Peacock, and thus what Williams-Ellis has been doing is translating Peacock's conversations into architectural terms" (Williams-Ellis 1991 210). Today it constitutes one of Gwynedd's leading tourist magnets, and it was here that the cult television series *The Prisoner* was filmed.

A more demotic attraction is Butlin's camp at Pen Ychain, constructed by Billy Butlin in 1938 under an agreement with the War Office whereby the site was to revert to him after hostilities. Initially the chalets made up HMS *Glendower*, and housed 100 officers and 5,000 sailors, as well as 500 Wrens in separate billets. After serving until 1945, it reopened as a holiday camp, despite strong representations that it become an educational venue (Jones 1995 24, 68).

10 ARCHAEOLOGICAL SURVEY

Map 1 (figs 2-4) Aberdaron to Porth Neigwl

a. Coast type and erosion assessment

This first stretch of coast is defined by three headlands of intrusive rock, Uwchmynydd, Trwyn y Penrhyn and Mynydd Penarfynydd. Erosion is marked in the eastern part of Aberdaron Bay, an alluvial area which lies between the first two of these headlands. In the middle of this area the Afon Daron enters the sea. St Hywyn's churchyard in Aberdaron suffers severe and active coastal erosion. A sea wall of modern construction has not prevented a section of exposure, thirty metres long, which reveals building rubble and displaced human bones. Further to the east, erosion becomes less marked in the drift and boulder clay, and disappears altogether in the hard rock of Trwyn y Penrhyn near Ogof Ddeuddrws.

The stretch between the second and third headland, Porth Ysgo, is made up of rock to the tide line with a drift cover, and no erosion was observed. A short length of slight erosion was noted in the east-facing slopes of Mynydd Penarfynydd.

b. Archaeology

Of the putative Mesolithic flint-working sites at Trwyn y Penrhyn and Porth Ceiriad, no trace was apparent. From later Prehistory, or the Roman period, the survey identified a possible hut circle settlement at Mynydd y Graig.

In St Hywyn's churchyard in Aberdaron is an octagonal socket stone for a cross and two early Christian inscriptions - the *Veracius* and *Senacius* stones. These are well-protected and are not considered to be at risk.

A rectangular structure or enclosure of unknown period was identified at Penrhyn Mawr, surviving only as a grassed-over stony bank, together with a nearby enclosure or field bank, now largely ploughed out, and the remains of a field system. At Trwyn Gwningaer a puzzling site may be the remains of a long hut, part of a settlement, though it may equally have been a promontory fort or a mineral trial. It appears to be part natural and part man-made; on the south side of a natural cleft is a quarried-out hollow, surrounded by banked earth on the other three sides.

Evidence of mineral exploitation on a serious scale in the modern period was met with at Porth Alwm, where the remains of the railway to Benallt mine survive, as well as the jetty, some wagon parts, a winch, and inclines. The adits of the Nant iron and manganese mine, and an open chamber, were also noted.

Map 2 (figs 5-7) Porth Neigwl to Abersoch

a. Coast type and erosion assessment

The pattern of Aberdaron Bay is to some extent repeated here, with a long alluvial bay, Porth Neigwl or Hell's Mouth, facing south-west surrounded by two headlands, Mynydd y Graig to the west and Mynydd Cilan to the east, with a smaller bay to the east, Porth Ceiriad, defined at its eastern extremity by the headland of Trwyn yr Wylfa. Beyond Trwyn yr Wylfa the coast begins to face east; the pattern of cliffs is apparent as far as Penrhyn Du, and thereafter an undulating landscape forms the land-edge to the Morfa Gors between Machroes and Abersoch.

The intense coastal erosion which the eastern end of Porth Neigwl suffers has been studied in detail in Darbishire 1977, and the information is offered in **Appendix 3 case study 1**. Some erosion was also noted in parts of the beach at Porth Ceiriad, and mild erosion on the east-facing shores around Abersoch, where boulder dumps have been placed in an attempt to contain the problem.

b. Archaeology

The findspot where two unworked flints were discovered at Porth Ceiriad, with their suggestions of a Mesolithic settlement, suffers from considerable land erosion. Evidence of Neolithic settlement and activity in the northern part of Cardigan Bay is scanty, and the one known site, the Cilan Uchaf burial chamber, is within this area, with a cairn nearby. Its situation is impressive, on the headland to the east of Porth Neigwl.

At Mynydd y Graig a possible prehistoric settlement was noted. Though the area was much obscured by bracken, a semi-circle of large stones was apparent, terraced into a south-east-facing slope and forming an arc approximately 9m in diameter, possibly the remains of a hut. Wandering walls nearby suggest a related field system. Nearby a probable enclosed settlement was observed, consisting of a level terrace with a large number of visible stones, and other platforms, as well as traces of boundary banks. At Pared Mawr the promontory fort was noted, containing a number of ill-defined platforms and a possible round-hut within the bank and ditch. Field systems of unknown date were evident at Porth Ceiriad.

The motte at Abersoch has been partly destroyed by road building and housing, and partly stabilised as a garden.

The most abundant remains in this section of coast date from the modern period. Some are connected with coastal transport - the fragments of a jetty and the remains of its associated ropeway system to the Rhiw mine, and the badly-corroded marine boiler in the sand at Porth Neigwl. At Abersoch the small harbour includes sluice gates, a slipway and a limekiln.

Others are to do with mineral extraction, in the form of the extensive mining remains around Penrhyn Du, which includes a beam-engine house for either a Cornish or a Boulton and Watt engine, one of only three surviving in the present (February 1996) county of Gwynedd.

A third category represented here is defence - at Porth Neigwl the remains of a bombing range were noted, together with a relief landing ground for Penrhos aerodrome, near Pwllheli. On Mynydd Penarfynydd a possible searchlight battery was noted.

Map 3 (figs 8-10) Abersoch to Pwllheli

a. Coast type and erosion assessment

The general direction of the coastline here is south-east facing, and the land edge exhibits a variety of types - improved pasture, and poorer quality land on the outcrops, as well as leisure use nearer Pwllheli. With the exception of the extensive harbour walls and sea-front at Pwllheli, nearly all of this length of coastline was found to be suffering from some degree of erosion. At Mynydd Tir Cwmwd the industrial remains connected with the Cambrian Quarry are particularly at threat, and immediately to the north of Carreg y Defaid, where the igneous rock yields to alluvium, a short length of coast is subject to major erosion. Along Traeth Crugan some areas of blown sand suffer severe erosion. To the east of Pwllheli constant slight erosion in the soft coastline was apparent.

b. Archaeology

The two known Neolithic findspots, one at Plas Glyn y Weddw, where an axe from the factory at Mynydd Rhiw was found in the 1960s, and the other at Mynydd Tir Cwmwd, lie at sufficient distance from the coast-edge for erosion not to be a threat.

Structures of early or mid nineteenth century date include a boathouse, substantially rebuilt, a limekiln, and "Foxhole", two *cottages ornées* which may be connected with Plas Glyn y Weddw, the former Madryn estate dower-house.

Other remains from the modern period include the extensive Cambrian group of coastal quarries working the rock of Mynydd Tir Cwmwd, with the remains of a jetty, an incline and a large storage hopper, and the remains of the Carreg yr Imbill (Gimlet Rock) quarry at Pwllheli, where the protrusion of rock has been almost entirely removed.

It was in this section that the survey first encountered substantial evidence of modern leisure amenities. At Pwllheli the Marian y Mor or "West End" developments are apparent as a network of broad straight streets flanked by four-storey boarding houses, contrasting markedly with the winding alleys and smaller buildings of the town's Medieval core. Further evidence of resort-building survives in the quarry at Carreg y Defaid, the source of supply for these developments, the re-use of Plas Glyn y Weddw as an art gallery and a skating rink, and in the course of the tramway which connected all these sites.

A pillbox and a concrete arrow symbol in the ground were noted at the coast edge near Carreg y Defaid, connected to the nearby Penrhos airfield.

Map 4 (figs 11-13) Pwllheli to Aberdwyfor

a. Coast type and erosion assessment

The coast-edge of Morfa Abererch, between Pwllheli and Pen Ychain, is made up of drift and sand, and the land-edge of unimproved pasture. Pen Ychain itself is a low headland, forming part of the Butlin's camp, and the pattern of unimproved pasture and the railway forming the land edge is resumed to the east, at the point where the Afon Wen enters Cardigan Bay.

The slight erosion which is a feature of the coast east of Pwllheli becomes fractionally more severe at the east end of Morfa Abererch, and though the igneous rock of Pen Ychain is not subject to erosion, the east shore of the headland of which it is the furthest point is eroding, in places to a major extent, despite attempts made to control its extent by placing gabions on the coast-edge. By the former Afonwen Junction and eastwards, the railway embankment to some extent controls its effects, but evidence of trouble is the recent boulder dumping that has been going on here.

b. Archaeology

Pre-modern archaeology is represented by the discovery in 1907 of two copper cakes of Roman date in an eroding cliff-edge. Most of the harbour works were observed to be of very recent construction, though the plan probably derives largely from the work completed in 1815.

The AWCN, successively the Cambrian Railways, the Great Western, British Rail and Regional Railways, remains in operation as a branch line from Dyfi Junction to Pwllheli, and its route formed the designated land-edge for much of the coastal survey from this point onwards. At Afonwen the remains of the junction station were noted.

A series of gun-emplacements and nearby tank-traps at Pen Ychain has been little damaged by the adaptation of the former HMS Glendower to a Butlin's camp after the war.

Map 5 (figs 14-16) Aberdwyfor to Ynys Cyngar

a. Coast type and erosion assessment

The coast-edge between Afon Wen and Criccieth is made up partly of man-made walls, partly of boulder dumps and partly of drift. Despite the protection that the walls and dumps might afford, mild erosion is a feature of this section of the coast. The outcrop on which Criccieth castle itself stands is not at all affected, but an intense area of erosion, some of it severe, was noted immediately to the east, despite modern attempts to create sea-walls. Beyond this point, up to Graig Ddu and Black Rock sands, no erosion was observed.

b. Archaeology

Criccieth Castle is the most important archaeological feature within this area; the outcrop of igneous rock on which it is constructed is resistant to erosion, but the townscape to the east is actively threatened.

The one post-second world war feature noted in the survey is the Morannedd café at Criccieth, an excellent example of Modernist architecture.

Map 6 (figs 17-19) Traeth Mawr, Traeth Bach and Talsarnau

a. Coast type and erosion assessment

This coast-edge of this area is made up of a complex variety of types, reflecting the intensity of

settlement and development over the last two hundred years, which moved the focus of activity from the old coast edge of Traeth Mawr, around Tremadoc, Hafod Garegog and Llanfrothen, to the present Borth y Gest - Porthmadog - Portmeirion area. The intensity of industrial development in the nineteenth century is matched by the intensity of tourist development in the late twentieth, with the establishment of yachting facilities, maisonettes and the re-opening of the narrow gauge railways.

Much of the extensive coastline of the Traeth Mawr and Traeth Bach areas is made up in many places of man-made walls - the slate quays of Porthmadog and the Cob - but mild erosion was noted in a number of places which have not been so protected, and one severe stretch on the saltings by Talsarnau. These seemed little related to the nature of the coast-edge and to be instead a consequence of the focussing of wave patterns.

b. Archaeology

Very little archaeology from before the early nineteenth century was observed within this section, largely because much of the present-day coastline is a modern development, reflecting embankment work and transport improvements and the construction of sea-side lodging houses. Madocks' work at Traeth Mawr has left its mark not only in the form of the Cob, a 1.5km long boulder embankment, but also of the quarries from which the rock was obtained, the powder house at Ynys Cyngar where explosives were landed, and the kiln nearby where the lime for the mortar was burnt.

The harbour itself, the most extensive of those which formed part of the survey, has recently been tidied up with European funds, but preserves many of its original features - the yacht club contains the fittings from its earlier incarnation as the seamen's mission. Five plate-rails from Madocks' original construction tramway for the Cob were found on the sluice bridge in the course of the survey. Evidence of ship-building, as distinct from archival confirmation of ship-building, was slight, and only one tiny creek preserves evidence of having been used as such. Nearby, the survey noted the stone quay for shipping slate at Aber-Iâ, where the Portmeirion hotel now stands, in existence by 1836 (Lewis 61-3) The Talsarnau slate boat, discovered in 1988, was not observed, as it is only visible at low tides.

Though the scale of Madocks's operations tends to dwarf similar achievements, the four-mile long boulder embankment from where Pont Briwat now stands to Ty Gwyn is a substantial work. Pont Briwat, a wooden railway bridge of 1867, is also an impressive feature. Nearby is the extensive nineteenth century Cooke's explosives works, in which some work was observed to continue.

A second world war feature, a pill-box at Boston Lodge, was demolished in the course of the survey by the Ffestiniog Railway, who also removed the gunpowder sheds at Glan y Mor nearby a number of years ago. Only as the lower parts of the walls now survive.

Map 7 (figs 20-22) Harlech to Mochras

a. Coast type and erosion assessment

The coast-edge of this section is made up of blown sand and alluvial mud as far south as Llandanwg, where it is constituted by a man-made wall, whereas on Mochras (Shell Island), drift over boulder clay and sand predominated. Except around the village of Llandanwg itself, some erosion was observed, though only very slight.

b. Archaeology

Llandanwg church is not at risk from coastal erosion but is so near the sea-shore that it is at risk of being buried by the sand. The cross and the *Iarrus* stone are not at risk. The curving ditch on the landward side may be part of the original enclosure.

Pen y Sarn wharf is an attractive example of a small landing place serving a rural hinterland, and is now used for outdoor pursuits. The limekiln has been incorporated into a modern building.

At Mochras (Shell Island) a large sub-Medieval farmhouse has been incorporated into a modern tourist development. It is possible that any Prehistoric archaeology might be in danger from the construction of roads, paths and bathing places here.

The Royal Artillery gunnery range at Harlech, operated in conjunction with Trawsfynydd camp, preserves few structures, but amongst them is the figure-of-eight railway line, on which targets were towed, which survives as an embankment built up of cement blocks formed out of sandbags. Llanaber airfield is now an outstation of R.A.E. Farnborough and could not be visited, but contains structures of second world war date.

Map 8 (figs 23-25) Mochras to the Mawddach

a. Coast type and erosion assessment

From Morfa Dyffryn to the estuary of the Afon Ysgethin, the coast-edge consisted of drift and sand, with boulder dumping near the watersmeet. Boulder dumps were observed at a number of points between here and Barmouth, where a long sea wall protects the town.

b. Archaeology

The remains of an extensive Prehistoric forest were first encountered on this section, visible as stumps protruding from the shingle.

The timber trackways discovered on the land-edge are now only visible as back-filled excavation trenches. Some evidence of a similar feature was exposed for some 10m length on the foreshore.

The harbour at Barmouth is largely nineteenth century, though the two-storey building known as "Davy Jones's Locker" is Medieval or sub-Medieval. The part of the townscape which faces the coast-edge consists largely of nineteenth-century boarding houses (and one attractive art-deco structure behind the yacht-club.) Barmouth bridge consists of a centrally-pivoted swing bridge and a fixed span of 118', both hogged steel spans, and 113 openings of 18' span on timber pile trestles. However it was noted in the course of the survey that the piles for the original bridge are still apparent.

Map 9 (figs 26-28) The Mawddach to Tonfanau

a. Coast type and erosion assessment

South Bank and Fairbourne are constructed on a sandy spit projecting into the mouth of the Mawddach, and the coastline here is stable until a point to the south of Friog, after which some erosion is evident. Avalanche shelters have been constructed over the railway on the notorious cliffs at Friog itself. The settlement at Llwyngwrl is built on an alluvial plain at the mouth of the Afon Gwrl, but otherwise the pattern is of steep, though not particularly lofty, hills dropping sharply to coastal level.

b. Archaeology

Within the Prehistoric to Roman periods, a probable enclosed hut group was identified in the course of the survey at Llangelyn in Ardudwy. It is situated in a field between the railway and the coast-edge, and is much overgrown and obscured by later stone dumping.

The Victorian holiday village at Fairbourne includes a miniature railway and golf-course, and the ruined structures at the end of the promontory seem to be coeval rather than to be the remains of the stables for pack and coach horses from before Barmouth bridge was built (Boyd 1970 175).

The "dragon's teeth" tank cubes at Fairbourne are impressive remains from the second world war, and are in good condition.

Map 10 (figs 29-31) Tonfanau to Aberdyfi

a. Coast type and erosion assessment

Though the pattern of slight erosion noted in **Map 9 a.** above is apparent as far South as Aber Dysynni, the coastline is largely stable as far as Aberdyfi, and extensive sea-walls have been put in place around Tywyn. The landscape is characterised by a broad plain, which has permitted the construction of features such as military camps and a holiday resort.

b. Archaeology

An unusual feature observed south of Tywyn were peat diggings, which have preserved a remarkably regular shape, and appear to incorporate drainage channels.

Just as second world war pillboxes demarcate the coastline of 1940, and provide a datum against which erosion can be judged, so also they are particularly at risk, as the run of pillboxes between Tywyn and Aberdyfi demonstrates. The anti-aircraft gun bases at Tonfannau camp are similarly threatened.

Map 11 (figs 32-34) Aberdyfi to Pennal

a. Coast type and erosion assessment

The coastline is largely stable from Aberdyfi to Pennal except for some slight erosion noted at the southern limit of the study between Gogarth and the railway bridge over the Dyfi. The coast edge is formed by the embankments constructed for the AWCR for much of this section, and the immediate hinterland is occupied by modern dwellings and the road, built along the afforested northern slopes of the Dyfi estuary.

b. Archaeology

The AWCR forms the land-edge for practically the whole of this stretch. The attractive and well-constructed stone embankments on which it is constructed are prominent features, and make use of a variety of stone-mason's techniques. The Dyfi railway bridge and an associated dwelling (of the pyramid-roofed *ty unicorn* type) constitute the southern limit of the survey, and the border with the county of Dyfed.

11 RESULTS OF SURVEY

11.1 Assessment of Erosion

Recording of erosion has been descriptive and qualitative rather than strictly quantitative. This is because of the lack of specific markers against which to measure erosion. Comparison with early maps is of limited usefulness since they are not sufficiently precise except where specific features are located on the then coast edge. However, the earliest editions of the Ordnance Survey 25 inch maps date from 1886-7, and show the coast in sufficient detail to allow comparison with recent editions and therefore changes can be measured. In the case of Porth Neigwl, it was possible for Professor Darbishire to suggest in 1974 an annual rate of erosion of 1ft per year (Darbishire 1974 67).

Porth Neigwl, it is clear from the survey, is untypical. Normal wave action may have little erosive power. Real change is the result of storms on annual and longer cycles when astronomical coincidences can cause exceptional tides and winds.

Another possibility is that erosion may be less significant than changes in sea-level. Sea-level rose steadily in most places in Britain from the end of the last glacial period *c.* 10000 BP to the early Neolithic *c.* 5700 BP (Tooley 1974). This involved a change in sea-level from about 40m below OD during the glacial maximum to the present level. During the early Mesolithic (*c.* 6500 BC) sea levels were about 20m below OD while during the later Mesolithic they were at about 10m below OD. Plotting the sea-bed contours at these levels gives a reasonably accurate picture of the coast edge during these periods (Fig. 1). Large areas of low-lying land around Gwynedd have therefore been submerged, including any coastal exploitation sites situated thereon. Where the coast edge is elevated as in Penllŷn, mesolithic sites have survived. Other more gradually sloping and low-lying coasts have retreated substantially and so sites of this period are not found on the coast edge as it is at present. Evidence of the latest phase of submergence survives as remains of forests and peat beds at Tywyn and Dyffryn Ardudwy. This post-glacial submergence may also have led to the legends of the *Cantre'r Gwaelod*. From about the beginning of the Neolithic period sea-levels are calculated to have fluctuated within about 5m of the present level, for instance with a temporary recession of the sea during the Neolithic period (Tooley 1974), so local changes and erosion must have taken place on sensitive *i.e.* low lying and geologically 'soft' coasts. These minor fluctuations are difficult to document but require consideration.

The effects of the documented changes in sea-level need to be assessed in the face of the projected rise in sea-levels in the next century from global warming - about two metres (Clark and Primus 1987). Much depends on how tidal ranges (the difference between highest and lowest water) change but areas within about 5m of present high tide will be prone to flooding. The maximum present tidal range around North Wales is about 10m. Ordnance Survey heights are plotted above **mean** sea-level and so the 10m OD contour effectively shows areas within about 5m of highest tide level and which therefore need assessment.

The problem with the effects of erosion on archaeology is that it is not an item covered by development controls - for instance, erosion was not considered as a threat to archaeology in the *Gwynedd Structure Plan* (Gwynedd County Council, 1986, 11.11), nor in the local plans. Any assessment will therefore only come through specially commissioned studies such as the present project.

Erosion is, however, recognised as a threat to existing settlement; the Association of Welsh Counties is already assessing the issues likely to be significant in the next ten to fifteen years and has formed a Coastal Strategy Working Group. The Coastal Planning Draft PPG suggests that coastal areas within 5m of sea level (presumably meaning within 5m of mean high tide) could be vulnerable to flooding and that therefore any proposed development in those areas should be considered carefully.

The results of this study would suggest that the majority of the coastline is fairly stable, as shown on the Maps 1 to 11 Erosion type. Of the 170km of coast, 84% was found to be stable or subject to only slight erosion (*i.e.* classified as erosion levels 1 or 2). Nine percent of the coastline is subject to medium erosion (erosion class 3), five percent is subject to major erosion (class 4), and two percent is subject to severe erosion (class 5). The main areas at risk from erosion are Aberdaron (Map 1, erosion 2), Porth Neigwl (Map 2, erosion 9), Porth Ceiriad (Map 2, erosion 12 to 14), Carreg y Defaid east to Pwllheli (Map 3, erosion 23 to 27), east of Criccieth (Map 5, erosion 44), Llanaber (Map 8, erosion 65 to 67) and Llwyngwritl to Tonfanau (Map 9 and 10, erosion 70).

The survey has shown that there are some localised areas of significant erosion threat but that a large part of this particular length of coast is relatively stable because it consists of high cliffs of resistant rock.

11.2 Archaeology and erosion

The following table shows the breakdown of sites according to their erosion class and category of importance:

	Erosion class					T
	1	2	3	4	5	
CATEGORY A	17	0	1	0	4	22
CATEGORY B	37	8	4	0	0	49
CATEGORY C	58	22	2	10	4	96
CATEGORY D	36	9	6	1	0	52
CATEGORY E	13	3	6	5	0	27
	161	42	19	16	8	246

83% of the recorded sites were found to be within erosion class 1, and therefore under no erosive threat. 17% were in erosion class 2 (slight erosion), 8% were within erosion class 3 (medium erosion), 7% were in erosion class 4 (major erosion) and 3% in erosion class 5 (severe erosion).

The Prehistoric sites most at risk are the features at Porth Neigwl (42), Castell Pared Mawr (58) and the potential Mesolithic site at Porth Ceirad (59).

The Roman site most at risk is the findspot of two copper cakes at Afonwen (107).

The Early Medieval and Medieval sites most at risk from erosion are those connected with the church at Aberdaron (7 to 10), where work is in hand to protect them.

Post-Medieval sites at risk are Ty Mawr at Criccieth (121) and the agricultural features at Porth Ceiriad (62 and 63).

Modern sites most at risk are a marine wreck, part of a jetty and RAF features at Porth Neigwl (37-41 and 44), a limekiln at Llanbedrog (82), tramways and a pillbox at Carreg y Defaid (88 to 90), a tramway at Y Gamlas (94) and a jetty at Criccieth (123).

Sites of unknown date most at risk are a wall, a ring-ditch and a structure at Porth Neigwl (43, 45 and 46), a mound and a ford at Afonwen (102 and 103).

A total of 246 sites were found to lie within the study area, of which 202 were sites not previously entered within the Sites and Monuments Record. The table below gives a breakdown of sites according to period:

	Sites	Prev. on SMR	Added to SMR
Prehistoric	19	14	5
Roman	1	1	0
Early Medieval	5	5	0
Medieval	12	12	0
Post-Medieval	25	3	22
Modern	152	6	146
Unknown	32	3	29

The majority of previously unrecorded sites are therefore those of the modern period, although five previously unrecorded sites of Prehistoric date were noted, including features at Porth

Neigwl (42) and a hut group at Ty Coch (202).

11.3 Other factors affecting coastal archaeology

The seaside and the coast are important attractions for both the day-visitor and the holidaymaker who chooses to stay in Wales. Of the first category, the coast generates an estimated 7% of all leisure and social trips, including those undertaken for shopping. Of the second, an estimated 61% choose to stay in coastal locations, the great majority of them in caravan parks. 35% of all sport and recreational sites in Wales are to be found within 2km of the coast (CCW *Coastline 1995* 13). There is therefore considerable pressure on the coastline from leisure use. For example, power-boating takes place at Abersoch, Pwllheli, Porthmadog and Barmouth, and jet-skiing at Abersoch, Pwllheli and Porthmadog (ex info., Gwynedd yacht-club officials). As well as the existing facilities at Pwllheli, potential marina sites have been identified at Porthmadog, Barmouth, Tywyn and Aberdyfi (MCMP 1990-1993 255).

The historical and archaeological significance of some sites has itself become a magnet. In the case of Harlech and Criccieth, visitor-access and -enjoyment does not impact significantly on archaeological sites which receive the highest level of conservation and recording. It is, perhaps, at Porthmadog, a historic dock-landscape of the utmost significance, that the problem can be seen in acute form. Its sea-going tradition is kept alive in the maritime museum, and the Ffestiniog Railway is a reminder of its *raison d'être* as a slate port. Modern features such as wharves and their associated buildings are rarely subject to a serious erosion threat, but its association with the railway and its proximity to a residential area and popular holiday resort has meant extensive changes in an area which merits the highest level of recording. In the 1960s maisonettes were constructed on Cei Holland and Cei Newydd, which substantially altered the character of the area; more recently, European funds were used to consolidate, and, inevitably, alter the area around the public wharves of 1824. In this respect the grants available to local planning authorities to regenerate and restore run-down areas and reclaim derelict land can constitute a threat to the archaeological resource within a coastal context. It was, for instance, only a chance sighting by a member of the public in February 1996 which alerted the Trust to the survival of remains of the plateway used to build the Cob between 1808 and 1813. The White Paper *A Working Countryside for Wales* observes:

"The undeveloped coast will seldom be the most appropriate location for development and in all areas of the coast designated for their natural or historic landscape, policies should limit development, particularly where it is visually intrusive. Where developments require a coastal location, the developed coast will usually offer the best option." (*A Working Countryside for Wales* 1996 90)

The case of Porthmadog illustrates that developed areas themselves, even very recent (last-century) examples, pose problems of archaeological management within an historic landscape. The case of Pwllheli is more marked; a popular harbour with the owners of pleasure-craft, it would have been the venue for the yachting element of the 1996 Olympic games had Manchester's bid been successful. Intense modern reuse means that few features survive from the nineteenth century.

In this context it is appropriate to mention the smaller harbours and jetties which were encountered in the course of the survey. The wooden structures which served the small mines and quarries of Penllŷn and Eifionydd have survived very badly, and are often only visible as stumps protruding from the rocks of the foreshore.

The impact of any construction or other development on archaeology is taken account of in the draft PPG on Coastal Planning (1992). Other relevant PPGs are those on Nature Conservation (PPG9), Archaeology (PPG16), Countryside (including National Parks and Areas of Outstanding Natural Beauty) (PPG7), Sport and Recreation (PPG17) and guidance notes on physical restraints to development in relation to coastal erosion, such as flooding (DOE Circular 17/82) and unstable land (PPG14).

12 RECOMMENDATIONS

12.1 General

Both the present study and the work of Smith in 1993 have taken place at a time when concern about the problems of coastal management has been translated into a series of initiatives designed to involve the various different agencies which are in one way or another concerned with coastal management objectives.

A Government directive established eleven "Coastal Cells" whose function is to produce Shoreline Management Plans for England and Wales, which can then be used by landowners, local authorities and conservationists, as set out in the Ministry of Agriculture, Food and Fisheries and others' *Shoreline Management Plans: a guide for coastal defence authorities*. Appropriate consultees are identified as including English Heritage, Cadw and County and District Archaeological Officers (*SMP* 10, 25).

A number of initiatives have already been effected in response; the Norwich Union Coastwatch UK group, using a project design tested in 1987 by the Dublin Bay Environmental Group, carried out a survey of coastal pollution levels throughout England and Wales (*MCMS* 1993 Appendix A1.3); in June 1991 Hampshire County Council produced a report *A Strategy for Hampshire's Coasts*, and Northumberland County Council their *Northumberland Coastal Management Plan Consultation Draft* (*MCMS* 1993 Appendix A1.4) This latter led to the publication of the *Northumberland Coast Management Plan* in October 1993 and *A Strategy for Coastal Archaeology in Northumberland*.

The Welsh coastline includes seven such Coastal Cells:

- a. Liverpool Bay
- b. Llandudno to Bardsey
- c. Cardigan Bay
- d. Carmarthen Bay (two sections)
- e. Swansea bay
- f. Severn Estuary

So far a Shoreline Management Plan has only been produced for one coastal area in Wales, the Meirionnydd part of Cardigan Bay. However, archaeology features in neither *MCMP 1990-1993* nor *MCMS 1993*, and to the best of the Trust's knowledge, the archaeological resource of a given coastal area has only been specifically related to the effects of erosion by Smith 1993 and by the Pilot Project in Maritime recording *Between Tides: A Coastal Survey of Carmarthen Bay*, completed in February 1995 by Alison Gale for the RCAHM(W) in partnership with Dyfed Archaeological Trust.

The Coastal Cell is therefore increasingly being adopted as the unit of coastal management, but so far there has been little involvement by organisations concerned with the man-made environment. In Wales the contributory agencies comprise District Councils, National Parks, the National Rivers Authority, Railtrack, landowners and industrialists, CCW and a Welsh Office representative.

It is therefore recommended that Cadw give consideration to membership of the relevant Coastal Cells through CCW, either directly or represented by the appropriate regional Trusts.

There is also a strong case to be made for a structure whereby it became possible constantly to monitor erosion at Porth Neigwl in the light of the issues discussed in **Appendix 3 Case Study 1**, and also Porth Ceiriad and Glanllynau, both of which are SSSIs, and both of which may yield Mesolithic activity (see **8.1** above).

In this connection it is worth also observing that CCW also provides the Secretariat of *Arfordir* ("Coastline"), a group of local authority officers in Wales who are promoting "best practice" management based on principles gained from Heritage Coast Management over twenty years. Concern has been expressed at the rôle of the new unitary authorities, and the possibility of policy vacuum which might lead to a succession of *ad-hoc* and sectional initiatives, instead of a unified plan which would relate separate concerns.

12.2 Site recommendations

Appendix 5 is a list of sites sorted on erosion class and category of site importance. The categories follow those used by the Gwynedd Archaeological Trust for assessment projects, and are:

Category A - Sites of National Importance.

Presently Scheduled Ancient Monuments and Listed Buildings as well as those sites which would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both.

Category B - Sites of Regional Importance

Sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region.

Category C - Sites of District or Local Importance

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened.

Category D - Minor and Damaged Sites

Sites which are of minor importance or so badly damaged that too little remains to justify their inclusion in a higher category.

Category E - Sites needing further investigation

Sites the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A-D are temporarily placed in this category, with specific recommendations for further evaluation.

Management recommendations are made for each site if there is a threat other than erosion, or if the erosion level is 3 or greater. This list provides a simple method of recognising those sites which are most at risk according to their level of archaeological importance. The principal areas at risk have been studied in greater detail in Appendix 1: *i.e.* the sites at Porth Neigwl, the erosion at Criccieth, Morfa Dyffryn Ardudwy, the twentieth century defences, and the settlement at Castell Pared Mawr. The exception is the church and related monuments at Aberdaron, which have not been discussed further because work is presently being carried out there to stabilise the sea wall.

Thus the main recommendations for further work arising from this study are:

- (i) a survey and assessment of the peat beds at Tywyn and Morfa Dyffryn.
- (ii) A survey and assessment of twentieth century coast defences.
- (iii) Monitoring and survey, or evaluation if the nature of the site is not known, at specific sites which are suffering from erosion, *i.e.* Criccieth (see Appendix 1), Porth Neigwl (see Appendix 1), the copper cake findspot at Afonwen (site 107), and additional sites as specified in Appendix 5.

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John Evans map, 1795-7

OS maps

6" and 25" Caernarfonshire

XLIII	SE	15,16	
XLIV		SW	10,13,14
		SE	11,12,16
XLV		NW	2,6
		SW	10,14
XLVI		NW	2
		NE	3,4
XLVIII	NW	1,2	
XL		SW	14
00		SE	15,11,12
XLI		NW	5,6

Merionethshire

X		SE	16
XI		SW	13,14
XVIII	NE	4,8	
		SE	12,16
XIX		NW	1,2,5,6
		SW	9,13
XXV		NE	4,8
XXVI		NW	1,5
		SW	9,13
		SE	16
XXXI		NE	4,6
		SE	(not surveyed)
XXXII	NW	5	
		SW	9,13
XXXVI	NW	1,2,6	
		NE	3
		SW	10,14
XL		SE	12,16
XLI		NW	1,2,5
		SW	9,13
XLV		NE	4,8
		SE	12
XLVI		NW	6
		SW	9,13
XLVIII	NW	1,2,5,6	
XLVIII	NE	3,4,7,8	
		SW	14
XLIX		NW	1

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2 (Aberdaron), 3 (Abererch), 17 (Criccieth), 18 (Deneio), 29 (Llanbedrog), 33 (Llandygwning), 37 (Llanengan), 38 (Llanfaelrhys), 45 (Llangian), 56 (Llanystumdwy), 63 (Penrhos), 65 (Rhiw), 66 (Treflys), 69 (Ynyscynhaearn)

(In each case, apart from Aberdaron, the schedules include field names)

Estate papers:

Boduan

Cefnamwlch XD/32

Map of Cefnamwlch holdings in Penllyn, 1812

XD2/8356

Map of Glynllifon holdings, late eighteenth century

Sheet 2

In addition the Breese Jones Casson papers were searched for plans of the Bryncir and Castelldeudraeth estates, and the Castellmarch papers for an estate plan. Though the Vaynol papers yielded many plans of individual buildings, none shed any light on coastal holdings. Sales catalogues were searched unavailingly for plans of the Madryn estate.

Maps:

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X/Plans/H&P/10: Pwllheli pier

X/Plans/R/4: Festiniog Railway deposited plans

X/Plans/R/32: AWCR (1861)

X/Plans/R/33: AWCR (1861)

X/Plans/R/41: AWCR (1864)

X/Plans/R/49: CR (1865)

X/Plans/R/90: CR (1882) Aberdyfi pier.

X/Plans/R/105: CR (1895) Pwllheli.

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Likewise it is a pleasure to record our obligation to the farmers of Penllyn, Eifionydd and Meirionydd, who allowed us to tramp over their fields, as well as to other people who took an interest in what we were doing and pointed out features of interest to us; to Michael Seymour, Dr Michael Lewis and Francis Stapleton for assistance with matters related to Porthmadog, to Dr Rod Jones for discussion of the Meirionnydd coastal initiatives, and to other members of the staff of the Countryside Council for Wales for providing up-to-date information on protected sites. Diolchwn am eu caredigrwydd.

The emergence of the Gwynedd coastline

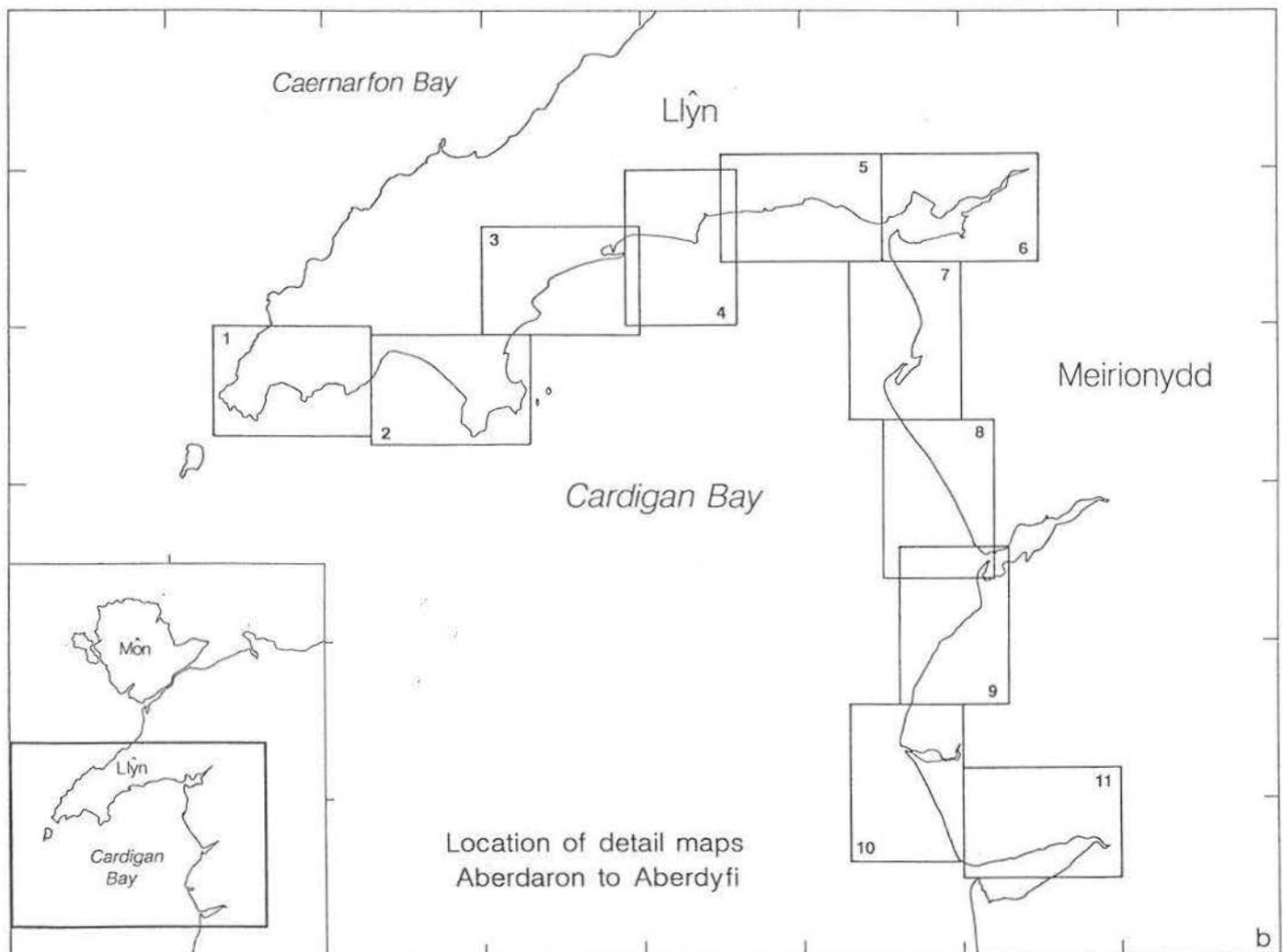
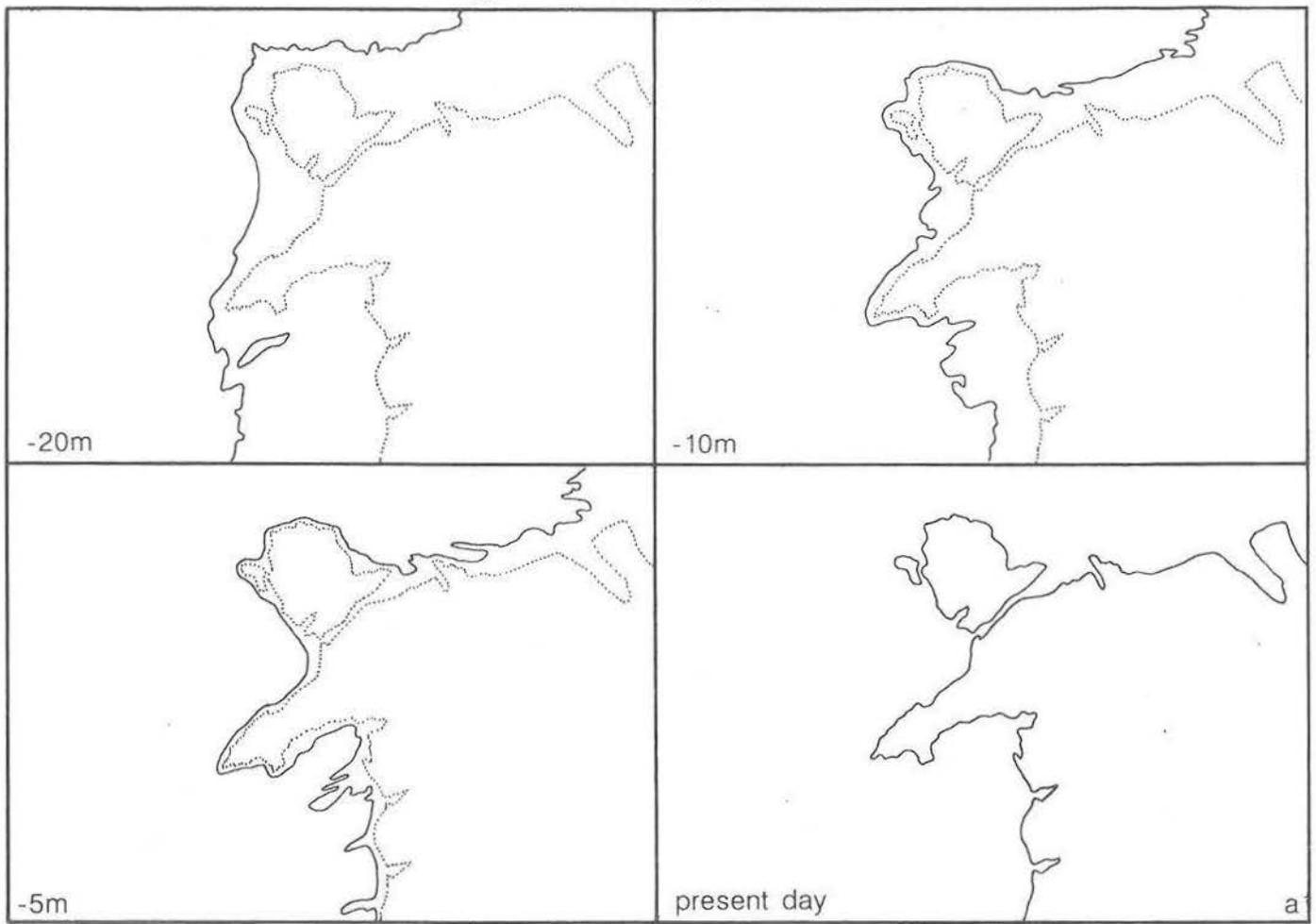


fig.1

MAP 1
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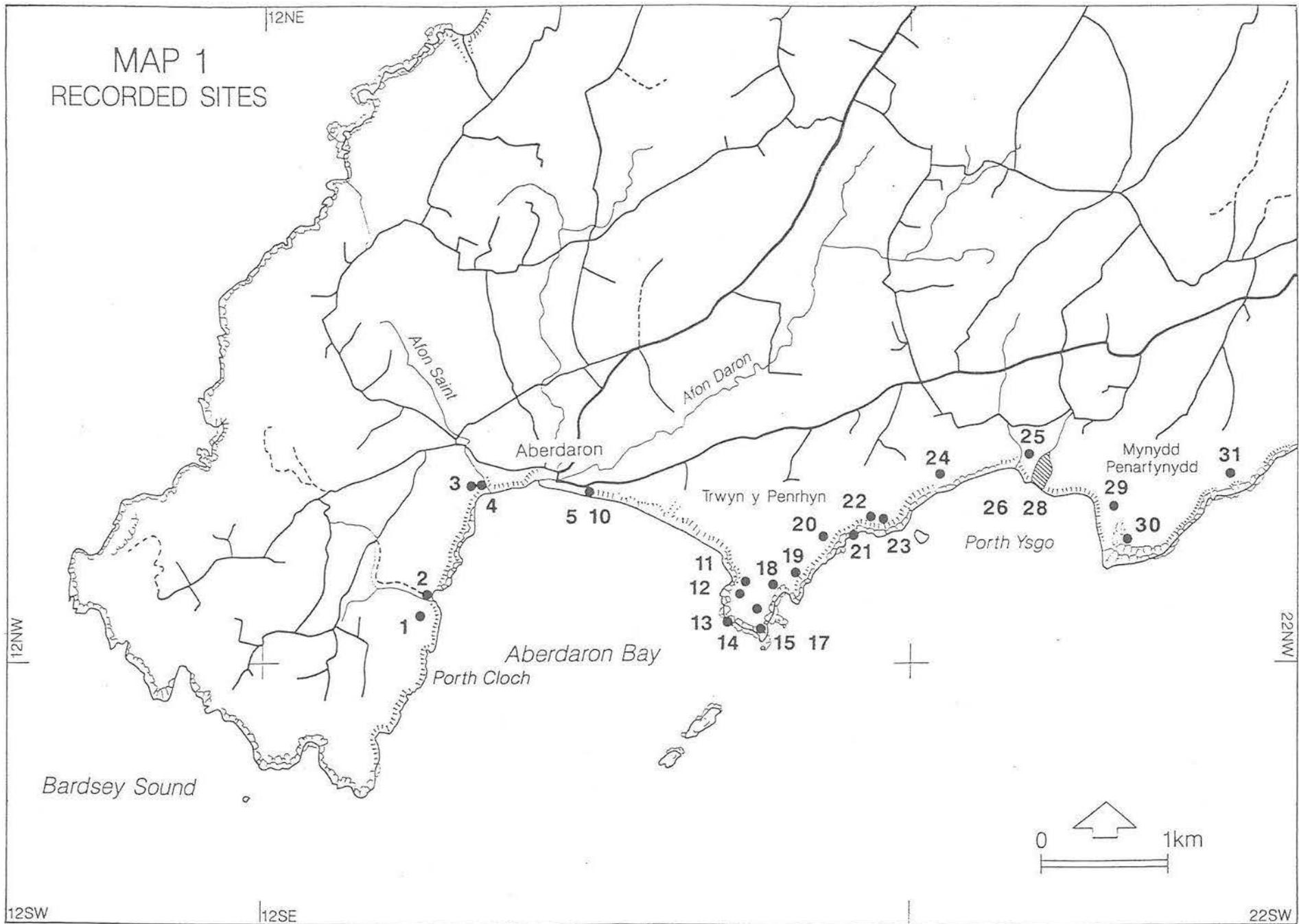


fig. 2

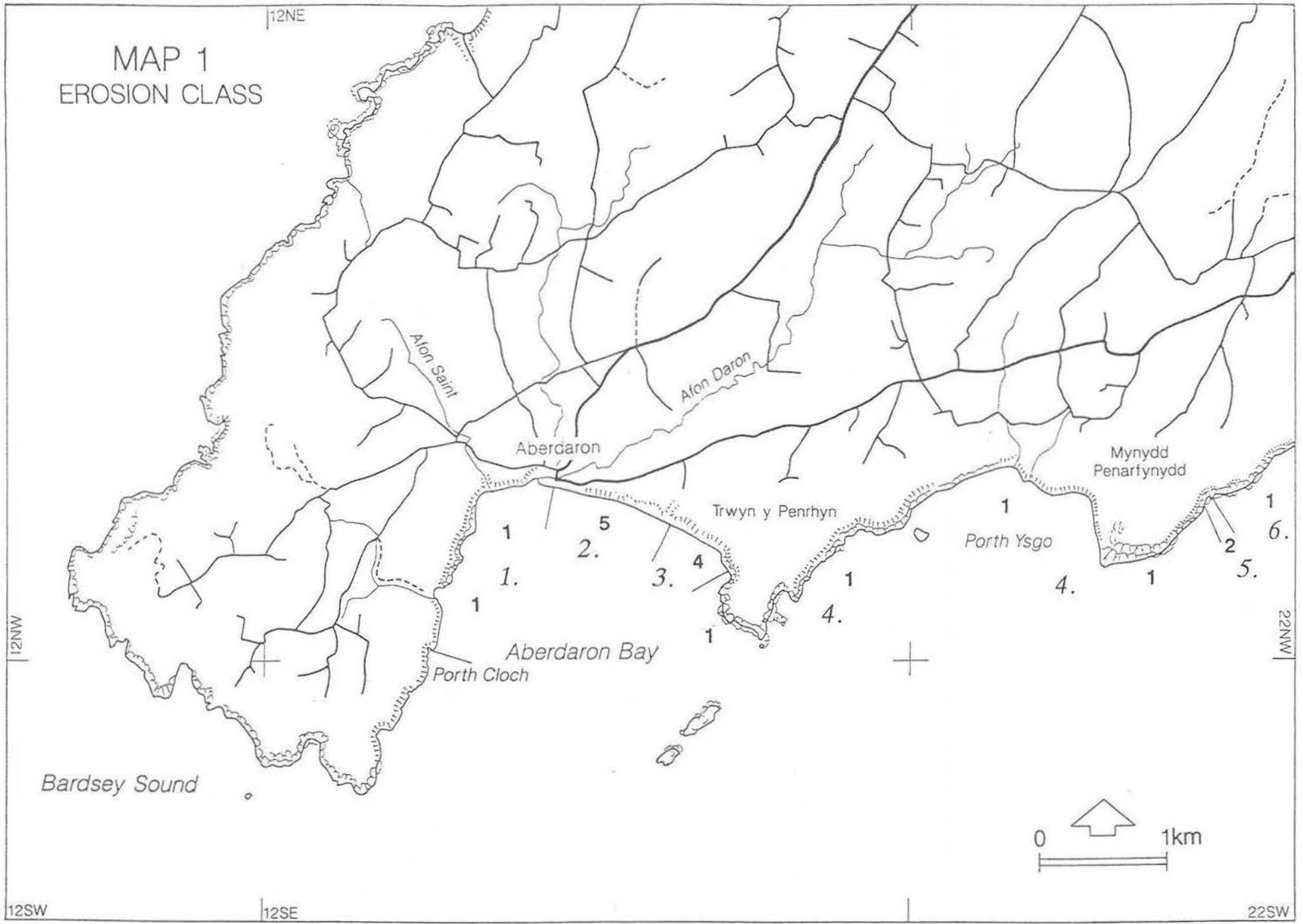
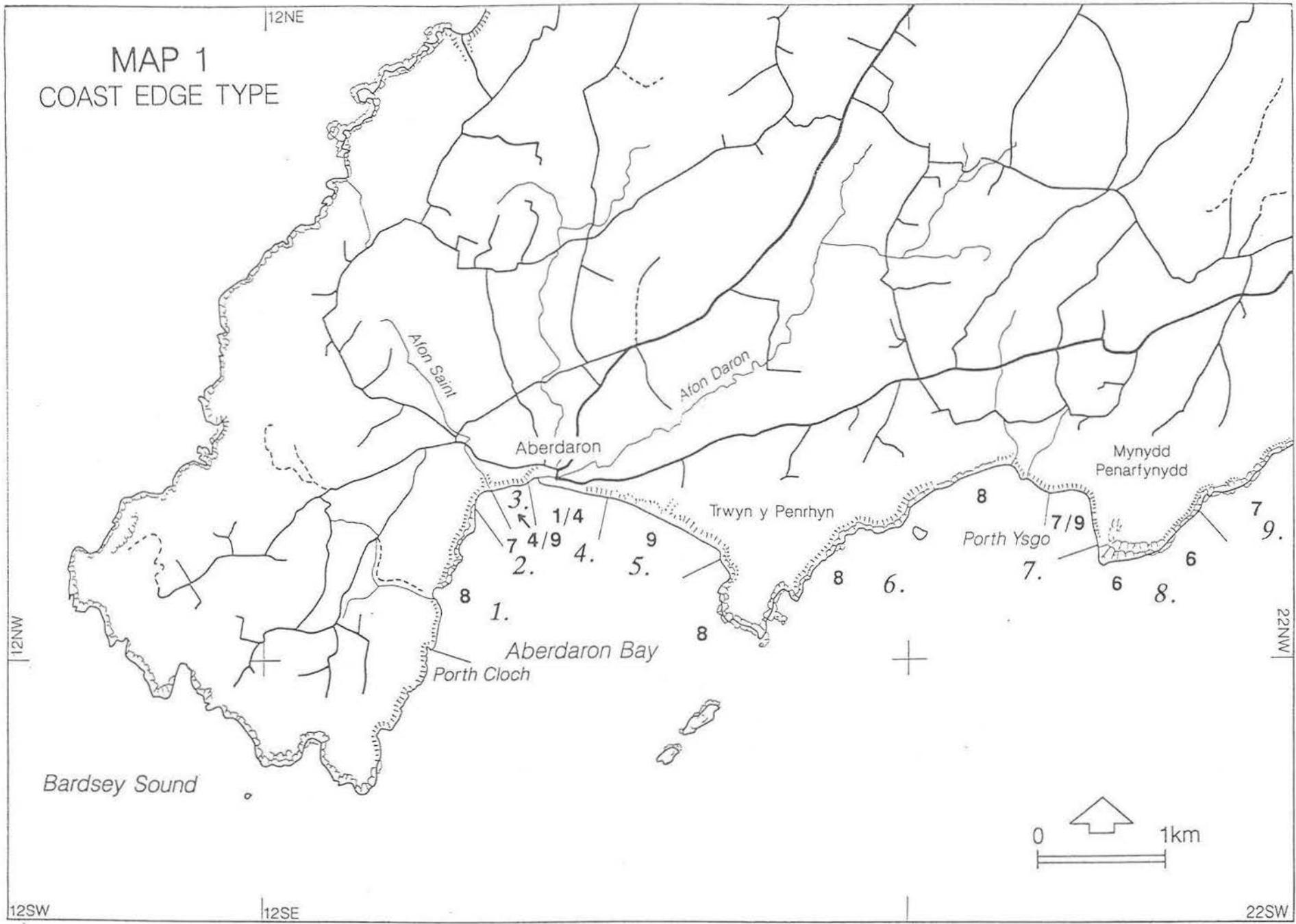


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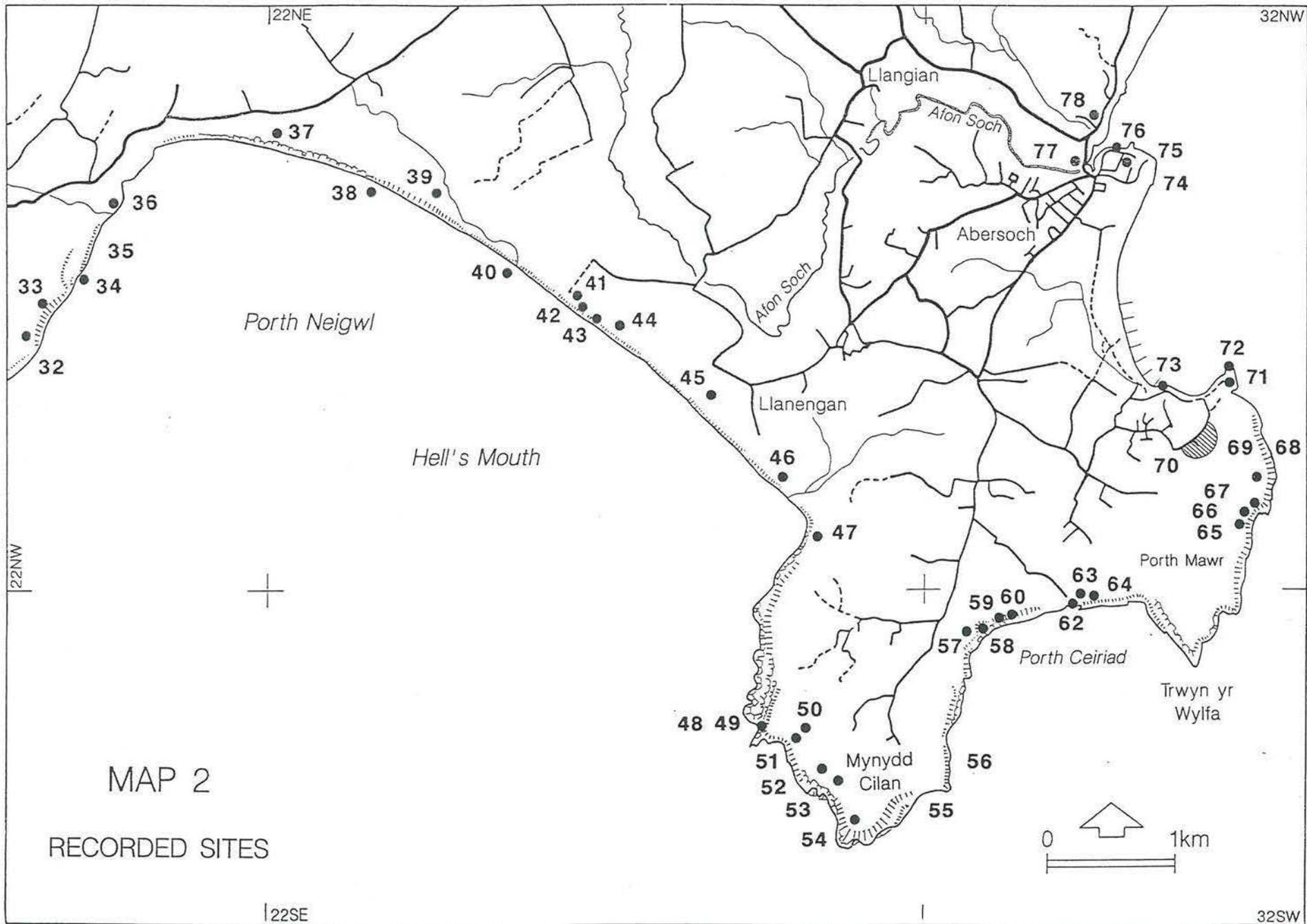


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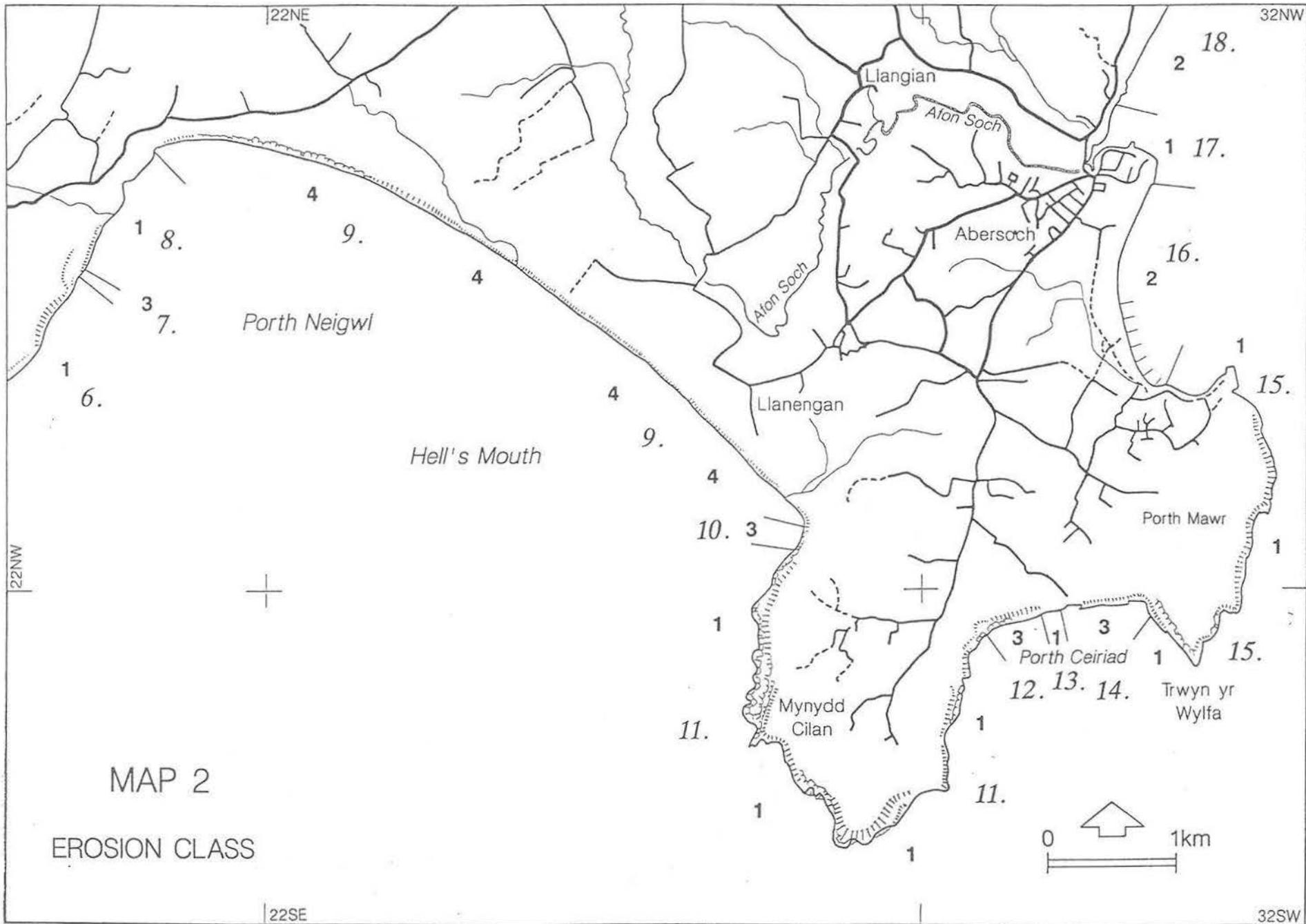


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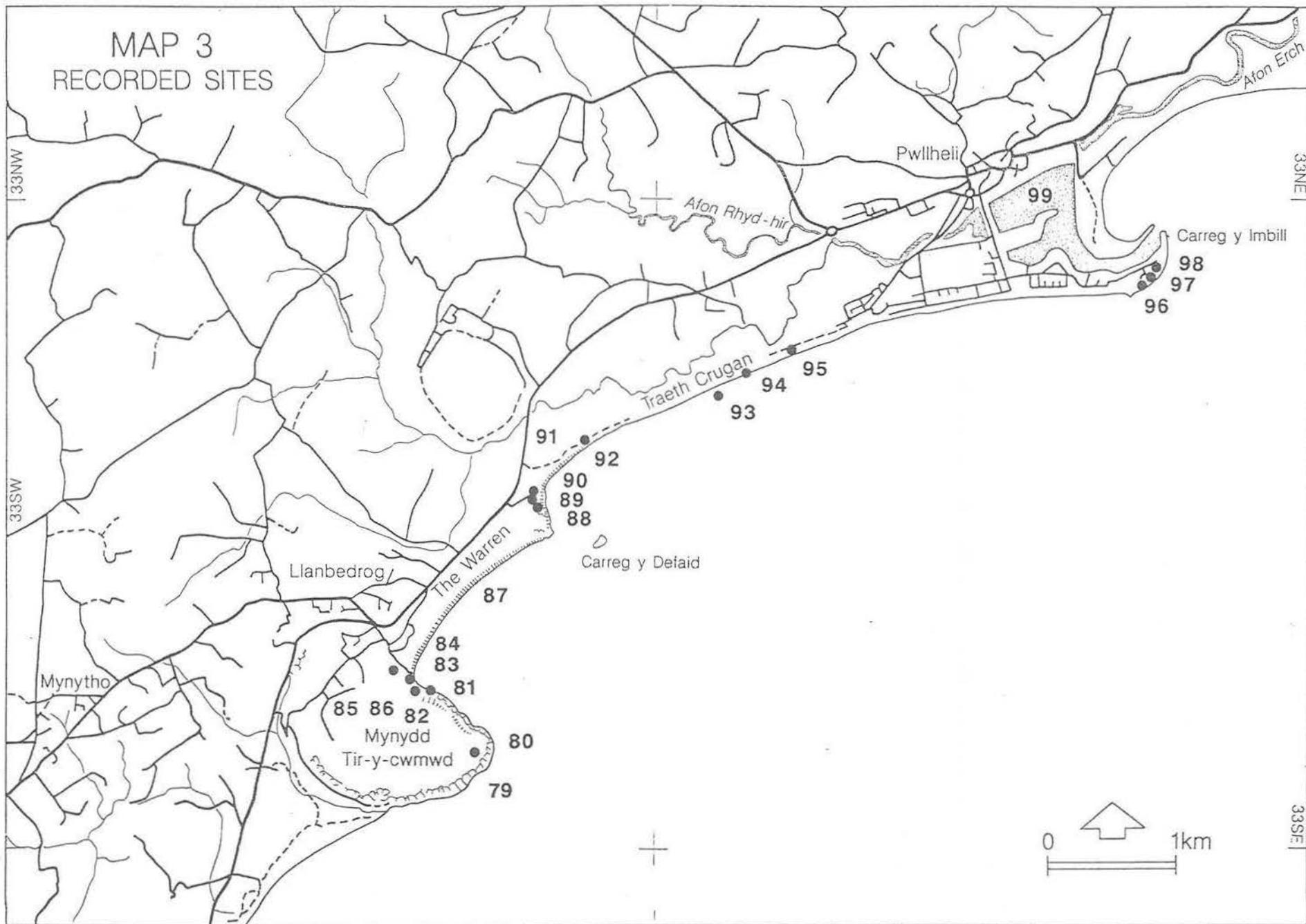


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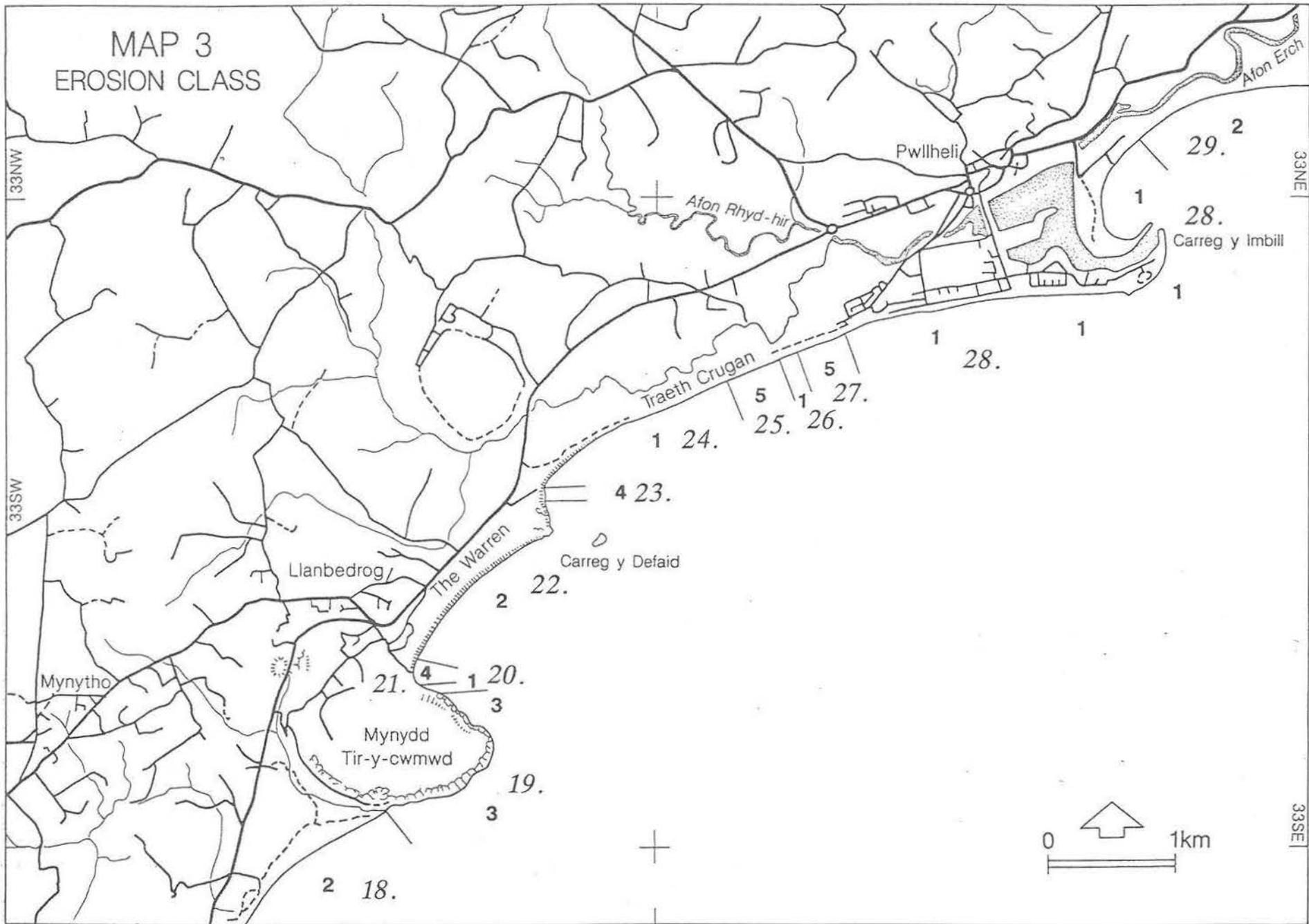


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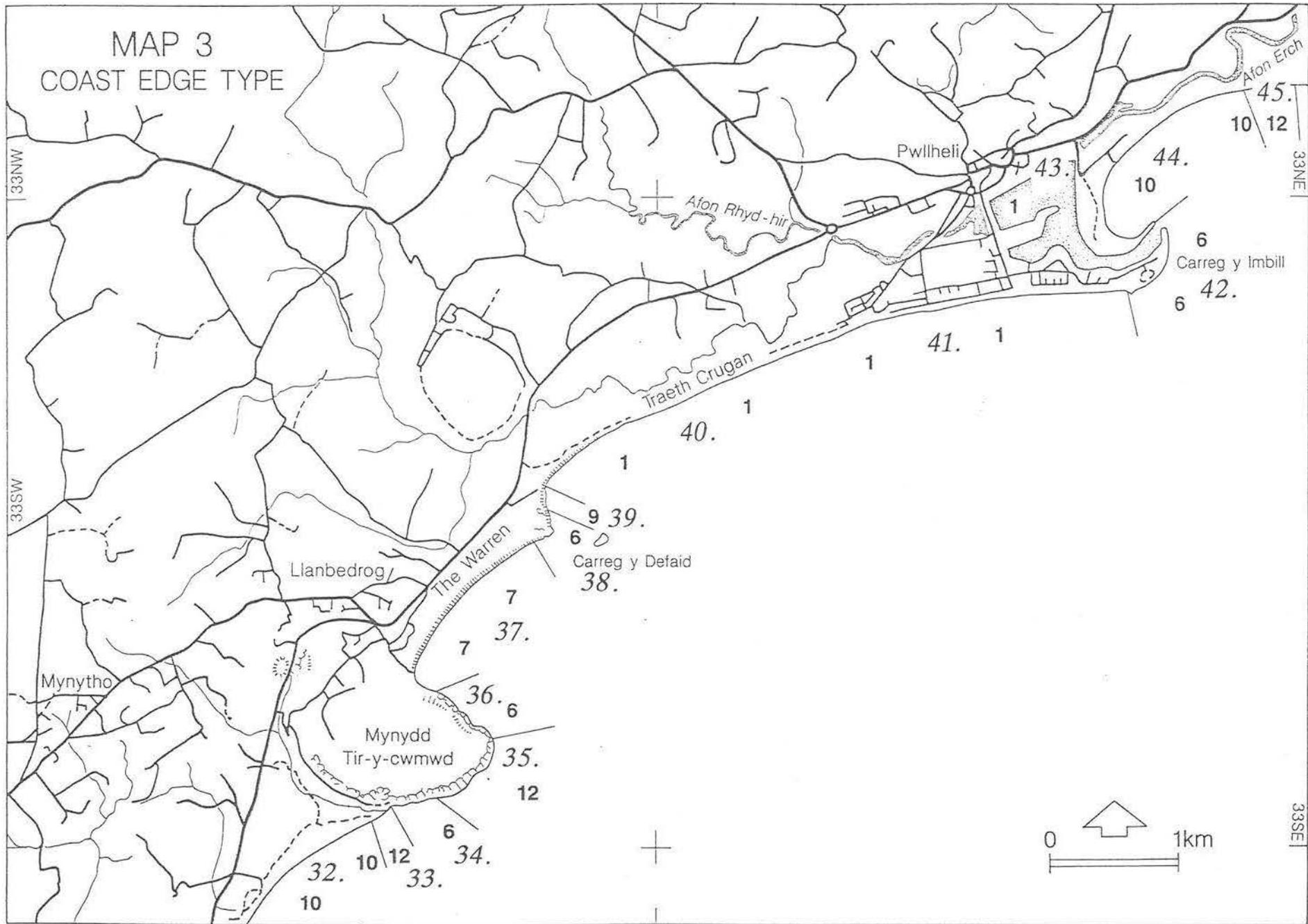


fig.10

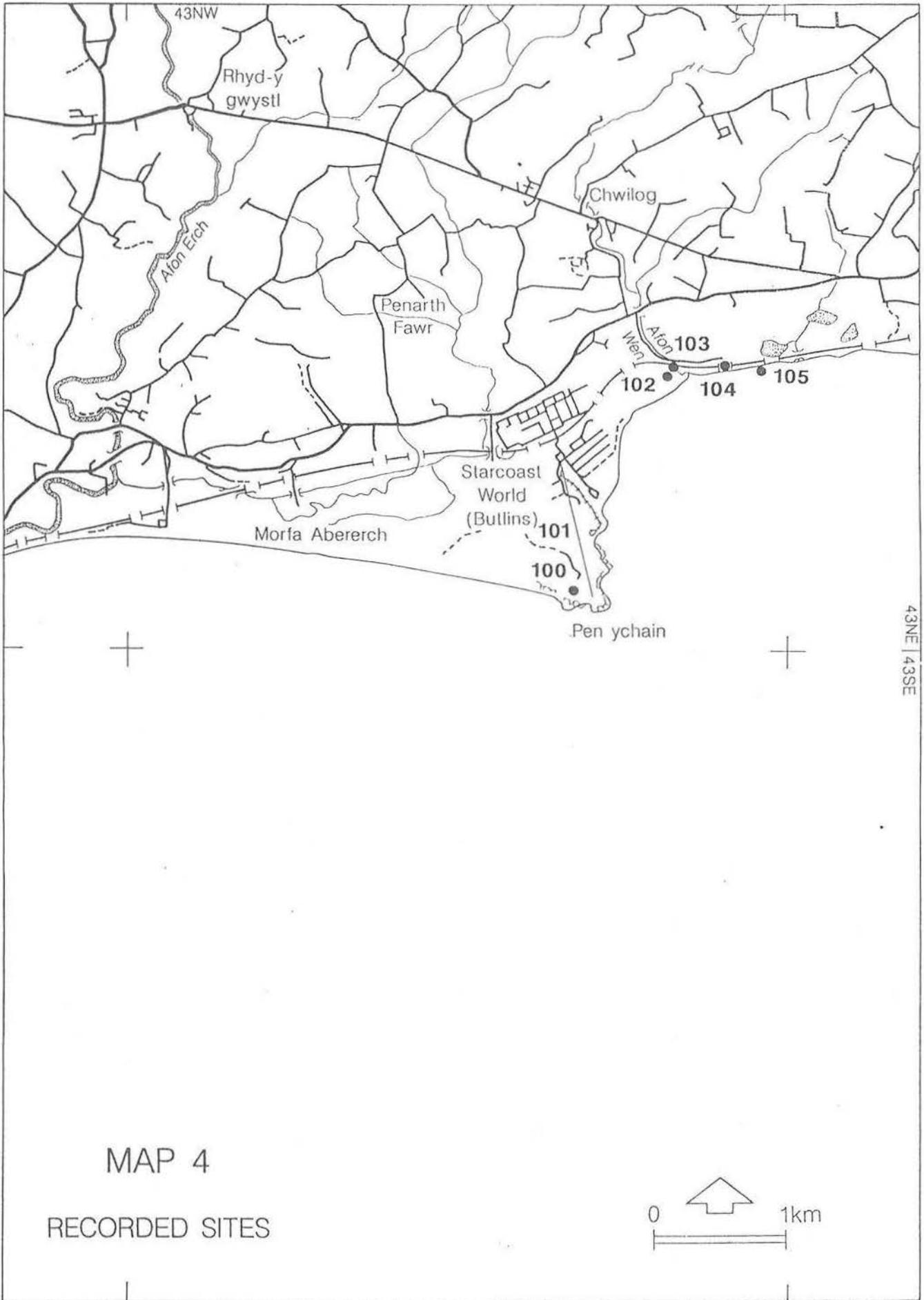


fig.11

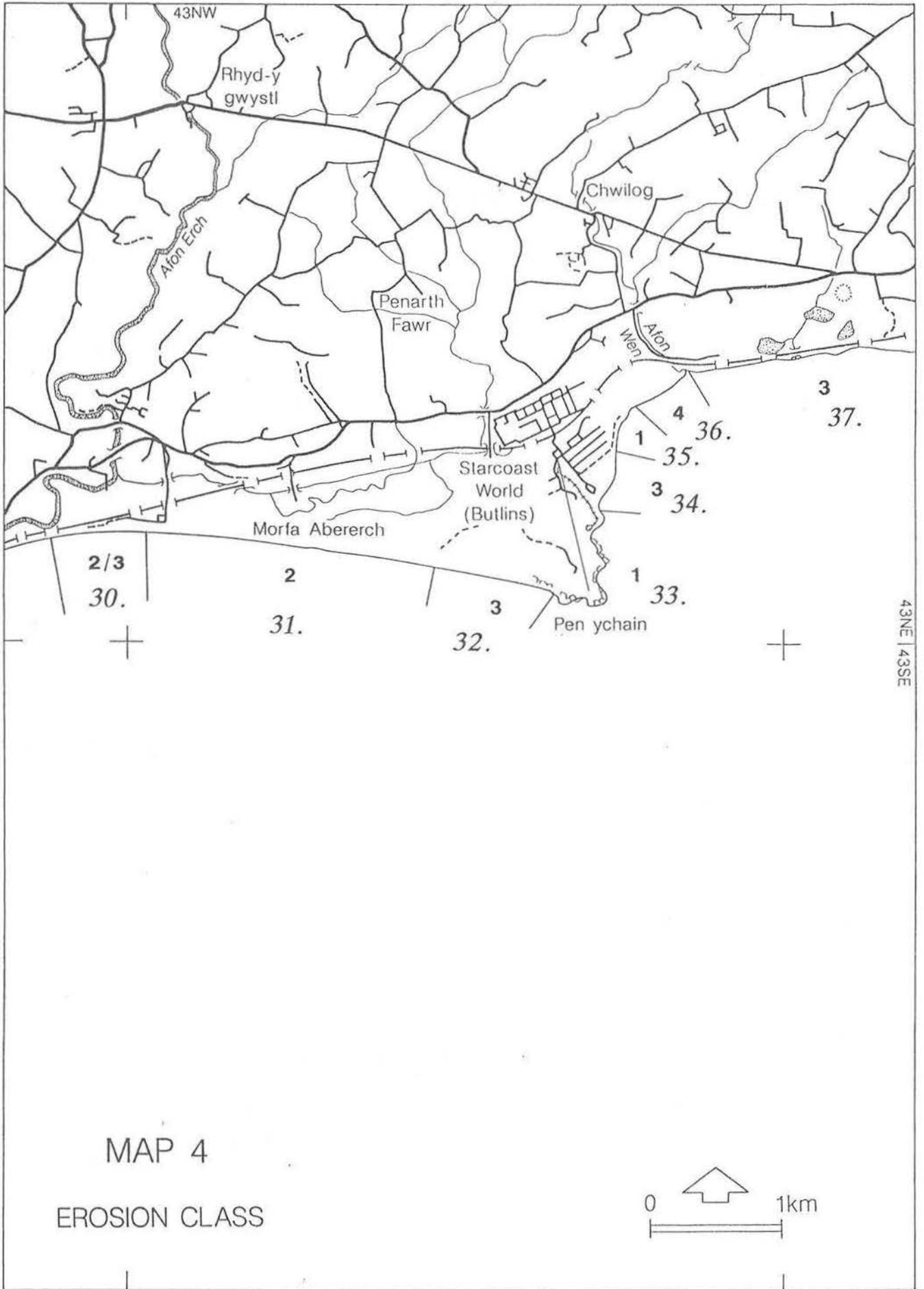


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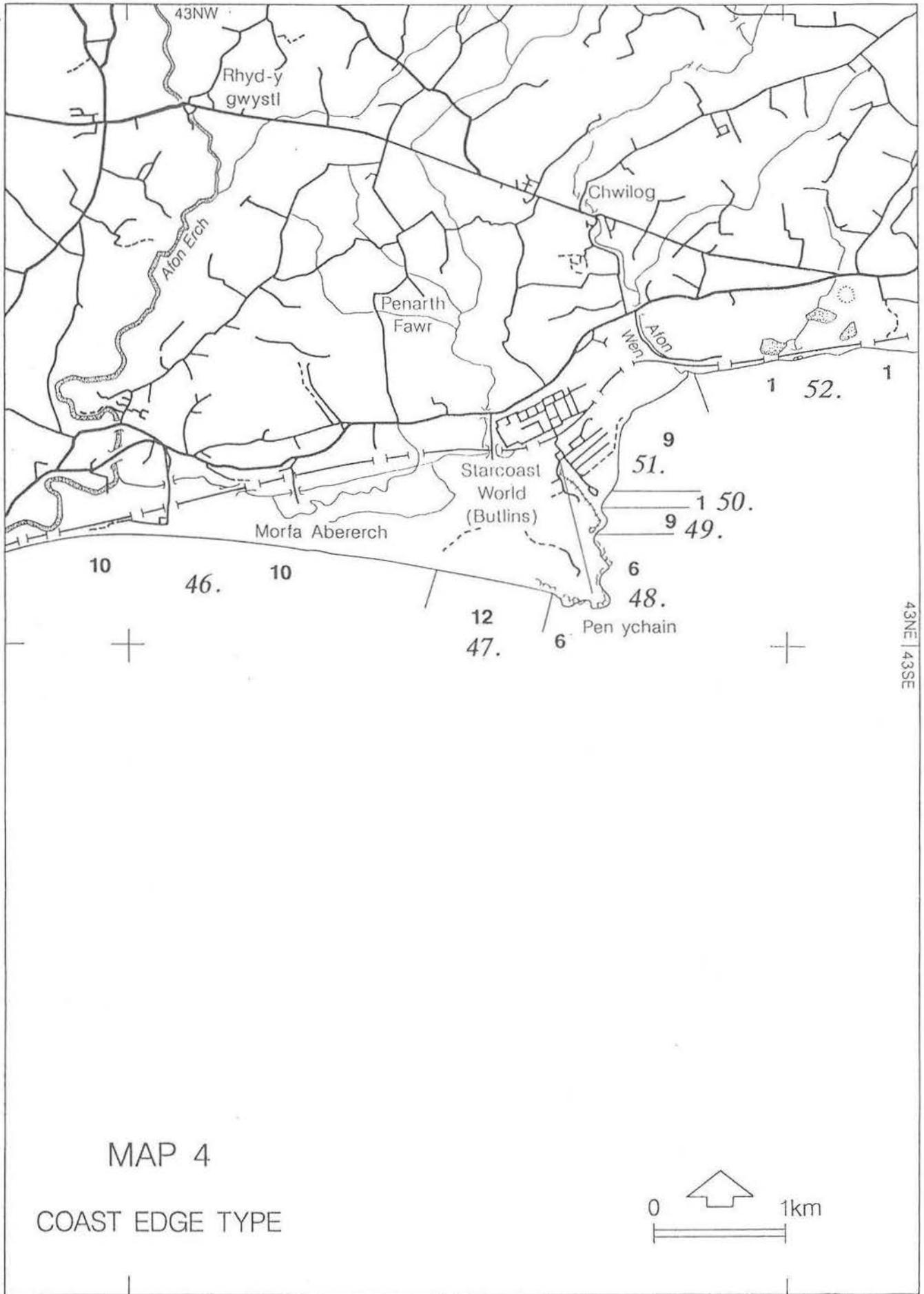


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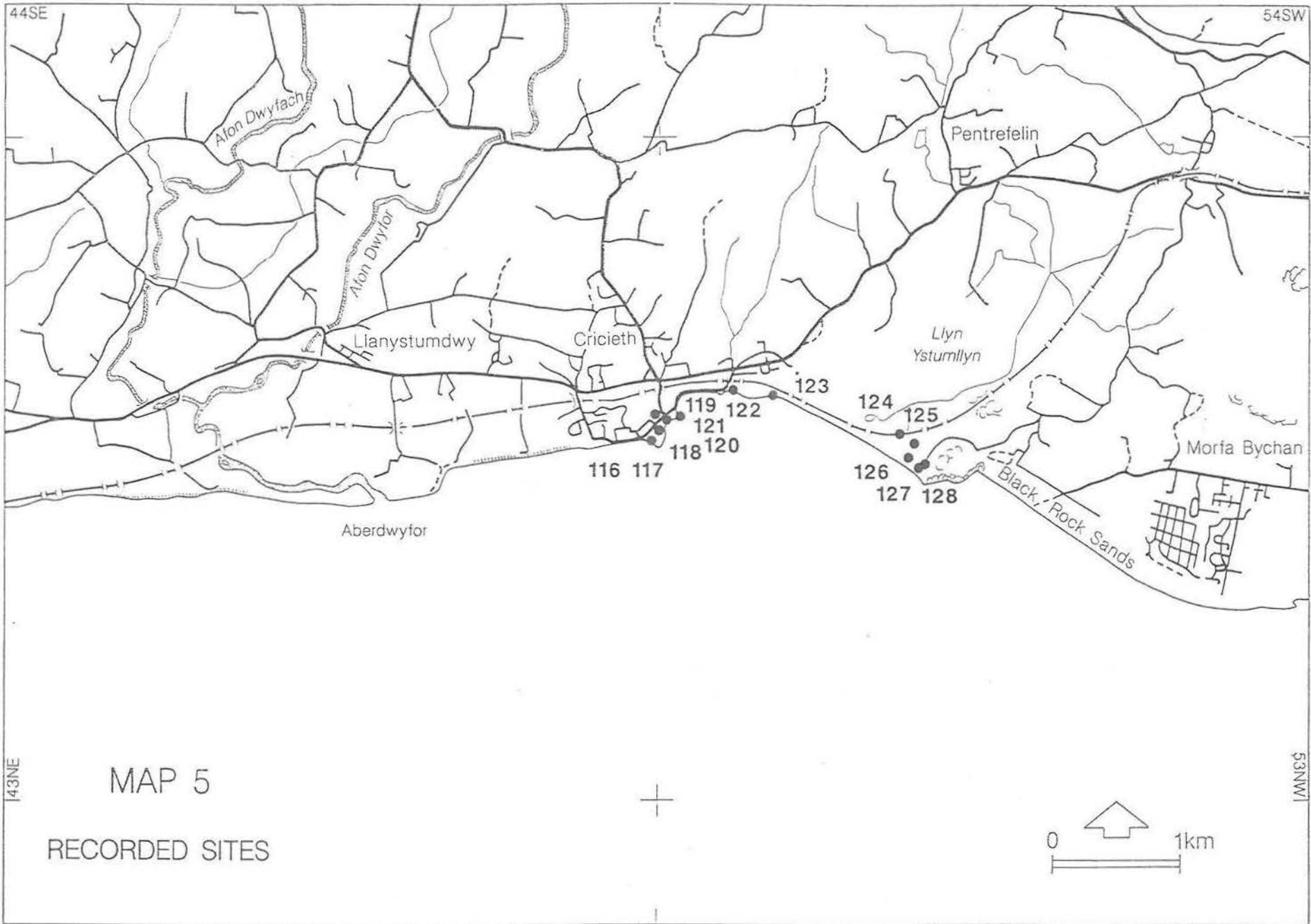


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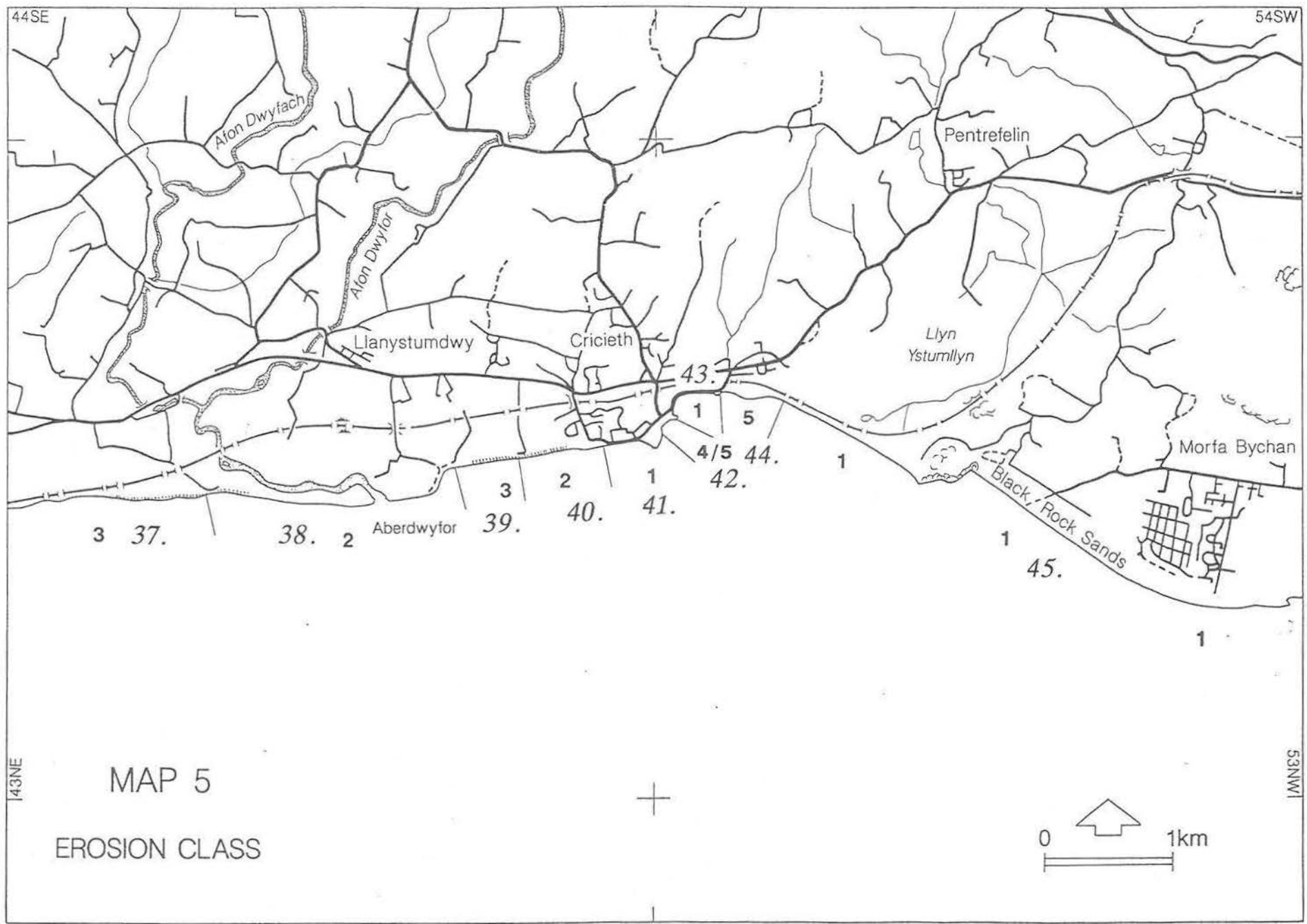


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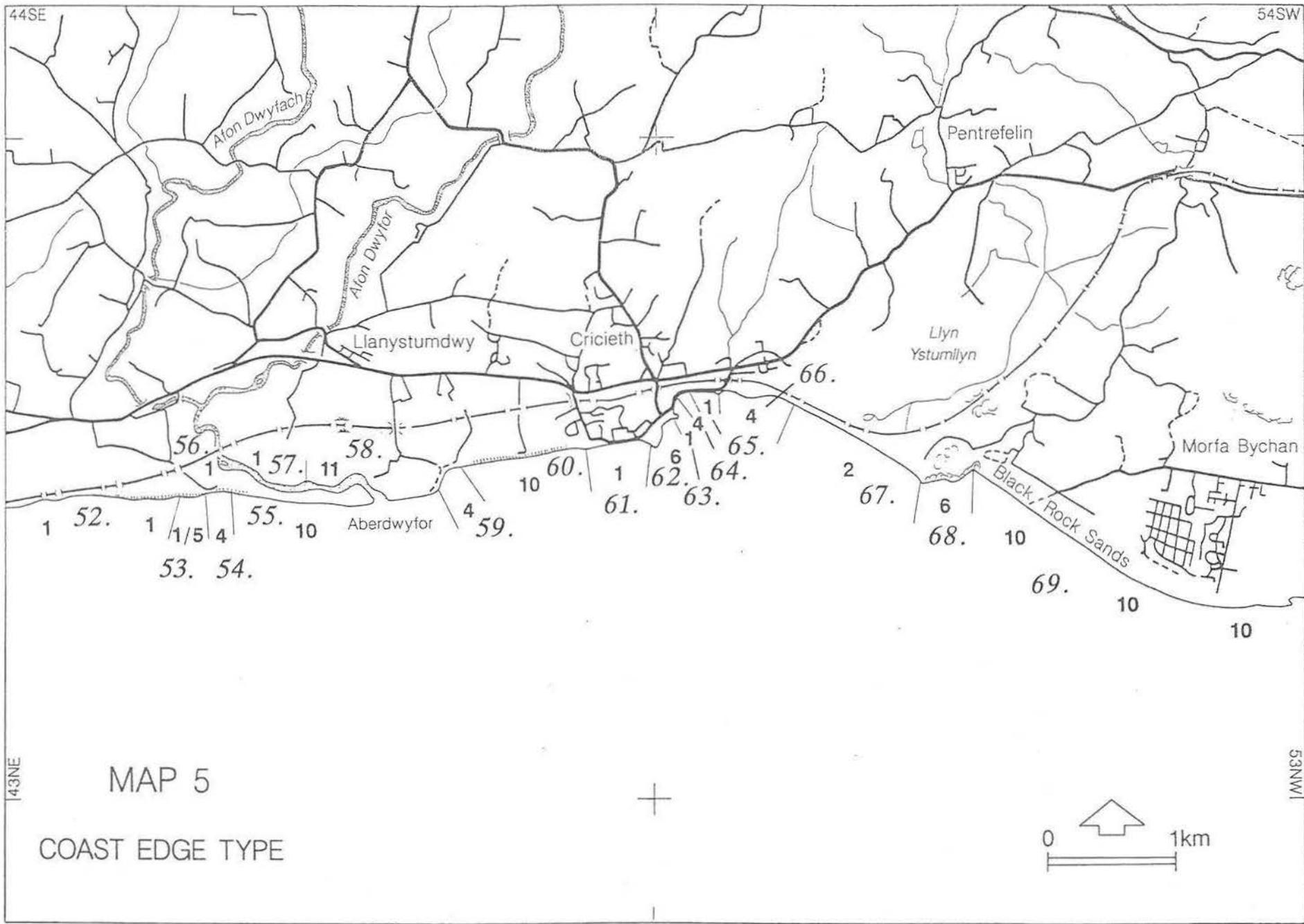


fig.16

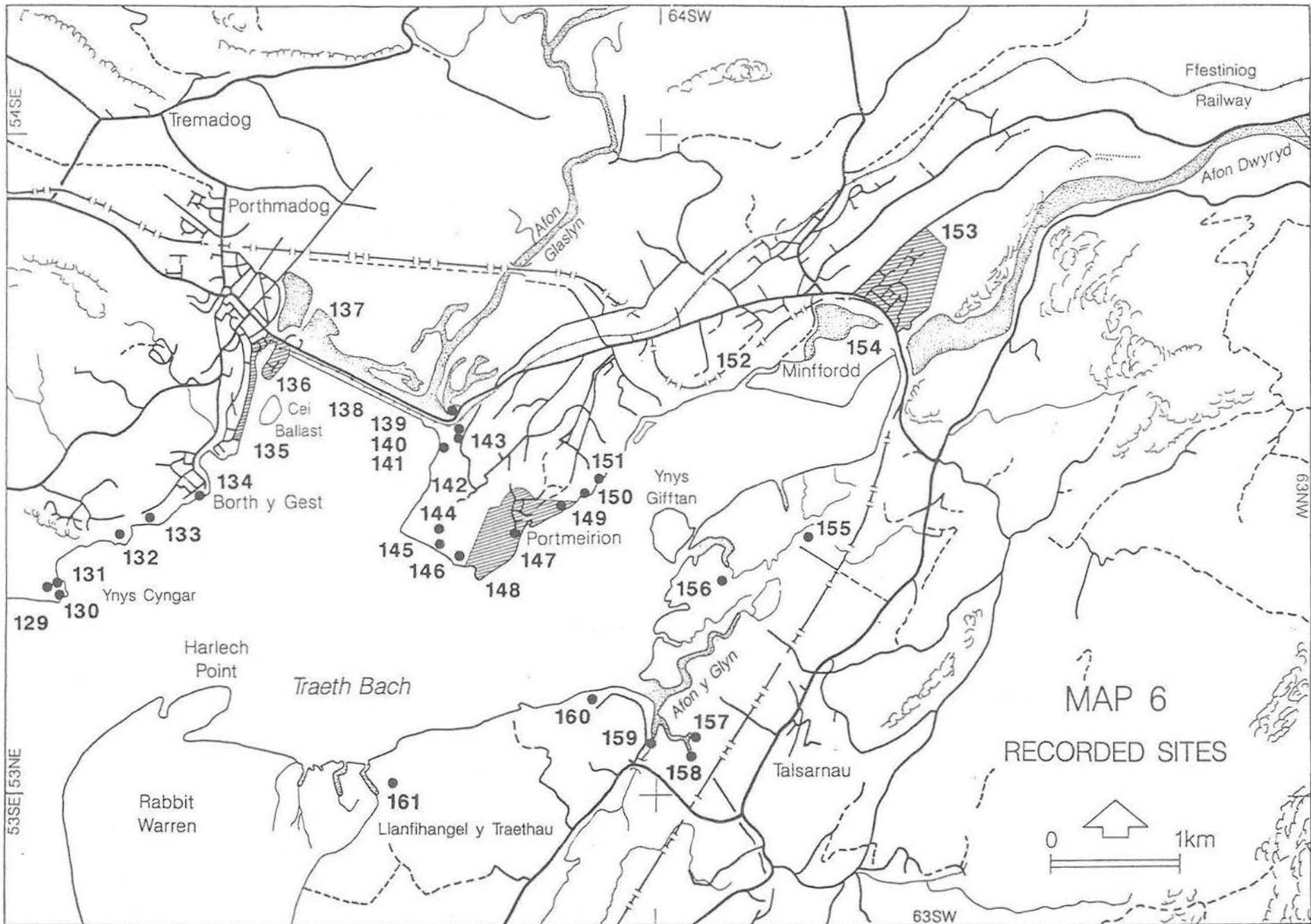


fig.17

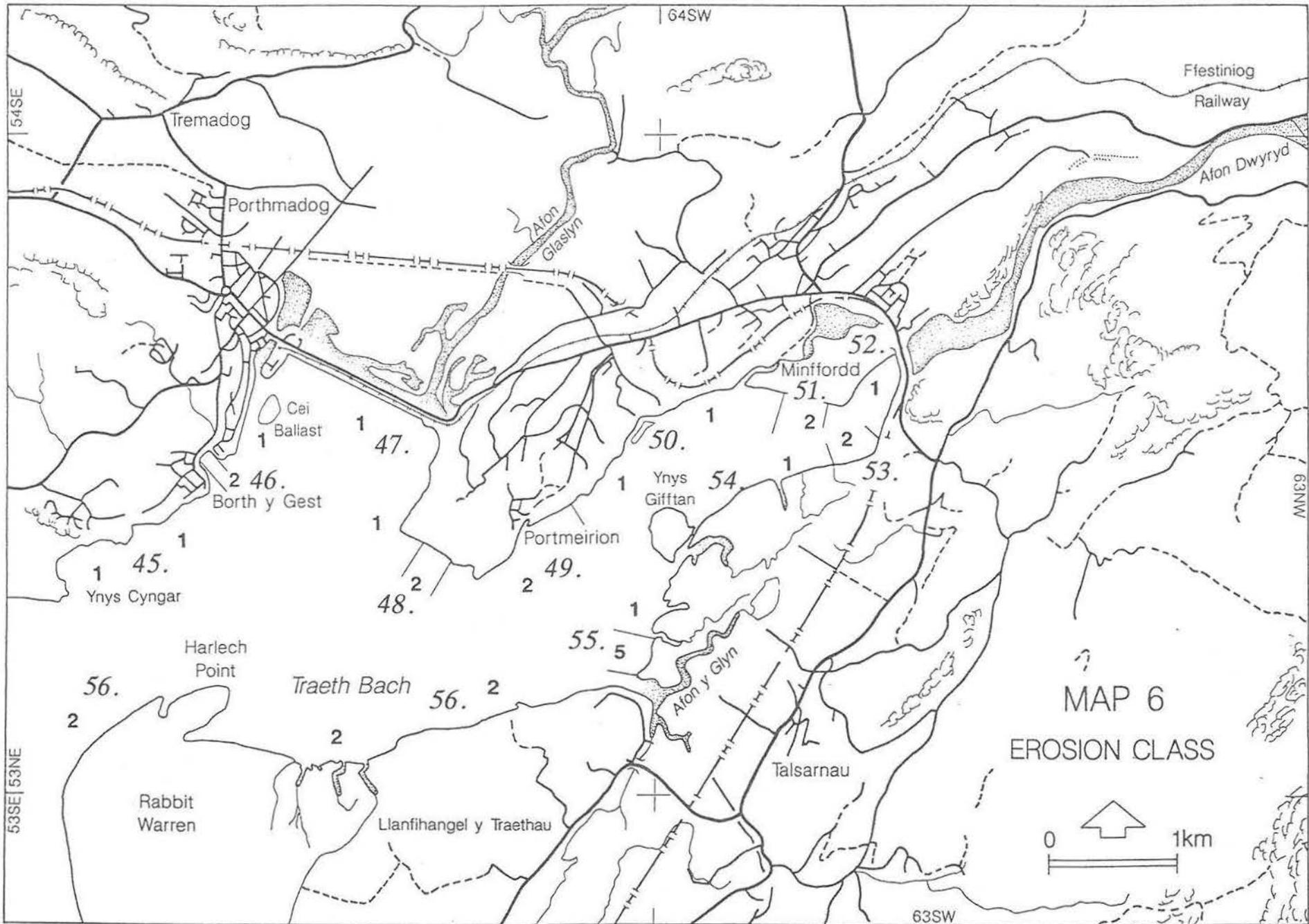


fig. 18

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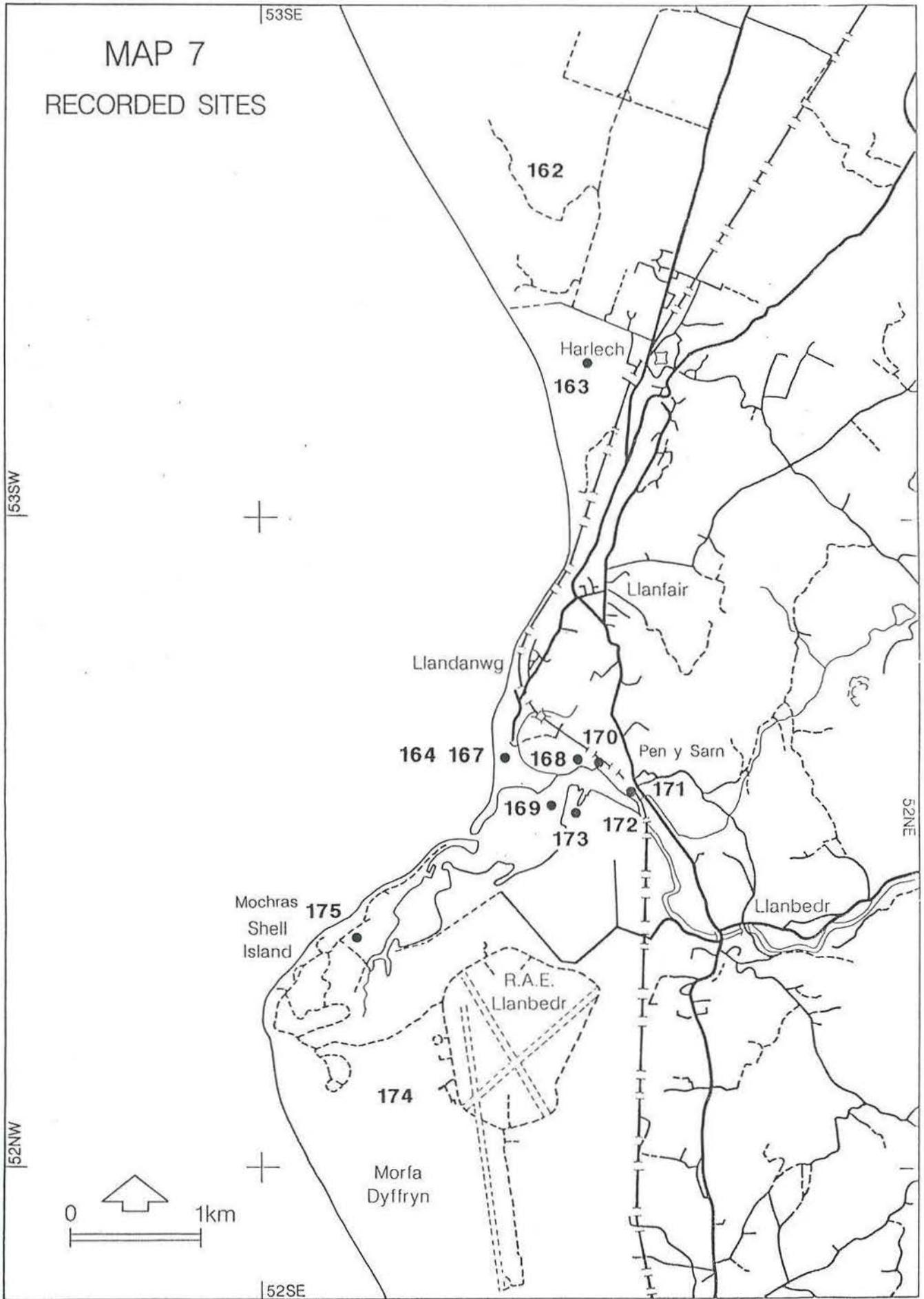


fig. 20

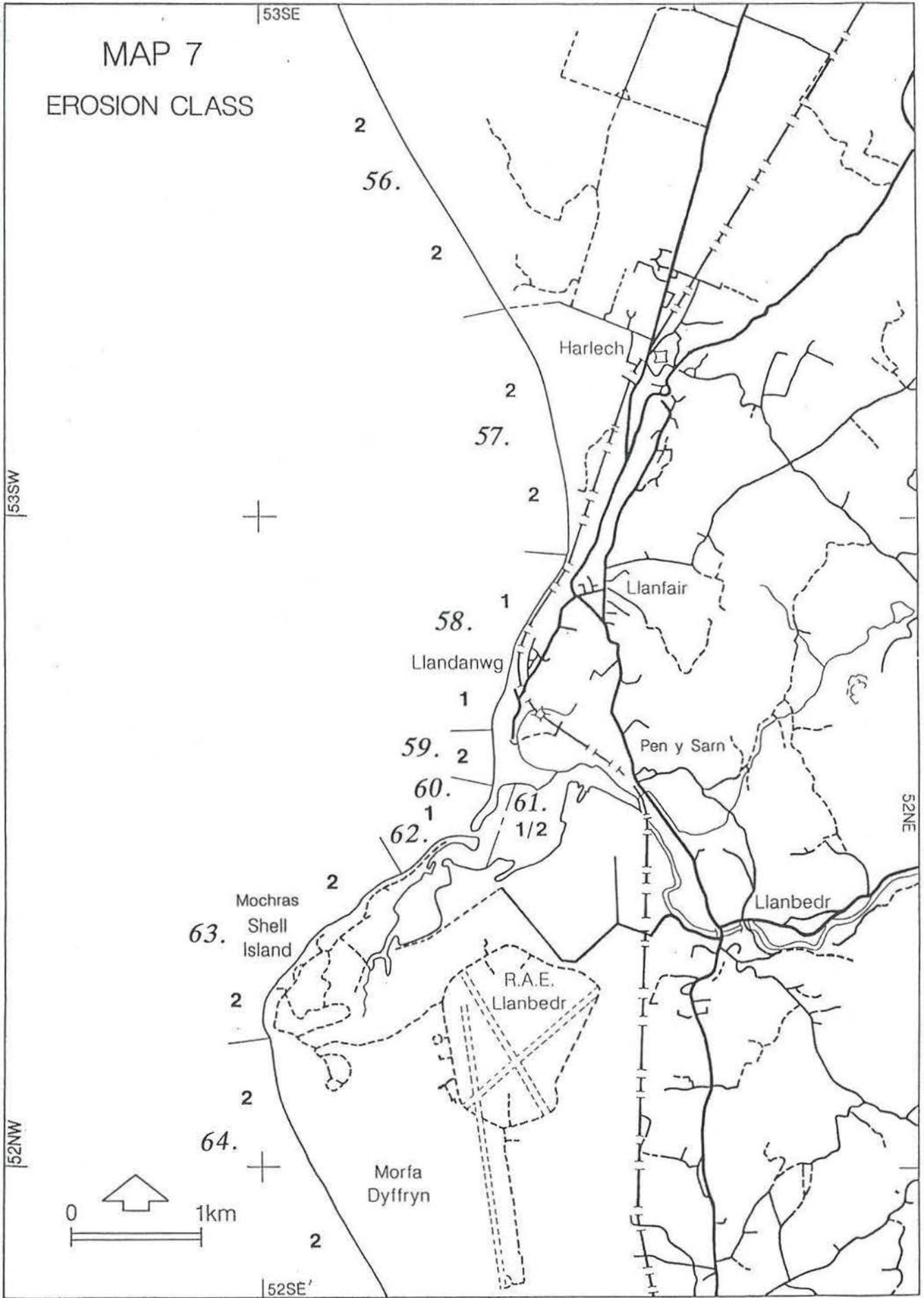


fig.21

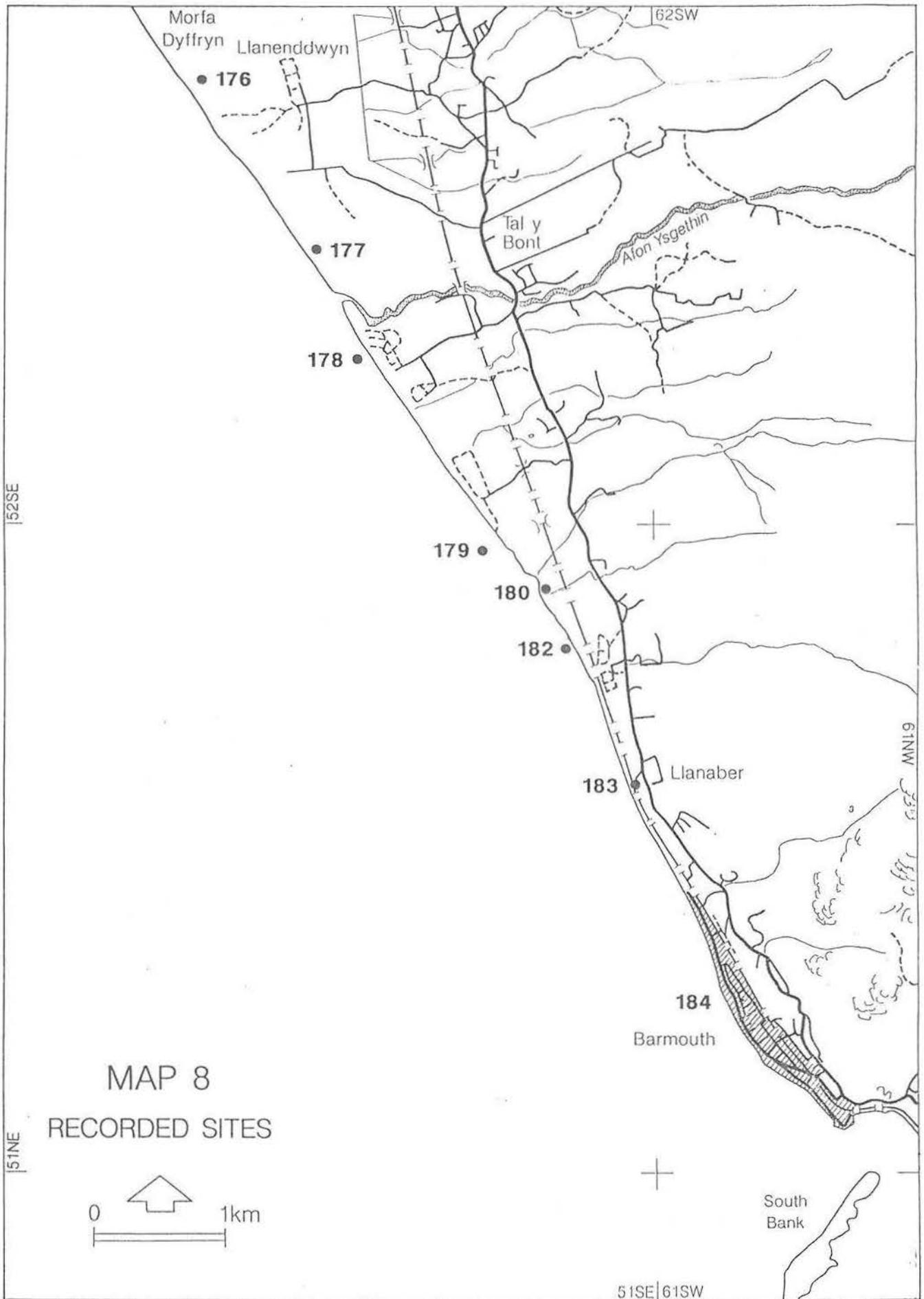


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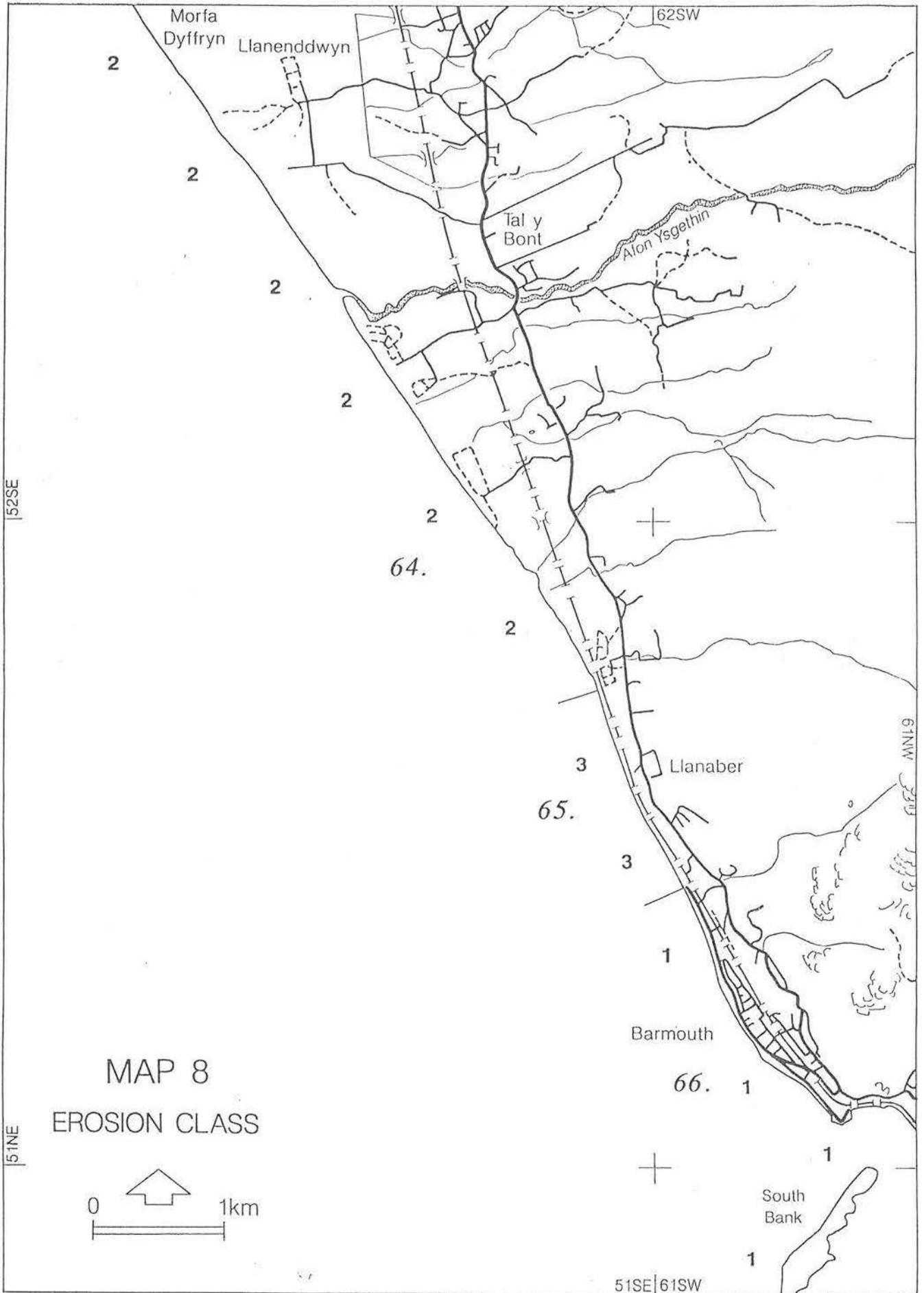


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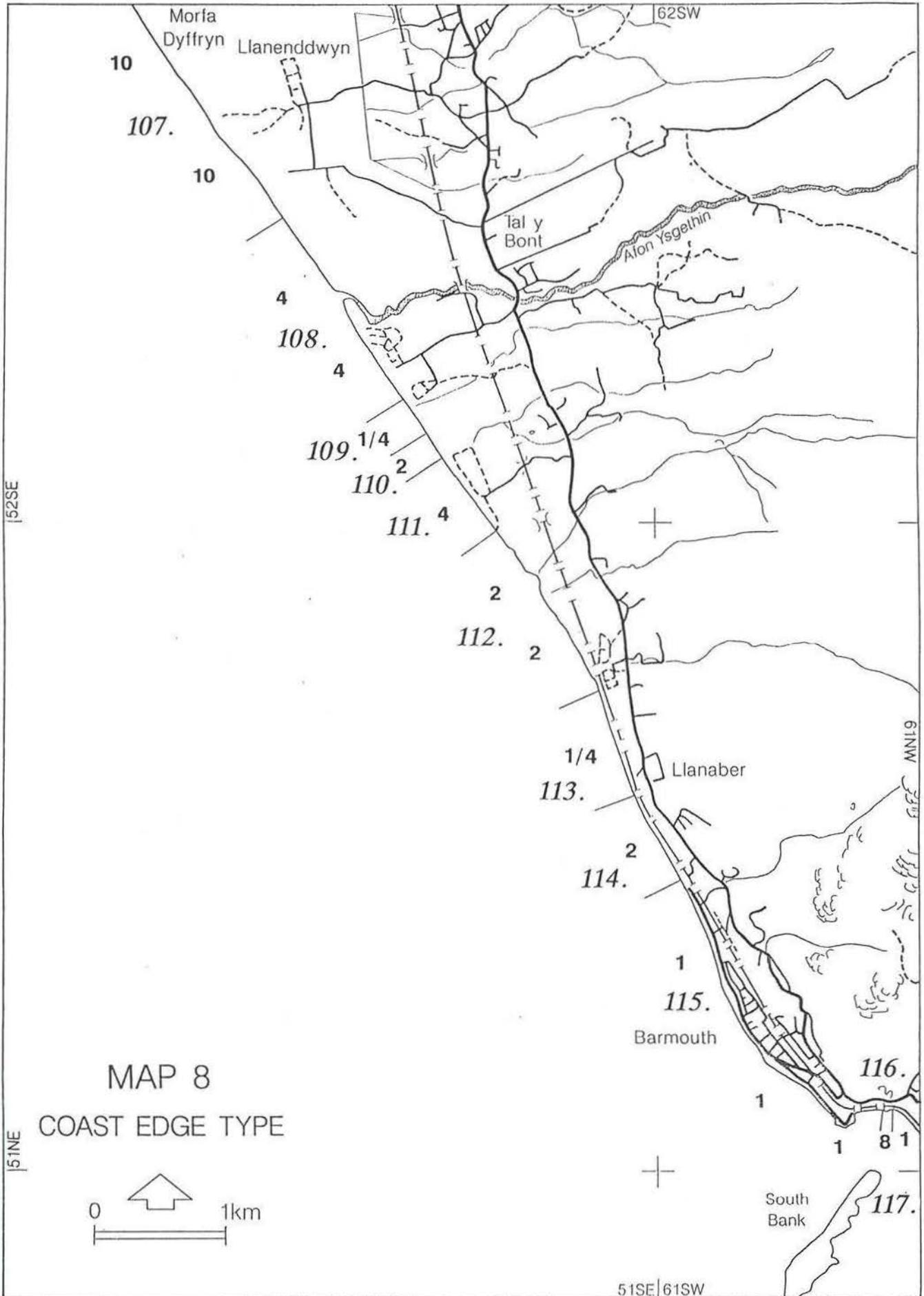


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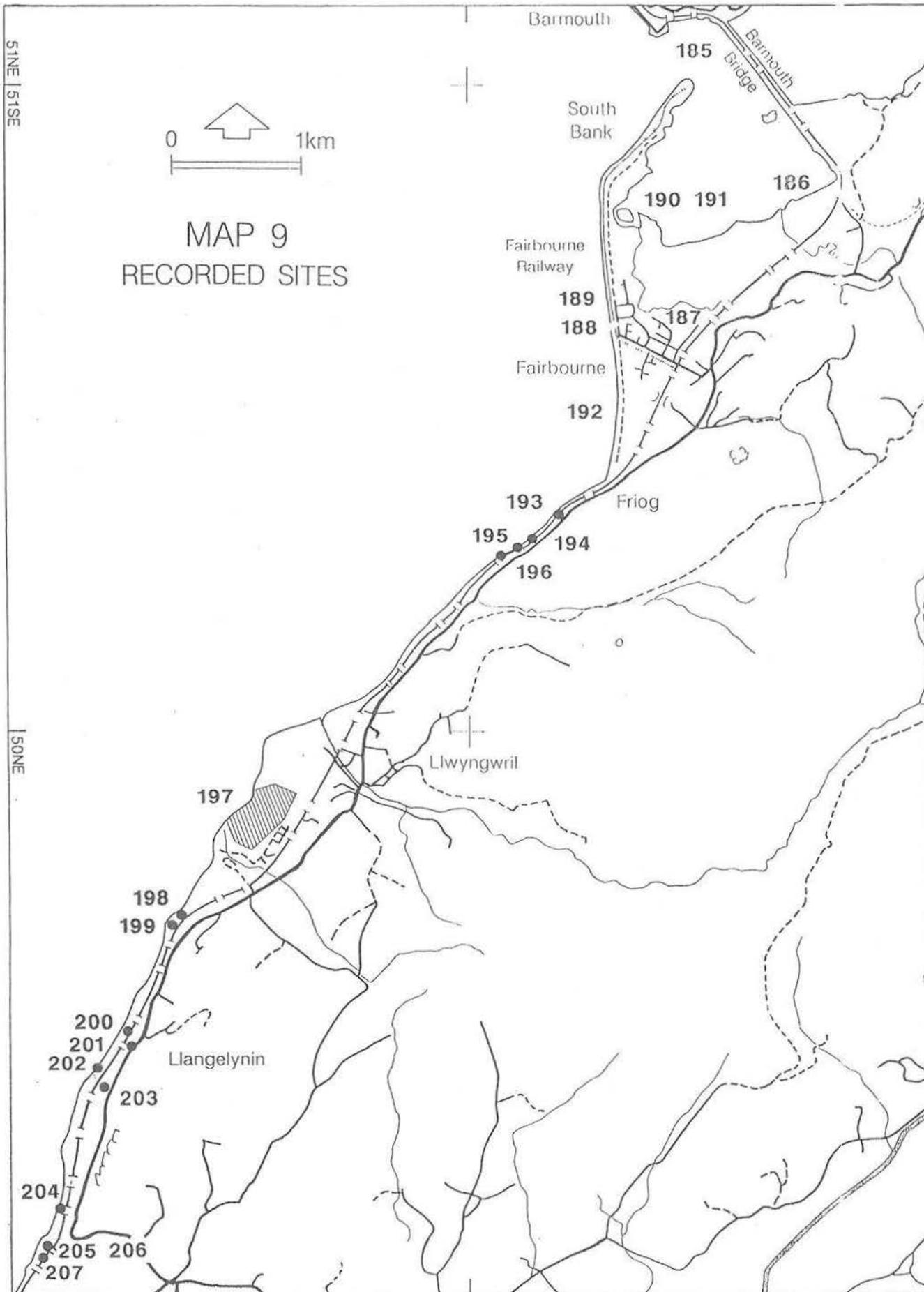
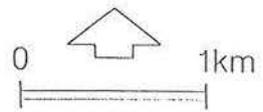


fig.26

51NE | 51SE



MAP 9 EROSION CLASS

| 50NE

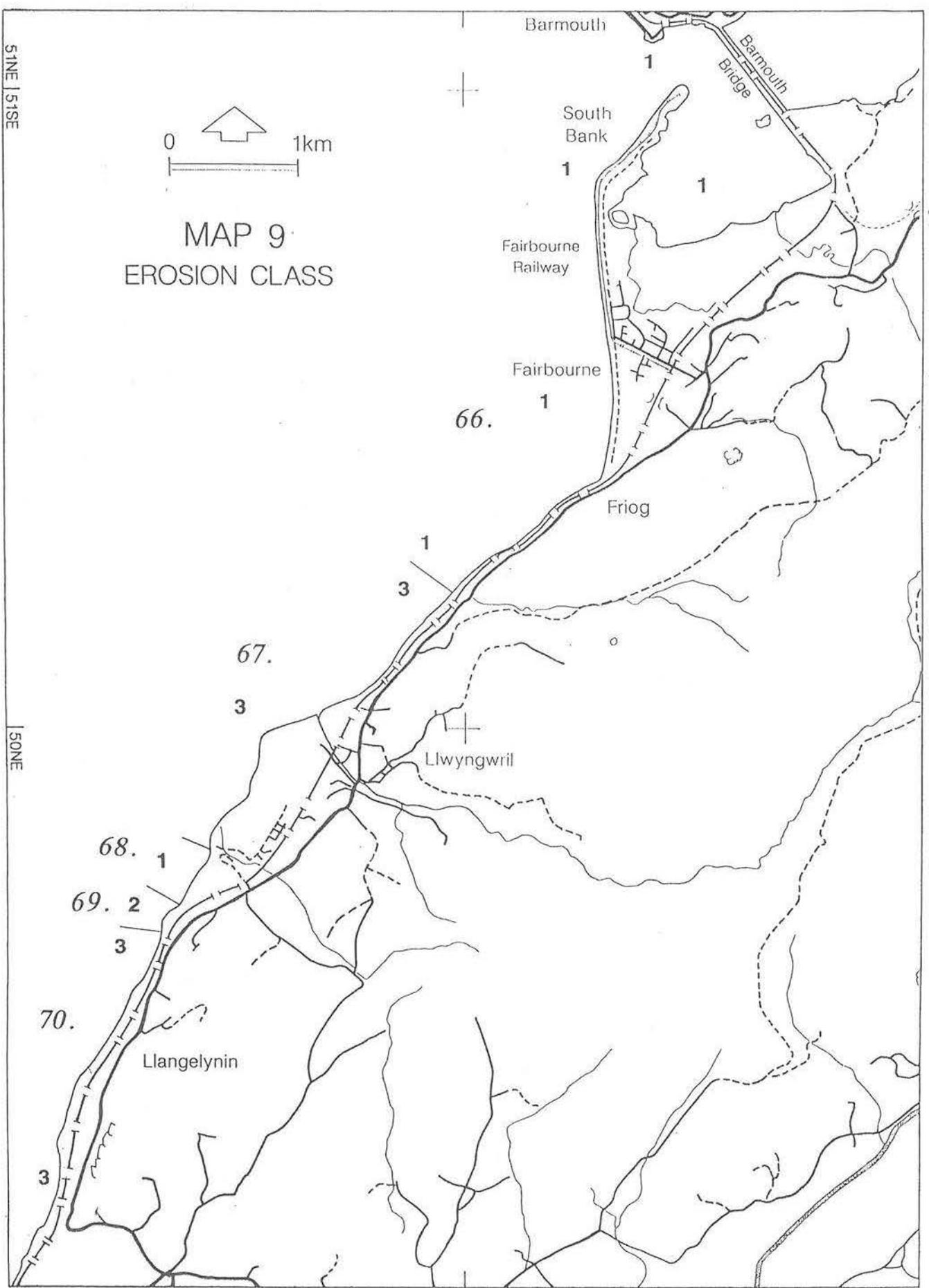


fig.27

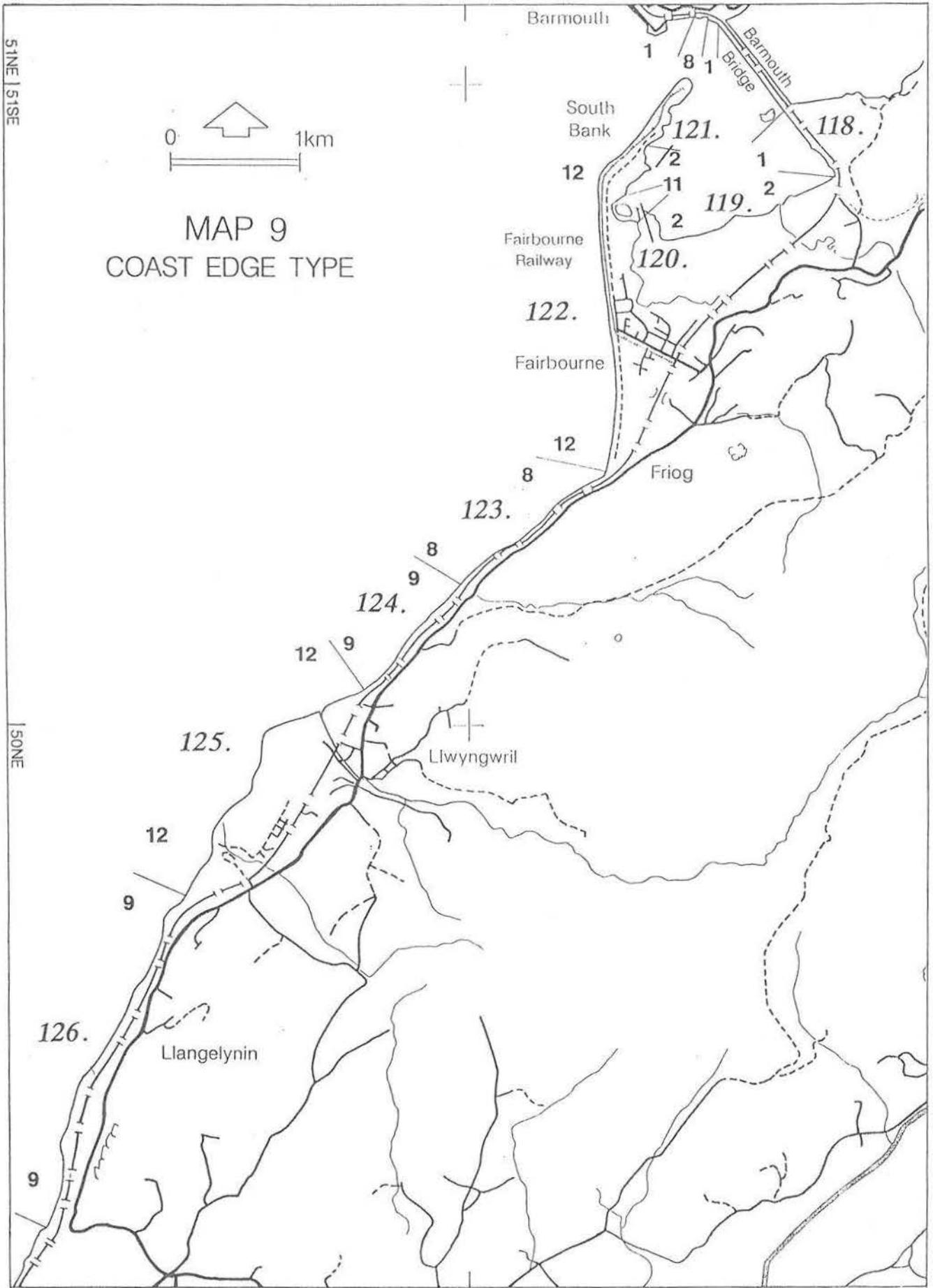


fig.28

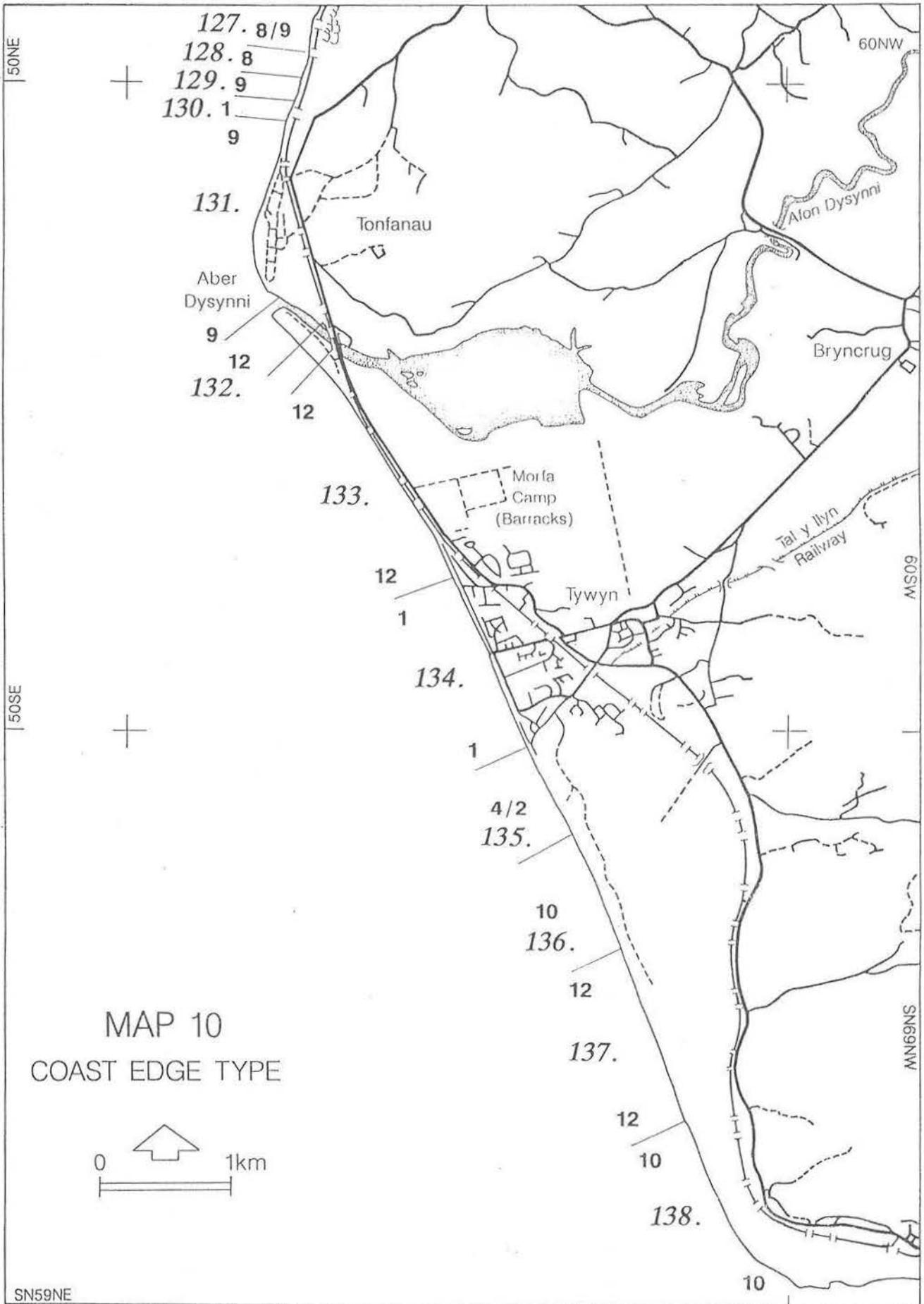


fig. 29

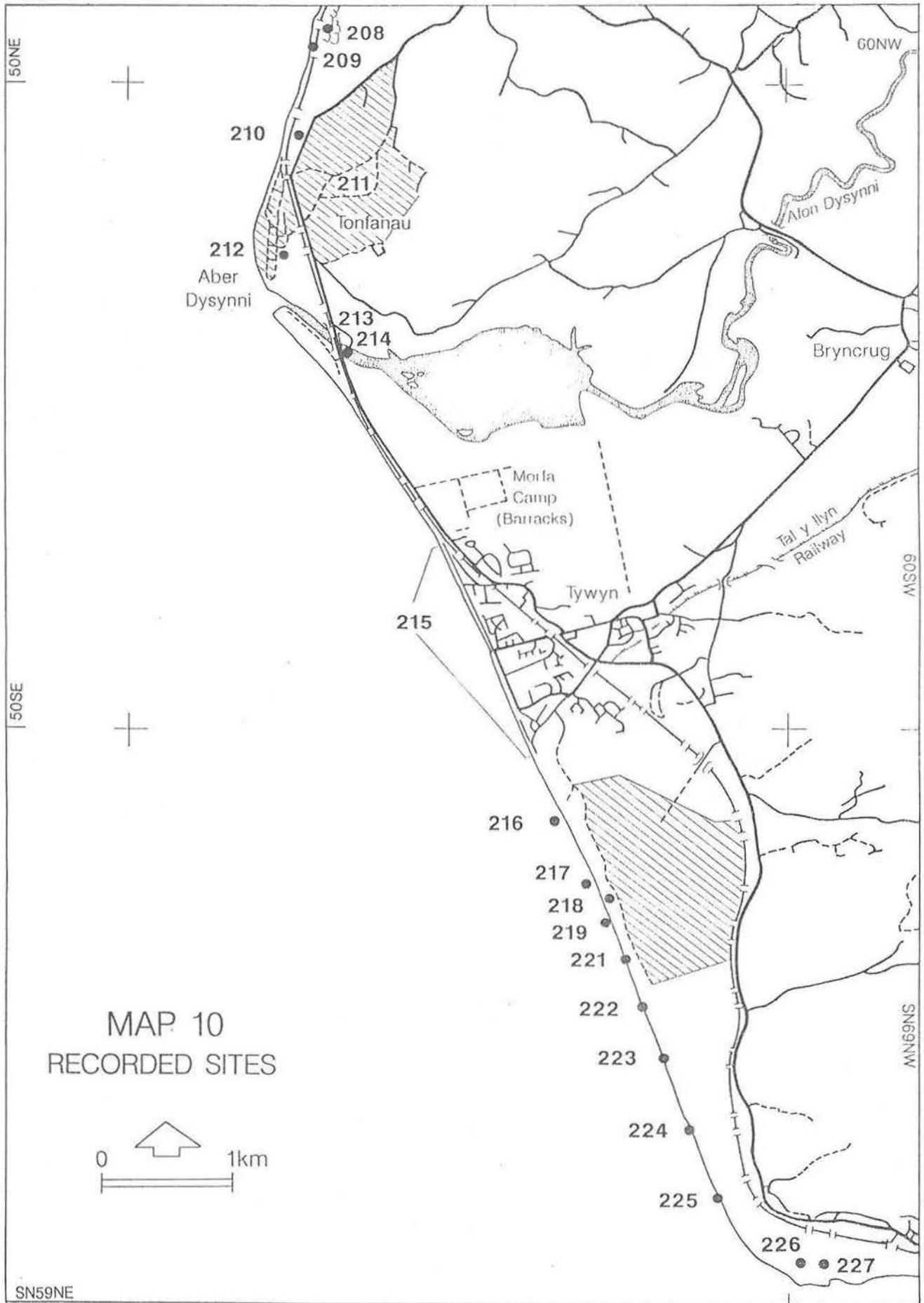


fig.31

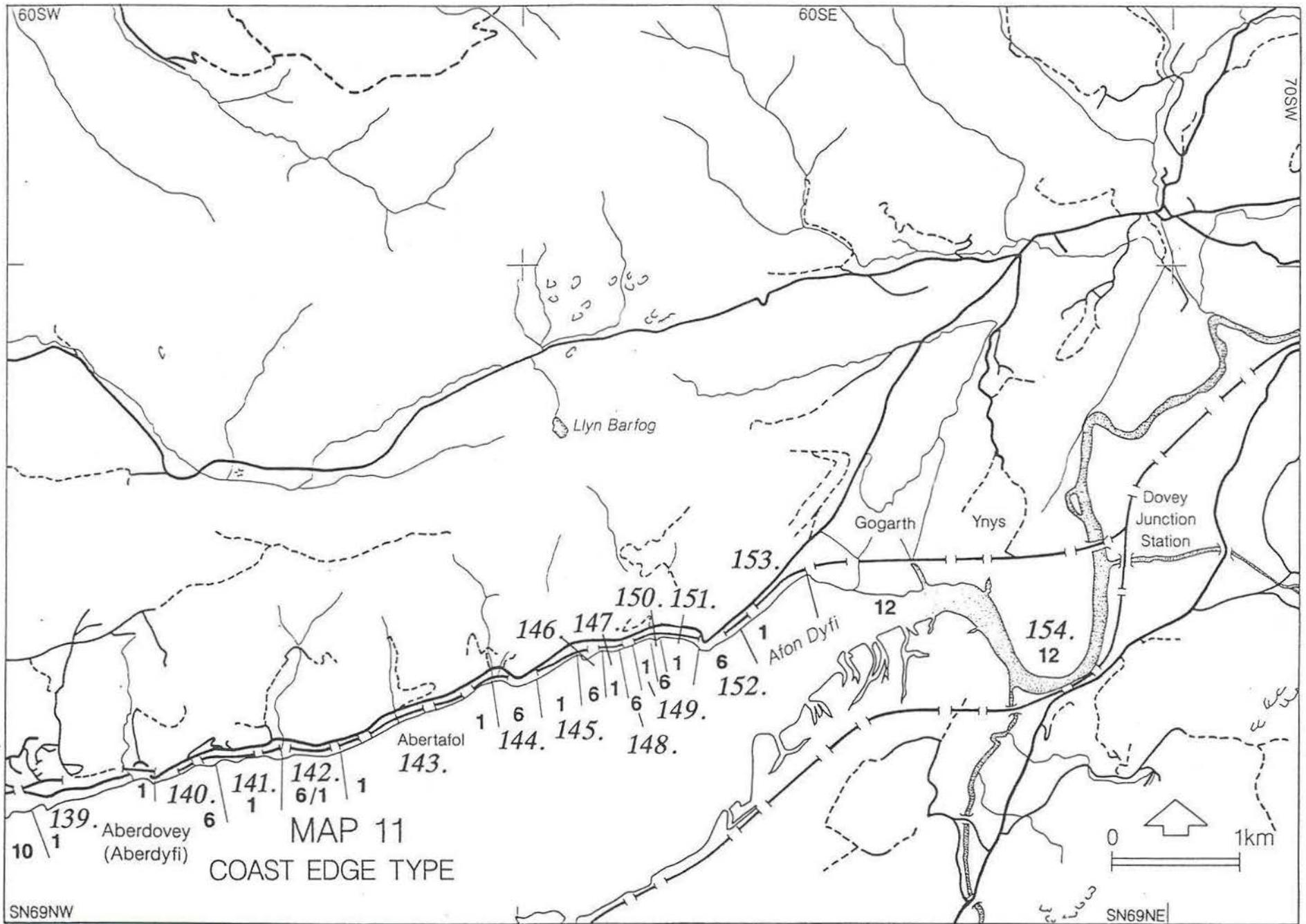


fig. 32

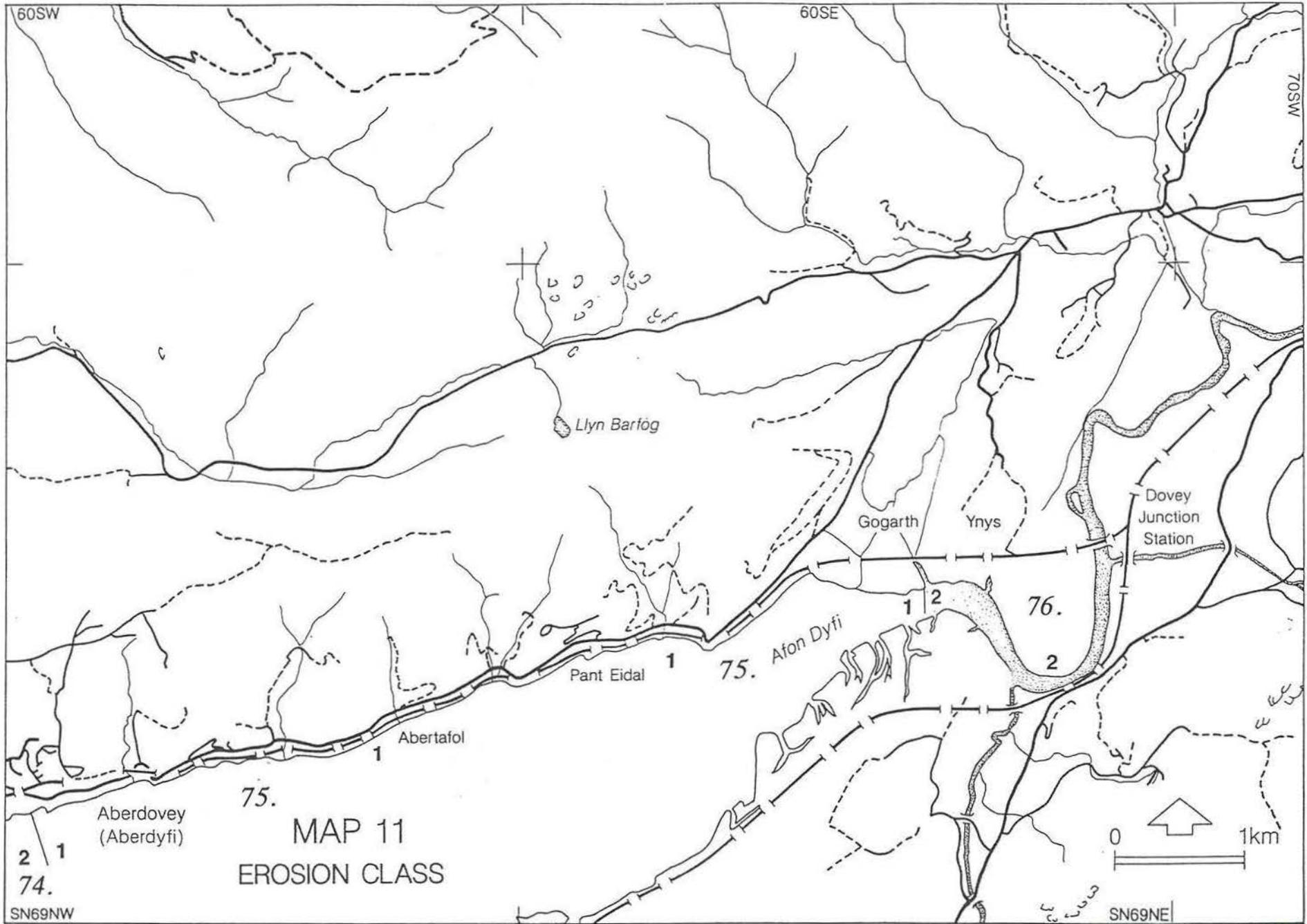


fig. 33

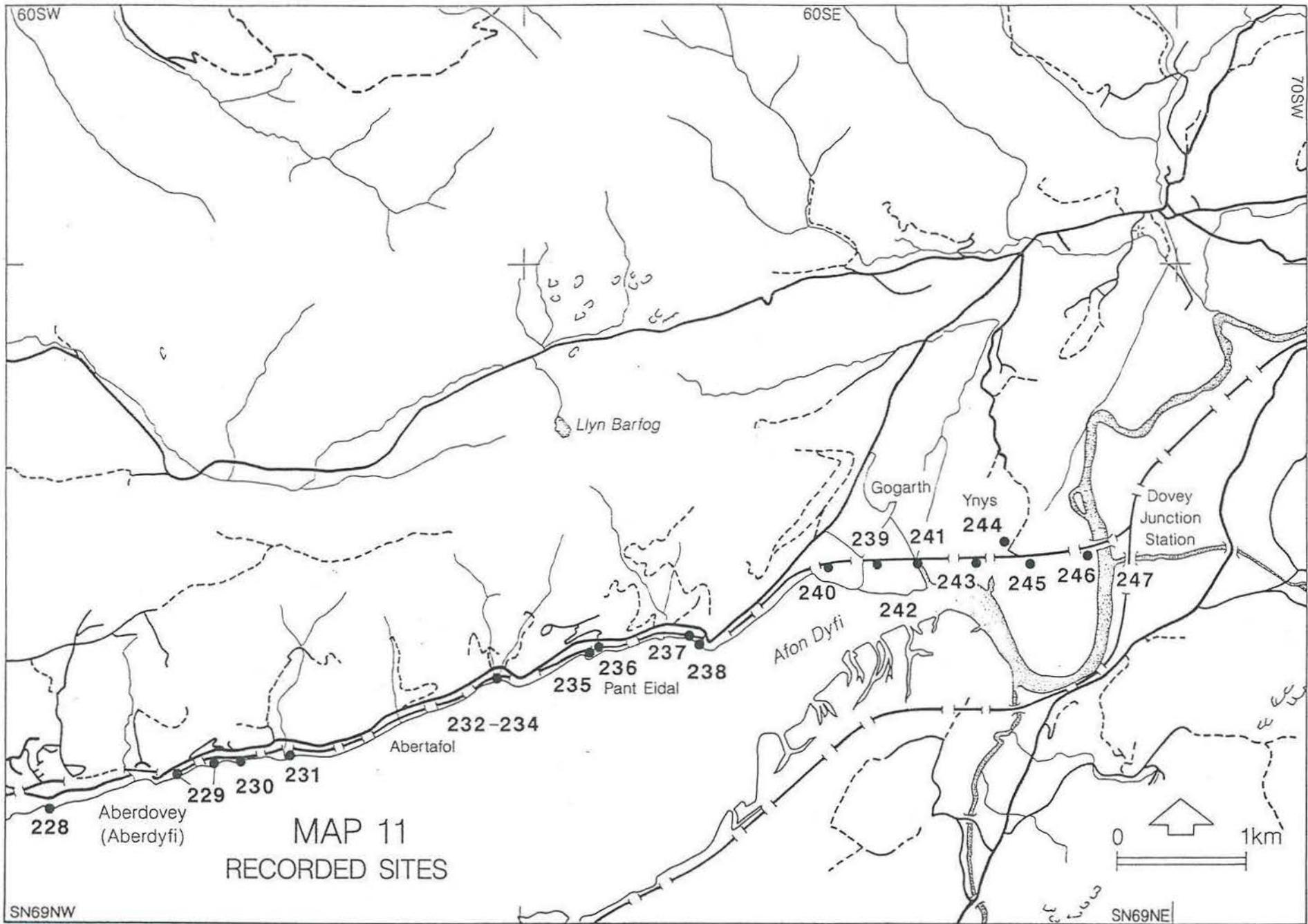


fig. 34

APPENDIX 1

CASE STUDIES

Five case-studies are presented. Four are of specific areas - Pared Mawr, Porth Neigwl, Criccieth and Dyffryn Ardudwy. One is a thematic study, of second world war installations.

These five studies were chosen as exemplifying different problems in the management of coastal archaeology. In the case of Porth Neigwl the erosion patterns have been studied in considerable detail by Darbishire *et alii*, but the known archaeological resource is comparatively slight. However, it became clear in the course of the study that it included a number of maritime features from the nineteenth century, including a ship's boiler and the remains of a jetty, as well as a second world war relief landing ground. The rate of erosion, however, raises the possibility that buried features may be exposed in the near future.

Pared Mawr is presented as an example of a Prehistoric site under active threat of erosion.

Criccieth is one of two examples within the present survey, along with Aberdaron, of erosion threatening the archaeology of a modern-day settlement. In the case of Aberdaron the archaeological resource has been quantified and measures have been taken to protect the threatened churchyard. In the case of Criccieth, though work is in hand at the time of writing to dump boulders on the foreshore, no attempt has been made to consider the threat to any possible archaeology of the area immediately to the east of the castle.

The military sites from the Second World War are particularly at risk from a variety of threats. The most pressing of these is the erosion of the coastline. The part of Tonfanau camp where the gun-batteries were positioned in places only metres from the coast edge. A run of pillboxes between Tywyn and Aberdyfi have slumped badly. Furthermore, it is only very recently have they come to be regarded as anything other than an eyesore, and in an area where visual amenity weighs very heavily, they must still be regarded as under threat of removal by human agency. During the course of the survey a pillbox at Boston Lodge was demolished by the Ffestiniog Railway.

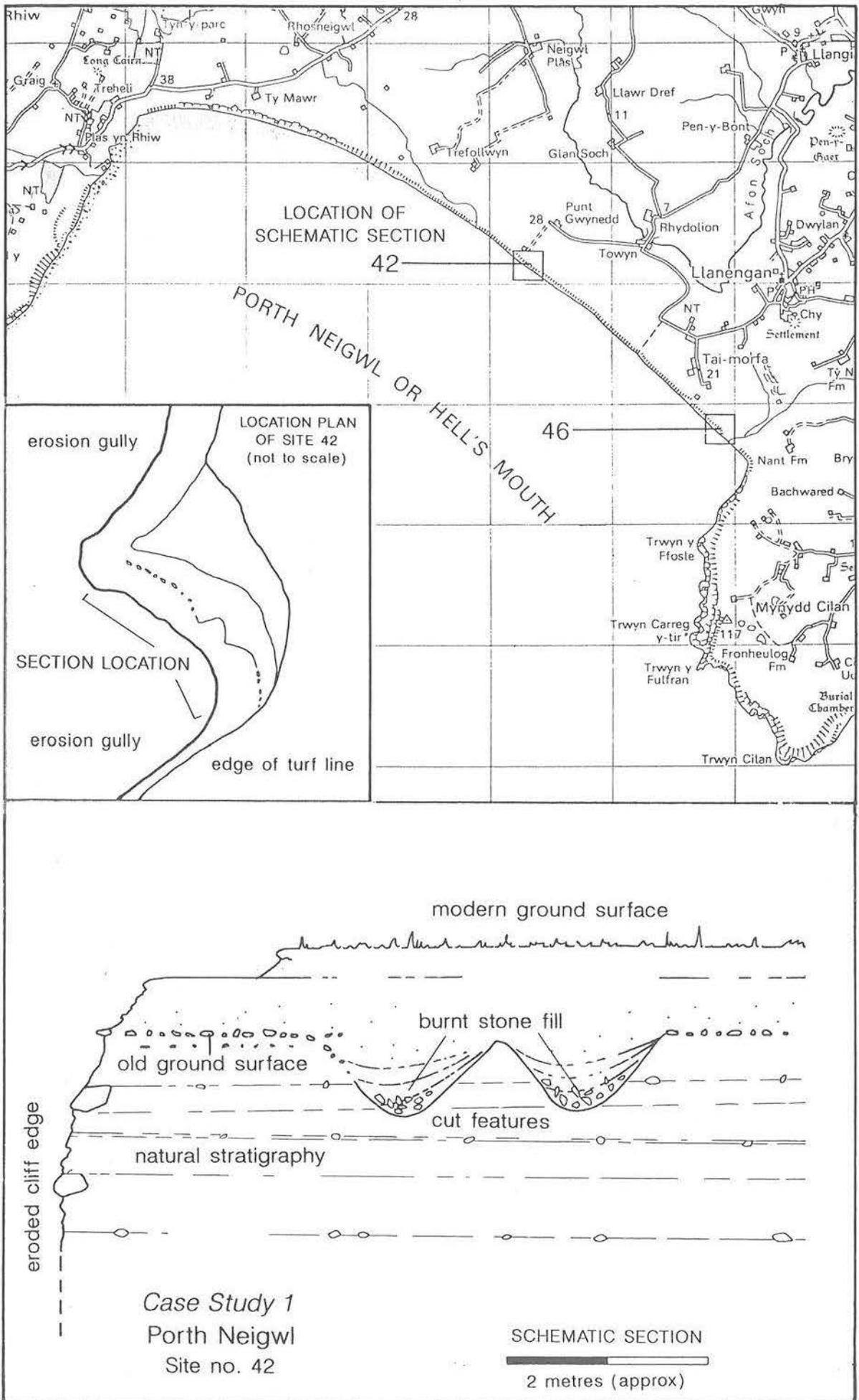


fig.35

Case Study 1 - Porth Neigwl (fig. 35)

The coast-edge here is composed mainly of boulder clay and sand, and offers little resistance to the force of the waves, which, coming from the south west, are focussed on the bay as a whole. The shoal known as Devil's Ridge reduces the speed of the waves and produces a concave wave front which focuses the waves particularly on the eastern part of the bay.

While the cliffs can crumble due to the direct impact of the waves, the action of the waves upon them is more often of an indirect kind. The cusps which are formed along the length of the beach (*i.e.*, ridges perpendicular to the shoreline), have the effect of draining the water of incoming waves along the hollows rather than the crests. This frequently takes place at great speed, and the waves carry with them stones and other materials. These streams (also known as rip currents) are partly responsible for undercutting the cliffs.

Comparison with early 25" ordnance survey maps suggests that the rate of erosion is approximately 1' per year over the bay as a whole, and while the process would take several centuries, the bay is theoretically capable of eroding two miles inland, until solid rock is reached (Darbishire 71).

Surface features within the area consists of the RAF relief airfield, discussed in **Case Study 4** below, the remains of a coastal shipping jetty, possibly part of the one used to ship manganese from Rhiw, and a ship's boiler, and a possible ring-ditch and enclosure. In the course of the survey, several sub-surface features were identified within the eroding section of the cliff, the most prominent being the double ditch profiles (SH27302716), the fill of which contains a dense concentration of fire-shattered stone. The old ground surface associated with these features was apparent approximately a metre below the modern ground surface. There remains the potential for recovering dating evidence from what is a possible Prehistoric site, and for further recording of the resource as it becomes evident in the course of erosion.

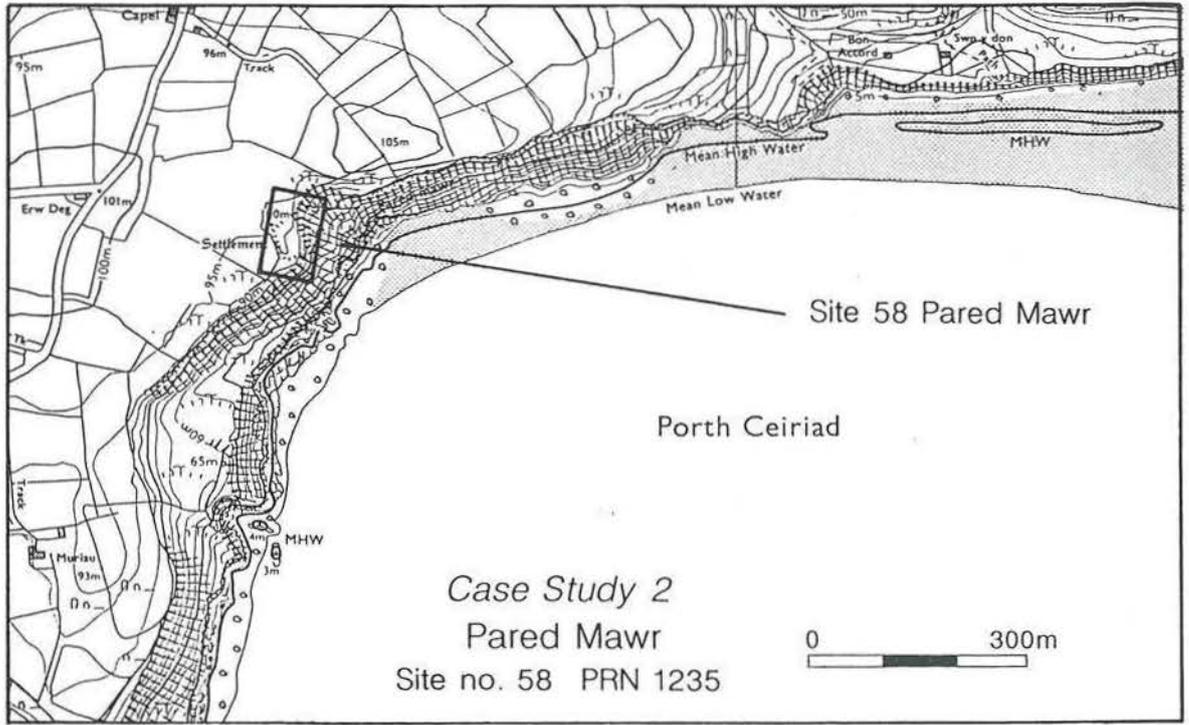
At the East end of Porth Neigwl were noted the foundations of a drystone structure eroding out of the cliff, 2m below the ground surface (SH28942572), which may suggest that these are of some antiquity. Further dating evidence may become available if the erosion is maintained. Whilst the "restless shore", in Professor Darbishire's descriptive phrase, undoubtedly represents a threat to archaeology, it also offers an opportunity to study in detail, and across an extremely wide section, whatever evidence there is for buried features and structures.

A number of features of contrasting type and period were therefore revealed at intervals within the section as a whole. Although most represented the crumbling remnants of recent, military structures, others were more ambiguous, being seen as cuts, *i.e.* negative features through the natural generally horizontal stratigraphy or the drift.

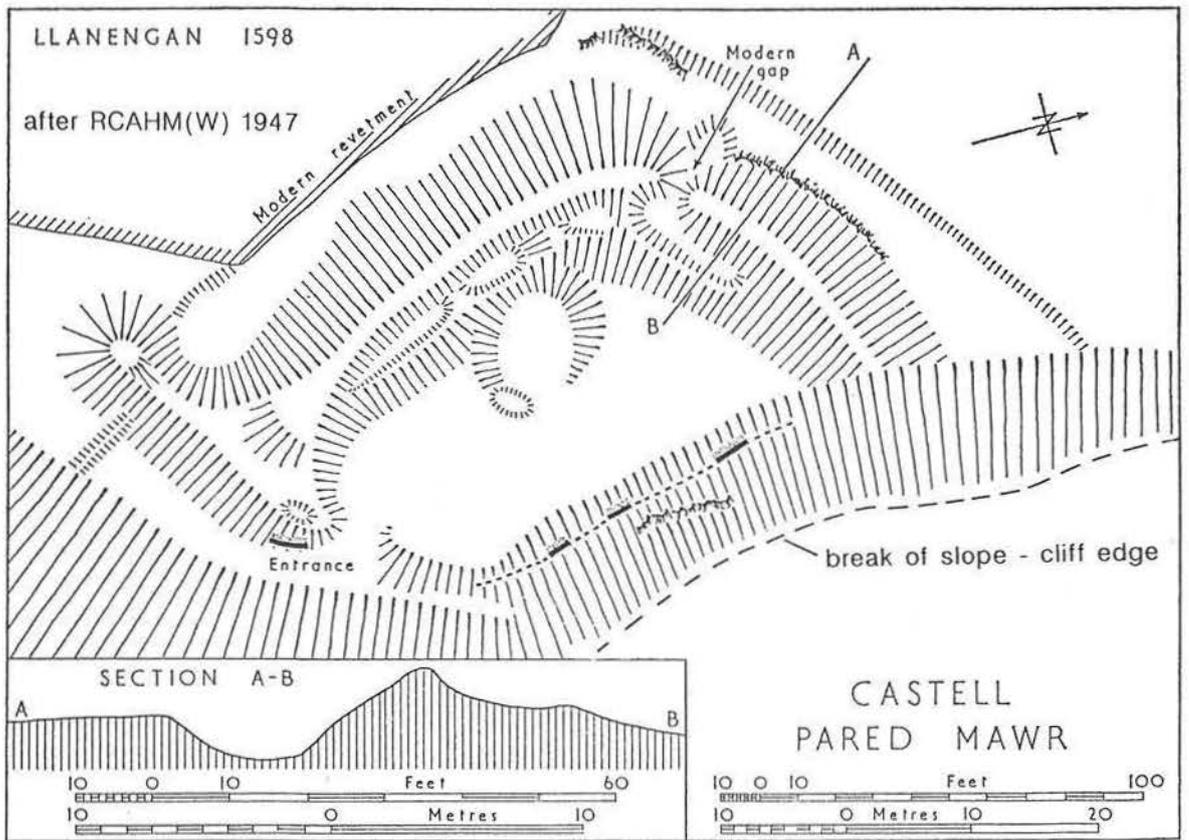
Recommendations

A record should be made of the military structures before they completely disappear.

The features of unknown date (but very probably prehistoric) should be evaluated by trial excavation so that the importance of the features can be better assessed. The erosion of the cliff face should be monitored on a regular basis, and visible features should be recorded and evidence sought for date and status.



a



b

fig.36

Case Study 2 - Castell Pared Mawr (fig. 36)

Castell, a small cliff fort on the edge of Pared Mawr, a Scheduled Ancient Monument, stands at SH30392468 above Porth Ceiriad. It consists of a number of ill-defined platforms and a possible round hut within a substantial bank and ditch. The area enclosed measures approximately 40m within the defences north to south, 20m across, but the rampart has almost disappeared on the east side. Its former existence is denoted by the stones in a hollow in the hillside some way below (RCAHM[W] 1964 51). A manuscript of 1871 laments the removal of topsoil by the farmer and the possibility of undermining by underground working for lead and suggests that the putative Eastern rampart identified by the RCAHM(W) had either already collapsed or that the fort relied on the steep slope on the seaward side for defence (Owen 1903 252). Evidence gathered in the course of the survey suggests that Pared Mawr is not, in any case, an isolated settlement; huts within field systems to the West may be contemporary and in the light of their proximity to the coast it is possible that Pared Mawr might have functioned as a defensive focus for a number of settlements in the locality.

Recommendations

Despite negative evidence for the location or existence of the defences on the Eastern side, there is clearly progressive erosion of the extant monument, the importance of which has been recognised by its status as a Scheduled Ancient Monument. In the light of further erosion resulting in soil exposure, some limited recording or excavation may become necessary. In addition, a survey of the surrounding area, particularly the features visible in the valley to the east, in conjunction with a study of the Prehistoric settlement pattern in the area, would aid interpretation of the site in its setting.



Plate 3. Case Study 2 - Pared Mawr viewed from the west. The horizontal banding visible across the sloping coast edge indicates erosion slippage.



Plate 4. Case Study 3 - Criccieth Castle, sited on a rocky promontory, viewed from the south. The bay seen at the right of the picture suffers from considerable erosion.

Case Study 3 - Criccieth (fig. 37)

A section of erosion immediately to the west of the outcrop of igneous rock on which Criccieth Castle stands represents an active threat to Castle Street, the focus of the small Medieval settlement, and an effort has been made to halt it by placing gabions at the foot of the exposure. Distinct variations in the stratigraphy were seen at the top of the soil drift exposure may show a ditch or pit in cross-section.

Whilst it is possible that the ditch, if such it be, was a curved feature in plan, centred around the outcrop on which the castle was built, there is no corroborative documentary source from the Medieval period, nor supplementary archaeological evidence. The Black Prince's *Register* records little work at Criccieth after the English conquest, and what is recorded deals entirely with construction or reconstruction of towers or heightening of the gatehouse (Taylor 1986 73-5). The discovery of a Prehistoric, possibly Bronze Age, urn behind the cottage of the castle custodian in what has been suggested is an Iron Age earthwork raises the possibility that what has been exposed is a Prehistoric feature, perhaps connected to a promontory fortified settlement where the castle now stands.

Recommendations

The features visible in the eroding cliff face are about 12m above the foreshore. Further examination and survey are necessary to establish date and function, following which more appropriate recommendations could be made.

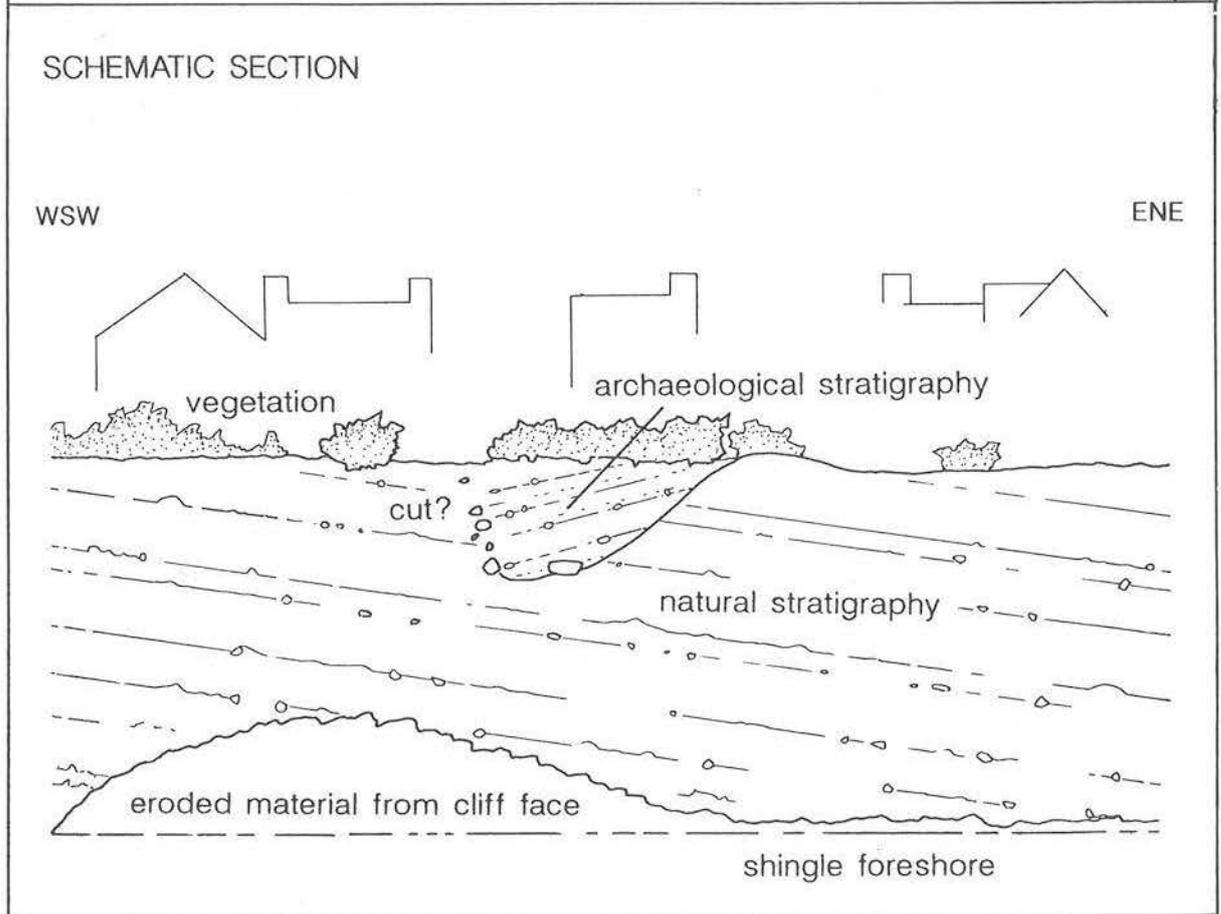
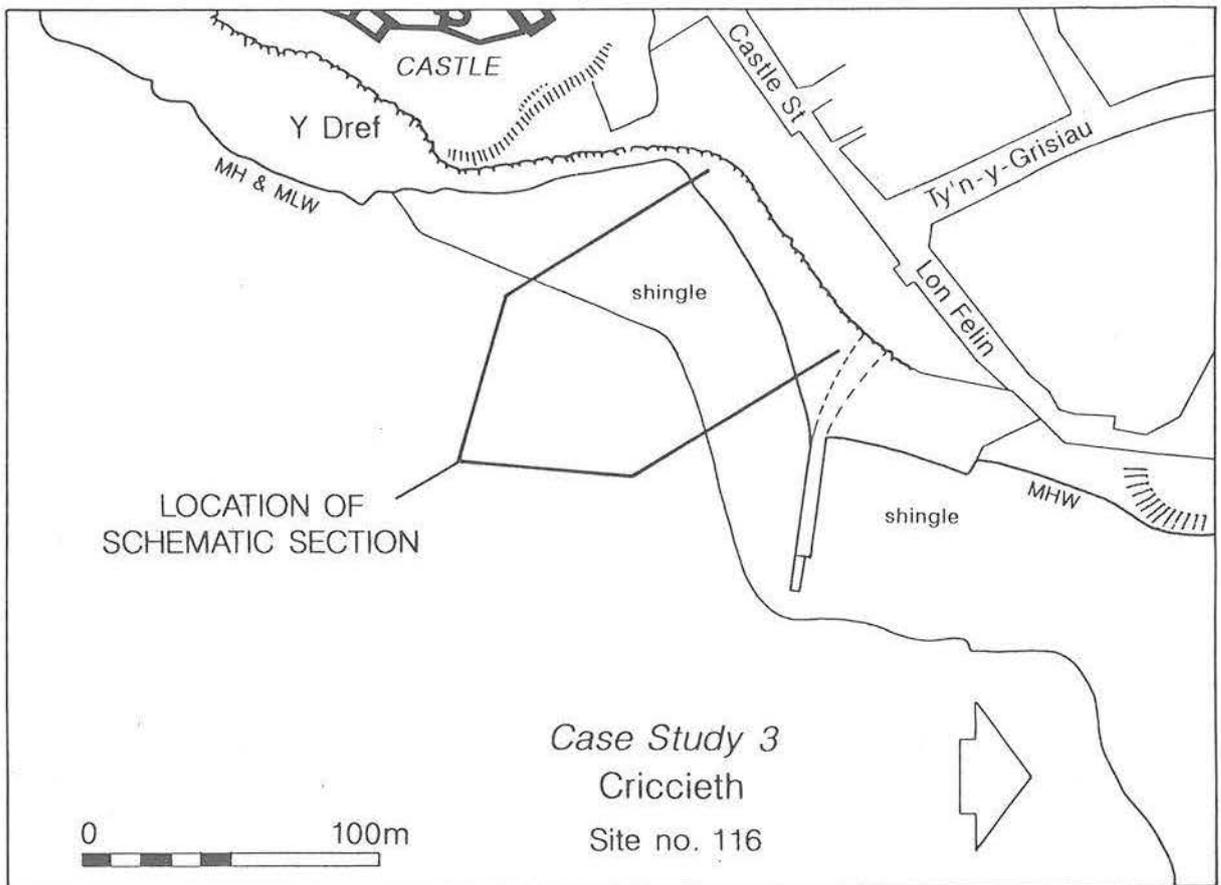


fig.37

Case Study 4 Morfa Dyffryn Ardudwy

Though studies have been made of the archaeology of parts of Dyffryn Ardudwy (e.g. Kelly 1982) and of individual sites on the coast (Musson, Taylor, Heyworth 1984) none has concentrated on the coast as such.

The area included as Case Study 4 extends from south of Mochras (Shell Island) to the point where the *Aetern et Aetern* inscribed stone was found (SH60421683). Other archaeological features include two timber trackways, one identified as Medieval, the other unknown, a worked wood object, possibly a part of a fish weir and the wreck of a seventeenth-century armed merchantman. Natural features include a prehistoric submerged forest, visible as stumps on the foreshore. Lewis Morris' map also shows a curious lozenge-shaped feature immediately to the south of the confluence of the Afon Ceilwart with the Bay, measuring approximately 200m North to South and perhaps 150m East to West, at approximately SH616165. The site has vanished under Victorian housing. Morris names it "Y Vor Gerwyn", probably "the Sea Cauldron", possibly "the Great Cauldron". On a sandy foreshore, it is unlikely to be a man-made feature, and may be a natural blow-hole.

Of the archaeological features, the precise location of the vessel, a Designated Historic Wreck Site, is unclear, and no remains were observed in the course of the study. The process of coastal erosion itself uncovered the Medieval trackway, as well as turbaries and tree stumps, after the storms of 1974. The report by Musson, Taylor and Heyworth makes the point that between 1901 and 1974 the coastline had eroded a total of some 150m at this point (Musson, Taylor, Heyworth 22). They argue that the coastline in the Medieval period lay much further to the west. "The environmental basis for an extended coastal plain is strongly substantiated, and field systems, Dutch polder style, are assumed to have existed, protected by embankments, dykes and sluices" and they consider that their work lends support to a theory voiced by Ashton that the Mawddach may have entered the sea near Llanaber, until it broke through a sand barrier near the present confluence, leaving a brackish lagoon prone to flooding (*ibid.*, 25). A worked wood object, which may be part of a fish trap or some other structure of Medieval or even Prehistoric date, discovered by the "Sunny Sands" caravan park, provides further evidence for human activity in this immediate area.

A further area of exposed prehistoric forest is to the south of Tywyn (SH58189932), where several large timbers can be seen bedded in the peat on the site of an early nineteenth century turbarry. It has been suggested by Dr Charles Lamb of Aberystwyth that the peat deposit is dated to approximately 3,000 BC (in correspondence with Mr Ted Batty of Tywyn). The peat workings are remarkably well preserved, even down to the presence of drainage channels from one area of digging to the next (plate 5).

Of the two inscribed stones now in Llanaber church, one comes from Ceilwart Isa farm, a little way inland, the other from a point 20' below high water mark at approximately SH60421683.

Recommendations

Recognition of archaeology within eroding peat levels situated within a tidal zone is difficult, and would only come about as a result of intensive and continuous monitoring. The relatively small number of sites so far known from the Dyffryn Ardudwy and Tywyn peat beds is therefore probably only a very small part of the potential. It is therefore recommended that these areas are assessed, surveyed and then monitored on a regular basis if the resulting archaeology is of a sufficiently high standard.

Case Study 5 - Twentieth century defences (fig. 38)

The considerable number of second world war military sites encountered in the course of the survey appears to be a reflection of two factors. One is the decision to site training bases away from the theatre of war in the South-East of England, which in the case of Gwynedd meant the narrow coastal strip (Sloan 1991 10). Second is the fact that North-West Wales had its own strategic significance, facing the Irish Sea and the Free State.

The wide inlets of Cardigan Bay, and the eastward-running valley systems they presented have always left open the possibility of an invasion from the west. British anxiety on this score underlies the construction of Fort Belan, noted by Smith 1993 12 (434), in 1761, and that it was more than paranoia is demonstrated by the success of the French navy in landing forces at Pembrokeshire in 1797, and in Ireland in the following year, even if the French military covered itself in glory on neither occasion.

An invasion from Ireland only became a potent military threat again when the Wehrmacht drew up plans to occupy the Irish Free State (as it had by then become), in 1939-1940. Though this never became a reality, Gwynedd remained of strategic importance until France was back in allied hands. The Luftwaffe flew sorties from French airfields over Dublin, where there was no blackout, and then over Cardigan Bay and the Gwynedd mountains to the North-West of England and the Midlands. Llyn Tegid at Bala formed a particularly useful landmark; as long as it is narrow, it points straight at Liverpool.

Penrhos airfield appears to have been the first site to have been constructed, dating from 1936. Essentially designed with biplanes in mind, it was remarkable for its drop of 20' from the airfield level to that of the ground beneath it to the south (Sloan 1991 114). Lying some way in from the coast edge, the only parts considered to be under threat were the concrete arrow and the nearby structure, possibly a Royal Observation Corps post.

Hell's Mouth functioned as a bombing range and later as a Relief Landing Ground for Penrhos. Three Bellman (*i.e.* transportable) hangars and a moving target range were built here (Sloan 109). By their nature they will have left comparatively little trace. The rapid erosion from which the area suffers leaves the surviving archaeology very much at risk; it is clear from Darbshire figs 5 and 6 that structures from this period were swept away in the 1970s.

Llanbedr was opened in June 1941 under the control of Valley to guard the Irish sea from enemy aircraft and to provide cover for convoys. As an outstation of RAE Farnborough, it was not possible to gain access to this site, which remains fully operational. It is clear, however, from the perimeter fence that many structures from the war survive.

Tywyn, which functioned between 1941 and 1945, appears to have left least evidence of its existence. As a low-lying site it is known to have been prone to flooding when it was in use, and possibly subsequent inundations have damaged the resource. The only structure observed was a shooting range and its related shelter.

Two army sites were observed. The Tonfanau camp includes a row of anti-aircraft holdfasts or a coast battery, which is at risk from coastal erosion. Though many of the camp buildings appear to have been destroyed fairly recently, a barrack block survives near the gun sites, and much of the road system remains.

The extensive Royal Artillery gunnery range at Harlech, in use from 1941 to 1946, is not at risk from coastal erosion, though afforestation of the site is causing damage to the archaeological resource. The figure-of-eight railway embankment, with its sand-bag walls, is an impressive feature.

HMS *Glendower* was a naval base for training sailors in theoretical gunnery work. The chalets lettered from A to Z housed 100 officers and 5,000 sailors, and the 500 Wrens had their own billets. The gun emplacements on Pen Ychain itself are on a solid igneous rock, and are not at

risk from coastal erosion, but the attractiveness of the location, near the terminus of the Seaworld chair-lift and the narrow-gauge railway from the main camp, inevitably brings huge number of campers to the promontory.

Pillboxes were met at a number of locations, some disguised, as at Borth y Gest, most unadorned concrete. The run between Tywyn airfield and Aberdyfi, spaced at approximate 400 yard intervals, is particularly impressive, but they are suffering badly from slumping, having been constructed on a pebbled foreshore. "Dragon's teeth", anti-tank cubes, survive intact on the coast-edge at Fairbourne.

Recommendations

The Dyfed and the Northumberland reports both emphasise the significance of these aspects of the modern man-made landscape, and the fact that many local authorities still consider these as eyesores places them under a continual threat. Evidence of slumping in some of the pillboxes underlines the threat from natural erosion. There is therefore an urgent need to carry out an assessment of these sites, followed by detailed archaeological recording of specific coastal defences, which should include pre-1939 features where they survive.

Just as the archaeological resource is under various forms of pressure, another urgent need is to interview people who worked on these sites, or who served in the forces there. At the time of writing (1996), a boy of sixteen who joined the Home Guard in 1945, the youngest possible person to have been involved as a potential combatant, will now be sixty-seven years old. The *Defence of Britain* Project handbook emphasises the importance of oral testimony towards understanding these sites' functions (7-8).

APPENDIX 2

COAST EDGE GAZETTEER

Map Number 01

1 ABERDARON BAY NGR Start and finish SH16282507 - SH16672630
 Length (Kms) 1.50 Facing ESE Geology ORDOVICIAN
 Coast edge 8 Land edge 3/4 Erosion 1
 ESE-facing slopes of scrub, breaking to sea-cliffs. Afon Meudwy enters the bay through a narrow defile.

2 ABERDARON BAY NGR Start and finish SH16672630 - SH16742635
 Length (Kms) 0.20 Facing S Geology ORDOVICIAN
 Coast edge 7 Land edge 3 Erosion 1
 Area of rock with drift cover where stream enters Aberdaron bay.

3 ABERDARON BAY NGR Start and finish SH16742635 - SH17102639
 Length (Kms) 0.20 Facing S Geology ORDOVICIAN
 Coast edge 4/9 Land edge 3 Erosion 1

4 ABERDARON BAY NGR Start and finish SH17102639 - SH17642653
 Length (Kms) 0.40 Facing S Geology BOULDER CLAY
 Coast edge 1/4 Land edge 1 Erosion 5
 A man-made wall protecting the village of Aberdaron, with a boulder dump on the seaward side to stabilise the eroded slope of the churchyard. Building rubble and human bones have been exposed.

5 ABERDARON BAY NGR Start and finish SH17642635 - SH18582579
 Length (Kms) 1.10 Facing S Geology BOULDER CLAY
 Coast edge 9 Land edge 3/4 Erosion 3/4/5
 Erosion becomes less marked to east.

6 TRWYN Y PENRHYN NGR Start and finish SH18582579 - SH20882536
 Length (Kms) 5.60 Facing WSE Geology IGNEOUS
 Coast edge 8 Land edge 3/4 Erosion 1

7 PORTH YSGO NGR Start and finish SH20882536 - SH21562490
 Length (Kms) 0.70 Facing S,E Geology ORDOVICIAN
 Coast edge 7/9 Land edge 4 Erosion 1

8 MYNYDD PENARFYNYDD NGR Start and finish SH21562490 - SH22262617
 Length (Kms) 1.20 Facing W,S Geology IGNEOUS
 Coast edge 6 Land edge 4 Erosion 1/2

9 MYNYDD PENARFYNYDD NGR Start and finish SH22262617 - SH23392619
 Length (Kms) 1.70 Facing SE Geology IGNEOUS
 Coast edge 7 Land edge 4 Erosion 1

Map Number 02

10 MYNYDD PENARFYNYDD NGR Start and finish SH23392619 - SH23502637
 Length (Kms) 0.20 Facing SE Geology IGNEOUS
 Coast edge 6 Land edge 4 Erosion 1/2/3

11 MYNYDD PENARFYNYDD NGR Start and finish SH23502637 - SH23902700
 Length (Kms) 0.80 Facing SE Geology BOULDER CLAY
 Coast edge 12 Land edge 4/5 Erosion 1
 The coast edge here is rough scrub coming down to the foreshore.

12 HELL'S MOUTH NGR Start and finish SH23902700 - SH23862713
 Length (Kms) 0.10 Facing E Geology BOULDER CLAY
 Coast edge 6 Land edge 4 Erosion 1

13 HELL'S MOUTH NGR Start and finish SH23862713 - SH24272744
 Length (Kms) 0.40 Facing S Geology BOULDER CLAY
 Coast edge 9 Land edge 4/5 Erosion 1

14 HELL'S MOUTH NGR Start and finish SH24272744 - SH28302632
 Length (Kms) 4.50 Facing SW Geology BOULDER CLAY
 Coast edge 9/10 Land edge 3/4 Erosion 3/4

15 HELL'S MOUTH NGR Start and finish SH28302632 - SH29112547
 Length (Kms) 1.60 Facing SW Geology BOULDER CLAY
 Coast edge 9 Land edge 4 Erosion 3/4

16 HELL'S MOUTH NGR Start and finish SH29112547 - SH29032525
 Length (Kms) 0.20 Facing W Geology BOULDER CLAY
 Coast edge 7 Land edge 4 Erosion 2/3

17 MYNYDD CILAN NGR Start and finish SH29032525 - SH30622473
 Length (Kms) 5.40 Facing WSE Geology CAMBRIAN
 Coast edge 6 Land edge 4 Erosion 1

18 PORTH CEIRIAD NGR Start and finish SH30622473 - SH30912480
 Length (Kms) 0.30 Facing S Geology CAMBRIAN
 Coast edge 6/7 Land edge 4 Erosion 1/3

19 PORTH CEIRIAD NGR Start and finish SH30912480 - SH31752488
 Length (Kms) 0.80 Facing S Geology CAMBRIAN
 Coast edge 7/10 Land edge 4 Erosion 1/3

20 TRWYN Y WYLFA NGR Start and finish SH31752488 - SH32222622
 Length (Kms) 3.40 Facing E Geology ORDOVICIAN
 Coast edge 6 Land edge 4/6 Erosion 1

21 PORTH MAWR NGR Start and finish SH32222622 - SH32072645
 Length (Kms) 0.20 Facing N Geology ORDOVICIAN
 Coast edge 4 Land edge 6 Erosion 1

22 PORTH MAWR NGR Start and finish SH32072645 - SH31962649
 Length (Kms) 0.20 Facing NE Geology ORDOVICIAN
 Coast edge 1/6 Land edge 6 Erosion 1

23	PORTH MAWR			NGR Start and finish	SH31962649 - SH31552687
Length (Kms)	0.50	Facing	NE	Geology	SAND
Coast edge	6	Land edge	6	Erosion	2

24	PORTH MAWR			NGR Start and finish	SH31552687 - SH31512709
Length (Kms)	0.30	Facing	E	Geology	SAND
Coast edge	10	Land edge	6	Erosion	2

25	PORTH MAWR			NGR Start and finish	SH31512709 - SH31542749
Length (Kms)	0.40	Facing	E	Geology	SAND
Coast edge	4/10	Land edge	6	Erosion	2

26	PORTH MAWR			NGR Start and finish	SH31542749 - SH31752809
Length (Kms)	0.80	Facing	E	Geology	SAND
Coast edge	10	Land edge	6/3	Erosion	2

27	ABERSOCH			NGR Start and finish	SH31752809 - SH31352831
Length (Kms)	0.70	Facing	NE	Geology	CAMBRIAN
Coast edge	1/6	Land edge	1	Erosion	1

28	ABERSOCH			NGR Start and finish	SH31352831 - SH31242821
Length (Kms)	0.10	Facing	N,E	Geology	ORDOVICIAN
Coast edge	7	Land edge	1	Erosion	

29	ABERSOCH			NGR Start and finish	SH31242821 - SH31322838
Length (Kms)	0.30	Facing	E	Geology	ORDOVICIAN
Coast edge	11	Land edge	1	Erosion	1

30	ABERSOCH			NGR Start and finish	SH31322838 - SH31452864
Length (Kms)	0.30	Facing	E	Geology	ORDOVICIAN
Coast edge	4	Land edge	1/2	Erosion	1

31	ABERSOCH			NGR Start and finish	SH31452864 - SH31532885
Length (Kms)	0.30	Facing	E	Geology	ORDOVICIAN
Coast edge	7	Land edge	1	Erosion	1

32	ABERSOCH			NGR Start and finish	SH31532885 - SH32943031
Length (Kms)	2.10	Facing	SE	Geology	SAND
Coast edge	10	Land edge	5/12	Erosion	2

Map Number 03

33	MYNYDD TIR Y CWMWD			NGR Start and finish	SH32943031 - SH33003035
Length (Kms)	0.10	Facing	SE	Geology	IGNEOUS
Coast edge	12	Land edge	4/6	Erosion	2

A small quarry, now disused and partly made into a car-park, working a natural cliff-face, behind which is rough pasture.

34	MYNYDD TIR Y CWMWD			NGR Start and finish	SH33003035 - SH33253039
Length (Kms)	0.30	Facing	SE	Geology	IGNEOUS
Coast edge	6	Land edge	4	Erosion	2

35	MYNYDD TIR Y CWMWD	NGR Start and finish	SH33253039 - SH33773087
Length (Kms)	0.70	Facing	E
Coast edge	12	Land edge	4
A disused quarry working the natural cliff-face.			
36	MYNYDD TIR Y CWMWD	NGR Start and finish	SH33773087 - SH33283127
Length (Kms)	0.70	Facing	NE
Coast edge	6	Land edge	1/4
37	THE WARREN	NGR Start and finish	SH33283127 - SH34053236
Length (Kms)	1.50	Facing	E
Coast edge	7	Land edge	1/3/6
38	CARREG Y DEFAID	NGR Start and finish	SH34053236 - SH34143258
Length (Kms)	0.40	Facing	E
Coast edge	6	Land edge	3
39	CARREG Y DEFAID	NGR Start and finish	SH34143258 - SH34123276
Length (Kms)	0.20	Facing	E
Coast edge	9	Land edge	3
40	TRAETH CRUGAN	NGR Start and finish	SH34123276 - SH36793407
Length (Kms)	2.90	Facing	SE
Coast edge	1	Land edge	3/6
41	TRAETH CRUGAN	NGR Start and finish	SH36793407 - SH38613424
Length (Kms)	2.00	Facing	S
Coast edge	10	Land edge	1
42	CARREG YR IMBYLL	NGR Start and finish	SH38613424 - SH38483445
Length (Kms)	1.60	Facing	SEN
Coast edge	6	Land edge	1
43	PWLLHELI HARBOUR	NGR Start and finish	SH38483445 - SH38293459
Length (Kms)	4.40	Facing	
Coast edge	1	Land edge	1
A nineteenth century harbour development with recent sluices, bridges, etc.			
44	MORFA ABERERCH	NGR Start and finish	SH38293459 - SH39803585
Length (Kms)	2.10	Facing	S
Coast edge	10	Land edge	1/6
45	MORFA ABERERCH	NGR Start and finish	SH39803585 - SH40173584
Length (Kms)	0.40	Facing	S
Coast edge	12	Land edge	6
Caravan park.			
46	MORFA ABERERCH	NGR Start and finish	SH40173584 - SH42303549
Length (Kms)	2.20	Facing	S
Coast edge	10	Land edge	3/4

Map Number 04

47 MORFA ABERERCH NGR Start and finish SH42303549 - SH43163544
 Length (Kms) 0.80 Facing S Geology BOULDER CLAY
 Coast edge 12 Land edge 3 Erosion 2/3
 Scrub reaches down to foreshore.

48 PEN YCHAIN NGR Start and finish SH43163544 - SH43573600
 Length (Kms) 1.30 Facing S,E Geology IGNEOUS
 Coast edge 6 Land edge 1 Erosion 1
 Rocky coastline, partly vegetated, around second world war naval base, now leisure complex.

49 PEN YCHAIN NGR Start and finish SH43573600 - SH43713645
 Length (Kms) 0.50 Facing E Geology IGNEOUS
 Coast edge 9 Land edge 1 Erosion 1

50 PEN YCHAIN NGR Start and finish SH43713645 - SH43723656
 Length (Kms) 0.10 Facing E Geology IGNEOUS
 Coast edge 1 Land edge 1 Erosion 2/3
 Steel wall.

51 PEN YCHAIN NGR Start and finish SH43723656 - SH44223717
 Length (Kms) 0.80 Facing SE Geology IGNEOUS
 Coast edge 9 Land edge 1 Erosion 1/2/3/4
 This section of coast-edge contains much twentieth century detritus that has been re-deposited, also steel piles and wire cages.

52 AFONWEN NGR Start and finish SH44223717 - SH46353729
 Length (Kms) 1.20 Facing S Geology BOULDER CLAY
 Coast edge 1 Land edge 1 Erosion 2/3
 Protective sea-wall for railway.

53 AFONWEN NGR Start and finish SH46353729 - SH46593731
 Length (Kms) 0.20 Facing S Geology BOULDER CLAY
 Coast edge 1/5 Land edge 3 Erosion 2/3

54 AFONWEN NGR Start and finish SH46593731 - SH46723731
 Length (Kms) 0.10 Facing S Geology BOULDER CLAY
 Coast edge 4 Land edge 3 Erosion 2

55 AFONWEN NGR Start and finish SH46723731 - SH46703748
 Length (Kms) 2.40 Facing S Geology BOULDER CLAY
 Coast edge 10 Land edge 3 Erosion 2

56 AFONWEN NGR Start and finish SH46703748 - SH46573759
 Length (Kms) 0.20 Facing NE Geology BOULDER CLAY
 Coast edge 1 Land edge 3 Erosion 2
 A dyke on the banks of the Dwyfor.

57 AFONWEN NGR Start and finish SH46703763 - SH47313741
 Length (Kms) 0.70 Facing S Geology BOULDER CLAY
 Coast edge 1 Land edge 3/4 Erosion 2
 Dyke.

Map Number 05

58	ABERDWYFOR			NGR Start and finish	SH47313741 - SH48283731
Length (Kms)	1.10	Facing	S	Geology	BOULDER CLAY
Coast edge	11	Land edge	3/4	Erosion	2
Sand, mud and stone.					

59	ABERDWYFOR			NGR Start and finish	SH48283731 - SH48483751
Length (Kms)	0.30	Facing	S	Geology	BOULDER CLAY
Coast edge	4	Land edge	3	Erosion	2

60	CRICCIETH			NGR Start and finish	SH48483751 - SH49443664
Length (Kms)	1.00	Facing	S	Geology	BOULDER CLAY
Coast edge	10	Land edge	3	Erosion	2/3

61	CRICCIETH			NGR Start and finish	SH49443664 - SH49933767
Length (Kms)	0.50	Facing	S	Geology	BOULDER CLAY
Coast edge	1	Land edge	1	Erosion	1

62	CRICCIETH			NGR Start and finish	SH49933767 - SH50063781
Length (Kms)	0.40	Facing	S	Geology	IGNEOUS
Coast edge	6	Land edge	1	Erosion	1

63	CRICCIETH			NGR Start and finish	SH50063781 - SH50173802
Length (Kms)	0.30	Facing	S	Geology	BOULDER CLAY
Coast edge	1	Land edge	1	Erosion	1/4/5

64	CRICCIETH			NGR Start and finish	SH50173802 - SH50263807
Length (Kms)	0.10	Facing	S	Geology	BOULDER CLAY
Coast edge	4	Land edge	1	Erosion	1

65	CRICCIETH			NGR Start and finish	SH50263807 - SH50593807
Length (Kms)	0.40	Facing	S	Geology	BOULDER CLAY
Coast edge	1	Land edge	1	Erosion	1

66	CRICCIETH			NGR Start and finish	SH50593807 - SH51103798
Length (Kms)	0.50	Facing	S	Geology	BOULDER CLAY
Coast edge	4	Land edge	1/3	Erosion	5

67	CRICCIETH			NGR Start and finish	SH51103798 - SH52083749
Length (Kms)	1.20	Facing	S	Geology	BOULDER CLAY
Coast edge	2	Land edge	1/4	Erosion	1

68	CRICCIETH			NGR Start and finish	SH52063740 - SH52483749
Length (Kms)	0.50	Facing	S	Geology	IGNEOUS
Coast edge	6	Land edge	4	Erosion	1

69	MORFA BYCHAN			NGR Start and finish	SH52483749 - SH55263655
Length (Kms)	3.30	Facing	SW	Geology	SAND
Coast edge	10	Land edge	1/4/6/1	Erosion	1

Map Number 06

70 YNYS CYNGAR NGR Start and finish SH55263655 - SH55373664
 Length (Kms) 0.40 Facing S Geology IGNEOUS
 Coast edge 7 Land edge 12 Erosion 1
 Rocky headland with golf-course behind.

71 BORTH FECHAN NGR Start and finish SH55373644 - SH55563692
 Length (Kms) 0.30 Facing SE Geology SAND
 Coast edge 4 Land edge 6 Erosion 1
 The land-edge is a golf-course.

72 BORTH FECHAN NGR Start and finish SH55563692 - SH55963701
 Length (Kms) 0.50 Facing S Geology CAMBRIAN
 Coast edge 6 Land edge 4 Erosion 1

73 BORTH FECHAN NGR Start and finish SH55963701 - SH56143707
 Length (Kms) 0.30 Facing SE Geology CAMBRIAN
 Coast edge 10 Land edge 4 Erosion 1

74 BORTH FECHAN NGR Start and finish SH56143707 - SH56533748
 Length (Kms) 0.70 Facing SE Geology CAMBRIAN
 Coast edge 6 Land edge 1/4 Erosion 1

75 BORTH Y GEST NGR Start and finish SH56533748 - SH56583760
 Length (Kms) 0.30 Facing E,S Geology CAMBRIAN
 Coast edge 11 Land edge 1 Erosion 2

76 BORTH Y GEST NGR Start and finish SH56583760 - SH56783765
 Length (Kms) 0.30 Facing S Geology CAMBRIAN
 Coast edge 6 Land edge 1 Erosion 1

77 PORTHMADOG NGR Start and finish SH56783765 - SH57073848
 Length (Kms) 0.90 Facing SE Geology CAMBRIAN
 Coast edge 1 Land edge 1 Erosion 1
 This section consists of the slate wharves at Porthmadog harbour, ending at the Glaslyn sluice bridge.

78 Y COB NGR Start and finish SH57073848 - SH58183792
 Length (Kms) 1.80 Facing SSW Geology
 Coast edge 1/3 Land edge 1 Erosion 1
 This section consists of the made-up ground at the Festiniog Railway's harbour station, the former Holland's slate quay and the ship-building yard at Rotten Tare.

79 BOSTON LODGE NGR Start and finish SH58183792 - SH58403765
 Length (Kms) 0.20 Facing W Geology CAMBRIAN
 Coast edge 3 Land edge 1 Erosion 1

80 TRWYN PENRHYN NGR Start and finish SH58403765 - SH58923687
 Length (Kms) 1.80 Facing WSE Geology CAMBRIAN
 Coast edge 6 Land edge 1/4/5/6 Erosion 1/2

81 PORTMEIRION NGR Start and finish SH58923687 - SH58973704
 Length (Kms) 0.10 Facing E Geology CAMBRIAN
 Coast edge 1/6 Land edge 1/5/6 Erosion 1/2

82 PORTMEIRION NGR Start and finish SH58973704 - SH60213800
 Length (Kms) 1.70 Facing SE Geology CAMBRIAN
 Coast edge 6 Land edge 1/6 Erosion 1

83 MINFFORDD NGR Start and finish SH60213800 - SH60373807
 Length (Kms) 0.20 Facing S Geology CAMBRIAN
 Coast edge 6/11 Land edge 4 Erosion 1

84 MINFFORDD NGR Start and finish SH60373807 - SH61883838
 Length (Kms) 1.90 Facing S Geology BOULDER CLAY
 Coast edge 11 Land edge 4 Erosion 1/2

86 LLANFIHANGEL Y TRAETHAU NGR Start and finish SH61723764 - SH596963549
 Length (Kms) 3.20 Facing N Geology BOULDER CLAY
 Coast edge 11 Land edge 3/4 Erosion 1/2/5

88 LLANFIHANGEL Y TRAETHAU NGR Start and finish SH59653582 - SH59163571
 Length (Kms) 1.00 Facing N Geology BOULDER CLAY
 Coast edge 6/8 Land edge 3/4 Erosion 1/2

89 LLANFIHANGEL Y TRAETHAU NGR Start and finish SH59163571 - SH59043568
 Length (Kms) 1.10 Facing N Geology BOULDER CLAY
 Coast edge 1 Land edge 3/4 Erosion 1/2

90 LLANFIHANGEL Y TRAETHAU NGR Start and finish SH59043568 - SH58023539
 Length (Kms) 1.20 Facing N Geology CAMBRIAN
 Coast edge 6/8 Land edge 4/12 Erosion 1/2
 Part of the land-edge consists of sand-dunes over rock.

91 HARLECH NGR Start and finish SH58023539 - SH57203168
 Length (Kms) 9.90 Facing N,W Geology SAND
 Coast edge 11 Land edge 1/4/6 Erosion 1/2

The land-edge at one point is constituted by an earthen embankment with a wall on one side made up of blocks of concrete which have been allowed to set inside a sandbag. This lengthy feature describes a figure-of-eight return loop, and is a feature of the Royal Artillery gunnery ranges at Harlech (1940-1946).

Map Number 07

92 HARLECH NGR Start and finish SH57203168 - SH57412980
 Length (Kms) 1.90 Facing W Geology SAND
 Coast edge 10 Land edge 1/6 Erosion 2

High sand-dunes backing onto the golf course at the northern end, and the railway towards the south.

93 LLANFAIR NGR Start and finish SH57412980 - SH57362965
 Length (Kms) 0.10 Facing W Geology SAND
 Coast edge 3 Land edge 6 Erosion 1

94 LLANFAIR NGR Start and finish SH57362965 - SH56962882
 Length (Kms) 0.90 Facing W Geology SAND
 Coast edge 1 Land edge 6 Erosion 1
 The coast-edge is formed by the railway embankment.

95 LLANDANWG NGR Start and finish SH56962882 - SH56802841
 Length (Kms) 0.50 Facing W Geology SAND
 Coast edge 9 Land edge 6 Erosion 1/2
 The land-edge is constituted by beach-huts.

96 LLANDANWG NGR Start and finish SH56802841 - SH57122806
 Length (Kms) 1.00 Facing SW Geology SAND
 Coast edge 10 Land edge 3 Erosion 1/2

97 PEN Y SARN NGR Start and finish SH57122806 - SH57622813
 Length (Kms) 0.50 Facing S Geology SAND
 Coast edge 2 Land edge 3 Erosion 1/2

98 PEN Y SARN NGR Start and finish SH57622813 - SH57792792
 Length (Kms) 0.20 Facing SW Geology SAND
 Coast edge 11 Land edge 6 Erosion 1/2
 The railway embankment forms the land-edge.

99 PEN Y SARN NGR Start and finish SH57792792 - SH57932775
 Length (Kms) 0.20 Facing SE Geology SAND
 Coast edge 1 Land edge 6 Erosion 1/2
 A wharf and a railway embankment.

100 LLANBEDR NGR Start and finish SH57932775 - SH57122735
 Length (Kms) 1.20 Facing NW Geology SAND
 Coast edge 2 Land edge 3 Erosion 1/2

101 LLANBEDR NGR Start and finish SH57122735 - SH56402680
 Length (Kms) 0.90 Facing NW Geology SAND
 Coast edge 11 Land edge 6 Erosion 1/2
 The Royal Aeronautical establishment forms the land-edge.

102 LLANBEDR NGR Start and finish SH56402680 - SH55892666
 Length (Kms) 0.50 Facing N Geology SAND
 Coast edge 2 Land edge 6 Erosion 1/2

103 MOCHRAS NGR Start and finish SH55892666 - SH56682752
 Length (Kms) 1.20 Facing SE Geology SAND
 Coast edge 4 Land edge 3/4 Erosion 1/2

104 MOCHRAS NGR Start and finish SH56682752 - SH56242738
 Length (Kms) 0.50 Facing NW Geology SAND
 Coast edge 4/9 Land edge 3/4 Erosion 1

106 MOCHRAS NGR Start and finish SH55492682 - SH55042606
 Length (Kms) 0.90 Facing NW Geology SAND
 Coast edge 9/10 Land edge 3/4 Erosion 1/2

107 MORFA DYFFRYN NGR Start and finish SH55042606 - SH57412250
 Length (Kms) 4.40 Facing W Geology SAND
 Coast edge 10 Land edge 6 Erosion 2
 The land-edge is constituted by the RAE establishment.

Map Number 08

108 MORFA DYFFRYN NGR Start and finish SH57412250 - SH58122100
 Length (Kms) 1.50 Facing SW Geology SAND
 Coast edge 4 Land edge 6 Erosion 2
 The land-edge is constituted by a caravan park.

109 MORFA DYFFRYN NGR Start and finish SH58122100 - SH58262077
 Length (Kms) 0.20 Facing SW Geology SAND
 Coast edge 4/1 Land edge 4/6 Erosion 2

110 MORFA DYFFRYN NGR Start and finish SH58262077 - SH58402056
 Length (Kms) 0.20 Facing SW Geology SAND
 Coast edge 2 Land edge 4 Erosion 2

111 MORFA DYFFRYN NGR Start and finish SH58402056 - SH58801996
 Length (Kms) 0.70 Facing SW Geology SAND
 Coast edge 4 Land edge 1/6 Erosion 2
 The land-edge includes a caravan park.

112 MORFA DYFFRYN NGR Start and finish SH58801996 - SH59591872
 Length (Kms) 2.30 Facing W Geology SAND
 Coast edge 2 Land edge 4/6 Erosion 2
 The land-edge includes a reed-grown area.

113 LLANABER NGR Start and finish SH59591872 - SH59911786
 Length (Kms) 1.00 Facing W Geology SAND
 Coast edge 1/4 Land edge 1/3/4 Erosion 2/3

114 LLANABER NGR Start and finish SH59911786 - SH60261723
 Length (Kms) 0.70 Facing W Geology CAMBRIAN
 Coast edge 2 Land edge 1 Erosion 2/3

115 BARMOUTH NGR Start and finish SH60261723 - SH61761555
 Length (Kms) 2.50 Facing W Geology CAMBRIAN
 Coast edge 1 Land edge 1 Erosion 1

116 BARMOUTH NGR Start and finish SH61761555 - SH61851555
 Length (Kms) 0.10 Facing S Geology CAMBRIAN
 Coast edge 8 Land edge 3 Erosion 1

117 BARMOUTH NGR Start and finish SH61851555 - SH62001545
 Length (Kms) 0.20 Facing SE Geology CAMBRIAN
 Coast edge 1 Land edge 6 Erosion 1
 The land-edge is constituted by the course of the railway leading to the north abutment of Barmouth bridge.

Map Number 09

118 MORFA MAWDDACH NGR Start and finish SH62431486 - SH62801429
 Length (Kms) 0.70 Facing SE Geology CAMBRIAN
 Coast edge 1 Land edge 6 Erosion 1
 The land-edge is constituted by the course of the railway leading to the southern abutment of Barmouth bridge.

119 FAIRBOURNE NGR Start and finish SH62801429 - SH61321392
 Length (Kms) 1.70 Facing N Geology CAMBRIAN
 Coast edge 2 Land edge 4 Erosion 1

120 FAIRBOURNE NGR Start and finish SH61321392 - SH61161409
 Length (Kms) 0.40 Facing E Geology CAMBRIAN
 Coast edge 11 Land edge 4 Erosion 1

121 FAIRBOURNE NGR Start and finish SH61161409 - SH61321447
 Length (Kms) 0.40 Facing E Geology CAMBRIAN
 Coast edge 2 Land edge 1 Erosion 1

122 FAIRBOURNE NGR Start and finish SH61321447 - SH61061195
 Length (Kms) 6.40 Facing ENW Geology CAMBRIAN
 Coast edge 12 Land edge 1/4 Erosion 1

123 FRIOG NGR Start and finish SH61061195 - SH60021115
 Length (Kms) 1.30 Facing NW Geology CAMBRIAN
 Coast edge 8 Land edge 1 Erosion 1

124 LLWYNGWRIL NGR Start and finish SH60021115 - SH59121021
 Length (Kms) 1.30 Facing NW Geology CAMBRIAN
 Coast edge 9 Land edge 1/4 Erosion 2/3

125 LLWYNGWRIL NGR Start and finish SH59121021 - SH57840873
 Length (Kms) 2.10 Facing NW Geology SAND
 Coast edge 12 Land edge 4 Erosion 1/2/3
 The coast-edge at this point is constituted by the foreshore.

126 LLANGELYNIN NGR Start and finish SH57840873 - SH56670603
 Length (Kms) 3.00 Facing W Geology CAMBRIAN
 Coast edge 9 Land edge 1/3/4 Erosion 2/3

127 LLANGELYNIN NGR Start and finish SH56670603 - SH56450553
 Length (Kms) 0.50 Facing W Geology CAMBRIAN
 Coast edge 8/9 Land edge 1/3 Erosion 2/3

Map Number 10

128 TONFANAU NGR Start and finish SH56450553 - SH56400539
 Length (Kms) 0.10 Facing W Geology CAMBRIAN
 Coast edge 8 Land edge 1 Erosion 2/3

129	TONFANAU			NGR Start and finish	SH56400539 - SH56380522
Length (Kms)	0.10	Facing	W	Geology	CAMBRIAN
Coast edge	9	Land edge	1	Erosion	2/3

130	TONFANAU			NGR Start and finish	SH56380522 - SH56330510
Length (Kms)	0.20	Facing	W	Geology	CAMBRIAN
Coast edge	1	Land edge	1	Erosion	2/3

131	TONFANAU			NGR Start and finish	SH56331510 - SH56080338
Length (Kms)	1.70	Facing	W	Geology	BOULDER CLAY
Coast edge	9	Land edge	1/4	Erosion	1/2/3

132	TONFANAU			NGR Start and finish	SH56080338 - SH56560303
Length (Kms)	0.70	Facing	W	Geology	BOULDER CLAY
Coast edge	12	Land edge	4	Erosion	1

The coast-edge is made up of shingle banks at this point.

133	TYWYN			NGR Start and finish	SH56590294 - SH57510008
Length (Kms)	3.20	Facing	SW	Geology	SAND
Coast edge	12	Land edge	1	Erosion	1

The coast edge is made up of shingle banks at this point.

134	TYWYN			NGR Start and finish	SH57510008 - SH58089979
Length (Kms)	1.40	Facing	W	Geology	SAND
Coast edge	1	Land edge	1	Erosion	1

135	TYWYN			NGR Start and finish	SH58089979 - SH58429905
Length (Kms)	0.80	Facing	SW	Geology	SAND
Coast edge	2/4	Land edge	4	Erosion	1

136	TYWYN			NGR Start and finish	SH58429905 - SH58769832
Length (Kms)	0.80	Facing	SW	Geology	SAND
Coast edge	10	Land edge	4	Erosion	1

137	ABERDYFI			NGR Start and finish	SH58769832 - SH59249701
Length (Kms)	1.40	Facing	SW	Geology	SAND
Coast edge	12	Land edge	4/6	Erosion	1/2/3

The coast-edge is constituted by shingle banks and LE1 at this point.

138	ABERDYFI			NGR Start and finish	SH59249701 - SH61139595
Length (Kms)	2.70	Facing	W,S	Geology	SAND
Coast edge	10	Land edge	1/6	Erosion	1/2

The coast-edge is constituted by vegetated dunes at this point.

Map Number 11

139	ABERDYFI			NGR Start and finish	SH61139595 - SH62179606
Length (Kms)	1.00	Facing	S	Geology	ORDOVICIAN
Coast edge	1	Land edge	1	Erosion	1

140	ABERDYFI			NGR Start and finish	SH62179606 -	SH62659625
Length (Kms)	0.40	Facing	S	Geology	ORDOVICIAN	
Coast edge	6	Land edge	1	Erosion	1	
141	ABERDYFI			NGR Start and finish	SH62659625 -	SH63159632
Length (Kms)	0.50	Facing	S	Geology	ORDOVICIAN	
Coast edge	1	Land edge	1	Erosion	1	
142	ABERDYFI			NGR Start and finish	SH63159632 -	SH63389629
Length (Kms)	0.40	Facing	S	Geology	ORDOVICIAN	
Coast edge	1/6	Land edge	5	Erosion	1	
143	ABERTAFOL			NGR Start and finish	SH63389629 -	SH64869686
Length (Kms)	1.50	Facing	S	Geology	ORDOVICIAN	
Coast edge	1	Land edge	1	Erosion	1	
144	ABERTAFOL			NGR Start and finish	SH64869686 -	SH65189691
Length (Kms)	0.40	Facing	S	Geology	ORDOVICIAN	
Coast edge	6	Land edge	1	Erosion	1	
145	ABERTAFOL			NGR Start and finish	SH65189691 -	SH65469706
Length (Kms)	0.30	Facing	S	Geology	ORDOVICIAN	
Coast edge	1	Land edge	1	Erosion	1	
146	ABERTAFOL			NGR Start and finish	SH65469706 -	SH65649709
Length (Kms)	0.20	Facing	S	Geology	ORDOVICIAN	
Coast edge	6	Land edge	1	Erosion	1	
147	PANT EIDAL			NGR Start and finish	SH65649709 -	SH65759710
Length (Kms)	0.10	Facing	S	Geology	ORDOVICIAN	
Coast edge	1	Land edge	1	Erosion	1	
148	PANT EIDAL			NGR Start and finish	SH65759710 -	SH65869713
Length (Kms)	0.10	Facing	S	Geology	ORDOVICIAN	
Coast edge	6	Land edge	1	Erosion	1	
149	PANT EIDAL			NGR Start and finish	SH65869713 -	SH66079720
Length (Kms)	0.20	Facing	S	Geology	ORDOVICIAN	
Coast edge	1	Land edge	1	Erosion	1	
150	PANT EIDAL			NGR Start and finish	SH66079720 -	SH66129721
Length (Kms)	0.10	Facing	S	Geology	ORDOVICIAN	
Coast edge	6	Land edge	1	Erosion	1	
151	PANT EIDAL			NGR Start and finish	SH66129721 -	SH66369718
Length (Kms)	0.20	Facing	S	Geology	ORDOVICIAN	
Coast edge	1	Land edge	1	Erosion	1	
152	PANT EIDAL			NGR Start and finish	SH66369718 -	SH66629720
Length (Kms)	0.30	Facing	S	Geology	SAND	
Coast edge	6	Land edge	1	Erosion	1	

153	GOGARTH			NGR Start and finish	SH66629720 - SH67149765
Length (Kms)	0.70	Facing	SE	Geology	SAND
Coast edge	1	Land edge	1	Erosion	1

154	YNYS			NGR Start and finish	SH67149765 - SH69459788
Length (Kms)	3.50	Facing	S	Geology	SAND
Coast edge	12	Land edge	3	Erosion	1/2

The coast-edge is constituted by LE4/5.

Map Number 06

85	TALSARNAU			NGR Start and finish	SH61903821 - SH61723764
Length (Kms)	0.60	Facing	W	Geology	BOULDER CLAY
Coast edge	3	Land edge	4	Erosion	1/2

Railway embankment.

87	LLANFIHANGEL Y TRAETHAU			NGR Start and finish	SH59963549 - SH59653582
Length (Kms)	1.10	Facing	N	Geology	BOULDER CLAY
Coast edge	10	Land edge	3/4	Erosion	1/2

Map Number 07

105	MOCHRAS			NGR Start and finish	SH56242738 - SH55492682
Length (Kms)	1.00	Facing	W	Geology	SAND
Coast edge	9	Land edge	3/4	Erosion	1

APPENDIX 3

ARCHAEOLOGICAL SITE GAZETTEER

Map Number 1

1 LYNCHET ABOVE PORTH MEUDWY SH16302538
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** LYNCHET
Period UNKNOWN **Condition** POOR
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
 Barely visible.

2 PORTH MEUDWY SH163258
Broad class MARITIME **Sitetype** WHARF
Period MODERN **Condition** GOOD
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
 Concrete slipway with inset iron rails, mortared stone building, slate-roofed, 8m X 5M, single storey, in use as fisherman's storehouse.

3 DWELLING ABOVE PORTH SIMDDE SH16602626
Broad class DOMESTIC **Sitetype** HOUSE
Period POST-MEDIEVAL **Condition** POOR
Coast edge type 7 **Erosion class** 1 **Threats** NONE
Description:
 Ty tan yr allt, stone building, derelict and overgrown, single room, single storey, small yard to rear.

4 BUILDING AT PORTH SIMDDE SH16732634
Broad class UNASSIGNED **Sitetype** BUILDING (UNCLASSIFIED)
Period MODERN **Condition** POOR
Coast edge type 7 **Erosion class** 1 **Threats** NONE
Description:
 The delapidated remains of a mortared stone building, 10m x 3m, on the W side of the Afon Saint, orientated NNW-SSE.

5 VERACIUS INSCRIBED STONE SH17322637
Broad class COMMEMORATIVE **Sitetype** INSCRIBED STONE
Period EARLY MEDIEVAL **Condition** GOOD
Coast edge type 1;4 **Erosion class** 1 **Threats** NONE
Description:
 A sixth-century inscribed stone, moved from an earlier site at Cefn Amwlch to Eglwys Sant Hywyn, Aberdaron.

6 SENACUS INSCRIBED STONE SH17322637
Broad class COMMEMORATIVE **Sitetype** INSCRIBED STONE
Period EARLY MEDIEVAL **Condition** GOOD
Coast edge type 1;4 **Erosion class** 1 **Threats** NONE
Description:
 A sixth-century inscribed stone, previously at Cefn Amwlch, moved to Eglwys Sant Hywyn.

7	EGLWYS SANT HYWYN					SH17322637
Broad class	RELIGIOUS, RITUAL AND FUNERARY	Sitetype	CHURCH			
Period	MEDIEVAL	Condition	GOOD			
Coast edge type	1;4	Erosion class	5	Threats	EROSION	
Description:						
Considerable erosion is evident on the south side of the churchyard.						
8	ABERDARON CLAS					SH17322637
Broad class	RELIGIOUS, RITUAL AND FUNERARY	Sitetype	RELIGIOUS HOUSE			
Period	EARLY MEDIEVAL	Condition	POOR			
Coast edge type	1;4	Erosion class	5	Threats	EROSION	
Description:						
No visible trace.						
9	SOCKET STONE IN EGLWYS SANT HYWYN					SH17292636
Broad class	RELIGIOUS, RITUAL AND FUNERARY	Sitetype	CROSS			
Period	MEDIEVAL	Condition	POOR			
Coast edge type	1;4	Erosion class	5	Threats	EROSION	
Description:						
Only the octagonal socket stone for the cross survives.						
10	EGLWYS SANT HYWYN CHURCHYARD					SH173264
Broad class	RELIGIOUS, RITUAL AND FUNERARY	Sitetype	CEMETERY			
Period	MEDIEVAL	Condition	POOR			
Coast edge type	1;4	Erosion class	5	Threats	EROSION	
Description:						
A section of exposure, 30m long, reveals building rubble and displaced human bones within the levelling layers behind the sea-wall (probably from the construction of the sea-wall - pers. comm., vicar of Aberdaron, 16.11.1995)						
11	STRUCTURE AT PENRHYN MAWR					SH18722564
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	BUILDING (UNCLASSIFIED)			
Period	UNKNOWN	Condition	POOR			
Coast edge type	8	Erosion class	1	Threats	NONE	
Description:						
The foundations of a rectangular structure or enclosure on the S side of a gully at the junction of a field-bank and a wall, which survives on the W side as a grassed-over stony bank, 11m X 6m, <1m high.						
12	ENCLOSURE AT PENRHYN MAWR					SH18642553
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	ENCLOSURE			
Period	UNKNOWN	Condition	POOR			
Coast edge type	8	Erosion class	1	Threats	NONE	
Description:						
An enclosure or a field-bank? Ploughed out, very low, <15cm, orientated E-W.						
13	FLINT WORKING SITE AT TRWYN Y PENRHYN					SH186253
Broad class	INDUSTRIAL	Sitetype	FLINT-MINE			
Period	PREHISTORIC	Condition	POOR			
Coast edge type	8	Erosion class	3	Threats	EROSION	
Description:						
A putative mesolithic flint-working site, of which nothing is now visible.						

14 FIELD-SYSTEM AT PENRHYN MAWR SH188253
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FIELD SYSTEM
Period UNKNOWN **Condition** MEDIUM
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
Ridge and furrow, bank and ditch along cliff edge, the remains of a field-system.

15 LONG HUTS AT TRWYN GWNINGAER SH18842526
Broad class DOMESTIC **Sitetype** LONG HUT
Period MEDIEVAL **Condition** POOR
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
A putative hut site. Possibly also the site of a promontory fort or lookout and a mineral trial. Part natural, part man-made; on the S side of a natural cleft is a quarried-out sub-rectangular hollow 9m X 4m and 2m deep with a level floor. Material has also been banked up on three sides; the fourth side is defined by the cleft. The entrance is on this (i.e. NE) side. The bank continues down the promontory on the E side.

16 ENCLOSED SETTLEMENT AT TRWYN GWNINGAER SH18842526
Broad class DEFENCE **Sitetype** ENCLOSED SETTLEMENT
Period PREHISTORIC **Condition** POOR
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
A putative hut site.

17 MINERAL TRIAL AT TRWYN GWNINGAER SH18842526
Broad class INDUSTRIAL **Sitetype** MINE
Period MODERN **Condition** POOR
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
Possibly a mineral trial site.

18 STANDING STONE AT TRWYN Y PENRHYN SH18942549
Broad class UNASSIGNED **Sitetype** STANDING STONE
Period UNKNOWN **Condition** GOOD
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
A standing stone on a cliff-edge - no other stones are visible, nor is there any outcropping. The stone is weathered and lichen-covered, and leans to the S, >1m high, four-sided, 60cm diameter, on the projected line of the cliff-edge bank with which it may have been associated.

19 QUARRY AT TRWYN BYCHESTYN SH19142566
Broad class INDUSTRIAL **Sitetype** QUARRY
Period MODERN **Condition** GOOD
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
A small stone quarry (for field walls?) and a related trackway.

20 QUARRY AT TRWYN Y PENRHYN SH19332584
Broad class INDUSTRIAL **Sitetype** QUARRY
Period MODERN **Condition** GOOD
Coast edge type 8 **Erosion class** 1 **Threats** NONE
Description:
A small quarry (for field walls?) and an associated trackway.

21	TRACKWAY AT OGOF COLOMENNOD				SH195260
Broad class	TRANSPORT			Sitetype	TRACKWAY
Period	POST-MEDIEVAL			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
A >2m wide trackway, scared and terraced, which leads from fields on Penrhyn Mawr farm to a cave (Ogof Colomennod), suggesting a possible connection with smuggling.					
22	QUARRY 1 AT CADLAN UCHAF				SH19702611
Broad class	INDUSTRIAL			Sitetype	QUARRY
Period	POST-MEDIEVAL			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
A small stone quarry and associated trackway.					
23	QUARRY 2 AT CADLAN UCHAF				SH19792607
Broad class	INDUSTRIAL			Sitetype	QUARRY
Period	POST-MEDIEVAL			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
Stone quarry pits.					
24	WATER SYSTEM AT PWLL CWM				SH20192642
Broad class	WATER AND DRAINAGE			Sitetype	CISTERN
Period	MODERN			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
Springs, a dam and a concrete cistern for agricultural and domestic water-collection.					
25	QUARRY AT NANT Y GADWEN				SH20922654
Broad class	INDUSTRIAL			Sitetype	QUARRY
Period	MODERN			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
A small stone quarry face.					
26	BENALLT RAILWAY				SH211265
Broad class	INDUSTRIAL			Sitetype	RAILWAY
Period	MODERN			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
Site of former railway to Benallt mine (SH223283) includes traces of inclines (suggesting two phases of use), winding houses (unroofed, 80% survival, some ironwork) and a roofless weighbridge house, of which the chimney gable on the south end survives but the other gable has collapsed.					
27	BENALLT JETTY				SH20972634
Broad class	INDUSTRIAL			Sitetype	JETTY
Period	MODERN			Condition	POOR
Coast edge type	8	Erosion class	1	Threats	EROSION
Description:					
This survives only as two wooden stumps beneath the trace of the lower incline; 3' gauge wheelsets and a winch survive among the rocks.					

28 NANT IRON AND MANGANESE MINE SH21102658

Broad class INDUSTRIAL **Sitetype** MINE
Period MODERN **Condition** MEDIUM
Coast edge type 8 **Erosion class** 1 **Threats** NONE

Description:

An open chamber is visible from the course of the former Benallt Railway. Adits are evident, and part of a wagon survives.

29 ENCLOSURE ON MYNYDD PENARFYNYDD SH216262

Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** ENCLOSURE
Period UNKNOWN **Condition** MEDIUM
Coast edge type 7;9 **Erosion class** 1 **Threats** NONE

Description:

Enclosures, apparent as large orthostatic stones on the W side of a ?later field wall, which define the edge of terraced fields.

30 MINE TRIALS ON MYNYDD PENARFYNYDD SH21592577

Broad class INDUSTRIAL **Sitetype** MINE
Period MODERN **Condition** GOOD
Coast edge type 6 **Erosion class** 1 **Threats** NONE

Description:

Mineral trials only.

31 MILITARY INSTALLATION ON MYNYDD PENARFYNYDD SH22572638

Broad class DEFENCE **Sitetype** BATTERY
Period MODERN **Condition** GOOD
Coast edge type 7 **Erosion class** 1 **Threats** NONE

Description:

A concrete plinth 2m X 2m in plan, once enclosed by fence and concrete posts, 6m x 6m. A second world war gun-emplacment or a searchlight battery?

Map Number 2

32 FIELD SYSTEM ON MYNYDD Y GRAIG SH23212693

Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FIELD SYSTEM
Period PREHISTORIC **Condition** MEDIUM
Coast edge type 7 **Erosion class** 1 **Threats** NONE

Description:

Hut(s) and field system - one half of a circular hut platform, terraced into a gentle SE-facing slope above a natural terrace - a semi-circle of large stones form an arc approximately 9m diameter. The area is much obscured by bracken.

33 ENCLOSURE ON MYNYDD Y GRAIG SH23332713

Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** ENCLOSED SETTLEMENT
Period UNKNOWN **Condition**
Coast edge type 7 **Erosion class** 1 **Threats** NONE

Description:

A possible enclosure or hut platform - a level terrace with a large number of visible stones, making a north and north-west side, orientated SW-NE, 10m x 5m. There are a number of potential sites along the strip of coastline at this point, including well-defined platforms but the area is much overgrown with bracken. Similarly, there are traces of what may be boundary banks orientated NW-SE running downslope between these features.

- 34 RHIW JETTY SH23572747
Broad class MARITIME **Sitetype** WHARF
Period MODERN **Condition** POOR
Coast edge type 6 **Erosion class** 3 **Threats** EROSION
Description:
The remains of the jetty serving Rhiw mine (SH221281); twelve wooden uprights are visible, rising in height to meet the land edge. A length of wire rope extrudes from the the upper coast edge, at a point where there is some slight erosion. The course of an incline leading from the foot of the aerial ropeway from the mine to the jetty itself is apparent, though much overgrown. At the incline's summit, some 25m inland, is a stone-built platform, to the SE side of which lies a rusted steam-engine boiler, approximately 2m long and 1m diameter.
-
- 35 SEA DEFENCE AT TAN YR ALLT SH23662766
Broad class UNASSIGNED **Sitetype** SEA-DEFENCE
Period MODERN **Condition** POOR
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
An area of coarse concrete, now much broken up and weathered, extending from the land--edge for a maximum of 20m x 5m.
-
- 36 TAN YR ALLT SH23792797
Broad class DOMESTIC **Sitetype** HOUSE
Period POST-MEDIEVAL **Condition** POOR
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
A stone-built house, two-storey, derelict, but well-built of rounded boulders from the beach; a cobbled path or yard runs along the seaward side. There are the remains of outhouses and of a yard to the rear.
-
- 37 RAF HELL'S MOUTH 1 SH25062848
Broad class DEFENCE **Sitetype** AIRFIELD
Period MODERN **Condition** MEDIUM
Coast edge type 9;1 **Erosion class** 4 **Threats** EROSION
Description:
A red-brick structure, asbestos roofed, derelict; possibly part of RAF Hell's Mouth.
-
- 38 MARINE WRECK AT HELL'S MOUTH SH25762806
Broad class MARITIME **Sitetype** SHIP FIND
Period MODERN **Condition** POOR
Coast edge type 9;1 **Erosion class** 4 **Threats** EROSION
Description:
A part of a marine boiler only survives.
-
- 39 RAF HELL'S MOUTH 2 SH26292804
Broad class DEFENCE **Sitetype** AIRFIELD
Period MODERN **Condition** MEDIUM
Coast edge type 9;1 **Erosion class** 4 **Threats** EROSION
Description:
A red-brick structure, part rendered, derelict.
-
- 40 JETTY REMAINS AT HELL'S MOUTH SH26892735
Broad class MARITIME **Sitetype** WHARF
Period MODERN **Condition** POOR
Coast edge type 9;1 **Erosion class** 4 **Threats** EROSION
Description:
A cast-iron pipe, approximately 10m long, bolted together with L-section channel attached at one end. It may be a pier support or may possibly be a part of the arrangements to carry the aerial ropeway at the Rhiw mine jetty at SH23572797, q.v.

41	RAF HELL'S MOUTH 3					SH27312727
Broad class	DEFENCE			Sitetype	LOOKOUT	
Period	MODERN			Condition	GOOD	
Coast edge type	9;1	Erosion class	4	Threats	EROSION	
Description:						
A large concrete-roofed structure, the entrance to which is on the headland (SW) side; small windows are apparent on the other sides.						
42	BURNT STONE AT HELL'S MOUTH					SH27302716
Broad class	UNASSIGNED			Sitetype	BURNT STONE	
Period	PREHISTORIC			Condition	????GOOD	
Coast edge type	9;1	Erosion class	4	Threats	EROSION	
Description:						
A double-ditch profile, the fill of which contains a dense concentration of fire-shattered stone.						
43	WALL AT HELL'S MOUTH					SH27452710
Broad class	AGRICULTURE AND SUBSISTENCE			Sitetype	WALL	
Period	UNKNOWN			Condition	MEDIUM	
Coast edge type	9;1	Erosion class	4	Threats	EROSION	
Description:						
A drystone wall, approximately 1m wide, of which only one course is visible, exposed under ?eroding surface 0.3m down.						
44	RAF HELL'S MOUTH 4					SH27572709
Broad class	DEFENCE			Sitetype	PILLBOX	
Period	MODERN			Condition	GOOD	
Coast edge type	9;1	Erosion class	4	Threats	EROSION	
Description:						
A rectangular concrete structure, roofed, open on the seaward (SW) side, and a polygonal brick and concrete pillbox. There are also traces of a firing range etc. nearby.						
45	RING-DITCH AT HELL'S MOUTH					SH28202682
Broad class	DOMESTIC			Sitetype	ENCLOSED SETTLEMENT	
Period	UNKNOWN			Condition	POOR	
Coast edge type	9;1	Erosion class	4	Threats	EROSION	
Description:						
A ring-ditch around a settlement, no longer visible as such on the ground.						
46	STRUCTURE AT HELL'S MOUTH					SH28942572
Broad class	UNASSIGNED			Sitetype	BUILDING (UNCLASSIFIED)	
Period	UNKNOWN			Condition	POOR	
Coast edge type	9;1	Erosion class	4	Threats	EROSION	
Description:						
Drystone wall coursing exposed in an eroding coast-edge, sealed by sand above. Up to three courses of water-worn stone survive.						
47	LINEAR BANKS ON MYNYDD CILAN					SH29152548
Broad class	UNASSIGNED			Sitetype	BANK	
Period	UNKNOWN			Condition	MEDIUM	
Coast edge type	6	Erosion class	3	Threats	EROSION	
Description:						
Linear banks, <2m high - erosion gulleys which have subsequently been grassed over. There is evidence also of more recent erosion.						

48	MINERAL TRIALS ON MYNYDD CILAN				SH288240
Broad class	INDUSTRIAL			Sitetype	MINE
Period	MODERN			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
Scattered mineral trials or small-scale workings.					
49	TRACKWAYS ON MYNYDD CILAN				SH288240
Broad class	TRANSPORT			Sitetype	TRACKWAYS
Period	MODERN			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
Trackways associated with mineral workings, eroded and slumped in places; the lower path is cut by workings.					
50	RIDGE AND FURROW ON MYNYDD CILAN				SH29052392
Broad class	AGRICULTURE AND SUBSISTENCE			Sitetype	RIDGE AND FURROW
Period	POST-MEDIEVAL			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
Ridge and furrow, running E-W and N-S; the space between the furrows is approximately 2m.					
51	HOLLOW ON MYNYDD CILAN				SH28982388
Broad class	UNASSIGNED			Sitetype	NATURAL FEATURE
Period	UNKNOWN			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
An oval-shaped hollow (approximately 9m x 7m) orientated N-S, 1.5m deep, incorporated into E-W orientated boundary bank on N side, defined by low banks <0.4 high, approximately 1.5m wide, whose purpose is unclear.					
52	MESOLITHIC FLINT WORKING ON MYNYDD CILAN				SH290230A
Broad class	INDUSTRIAL			Sitetype	FINDSPOT
Period	PREHISTORIC			Condition	POOR
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A collection of approximately seventy Mesolithic flints consisting of a blunted-back point type, unworked blades and waste fragments were found on the surface at Cilan Uchaf; these were presented to the National Museum of Wales.					
53	FIELD SYSTEM ON MYNYDD CILAN				SH29272352
Broad class	AGRICULTURE AND SUBSISTENCE			Sitetype	FIELD SYSTEM
Period	POST-MEDIEVAL			Condition	
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A field system consisting of earthen banks and lynchets with some evidence of cross-slope cultivation, though probably of fairly recent date. There are a number of unreclaimed boundary banks within this area. See also (54).					
54	SIGNAL STATION ON MYNYDD CILAN				SH29432314
Broad class	DEFENCE			Sitetype	SIGNAL STATION
Period	MODERN			Condition	MEDIUM
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
Concrete setting for a large rounded section post 30cm x 30cm - possibly a second world war maritime signal station.					

55 BURIAL CHAMBER AT CILAN UCHAF SH30022352
Broad class RELIGIOUS, RITUAL AND FUNERARY **Sitetype** CHAMBERED CAIRN
Period PREHISTORIC **Condition** POOR
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
 Cilan Uchaf burial chamber, partly ruined; only one support remains, and a large recumbent capstone, 3m long, 2m wide, 1.5m thick.

56 CAIRN AT CILAN UCHAF SH30132371
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** CAIRN
Period UNKNOWN **Condition** POOR
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
 An obtrusive stone cairn within an area of improved pasture, now overgrown. A number of field boundaries have been ploughed out in this area.

57 POSSIBLE THUMBSRAPER AT PORTH CEIRIAD SH30282459
Broad class OBJECT **Sitetype** FINDSPOT
Period PREHISTORIC **Condition** POOR
Coast edge type 6 **Erosion class** 1 **Threats** DUMPING
Description:
 The find of a thumbscraper might indicate the presence of a mesolithic site here. The immediate area is now used as a dump.

58 FORT ON PARED MAWR SH303392468
Broad class DEFENCE **Sitetype** PROMONTORY FORT
Period PREHISTORIC **Condition** MEDIUM
Coast edge type 6 **Erosion class** 3 **Threats** EROSION
Description:
 Also known as Castell Pared Mawr; a promontory fort on the edge of Pared Mawr containing a number of ill-defined platforms and a possible round hut within the bank and ditch. The area enclosed is roughly rectangular, measuring approximately 40m within the defences N-S, 20m across.

59 UNWORKED FLINTS AT PORTH CEIRIAD SH30502477
Broad class OBJECT **Sitetype** FINDSPOT
Period PREHISTORIC **Condition**
Coast edge type 6;7 **Erosion class** 3 **Threats** EROSION
Description:
 Two unworked flints discovered here might indicate the presence of a mesolithic settlement. There is considerable land-erosion at this point.

60 PILLBOX AT PORTH CEIRIAD SH30552479
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** MEDIUM
Coast edge type 6;7 **Erosion class** 3 **Threats** EROSION
Description:
 A second-world war pillbox or lookout, built out of mortared stone and brick, approximately 2.5m x 2.5m.

61 FIELD SYSTEM 1 AT PORTH CEIRIAD SH?30362458
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FIELD SYSTEM
Period POST-MEDIEVAL **Condition**
Coast edge type 6;7 **Erosion class** 1 **Threats** NONE
Description:
 A field system of low banks with traces of surviving stone facing in some places.

62	WALL AT PORTH CEIRIAD					SH30613475
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	WALL			
Period	POST-MEDIEVAL	Condition				
Coast edge type	6;7	Erosion class	3	Threats	EROSION	
Description:						
Remains of a drystone wall along the top of Pared Mawr; some land-erosion is visible at this point.						
63	FIELD SYSTEM 2 AT PORTH CEIRIAD					SH30802482
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	FIELD SYSTEM			
Period	POST-MEDIEVAL	Condition				
Coast edge type	6;7	Erosion class	3	Threats	EROSION	
Description:						
Field system of low banks with traces of stone facing in some places.						
64	FIELD SYSTEM 3 AT PORTH CEIRIAD					SH30972485
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	FIELD SYSTEM			
Period	UNKNOWN	Condition				
Coast edge type	67	Erosion class	3	Threats	EROSION	
Description:						
A circular scoop 4m in diameter and a field system of low banks with traces of stone facing in some places.						
65	MILITARY INSTALLATION AT PENRHYN DU					SH32392536
Broad class	DEFENCE	Sitetype	BATTERY			
Period	MODERN	Condition	MEDIUM			
Coast edge type	6	Erosion class	1	Threats	NONE	
Description:						
The remains of a fenced enclosure, orientated E-W, measuring approximately 8m x 6m, with concrete posts and a gated entrance on the E side. There are traces of concrete and brick internal fittings for a mounting. Probably a gun emplacement from the Second World War.						
66	ENCLOSURE AT PENRHYN DU					SH32442551
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	ENCLOSURE			
Period	POST-MEDIEVAL	Condition				
Coast edge type	6	Erosion class	1	Threats	NONE	
Description:						
The enclosures are bounded by banks and double banks. The boundary banks are stone-faced in places, <1.5m high, <3.5m wide, with a ditch upslope in places.						
67	FIELD BANK AT PENRHYN DU					SH32542568
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	BANK			
Period	POST-MEDIEVAL	Condition				
Coast edge type	6	Erosion class	1	Threats	NONE	
Description:						
L-shaped double bank and central ditch, purpose unclear.						
68	HOUSE AT PENRHYN DU					SH32602594
Broad class	DOMESTIC	Sitetype	HOUSE			
Period	POST-MEDIEVAL	Condition	POOR			
Coast edge type	6	Erosion class	1	Threats	NONE	
Description:						
A NW-SE orientated mortared stone building, 4.5m x 3.5m, reaching to a maximum height of 1.5, wall width 0.5m. The entrance is in the W corner of the NW end. Part survives.						

69	MINE 1 AT PENRHYN DU					SH325261
Broad class	INDUSTRIAL			Sitetype	MINE	
Period	MODERN			Condition	MEDIUM	
Coast edge type	6	Erosion class	1	Threats	NONE	
Description: Metalliferous mine trials and trench workings.						
70	MINE 2 PENRHYN DU					SH32252623
Broad class	INDUSTRIAL			Sitetype	MINE	
Period	MODERN			Condition	MEDIUM	
Coast edge type	6	Erosion class	1	Threats	NONE	
Description: The remains of Penrhyn Du lead mine include dressing floors and shafts, though much of the site has been built over. A good example of an engine house for a Cornish or Boulton and Watt engine also survives, measuring 4m x5m internally. It is stone built and rendered, with wooden lintels. Other traces of mining activity, such as grassed-over tailings, are visible nearby.						
71	EARTHWORK AT PENRHYN DU					SH324266
Broad class	DEFENCE			Sitetype	EARTHWORK (UNCLASSIFIED)	
Period	UNKNOWN			Condition	UNKNOWN	
Coast edge type	6	Erosion class	1	Threats	NONE	
Description: This is an alleged site only, whose exact location is unclear.						
72	PIER AT PENRHYN DU					SH32372665
Broad class	MARITIME			Sitetype	WHARF	
Period	MODERN			Condition	GOOD	
Coast edge type	6	Erosion class	1	Threats	NONE	
Description: A life-boat house and slipway, possibly constructed on the site of the jetty serving Bwlch ironstone quarry (SH300271), Pant Gwyn lead mine (SH308269) and Bwlch Tocyn lead mine (SH310268).						
73	ROAD BRIDGE AT ST TUDWAL'S ROADS					SH31812651
Broad class	TRANSPORT			Sitetype	BRIDGE	
Period	MODERN			Condition	GOOD	
Coast edge type	6	Erosion class	1	Threats	NONE	
Description: A mortared stone arch over a now-culverted stream.						
74	GLASS BEAD FINDSPOT AT ABERSOCH					SH316283
Broad class	OBJECT			Sitetype	FINDSPOT	
Period	PREHISTORIC			Condition		
Coast edge type	6	Erosion class	1	Threats	NONE	
Description: A glass bead of Iron Age was found in soil recovered from a point on the south side of Abersoch harbour.						
75	SLIPWAY AT ABERSOCH					SH31512836
Broad class	MARITIME			Sitetype	SLIPWAY	
Period	MODERN			Condition	MEDIUM	
Coast edge type	1;6	Erosion class	1	Threats	NONE	
Description: Iron rails (flat-bottom section) inset in concrete slipway, cradle and winch visible.						

76 LIME-KILN AT ABERSOCH SH31462836
Broad class INDUSTRIAL **Sitetype** LIME-KILN
Period MODERN **Condition** MEDIUM
Coast edge type 1;6 **Erosion class** 1 **Threats** NONE
Description:
 A lime-kiln, with a single charging hole (now capped) and a NE-facing drawing-hole. Internally it measures 5m x 2m, and its external height is 4m. Part of the wall has collapsed.

77 SLUICE-BRIDGE AT ABERSOCH SH313283
Broad class TRANSPORT **Sitetype** BRIDGE
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
 A causeway carries the road over the Afon Soch at the point of its confluence with the bay; it is pierced by two stone arches, each equipped with wooden tide-gates, and a stone bridge.

78 CASTELL ABERSOCH SH31352857
Broad class DEFENCE **Sitetype** MOTTE
Period MEDIEVAL **Condition** POOR
Coast edge type 7 **Erosion class** 1 **Threats** NONE
Description:
 Castell Abersoch, largely destroyed by road construction and by housing, partly stabilised as a front garden. Several stone hammers are said to have been found when the turnpike was built in the nineteenth century.

Map Number 3

79 QUARRY AT MYNYDD TIR CWMWD SH334303
Broad class INDUSTRIAL **Sitetype** QUARRY
Period MODERN **Condition** POOR
Coast edge type 12 **Erosion class** 3 **Threats** EROSION; RECLAMATION
Description:
 Remains of the Cambrian Quarries; part of the quarry workings at SH32903030 have been turned into a car-park. A large hopper survives at SH33753085, also the trace of an incline at SH33503050, and four vertical timbers for a jetty at SH33333036.

80 ARROWHEAD FINDSPOT ON MYNYDD TIR CWMWD SH337308
Broad class OBJECT **Sitetype** FINDSPOT
Period PREHISTORIC **Condition**
Coast edge type 12 **Erosion class** 3 **Threats** NONE
Description:
 A leaf-shaped flint arrowhead found here is now in the National Museum of Wales.

81 BOATHOUSE AT LLANBEDROG SH33263126
Broad class DOMESTIC **Sitetype** BOATHOUSE
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
 A boathouse, in use, of nineteenth-century design with modern additions, a large two-storeyed building which includes three semi-circular doors for boats, and domestic accommodation of the first floor.

82	LIME-KILN AT LLANBEDROG				SH33253128
Broad class	INDUSTRIAL			Sitetype	LIME-KILN
Period	MODERN			Condition	POOR
Coast edge type	7	Erosion class	4	Threats	COLLAPSE
Description:					
A lime-kiln with a single charging hole, rectangular plan, approximately 6m square. It is in poor condition, partly collapsed.					
83	HOUSES AT LLANBEDROG				SH33183128
Broad class	DOMESTIC			Sitetype	HOUSE
Period	MODERN			Condition	GOOD
Coast edge type	7	Erosion class	2	Threats	NONE
Description:					
"Foxhole", two dwellings, semi-detached cottages or nees, inhabited, a polite adaptation of a vernacular idiom, which includes mock Tudor or Jacobean chimney-pots.					
84	SEA-DEFENCE AT LLANBEDROG				SH33203133
Broad class	UNASSIGNED			Sitetype	SEA-DEFENCE
Period	MODERN			Condition	GOOD
Coast edge type	7	Erosion class	2	Threats	NONE
Description:					
A stone sea-defence wall.					
85	NEOLITHIC AXE FINDSPOT AT LLANBEDROG				SH329314
Broad class	OBJECT			Sitetype	FINDSPOT
Period	PREHISTORIC			Condition	
Coast edge type	7	Erosion class	1	Threats	NONE
Description:					
A stone-axe was found in 1982 during the construction of houses in Parc Glyn y Weddw; it is now in private hands.					
86	GARDEN AT LLANBEDROG				SH32903140
Broad class	GARDEN AND PARKS			Sitetype	GARDEN
Period	MODERN			Condition	POOR
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
Little appears to survive of the original gardens of Plas Glyn y Weddw, built as the Madryn estate dower-house in 1857, and after 1896 used an art gallery, museum, dance hall and roller-skating rink. Houses have been built on the site at one point.					
87	FIELD SYSTEM AT LLANBEDROG				SH335320
Broad class	AGRICULTURE AND SUBSISTENCE			Sitetype	FIELD SYSTEM
Period	POST-MEDIEVAL			Condition	GOOD
Coast edge type	7	Erosion class	2	Threats	NONE
Description:					
Pebble-faced banks dividing improved pasture.					
88	TRAMWAY AT CARREG Y DEFAID				SH34133265
Broad class	TRANSPORT			Sitetype	RAILWAY
Period	MODERN			Condition	GOOD
Coast edge type	6	Erosion class	4	Threats	EROSION
Description:					
A shallow cutting, 1.5m approximately at its base, 2m deep, shelving out, possibly representing narrow gauge railway access from Carreg y Defaid quarry from Pwllheli.					

- 89 PILLBOX AT CARREG Y DEFAID SH34073271
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 9 **Erosion class** 4 **Threats** EROSION
Description:
A brick-built externally rendered structure with a separate but contiguous privy, both now roofless. Nearby is a large concrete base in the shape of an arrow, pointing out to sea at 110 degrees, 27m long, 20m across the arrow-head. Part of Penrhos bombing school ("Ysgol Fomio"), burnt down by Rev. Lewis Valentine, Saunders Lewis and D.J. Williams.
-
- 90 TRAMWAY AT CARREG Y DEFAID SH34053273
Broad class TRANSPORT **Sitetype** RAILWAY
Period MODERN **Condition** POOR
Coast edge type 9 **Erosion class** 5 **Threats** EROSION
Description:
A shallow linear depression alongside the lane may represent the course of the Pwllheli and Llanbedrog tramway.
-
- 91 FIELD SYSTEM AT Y GAMLAS SH34623322
Broad class UNASSIGNED **Sitetype** FIELD SYSTEM
Period POST-MEDIEVAL **Condition** POOR
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
A field wall on sandy foreshore, with (possibly reclaimed) pastureland behind consisting of a stone bank of beach pebbles, badly eroded, 0.5m high, 1m wide.
-
- 92 SEA DEFENCE AT Y GAMLAS SH347333
Broad class UNASSIGNED **Sitetype** SEA-DEFENCE
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
A stone and concrete bank, faced on the seaward side with rough boulders, on the landward side part concrete, part stone, 8-10m wide, which extends from near Carreg y Defaid to Pwllheli "West End".
-
- 93 SHIPWRECK AT Y GAMLAS SH356336
Broad class MARITIME **Sitetype** SHIP FIND
Period MODERN **Condition** UNKNOWN
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
Local information speaks of a ship being wrecked here carrying a cargo of coal c. 1900; the wreck, and pieces of coal, are said to be visible at low tides.
-
- 94 TRAMWAY AT Y GAMLAS SH35603377
Broad class TRANSPORT **Sitetype** RAILWAY
Period MODERN **Condition** MEDIUM
Coast edge type 1 **Erosion class** 5 **Threats** EROSION
Description:
An earthen bank which possibly carried the Pwllheli and Llanbedrog tramway.
-
- 95 AIR-CRASH SITE AT Y GAMLAS SH361338
Broad class DEFENCE **Sitetype** AIR CRASH SITE
Period MODERN **Condition**
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
Approximate site of the crash-landing of a Heinkel 111-H5 of 12KG40, shot down on 30 July 1942.
-

96 SPINDLE-WHORL FINDSPOT AT CARREG YR IMBILL SH387343
Broad class OBJECT **Sitetype** FINDSPOT
Period PREHISTORIC **Condition**
Coast edge type 10 **Erosion class** 1 **Threats** NONE
Description:
The find-spot is on the site of the Gimblet Rock quarry, now used as a caravan park.

97 MACEHEAD FINDSPOT AT CARREG YR IMBILL SH388344
Broad class OBJECT **Sitetype** FINDSPOT
Period PREHISTORIC **Condition**
Coast edge type 10 **Erosion class** 1 **Threats** NONE
Description:
An unusual hour-glass perforated macehead, now in the National Museum of Wales, is thought to have been found here. The find-spot is on the site of the Gimblet Rock quarry, now used as a caravan park.

98 QUARRY AT CARREG YR IMBILL SH38853455
Broad class INDUSTRIAL **Sitetype** QUARRY
Period MODERN **Condition** POOR
Coast edge type 10 **Erosion class** 1 **Threats** NONE
Description:
The granite has been largely quarried away, and little remains on site, which has been converted into a caravan and chalet park and yachting facilities. No trace was observed of the quarry's jetties.

99 PWLLHELI HARBOUR SH379346
Broad class MARITIME **Sitetype** WHARF
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** RE-USE
Description:
A large natural harbour, substantially embanked in the nineteenth century and the facilities subsequently upgraded and modernised for use as a yachting marina. The harbour is equipped with a sluice gate system. The sites of Pwllheli's two railway stations lie immediately to the north.

Map Number 4

100 LONG HUT AT PEN YCHAIN SH43313537
Broad class DOMESTIC **Sitetype** LONG HUT
Period MEDIEVAL **Condition** POOR
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
A long hut, orientated NW by N, 6m x 7m+, partly obliterated by a modern track. The walls survive as grassy banks.

101 HMS GLENDOWER AT PEN YCHAIN SH433362
Broad class DEFENCE **Sitetype** NAVAL BASE/HOLIDAY CAMP
Period MODERN **Condition** GOOD
Coast edge type 6 **Erosion class** 2 **Threats** NONE
Description:
A second world war naval base (HMS Glendower) in re-use as Butlin's holiday camp. A considerable number of possible gun-emplacements, searchlight batteries, etc. survive at the S end of the site, also features dating from the post-war period, such as a chair lift and a narrow-gauge pleasure railway.

102 MOUND AT AFONWEN SH44133706
Broad class UNASSIGNED **Sitetype** MOUND
Period UNKNOWN **Condition** GOOD
Coast edge type 9 **Erosion class** 4 **Threats** EROSION
Description:
 Tomen Pendorlan - a natural feature.

103 FORD AT AFONWEN SH44163707
Broad class TRANSPORT **Sitetype** FORD
Period UNKNOWN **Condition** MEDIUM
Coast edge type 9 **Erosion class** 4 **Threats** EROSION
Description:
 Traces survive of a small ford at this point.

104 RAILWAY AT AFONWEN SH445361
Broad class TRANSPORT **Sitetype** RAILWAY
Period MODERN **Condition** POOR
Coast edge type 1 **Erosion class** 2 **Threats** NONE
Description:
 The site of Afonwen Junction; the Cambrian Railways' platform survives, but traces only remain of the LNWR platform, and the locomotive sheds etc. have been obliterated. Evidence survives of some lineside buildings, and the stump of a starter signal survives.

105 GROUYNE AT AFONWEN SH447361
Broad class UNASSIGNED **Sitetype** SEA-DEFENCE
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 3 **Threats** EROSION
Description:

106 STONE CLEARANCE AT AFONWEN SH45003626
Broad class UNASSIGNED **Sitetype** SEA-DEFENCE
Period POST-MEDIEVAL **Condition** MEDIUM
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
 Overgrown.

107 COPPER CAKES FINDSPOT AT AFONWEN SH45683725
Broad class INDUSTRIAL **Sitetype** FINDSPOT
Period ROMAN **Condition**
Coast edge type 9 **Erosion class** 3 **Threats** EROSION
Description:
 These two copper cakes, weighing 36 and 44 lbs, were discovered in 1907 in an eroding cliff-face, where a complex geological sequence is exposed.

Map Number 5

108 HOUSE AT AFONWEN SH46693636
Broad class DOMESTIC **Sitetype** HOUSE
Period MODERN **Condition** GOOD
Coast edge type 4 **Erosion class** 2 **Threats** NONE
Description:
 Nineteenth century building, in occupation, extended and modernised.

109	MOUNDS AT ABERDWYFOR				SH47723633
Broad class	UNASSIGNED	Sitetype	MOUNDS		
Period	POST-MEDIEVAL	Condition	MEDIUM		
Coast edge type	10	Erosion class	1	Threats	NONE
Description:					
Stone banks or mounds, now grassed over. Probably result of small scale gravel quarrying.					
110	ENCLOSURE AT ABERDWYFOR				SH47333627
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	ENCLOSURE		
Period	UNKNOWN	Condition	MEDIUM		
Coast edge type	10	Erosion class	1	Threats	NONE
Description:					
A rounded feature made up of stony earthen banks forming an overgrown enclosure approximately 5m x 5m with a dump or mound 3m x 4m at the W end, from which a wooden post protrudes. The banks reach up to 0.5m. The centre of the feature has been quarried away so that it only now resembles a structure. A depression to the NE may be a pond from which the material was derived. The original function of this feature is not now apparent.					
111	DYKE 1 AT ABERDWYFOR				SH46613652
Broad class	UNASSIGNED	Sitetype	SEA-DEFENCE		
Period	MODERN	Condition	GOOD		
Coast edge type	10	Erosion class	1	Threats	NONE
Description:					
112	DYKE 2 AT ABERDWYFOR				SH47313641
Broad class	UNASSIGNED	Sitetype	SEA-DEFENCE		
Period	MODERN	Condition	POOR		
Coast edge type	10	Erosion class	1	Threats	NONE
Description:					
The remains of a mortared stone dyke.					
113	DYKE 3 AT ABERDWYFOR				SH47593642
Broad class	UNASSIGNED	Sitetype	SEA-DEFENCE		
Period	MODERN	Condition	POOR		
Coast edge type	10	Erosion class	1	Threats	NONE
Description:					
Remains of a concrete dyke.					
114	QUAY AT ABERDWYFOR				SH47783641
Broad class	MARITIME	Sitetype	WHARF		
Period	MODERN	Condition	POOR		
Coast edge type	10	Erosion class	1	Threats	NONE
Description:					
Stone quay and slipway.					
115	FIELD SYSTEM AT ABERDWYFOR				SH48713655
Broad class	AGRICULTURE AND SUBSISTENCE	Sitetype	FIELD SYSTEM		
Period	POST-MEDIEVAL	Condition	POOR		
Coast edge type	9	Erosion class	3	Threats	EROSION
Description:					
A stone field bank, actively eroding.					

116	CRICCIETH CASTLE ADDITIONAL AREA				SH49953780
Broad class	DEFENCE			Sitetype	CASTLE
Period	MEDIEVAL			Condition	GOOD
Coast edge type	6	Erosion class	5	Threats	EROSION
Description:					
This site possibly includes an Iron Age earthwork; distinct variations in the stratigraphy of an area immediately to the east may show a ditch or pit in cross-section.					
117	CRICCIETH CASTLE				SH49993773
Broad class	DEFENCE			Sitetype	CASTLE
Period	MEDIEVAL			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
Medieval Welsh castle with later English additions.					
118	URN AT CRICCIETH				SH49973779
Broad class	OBJECT			Sitetype	FINDSPOT
Period	PREHISTORIC			Condition	
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
An urn discovered behind the cottage of the Castle custodian might suggest an Iron Age site.					
119	SLIPWAY AT CRICCIETH				SH51153789
Broad class	MARITIME			Sitetype	SLIPWAY
Period	MODERN			Condition	GOOD
Coast edge type	1	Erosion class	1	Threats	NONE
Description:					
Slipway, overlying earlier slipway, with lifeboat building (in use), an attractive construction which bears an 1893 datestone.					
120	PORTH YR AUR, CRICCIETH				SH50033784
Broad class	DOMESTIC			Sitetype	HOUSE
Period	POST-MEDIEVAL			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
Porth yr Aur, 21 Castle Street, Criccieth, a house of c. 1700. Though active erosion threatens the houses on the SE side of Castle Street, it is too distant to present an immediate threat to this particular site.					
121	TY MAWR, CRICCIETH				SH50043785
Broad class	DOMESTIC			Sitetype	HOUSE
Period	POST-MEDIEVAL			Condition	GOOD
Coast edge type	6	Erosion class	4	Threats	EROSION
Description:					
Ty Mawr, 12 Castle Street, formerly the Castle Inn, a two-storeyed dwelling probably of sixteenth century date. The building is actively threatened by erosion. Distinct variations in the stratigraphy of an area immediately to the west may show a ditch or pit in cross section.					
122	MORANNEDD CAFE, CRICCIETH				SH50573813
Broad class	RECREATION			Sitetype	BUILDING
Period	MODERN			Condition	GOOD
Coast edge type	1	Erosion class	1	Threats	NONE
Description:					
The Morannedd Cafe of 1948, an excellent example of modernist architecture.					

123	JETTY AT CRICCIETH				SH50933807
Broad class	MARITIME			Sitetype	WHARF
Period	MODERN			Condition	POOR
Coast edge type	4	Erosion class	5	Threats	EROSION
Description: Fragment of a wooden structure, probably part of a pier.					
124	RAILWAY STATION AT CRICCIETH				SH51903777
Broad class	TRANSPORT			Sitetype	RAILWAY
Period	MODERN			Condition	POOR
Coast edge type	2	Erosion class	1	Threats	NONE
Description: Part of a wooden halt platform survives at this point.					
125	FIELD BANK AT CRICCIETH				SH52073769
Broad class	UNASSIGNED			Sitetype	BANK
Period	UNKNOWN			Condition	GOOD
Coast edge type	2	Erosion class	1	Threats	NONE
Description: The break of slope here may be natural. The land drops about 2m on the seaward side.					
126	SEWAGE SYSTEM AT CRICCIETH				SH520375
Broad class	WATER AND DRAINAGE			Sitetype	SEWAGE SYSTEM
Period	MODERN			Condition	GOOD
Coast edge type	2	Erosion class	1	Threats	NONE
Description: Modern sewage system, in use, consisting of buried pipes with spoil mounds around manholes, and open stone-lined drain.					
127	PEBBLE BANKS AT CRICCIETH				SH520374
Broad class	UNASSIGNED			Sitetype	BANKS
Period	UNKNOWN			Condition	GOOD
Coast edge type	2	Erosion class	1	Threats	NONE
Description: Heaped pebble banks, pierced by road from Penrhyn Du farm.					
128	ROAD AT CRICCIETH				SH52093755
Broad class	TRANSPORT			Sitetype	ROAD
Period	MODERN			Condition	GOOD
Coast edge type	2	Erosion class	1	Threats	NONE
Description: Road from Penrhyn Du farm to foreshore.					
130	GUNPOWDER HOUSE AT YNYS CYNGAR				SH55413654
Broad class	INDUSTRIAL			Sitetype	POWDER HOUSE
Period	MODERN			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description: Nineteenth-century gunpowder house, two units with a clerestory in each roof, in re-use as a house.					

129 EXCAVATIONS AT YNYS CYNGAR SH5534365
 Broad class UNASSIGNED Sitetype BANK
 Period MODERN Condition GOOD
 Coast edge type 6 Erosion class 1 Threats NONE

Description:

Possibly excavations in connection with the construction of the lime-kiln on Ynys Cyngar.

131 LIME-KILN AT YNYS CYNGAR SH55433660
 Broad class INDUSTRIAL Sitetype LIME-KILN
 Period MODERN Condition GOOD
 Coast edge type 6 Erosion class 1 Threats NONE

Description:

Single-charging hole, rectangular plan, possibly used for construction of Cob.

132 CHAMBERED CAIRN AT BORTH FECHAN SH55653695
 Broad class RELIGIOUS, RITUAL AND FUNERARY Sitetype CHAMBERED CAIRN
 Period PREHISTORIC Condition POOR
 Coast edge type 6 Erosion class 1 Threats NONE

Description:

Alltud Eifion refers to a cromlech "rhwng y ty a'r mor ... bron a chael ei chuddio gan y tywod" ("between the house and the sea ... nearly buried by the sand") (Y Gestiana 23). There is nothing now visible.

133 HOUSE AT BORTH FECHAN SH56053715
 Broad class DOMESTIC Sitetype HOUSE
 Period MODERN Condition GOOD
 Coast edge type 10 Erosion class 1 Threats NONE

Description:

A group of small nineteenth century houses of vernacular style.

134 PILLBOX AT BORTH Y GEST SH56533730
 Broad class DEFENCE Sitetype PILLBOX
 Period MODERN Condition GOOD
 Coast edge type 6 Erosion class 1 Threats NONE

Description:

The brick internal wall is camouflaged with rough stone, 8m x 3m external measurement.

135 CEI BALAST SH56923780
 Broad class MARITIME Sitetype WHARF
 Period MODERN Condition MEDIUM
 Coast edge type 1 Erosion class 3 Threats EROSION

Description:

An island made up entirely of dumped ships' ballast; timber piles were noted on the NW shore, as was a stone structure, possibly part of a jetty for landing ballast.

136 HARBOUR AT PORTHMADOG SH569383
 Broad class MARITIME Sitetype WHARF
 Period MODERN Condition GOOD
 Coast edge type 1 Erosion class 1 Threats RE-USE

Description:

An extensive series of quays for shipping slate together with associated features, eg the fragmentary remains of a limekiln at SH56813842, sheds for storing slate and other buildings, shipbuilding yards, a seamen's mission converted into a yachting club at SH56893829, and a railway station at SH571384.

137 SLUICE BRIDGE AT PORTHMADOG SH57073848
Broad class TRANSPORT **Sitetype** BRIDGE
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** RE-USE

Description:

An elegant five-arch sluice bridge, constructed in 1810, whose stone piers have been extended in reinforced concrete, to carry a railway and a road, and which remains in use for road transport. The remains of a cast-iron plateway on stone block sleepers, used to construct the Cob, were discovered on the bridge and subsequently recovered in February 1996. A slate-clad tollhouse of between 1831 and 1833, with Kellow's patent ridge tiles on the roof, was noted at the SE end of the bridge.

138 PORTHMADOG COB SH57803814
Broad class TRANSPORT **Sitetype** SEA-DEFENCE
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** NONE

Description:

A nineteenth century (1808-1813) boulder-dump embankment ("the Cob") enclosing the Aberglaslyn marshes and carrying the Ffestiniog Railway. It extends from SH584379 to SH571384. A lower embankment of 1833-4 on the landward side carries the road.

139 TOLLHOUSE AT BOSTON LODGE SH58453792
Broad class TRANSPORT **Sitetype** TOLLHOUSE
Period MODERN **Condition** GOOD
Coast edge type 3 **Erosion class** 1 **Threats** NONE

Description:

A tollhouse for collecting dues for road traffic over the Cob. Built c. 1860, it remains in daily use.

140 BOSTON LODGE RAILWAY WORKS SH584378
Broad class TRANSPORT **Sitetype** RAILWAY
Period MODERN **Condition** GOOD
Coast edge type 3 **Erosion class** 1 **Threats** RE-USE

Description:

An extensive nineteenth century railway works, in use, containing residential accommodation (two storey building, constructed in connection with building works on the Cob), erecting shop, locomotive sheds, offices, wagon repair facilities, and at SH58573800 a halt building, possibly built in connection with the Cob tramway of 1811.

141 BOSTON LODGE QUARRY SH58513783
Broad class INDUSTRIAL **Sitetype** QUARRY
Period MODERN **Condition** GOOD
Coast edge type 3 **Erosion class** 1 **Threats** RE-USE

Description:

One of the quarries opened to build the Cob.

142 GUNPOWDER HOUSE AT BOSTON LODGE SH58433773
Broad class INDUSTRIAL **Sitetype** POWDER HOUSES
Period MODERN **Condition** POOR
Coast edge type 3 **Erosion class** 1 **Threats** RE-USE

Description:

The lower walls only survive of Messrs Harvey and Curtis's two gunpowder houses. There are traces of siding access and a possible wharf.

- 143 ROAD TO PENRHYN ISAF SH58493769
Broad class INDUSTRIAL **Sitetype** ROAD
Period MODERN **Condition** GOOD
Coast edge type 3 **Erosion class** 1 **Threats** NONE
Description:
 Cart or carriage access to Penrhyn Isaf farm, substantially constructed in places on embankments, overlooking the quarry and railway works.
-
- 144 FIELD SYSTEM AT TRWYN Y PENRHYN SH58303707
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FIELD SYSTEM
Period POST-MEDIEVAL **Condition** GOOD
Coast edge type 6 **Erosion class** 2 **Threats** NONE
Description:
 Numerous enclosed fields defined by drystone walls linking uniform exposures of bedrock.
-
- 145 HOUSE AT TRWYN Y PENRHYN SH58353698
Broad class DOMESTIC **Sitetype** HOUSE
Period MODERN **Condition** POOR
Coast edge type 6 **Erosion class** 2 **Threats** NONE
Description:
 The remains of a small two-storey building, 9m x 5m, orientated NE-SW, adjacent to a cliff-edge gully. Low entrance on E side, E corner still stands 3.5m high. W side wall is much thicker than the other walls - approximately 1.5m thick. Of mortared stone and slate construction. Its function is unclear.
-
- 146 PILLBOX AT TRWYN Y PENRHYN SH58473697
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 6 **Erosion class** 2 **Threats** NONE
Description:
 A small hut, 5m x 5m, butted to an outcrop on the W side. There are two small windows and a large entrance on the N side, suggesting that it was built as a coastal defence look-out point. It appears to have been renovated since and re-roofed with corrugated iron. It is partly internally rendered.
-
- 147 QUAY AT PORTMEIRION SH58933696
Broad class TRANSPORT **Sitetype** SLATE QUAY
Period MODERN **Condition** POOR
Coast edge type 1/6 **Erosion class** 1 **Threats** NONE
Description:
 The slate quay once used for transshipping slate from river boats to coastal vessels may underlie the quay "Amis Reunis" by the modern hotel. Of the foundry formerly on the site, no trace appears to remain. The area is embellished with architectural and decorative whimsies as part of the extensive Portmeirion complex.
-
- 148 GARDEN AT PORTMEIRION SH593372
Broad class GARDEN AND PARKS **Sitetype** GARDEN
Period MODERN **Condition** GOOD
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
 An extensive Italianate fantasy village and a variety of formal and informal gardens, built on the site of the nineteenth century Aber-ia estate from 1926 onwards. Of specifically riparian features, a low-walled building was noted at SH59333724, constructed out of dry and mortared stone, partly delapidated and entirely roofless, probably built on the site of an earlier, industrial, building, which may have been a smithy. There are a number of curious features, including a round-section chimney and hearth, which may date from its putative reconstruction as a folly. Nearby is a semi-circular quay and jetty.
-

149	MOUND AT PENRHYNDEUDRAETH				SH59513744
Broad class	UNASSIGNED	Sitetype	MOUND		
Period	MODERN	Condition	GOOD		
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A low mound, <1m high, diameter 5m. A square slab on top revealed a hollow pipe set vertically into the ground. Possibly the site of a fountain.					
150	SHIP-BUILDING CREEK AT PENRHYNDEUDRAETH				SH59543740
Broad class	MARITIME	Sitetype	SHIP-BUILDING CREEK		
Period	MODERN	Condition	MEDIUM		
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A small inlet, known from documentary sources to have been a ship-building creek; evidence survives in the form of a low quay along the W side built out of slabs of a fissile stone.					
151	POSSIBLE QUARRY AT PENRHYNDEUDRAETH				SH59633753
Broad class	INDUSTRIAL	Sitetype	QUARRY		
Period	MODERN	Condition	MEDIUM		
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A small stone quarry or natural cave.					
152	EARTHWORK AT PENRHYNDEUDRAETH				SH608385
Broad class	WATER AND DRAINAGE	Sitetype	EARTHWORK		
Period	MODERN	Condition	GOOD		
Coast edge type	11	Erosion class	2	Threats	NONE
Description:					
An earthen sea-defence.					
153	EXPLOSIVES FACTORY AT PENRHYNDEUDRAETH				SH620385
Broad class	INDUSTRIAL	Sitetype	INDUSTRIAL BUILDING		
Period	MODERN	Condition	GOOD		
Coast edge type	11	Erosion class	1	Threats	NONE
Description:					
Cooke's explosives works, an extensive factory site, in which some work appears to continue.					
154	RAILWAY BRIDGE AT TALSARNAU				SH619383
Broad class	TRANSPORT	Sitetype	BRIDGE		
Period	MODERN	Condition	GOOD		
Coast edge type	1	Erosion class	2	Threats	NONE
Description:					
Pont Briwat, parallel steel railway bridge and wooden road bridge.					
155	EMBANKMENT AT TALSARNAU				SH611370
Broad class	WATER AND DRAINAGE	Sitetype	EMBANKMENT		
Period	MODERN	Condition	GOOD		
Coast edge type	11	Erosion class	2	Threats	EROSION
Description:					
Early nineteenth century boulder-dump sea-defence embankment.					

156 BOAT AT TALSARNAU SH60503670
Broad class MARITIME **Sitetype** SHIP FIND
Period MODERN **Condition** MEDIUM
Coast edge type 11 **Erosion class** 2 **Threats** EROSION
Description:
The remains of a Dwyrdd estuary slate boat, discovered in 1988, partly excavated, and now protected by sand-bagging. The boat is only visible at low tide, and was therefore not seen in the course of the survey. It measures 7.92m long overall by 2.9m in beam and 1m deep from gunwale to keel. Of hybrid construction with clinker sides and carvel bottom.

157 SLUICE GATE AT LLANFIHANGEL Y TRAETHAU SH60263550
Broad class WATER AND DRAINAGE **Sitetype** DRAINAGE WORK
Period MODERN **Condition** GOOD
Coast edge type 11 **Erosion class** 1 **Threats** NONE
Description:
A tidal sluice gate in an embankment, stone facing on both sides of the channel, which is partly rock-cut. The wooden doors are steel-reinforced and measure 2m wide x 3m high overall. An earlier sluice gate may have been situated within the channel itself to the west of this point.

158 PEDESTRIAN BRIDGE AT LLANFIHANGEL Y TRAETHAU SH60243538
Broad class TRANSPORT **Sitetype** BRIDGE
Period MODERN **Condition** POOR
Coast edge type 11 **Erosion class** 1 **Threats** NONE
Description:
Traces of an earlier wooden foot bridge can be seen immediately to the S of the present wood and steel pedestrian bridge (0.6m wide). A stone pile can be seen beneath the water approximately 4.5m wide and the remains of timber uprights, square section 4" x 3", can be seen within this. Timbers can also be seen extruding from the river bank.

159 BUILDINGS AT LLANFIHANGEL Y TRAETHAU SH59923550
Broad class COMMERCIAL **Sitetype** BUILDING
Period MODERN **Condition** GOOD
Coast edge type 6;8 **Erosion class** 1 **Threats** NONE
Description:
A large four-storey warehouse and dwelling of nineteenth century construction, at the end of the road from Harlech to the former Ty Gwyn ferry. It remains in use as a house and a workshop.

160 LIME-KILN AT LLANFIHANGEL Y TRAETHAU SH59563584
Broad class INDUSTRIAL **Sitetype** LIME-KILN
Period MODERN **Condition** MEDIUM
Coast edge type 6;8 **Erosion class** 2 **Threats** COLLAPSE
Description:
A limekiln, approximately 6m square, with two draw-holes on the W and E sides and a ramp to the charging holes on both the S/SW and S/SE sides, built out of roughly dressed blocks. There is some collapse on the NW corner. There is also evidence of rebuilding or modification on the E side.

161 FIELD-SYSTEM AT MORFA HARLECH SH582355
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FIELD SYSTEM
Period UNKNOWN **Condition** GOOD
Coast edge type 6;8 **Erosion class** 1 **Threats** NONE
Description:
Low grass-covered banks enclosing terraced fields.

162 GUNNERY RANGE AT MORFA HARLECH SH578338
Broad class DEFENCE **Sitetype** GUNNERY RANGE
Period MODERN **Condition** MEDIUM
Coast edge type 12 **Erosion class** 1 **Threats** NONE

Description:

Royal Artillery gunnery range, 1941-1946, serving the gunnery range at Trawsfynydd. An extensive site, covering most of the area between the railway line and the foreshore. A prominent feature is the embankment which formerly carried a railway line. The bank is faced with concrete-filled bags which resemble eroded conglomerate blocks.

163 TRAMWAY AT HARLECH SH57703135
Broad class TRANSPORT **Sitetype** RAILWAY
Period MODERN **Condition** POOR
Coast edge type 10 **Erosion class** 1 **Threats** WIND EROSION

Description:

A horse tramway dating from 1878 which formerly took bathers from Noddfa Cottage SH57913110 to the beach. The site is now part of the golf course, opened in 1894. The tramway is evident as an embankment at SH57703135.

164 LLANDANWG CHURCH CROSS-INCISED STONE SH56872824
Broad class COMMEMORATIVE **Sitetype** CROSS-INCISED STONE
Period EARLY MEDIEVAL **Condition** GOOD
Coast edge type 10 **Erosion class** 1 **Threats** NONE

Description:

A simple cross with vestigial ridges separating the arms from the shaft.

165 LLANDANWG CHURCH SH56872824
Broad class RELIGIOUS, RITUAL AND FUNERARY **Sitetype** CHURCH
Period MEDIEVAL **Condition** GOOD
Coast edge type 10 **Erosion class** 1 **Threats** SAND

Description:

The church building is actively threatened by the effects of wind-erosion on the sand dunes, which are being banked up around the church with slate grave-slabs.

167 LLANDANWG CHURCH IARRUS STONE SH56872824
Broad class COMMEMORATIVE **Sitetype** INSCRIBED STONE
Period MEDIEVAL **Condition** GOOD
Coast edge type 10 **Erosion class** 1 **Threats** NONE

Description:

A rough pillar-stone bearing the words IN (G?)ENUI/IARRI(/ HI)C IA(CIT).

168 DYKE AT LLANDANWG SH574281
Broad class WATER AND DRAINAGE **Sitetype** EARTHWORK
Period MODERN **Condition** GOOD
Coast edge type 2 **Erosion class** 1 **Threats** NONE

Description:

2m high, 5m wide at base, with some stone outer facing in places.

169 GROYNES AT LLANDANWG SH575279
Broad class WATER AND DRAINAGE **Sitetype** EARTHWORK
Period MODERN **Condition** GOOD
Coast edge type 2 **Erosion class** 2 **Threats** NONE

Description:

Remains of groynes and channel markers.

170 TIDE GATE AT LLANDANWG SH57612814
Broad class WATER AND DRAINAGE **Sitetype** DRAINAGE WORK
Period MODERN **Condition** GOOD
Coast edge type 2 **Erosion class** 1 **Threats** NONE
Description:
A wood and steel tide gate over a stream outlet under the railway embankment.

171 WHARF AT PEN Y SARN SH57812893
Broad class MARITIME **Sitetype** WHARF
Period MODERN **Condition** GOOD
Coast edge type 11 **Erosion class** 1 **Threats** RE-USE
Description:
A wharf, in use for yachts and rebuilt, which includes a nineteenth-century office building, still occupied, and a lime-kiln, now incorporated into a large modern structure, 9m across the base.

172 RAILWAY BRIDGE AT PENSARN SH57942774
Broad class TRANSPORT **Sitetype** BRIDGE
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
Wooden pile railway bridge, in use.

173 DYKE AT LLANBEDR SH575278
Broad class WATER AND DRAINAGE **Sitetype** EARTHWORK
Period MODERN **Condition** GOOD
Coast edge type 2 **Erosion class** 1 **Threats** NONE
Description:
An embanked dyke, 2m high, 5m wide at the base, composed of dumped boulders or rubble in places, with some stone facing.

174 RAF LLANBEDR SH569265
Broad class DEFENCE **Sitetype** AIRFIELD
Period MODERN **Condition** GOOD
Coast edge type 10 **Erosion class** 1 **Threats** NONE
Description:
Second World War airfield, in use.

175 FARMHOUSE AT MOCHRAS SH55692676
Broad class DOMESTIC **Sitetype** HOUSE
Period POST-MEDIEVAL **Condition** GOOD
Coast edge type 10 **Erosion class** 1 **Threats** RE-USE
Description:
Large two-storey farmhouse, T-plan, with three dormers windows on front wall. It now forms part of the Shell Island tourist complex.

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176 PILLBOX 1 AT MORFA DYFFRYN SH56282365
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 10 **Erosion class** 2 **Threats** NONE
Description:
A concrete second world war pillbox, painted white on the seaward side.

177	PILLBOX 2 AT MORFA DYFFRYN					SH57182241
Broad class	DEFENCE			Sitetype	PILLBOX	
Period	MODERN			Condition	GOOD	
Coast edge type	10	Erosion class	2	Threats	NONE	
Description:						
A concrete second world war pillbox.						
<hr/>						
178	SHIPWRECK AT TAL Y BONT					SH57.21
Broad class	MARITIME			Sitetype	SHIP FIND	
Period	POST-MEDIEVAL			Condition	UNKNOWN	
Coast edge type	4	Erosion class	2	Threats	NONE	
Description:						
Designated Historic Wreck site 17, a seventeenth century armed merchantman; no remains were observed.						
<hr/>						
179	WOODEN OBJECT FINDSPOT AT TAL Y BONT					SH58.20
Broad class	OBJECT			Sitetype	FINDSPOT	
Period	UNKNOWN			Condition	POOR	
Coast edge type	4	Erosion class	1	Threats	NONE	
Description:						
A worked wood object was discovered in 1994; it might possibly be part of a fish-weir. It is now in store at the GAT.						
<hr/>						
180	TIMBER TRACKWAY AT MORFA DYFFRYN					SH591931951
Broad class	TRANSPORT			Sitetype	TRACKWAY	
Period	MEDIEVAL			Condition	BURIED	
Coast edge type	4	Erosion class	1	Threats	NONE	
Description:						
Only visible as a back-filled excavation trench, approximately 3m by 15m.						
<hr/>						
181	TIMBER TRACKWAY AT MORFA DYFFRYN					SH59221924
Broad class	TRANSPORT			Sitetype	TRACKWAY	
Period	UNKNOWN			Condition		
Coast edge type	2	Erosion class	2	Threats	EROSION	
Description:						
A number of uprights and cross-members can be seen within the peat, exposed on the seaward side, and eroding out of the coast edge.						
<hr/>						
182	SUBMERGED FOREST AT MORFA DYFFRYN					SH59651855
Broad class	NATURAL			Sitetype	SUBMERGED FOREST	
Period	PREHISTORIC			Condition	SUBMERGED	
Coast edge type	1	Erosion class	2	Threats	EROSION	
Description:						
This feature extends to the south of the given grid reference.						
<hr/>						
183	INSCRIBED STONES AT LLANABER					SH59911802
Broad class	COMMEMORATIVE			Sitetype	INSCRIBED STONES	
Period	EARLY MEDIEVAL			Condition	GOOD	
Coast edge type	1;4	Erosion class	1	Threats	NONE	
Description:						
The CAELEXTI MONEDO RIGI and AETERN et AETERN stones, now in Llanaber church						

184 BARMOUTH HARBOUR SH615155
 Broad class MARITIME Sitetype HARBOUR
 Period MODERN Condition GOOD
 Coast edge type 1 Erosion class 1 Threats RE-USE

Description:

A nineteenth century harbour, comprising a harbour master's office., which now doubles as the museum, a three-story warehouse, now used as the Yacht Club, single storey sheds and "Ty crwn", a round lock-up with a central chimney, built in 1834, containing separate cells for male and female vagrants. The buildings in the immediate vicinity are mainly boarding-houses constructed between 1872 and 1878, though immediately behind the yacht-club is a good example of art-deco style construction, and "Davy Jones' Locker" is medieval or sub-medieval.

Map Number 9

185 BARMOUTH BRIDGE SH62351500
 Broad class TRANSPORT Sitetype BRIDGE
 Period MODERN Condition GOOD
 Coast edge type 11 Erosion class 1 Threats NONE

Description:

A late-nineteenth century steel railway bridge, in use, comprising a swing section and a girder section, with a parallel footbridge. Underneath the railway bridge can be seen the piles for the original (1860s) railway bridge.

186 MAWDDACH JUNCTION STATION SH629141
 Broad class TRANSPORT Sitetype RAILWAY
 Period MODERN Condition MEDIUM
 Coast edge type 11 Erosion class 1 Threats NONE

Description:

A triangular junction station for the line to Dolgellau, Corwen and Llangollen; some of the platforms and walling survive, as does housing associated with the railway.

187 FAIRBOURNE SH612130
 Broad class DOMESTIC Sitetype SETTLEMENT
 Period MODERN Condition GOOD
 Coast edge type 12 Erosion class 1 Threats NONE

Description:

Late nineteenth-, early twentieth-century resort, constructed by McDougall of "Self-Raising Flour" fame.

188 FAIRBOURNE RAILWAY SH612130
 Broad class TRANSPORT Sitetype RAILWAY
 Period MODERN Condition GOOD
 Coast edge type 12 Erosion class 1 Threats NONE

Description:

Miniature pleasure railway, associated with feature 187.

189 TANK DEFENCES AT FAIRBOURNE SH61041340
 Broad class DEFENCE Sitetype WALL
 Period MODERN Condition GOOD
 Coast edge type 12 Erosion class 1 Threats NONE

Description:

An excellent example of a second world war coastal defence, consisting of a concrete sea-wall surmounted by cube tank defences, on a shingle bank.

190	STRUCTURE AT PENRHYN				SH61451465
Broad class	DOMESTIC			Sitetype	DOMESTIC (UNASSIGNED)
Period	MODERN			Condition	POOR
Coast edge type	2	Erosion class	1	Threats	NONE
Description:					
The foundations and some surviving walls for a once-extensive structure, marked on the 1901 25" OS map as "Penrhyn", possibly a hotel.					
191	GOLF CLUB-HOUSE AT FAIRBOURNE				SH61451460
Broad class	RECREATION			Sitetype	GOLF CLUBHOUSE
Period	MODERN			Condition	POOR
Coast edge type	2	Erosion class	1	Threats	NONE
Description:					
The clubhouse survives as an enclosure measuring 12m by 3m and a contiguous L-plan structure 10m by 16m.					
192	PILLBOX AT FAIRBOURNE				SH61161255
Broad class	DEFENCE			Sitetype	PILLBOX
Period	MODERN			Condition	GOOD
Coast edge type	12	Erosion class	1	Threats	NONE
Description:					
Concrete rectangular structure, now painted white and used by Barmouth Yacht Club as a store.					
193	RAILWAY AVALANCHE SHELTERS AT FRIOG				SH60501147
Broad class	TRANSPORT			Sitetype	RAILWAY
Period	MODERN			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	AVALANCHE
Description:					
Concrete avalanche shelters over railway.					
194	RAILWAY BRIDGE NW OF PONT CALETWR				SH59961107
Broad class	TRANSPORT			Sitetype	RAILWAY
Period	MODERN			Condition	GOOD
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
Single-span steel girder bridge on stone abutments.					
195	TRACKWAY W OF PONT CALETWR				SH59901102
Broad class	TRANSPORT			Sitetype	TRACKWAY
Period	UNKNOWN			Condition	MEDIUM
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
Possibly to give access to 196. Some stone revetting in places.					
196	BUILDING SW OF PONT CALETWR				SH59871098
Broad class	DOMESTIC			Sitetype	DOMESTIC
Period	UNKNOWN			Condition	POOR
Coast edge type	8	Erosion class	1	Threats	NONE
Description:					
The remains of a small building and enclosures, scarped onto and terraced out from a W-facing slope, drystone built and much overgrown in places with bracken and coarse grass. There is a small stream running along the S side. The enclosure(s) form an L-shape along the N and W sides, directly above a cliff coast-edge.					

197 LLWYNGWRIL CAMP SH583092
Broad class DEFENCE **Sitetype** MILITARY CAMP
Period MODERN **Condition** MEDIUM
Coast edge type 12 **Erosion class** 3 **Threats** EROSION
Description:
The site includes a grey brick blockhouse, a rifle range, earthen butts and brick-faced concrete plinths along the coast-edge at SH58160929.

198 STRUCTURE AT ENCIL SH57730853
Broad class UNASSIGNED **Sitetype** UNASSIGNED
Period UNKNOWN **Condition** MEDIUM
Coast edge type 12 **Erosion class** 2 **Threats** NONE
Description:
A drystone rectangular structure orientated NW to SE, 9m by 6m, scarped into a W-facing slope at its NW corner. The N wall is aligned with a field boundary and a sunken trackway runs alongside the N side of the wall.

199 FIELD BOUNDARY AT ENCIL SH57670853
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** BOUNDARY BANK
Period UNKNOWN **Condition** MEDIUM
Coast edge type 12 **Erosion class** 2 **Threats** NONE
Description:
Around a promontory top, <0.3m high, 1m wide.

200 FIELD SYSTEM AT LLANGELYNIN SH57050726
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FIELD SYSTEM
Period UNKNOWN **Condition** MEDIUM
Coast edge type 9 **Erosion class** 3 **Threats** EROSION
Description:
Terraced fields running along the contour.

201 LLANGELYNIN CHURCH SH57120720
Broad class RELIGIOUS, RITUAL AND FUNERARY **Sitetype** CHURCH
Period MEDIEVAL **Condition** GOOD
Coast edge type 9 **Erosion class** 1 **Threats** NONE
Description:

202 HUT GROUP AT TY COCH SH56910674
Broad class DOMESTIC **Sitetype** HUT GROUP
Period PREHISTORIC **Condition** MEDIUM
Coast edge type 9 **Erosion class** 2 **Threats** EROSION; AGRICULTURE
Description:
A probable (?enclosed) hut-group, lying on a level terrace below and W of Ty Coch, immediately W of the railway wall. It now appears as an area of boulder-strewn ground, hollowed in places, much overgrown with grass, bracken and bramble. The walls are much robbed and obscured by dumping from later field-clearance, especially at the N end. The site measures approx. 30m x 15m overall, orientated N-S; traces of at least one round hut at the N end, approx. 4m diameter, possibly entered from the W side are evident. A curving enclosure bank defines the S and part of the E side. The W side is defined by a lynchet or bank at the top end of the field. The wall components are rounded boulders, perhaps from the beach.

203 TY COCH FARM SH57010654
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FARM
Period MODERN **Condition** POOR
Coast edge type 9 **Erosion class** 1 **Threats** NONE
Description:
A derelict eighteenth or nineteenth century farmstead; the original trackway is below the road on the N side.

Map Number 10

204 **STRUCTURE AT CAE DU** **SH56820620**
Broad class UNASSIGNED **Sitetype** UNASSIGNED
Period UNKNOWN **Condition** POOR
Coast edge type 9 **Erosion class** 2 **Threats** EROSION

Description:

The possible remains of a structure indicated in erosion of the cliff edge, constructed from large, possibly quarried, blocks orientated E-W below the turf-line, approx. 4m apart show in section.

205 **RAILWAY BRIDGE AT FELIN FRAENAN** **SH56780595**
Broad class TRANSPORT **Sitetype** RAILWAY
Period MODERN **Condition** GOOD
Coast edge type 8;9 **Erosion class** 1 **Threats** NONE

Description:

A single tall stone and brick railway bridge over a trackway; a river is separately culverted on the N side.

206 **FELIN FRAENAN** **SH56740598**
Broad class DOMESTIC **Sitetype** DOMESTIC
Period POST-MEDIEVAL **Condition** GOOD
Coast edge type 8;9 **Erosion class** 1 **Threats** NONE

Description:

An attractive stone building, built out of quarried fissile stone and large water-worn pebbles. An outbuilding may have been a smithy, and traces of further now mostly demolished outbuildings can be seen incorporated into boundary walls adjacent to the stream on the S side.

207 **FELIN FRAENAN FIELD SYSTEM** **SH56720595**
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FIELD SYSTEM
Period UNKNOWN **Condition** GOOD
Coast edge type 8;9 **Erosion class** 3 **Threats** EROSION; AGRICULTURE

Description:

Terraced fields near Felin Fraenan.

208 **QUARRY AT FOEL LLANFENDIGAID** **SH56530550**
Broad class INDUSTRIAL **Sitetype** QUARRY
Period MODERN **Condition** GOOD
Coast edge type 8;9 **Erosion class** 2 **Threats** NONE

Description:

This is possibly the source of the stone used in the construction of the coastal revetment and the railway embankment. Two grass-grown mounds may be the residuum of on-site dressing.

209 **OGOF OWAIN** **SH56410542**
Broad class NATURAL **Sitetype** CAVE
Period UNKNOWN **Condition** GOOD
Coast edge type 8 **Erosion class** 2 **Threats** NONE

Description:

Though a natural sea-cave, traditionally associated with Owain Glyndwr, it is possible that a mineral trial may have been made here, in heavily jointed slate or shale strata, dipping 30' S - inclined entrance to E.

210 **SHOOTING BUTTS AT TONFANAU CAMP** **SH56220450**
Broad class DEFENCE **Sitetype** MILITARY CAMP
Period MODERN **Condition** GOOD
Coast edge type 9 **Erosion class** 1 **Threats** NONE

Description:

Part of Tonfanau camp.

211 TONFANAU CAMP SH565043
Broad class DEFENCE **Sitetype** MILITARY CAMP
Period MODERN **Condition** MEDIUM
Coast edge type 9 **Erosion class** 3 **Threats** EROSION

Description:

Extensive remains of a military camp of Second World War date include semi-derelict, part-demolished red-brick and concrete barrack blocks, concrete and iron gun-emplacements, and tarmacadam roads.

212 FARM AT TONFANAU SH56220370
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** FARM
Period POST-MEDIEVAL **Condition** GOOD
Coast edge type 9 **Erosion class** 1 **Threats** NONE

Description:

A large farm-building with two gable-end and one lateral (rear wall) chimneys, with additional later structures built the gables and built onto the back lateral wall. Around the courtyard are outbuildings and a cwt mochyn.

213 RAILWAY BRIDGE OVER AFON DYSINNI SH56600296
Broad class TRANSPORT **Sitetype** BRIDGE
Period MODERN **Condition** GOOD
Coast edge type 12 **Erosion class** 1 **Threats** NONE

Description:

A three-span hogged-profile steel girder bridge by Finch and Co. of Chepstow, dated 1911, carried on circular steel stanchions. The wooden piles of an earlier structure are visible in the water.

214 ROAD BRIDGE OVER AFON DYSINNI SH56670292
Broad class TRANSPORT **Sitetype** BRIDGE
Period MODERN **Condition** MEDIUM
Coast edge type 12 **Erosion class** 1 **Threats** NONE

Description:

The site of a military road bridge carried on steel piles and concrete abutments. There is a sentry box on the W bank.

215 TYWYN FRONT SH57700003
Broad class DOMESTIC **Sitetype** HOTELS
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** NONE

Description:

A mid-Victorian seaside development.

216 TURBARY AT TYWYN SH58189932
Broad class AGRICULTURE AND SUBSISTENCE **Sitetype** PEAT-CUTTING
Period MODERN **Condition** GOOD
Coast edge type 4;2 **Erosion class** 2 **Threats** EROSION

Description:

An early nineteenth century foreshore turbary.

217 FORESHORE STRUCTURE AT TYWYN SH58529881
Broad class UNASSIGNED **Sitetype** UNASSIGNED
Period MODERN **Condition** MEDIUM
Coast edge type 10 **Erosion class** 2 **Threats** NONE

Description:

Concrete foundations, damaged.

218 SHOOTING BUTTS AT RAF TYWYN SH58645879
Broad class DEFENCE **Sitetype** MILITARY CAMP
Period MODERN **Condition** GOOD
Coast edge type 10 **Erosion class** 1 **Threats** NONE
Description:
 These red-brick, concrete and earth shooting butts, target range and shelter form part of Tywyn camp.

219 PEAT EXPOSURES AT TYWYN SH58559853
Broad class NATURAL **Sitetype** NATURAL FEATURE
Period PREHISTORIC **Condition** GOOD
Coast edge type 10 **Erosion class** 2 **Threats** NONE
Description:
 These are largely unworked.

220 RAF TYWYN SH590987
Broad class DEFENCE **Sitetype** AIRFIELD
Period MODERN **Condition** POOR
Coast edge type 12 **Erosion class** 1 **Threats** NONE
Description:
 The site of RAF Tywyn, operational between 1941 and 1945.

221 PILLBOX 1 AT TYWYN SH58739830
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 12 **Erosion class** 2 **Threats** EROSION; COLLAPSE
Description:
 This consists of two compartments; the seaward half is roofed, and there is a single embrasure in each face, 5m X 4m.

222 PILLBOX 2 AT TYWYN SH58959779
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 12 **Erosion class** 2 **Threats** EROSION; COLLAPSE
Description:
 A pillbox, L-shaped in plan, and with a smaller open compartment to the rear. Iron rings are still visible.

223 PILLBOX 3 AT TYWYN SH59119726
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 12 **Erosion class** 2 **Threats** EROSION; COLLAPSE
Description:
 Rectangular plan, 5m by 4m, entirely roofed except for access at the NE corner.

224 PILLBOX 4 AT TYWYN SH59299676
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 10 **Erosion class** 2 **Threats** EROSION; COLLAPSE
Description:
 Rectangular structure 5m by 3m. Roofed except for shaped compartment at rear.

225 PILLBOX 5 AT TYWYN SH59539626
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** POOR
Coast edge type 10 **Erosion class** 2 **Threats** EROSION; COLLAPSE
Description:
 Half-buried by sand.

226 BOULDER DUMP AT ABERDYFI SH60189595
Broad class UNASSIGNED **Sitetype** UNASSIGNED
Period MODERN **Condition** GOOD
Coast edge type 10 **Erosion class** 2 **Threats** EROSION
Description:
 An arc of boulders approx. 50m x 15m in the lie of the dunes on the seaward side contains a number of wooden frames that may be for drying fishing nets or for stabilising the dunes.

227 PILLBOX 6 AT TYWYN SH60389586
Broad class DEFENCE **Sitetype** PILLBOX
Period MODERN **Condition** GOOD
Coast edge type 10 **Erosion class** 2 **Threats** EROSION; COLLAPSE
Description:
 Similar to 223 in plan. More than half buried by sand.

228 ABERDYFI HARBOUR SH61369583
Broad class MARITIME **Sitetype** WHARF
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** RE-USE
Description:
 A nineteenth-century harbour development with a resort town immediately behind.

Map Number 11

229 TERRACED BEACH AT PICNIC ISLAND SH62579620
Broad class INDUSTRIAL **Sitetype** MINERAL TRIAL
Period MODERN **Condition** GOOD
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
 A tiny mineral trial, <2m long.

230 PICNIC ISLAND SH62659622
Broad class MARITIME **Sitetype** HARBOUR
Period MODERN **Condition** GOOD
Coast edge type 1 **Erosion class** 1 **Threats** NONE
Description:
 A small harbour in the lee of the railway line, and probably predating it.

231 FOLLY AT TREFRI SH63209624
Broad class GARDEN AND PARKS **Sitetype** GARDEN
Period MODERN **Condition** GOOD
Coast edge type 6 **Erosion class** 1 **Threats** NONE
Description:
 A round crenellated tower; below, on the foreshore, is a tidal pond and its water-retaining wall.

232	MINERAL TRIAL AT ABERTAFOL				SH64809690
Broad class	INDUSTRIAL			Sitetype	TRIALS
Period	MODERN			Condition	MEDIUM
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
There are a number of tiny mineral trials in the vicinity of the harbour.					
233	CREEK AT ABERTAFOL				SH64819690
Broad class	MARITIME			Sitetype	WHARF
Period	MODERN			Condition	GOOD
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A small natural harbour, probably predating the railway, still in use for pleasure craft.					
234	TRACKWAY AT ABERTAFOL				SH65009682
Broad class	TRANSPORT			Sitetype	TRACKWAY
Period	MODERN			Condition	MEDIUM
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A quarried trackway around an outcrop.					
235	POSSIBLE SETTLEMENT AT PANT EIDAL				SH65559708
Broad class	DOMESTIC			Sitetype	SETTLEMENT
Period	UNKNOWN			Condition	POOR
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
The site of a possible settlement - very overgrown, and the apparent low banks may be vegetated natural outcropping.					
236	TERRACE AT PANT EIDAL				SH65789710
Broad class	TRANSPORT			Sitetype	TRACK
Period	MODERN			Condition	MEDIUM
Coast edge type	6	Erosion class	1	Threats	NONE
Description:					
A rock-cut trackway, part natural, revetted above on the W side.					
237	SLATE QUARRY JETTY AT PANT EIDAL				SH66379714
Broad class	MARITIME			Sitetype	WHARF
Period	MODERN			Condition	MEDIUM
Coast edge type	1	Erosion class	2	Threats	NONE
Description:					
The remains of a jetty serving the Pant Eidal slate quarry survive here; the tramway formerly led under the railway to a slate mill and then to the quarry. An iron "harbour wall" here is made up of disused boat cradles.					
238	SLATE QUARRY TIPS AT PANT EIDAL				SH66419715
Broad class	INDUSTRIAL			Sitetype	SLATE QUARRY
Period	MODERN			Condition	MEDIUM
Coast edge type	1	Erosion class	1	Threats	NONE
Description:					
Slate waste from Pant yr Eidal quarry is visible here.					

239	TIDE GATE E OF GOGARTH STATION				SH67369774
Broad class	WATER AND DRAINAGE		Sitetype	TIDE GATE	
Period	MODERN		Condition	MEDIUM	
Coast edge type	12	Erosion class	2	Threats	NONE
Description:					
<hr/>					
240	DRAINAGE CHANNEL AT GOGARTH				SH67759774
Broad class	WATER AND DRAINAGE		Sitetype	DRAINAGE WORK	
Period	MODERN		Condition	MEDIUM	
Coast edge type	12	Erosion class	2	Threats	NONE
Description:					
<hr/>					
241	TIDE GATE 1 AT YNYS				SH68029776
Broad class	WATER AND DRAINAGE		Sitetype	DRAINAGE WORK	
Period	MODERN		Condition	MEDIUM	
Coast edge type	12	Erosion class	2	Threats	NONE
Description:					
<hr/>					
242	PEDESTRIAN BRIDGE AT YNYS				SH68049773
Broad class	TRANSPORT		Sitetype	BRIDGE	
Period	MODERN		Condition	POOR	
Coast edge type	12	Erosion class	2	Threats	NONE
Description:					
The remnants of a timber bridge were observed in a section of the channel.					
<hr/>					
243	TIDE GATE 2 AT YNYS				SH68459778
Broad class	WATER AND DRAINAGE		Sitetype	DRAINAGE WORK	
Period	MODERN		Condition	MEDIUM	
Coast edge type	12	Erosion class	2	Threats	NONE
Description:					
<hr/>					
244	STRUCTURE AT PENMAEN ISAF				SH68719788
Broad class	AGRICULTURE AND SUBSISTENCE		Sitetype	BUILDING	
Period	MODERN		Condition	MEDIUM	
Coast edge type	12	Erosion class	1	Threats	NONE
Description:					
A prefabricated concrete structure, possibly of military origin.					
<hr/>					
245	DYKE AT YNYS				SH687978
Broad class	WATER AND DRAINAGE		Sitetype	DRAINAGE WORK	
Period	MODERN		Condition	MEDIUM	
Coast edge type	12	Erosion class	1	Threats	NONE
Description:					
<hr/>					
246	COTTAGE BY AFON DYFI RAILWAY BRIDGE				SH69399784
Broad class	DOMESTIC		Sitetype	COTTAGE	
Period	MODERN		Condition	GOOD	
Coast edge type	12	Erosion class	1	Threats	NONE
Description:					
A central-chimney pyramid-roofed structure, possibly a stationmaster's dwelling.					
<hr/>					

247 RAILWAY BRIDGE OVER AFON DYFI

SH69459788

Broad class TRANSPORT

Sitetype BRIDGE

Period MODERN

Condition GOOD

Coast edge type 12 **Erosion class** 1

Threats NONE

Description:

A timber bridge carried on steel girders carries the railway over the Afon Dyfi and out of Gwynedd.

APPENDIX 4

EROSION GAZETTEER

Erosion No.	Beginning	End	Erosion type
1	SH16302507	SH17122638	1
2	SH17122368	SH18182606	5
3	SH18182606	SH18582579	4
4	SH18582579	SH22262617	1
5	SH22262617	SH22442622	2
6	SH22442622	SH23562747	1
7	SH23562747	SH23612753	3
8	SH2361275	SH24042831	1
9	SH24042831	SH29112547	4
10	SH29112547	SH29032525	3
11	SH29032525	SH30432476	1
12	SH30432476	SH30862485	3
13	SH30862485	SH31062485	1
14	SH31062485	SH31752480	3
15	SH31752480	SH31452864	1
16	SH31862653	SH31762808	2
17	SH31762808	SH31452864	1
18	SH31452864	SH32943031	2
19	SH32943031	SH33333126	3
20	SH33333126	SH33283127	1
21	SH33283127	SH33233129	4
22	SH33233129	SH34153270	2
23	SH34153270	SH34123276	4
24	SH34123276	SH35603359	1
25	SH35603359	SH35903371	5
26	SH35903371	SH36063376	1
27	SH36063376	SH36413385	5
28	SH36413385	SH38633539	1
29	SH38633539	SH39413581	2
30	SH39413581	SH40143586	3
31	SH40143586	SH42363555	2
32	SH42363555	SH43273534	3
33	SH43273534	SH43573600	1
34	SH43573600	SH43713655	3
35	SH43713655	SH43853679	1
36	SH43853679	SH44223717	4
37	SH44223717	SH46523731	3
38	SH46523731	SH48493751	2
39	SH48493751	SH48933756	3
40	SH48933756	SH49443764	2
41	SH49443764	SH50063772	1
42	SH50063772	SH50133786	4
43	SH50133786	SH50523804	1
44	SH50523804	SH39983801	5
45	SH39983801	SH56513764	1
46	SH56513764	SH56583768	2
47	SH56583768	SH58223697	1
48	SH58223697	SH58443680	2
49	SH58443680	SH59333720	2
50	SH59333720	SH61083802	1
51	SH61083802	SH61383800	2
52	SH61383800	SH61663758	1
53	SH61663758	SH61453755	2
54	SH61453755	SH59993624	1
55	SH59993624	SH59943590	5
56	SH59943590	SH57193168	2
57	SH57193168	SH57412980	2
58	SH57412980	SH56812840	1

Erosion No.	Beginning	End	Erosion type
59	SH56812840	SH56762794	2
60	SH56762794	SH56932793	1
61	SH56932793	SH56782732	2
62	SH56782732	SH55972721	1
63	SH55972721	SH55042606	2
64	SH55042606	SH59591872	2
65	SH59591872	SH60261723	3
66	SH60261723	SH59871102	1
67	SH59871102	SH58940887	3
68	SH58940887	SH57720857	1
69	SH57720857	SH57610837	2
70	SH57610837	SH56000488	3
71	SH56000488	SH59049758	1
72	SH59049758	SH59139733	3
73	SH59139733	SH59799596	1
74	SH59799596	SH60179571	2
75	SH60179571	SH68139757	1
76	SH68139757	SH69429786	2

APPENDIX 5

LIST OF SITES GROUPED BY EROSION TYPE AND CATEGORY OF IMPORTANCE

EROSION	<i>Stable</i>	CATEGORY A		
55	BURIAL CHAMBER AT CILAN UCHAF	PREHISTORIC	NONE	NONE
5	VERACIUS INSCRIBED STONE	EARLY MEDIEVAL	NONE	NONE
6	SENACUS INSCRIBED STONE	EARLY MEDIEVAL	NONE	NONE
164	LLANDANWG CHURCH CROSS-INCISED STONE	EARLY MEDIEVAL	NONE	NONE
183	INSCRIBED STONES AT LLANABER	EARLY MEDIEVAL	NONE	NONE
117	CRICCIETH CASTLE	MEDIEVAL	NONE	NONE
165	LLANDANWG CHURCH	MEDIEVAL	SAND	MONITOR
167	LLANDANWG CHURCH IARRUS STONE	MEDIEVAL	NONE	NONE
201	LLANGELYNIN CHURCH	MEDIEVAL	NONE	NONE
136	HARBOUR AT PORTHMADOG	MODERN	RE-USE	ASSESSMENT
137	SLUICE BRIDGE AT PORTHMADOG	MODERN	RE-USE	ASSESSMENT
138	PORTHMADOG COB	MODERN	NONE	NONE
140	BOSTON LODGE RAILWAY WORKS	MODERN	RE-USE	ASSESSMENT
148	GARDEN AT PORTMEIRION	MODERN	NONE	NONE
153	EXPLOSIVES FACTORY AT PENRHYNDEUDRAETH	MODERN	NONE	NONE
184	BARMOUTH HARBOUR	MODERN	RE-USE	ASSESSMENT
185	BARMOUTH BRIDGE	MODERN	NONE	NONE
EROSION	<i>Stable</i>	CATEGORY B		
32	FIELD SYSTEM ON MYNYDD Y GRAIG	PREHISTORIC	NONE	NONE
52	MESOLITHIC FLINT WORKING ON MYNYDD CILAN	PREHISTORIC	NONE	NONE
118	URN AT CRICCIETH	PREHISTORIC	NONE	NONE
15	LONG HUTS AT TRWYN GWNINGAER	MEDIEVAL	NONE	NONE
78	CASTELL ABERSOCH	MEDIEVAL	NONE	NONE
180	TIMBER TRACKWAY AT MORFA DYFFRYN	MEDIEVAL	NONE	MONITOR
212	FARM AT TONFANAU	POST-MEDIEVAL	NONE	NONE
27	BENALLT JETTY	MODERN	EROSION	ASSESSMENT
70	MINE 2 PENRHYN DU	MODERN	NONE	NONE
99	PWLLHELI HARBOUR	MODERN	RE-USE	ASSESSMENT
122	MORANNEDD CAFE, CRICCIETH	MODERN	NONE	NONE
130	GUNPOWDER HOUSE AT YNYS CYNGAR	MODERN	NONE	NONE
139	TOLLHOUSE AT BOSTON LODGE	MODERN	NONE	NONE
142	GUNPOWDER HOUSE AT BOSTON LODGE	MODERN	RE-USE	SURVEY

150	SHIP-BUILDING CREEK AT PENRHYNDEUDRAETH	MODERN	NONE	NONE
159	BUILDINGS AT LLANFIHANGEL Y TRAETHAU	MODERN	NONE	NONE
162	GUNNERY RANGE AT MORFA HARLECH	MODERN	NONE	NONE
171	WHARF AT PEN Y SARN	MODERN	RE-USE	SURVEY
172	RAILWAY BRIDGE AT PENSARN	MODERN	NONE	NONE
174	RAF LLANBEDR	MODERN	NONE	NONE
186	MAWDDACH JUNCTION STATION	MODERN	NONE	NONE
187	FAIRBOURNE	MODERN	NONE	NONE
188	FAIRBOURNE RAILWAY	MODERN	NONE	NONE
189	TANK DEFENCES AT FAIRBOURNE	MODERN	NONE	NONE
193	RAILWAY AVALANCHE SHELTERS AT FRIOG	MODERN	AVALANCHE	NONE
205	RAILWAY BRIDGE AT FELIN FRAENAN	MODERN	NONE	NONE
210	SHOOTING BUTTS AT TONFANAU CAMP	MODERN	NONE	NONE
213	RAILWAY BRIDGE OVER AFON DYSINNI	MODERN	NONE	NONE
214	ROAD BRIDGE OVER AFON DYSINNI	MODERN	NONE	NONE
215	TYWYN FRONT	MODERN	NONE	NONE
218	SHOOTING BUTTS AT RAF TYWYN	MODERN	NONE	NONE
220	RAF TYWYN	MODERN	NONE	NONE
228	ABERDYFI HARBOUR	MODERN	RE-USE	ASSESSMENT
247	RAILWAY BRIDGE OVER AFON DYFI	MODERN	NONE	NONE
14	FIELD-SYSTEM AT PENRHYN MAWR	UNKNOWN	NONE	NONE
29	ENCLOSURE ON MYNYDD PENARFYNYDD	UNKNOWN	NONE	NONE
33	ENCLOSURE ON MYNYDD Y GRAIG	UNKNOWN	NONE	NONE

EROSION *Stable*

CATEGORY C

21	TRACKWAY AT OGOF COLOMENNOD	POST-MEDIEVAL	NONE	NONE
50	RIDGE AND FURROW ON MYNYDD CILAN	POST-MEDIEVAL	NONE	NONE
61	FIELD SYSTEM 1 AT PORTH CEIRIAD	POST-MEDIEVAL	NONE	NONE
66	ENCLOSURE AT PENRHYN DU	POST-MEDIEVAL	NONE	NONE
91	FIELD SYSTEM AT Y GAMLAS	POST-MEDIEVAL	NONE	NONE
120	PORTH YR AUR, CRICCIETH	POST-MEDIEVAL	NONE	NONE
175	FARMHOUSE AT MOCHRAS	POST-MEDIEVAL	RE-USE	MONITOR
2	PORTH MEUDWY	MODERN	NONE	NONE
19	QUARRY AT TRWYN BYCHESTYN	MODERN	NONE	NONE
20	QUARRY AT TRWYN Y PENRHYN	MODERN	NONE	NONE
26	BENALLT RAILWAY	MODERN	NONE	NONE

28	NANT IRON AND MANGANESE MINE	MODERN	NONE	NONE
31	MILITARY INSTALLATION ON MYNYDD PENARFYNYDD	MODERN	NONE	NONE
54	SIGNAL STATION ON MYNYDD CILAN	MODERN	NONE	NONE
65	MILITARY INSTALLATION AT PENRHYN DU	MODERN	NONE	NONE
69	MINE 1 AT PENRHYN DU	MODERN	NONE	NONE
72	PIER AT PENRHYN DU	MODERN	NONE	NONE
73	ROAD BRIDGE AT ST TUDWAL'S ROADS	MODERN	NONE	NONE
75	SLIPWAY AT ABERSOCH	MODERN	NONE	NONE
76	LIME-KILN AT ABERSOCH	MODERN	NONE	NONE
77	SLUICE-BRIDGE AT ABERSOCH	MODERN	NONE	NONE
81	BOATHOUSE AT LLANBEDROG	MODERN	NONE	NONE
86	GARDEN AT LLANBEDROG	MODERN	NONE	NONE
92	SEA DEFENCE AT Y GAMLAS	MODERN	NONE	NONE
93	SHIPWRECK AT Y GAMLAS	MODERN	NONE	NONE
98	QUARRY AT CARREG YR IMBILL	MODERN	NONE	NONE
119	SLIPWAY AT CRICCIETH	MODERN	NONE	NONE
124	RAILWAY STATION AT CRICCIETH	MODERN	NONE	NONE
131	LIME-KILN AT YNYS CYNGAR	MODERN	NONE	NONE
133	HOUSE AT BORTH FECHAN	MODERN	NONE	NONE
134	PILLBOX AT BORTH Y GEST	MODERN	NONE	NONE
141	BOSTON LODGE QUARRY	MODERN	RE-USE	NONE
143	ROAD TO PENRHYN ISAF	MODERN	NONE	NONE
147	QUAY AT PORTMEIRION	MODERN	NONE	NONE
157	SLUICE GATE AT LLANFIHANGEL Y TRAETHAU	MODERN	NONE	NONE
163	TRAMWAY AT HARLECH	MODERN	WIND EROSION	MONITOR
168	DYKE AT LLANDANWG	MODERN	NONE	NONE
170	TIDE GATE AT LLANDANWG	MODERN	NONE	NONE
173	DYKE AT LLANBEDR	MODERN	NONE	NONE
190	STRUCTURE AT PENRHYN	MODERN	NONE	NONE
191	GOLF CLUB-HOUSE AT FAIRBOURNE	MODERN	NONE	NONE
192	PILLBOX AT FAIRBOURNE	MODERN	NONE	NONE
194	RAILWAY BRIDGE NW OF PONT CALETWR	MODERN	NONE	NONE
203	TY COCH FARM	MODERN	NONE	NONE
206	FELIN FRAENAN	POST-MEDIEVAL	NONE	NONE
230	PICNIC ISLAND	MODERN	NONE	NONE
231	FOLLY AT TREFRI	MODERN	NONE	NONE
233	CREEK AT ABERTAFOL	MODERN	NONE	NONE
238	SLATE QUARRY TIPS AT PANT EIDAL	MODERN	NONE	NONE

244	STRUCTURE AT PENMAEN ISAF	MODERN	NONE	NONE
245	DYKE AT YNYS	MODERN	NONE	NONE
246	COTTAGE BY AFON DYFI	MODERN	NONE	NONE
	RAILWAY BRIDGE			
18	STANDING STONE AT TRWYN Y PENRHYN	UNKNOWN	NONE	NONE
56	CAIRN AT CILAN UCHAF	UNKNOWN	NONE	NONE
161	FIELD-SYSTEM AT MORFA HARLECH	UNKNOWN	NONE	NONE
195	TRACKWAY W OF PONT CALETWR	UNKNOWN	NONE	NONE
196	BUILDING SW OF PONT CALETWR	UNKNOWN	NONE	NONE
235	POSSIBLE SETTLEMENT AT PANT EIDAL	UNKNOWN	NONE	NONE

EROSION *Stable*

CATEGORY D

22	QUARRY 1 AT CADLAN UCHAF	POST-MEDIEVAL	NONE	NONE
23	QUARRY 2 AT CADLAN UCHAF	POST-MEDIEVAL	NONE	NONE
53	FIELD SYSTEM ON MYNYDD CILAN	POST-MEDIEVAL	NONE	NONE
68	HOUSE AT PENRHYN DU	POST-MEDIEVAL	NONE	NONE
106	STONE CLEARANCE AT AFONWEN	POST-MEDIEVAL	NONE	NONE
109	MOUNDS AT ABERDWYFOR	POST-MEDIEVAL	NONE	NONE
3	DWELLING ABOVE PORTH SIMDDE	POST-MEDIEVAL	NONE	NONE
4	BUILDING AT PORTH SIMDDE	MODERN	NONE	NONE
17	MINERAL TRIAL AT TRWYN GWNINGAER	MODERN	NONE	NONE
24	WATER SYSTEM AT PWLL CWM	MODERN	NONE	NONE
25	QUARRY AT NANT Y GADWEN	MODERN	NONE	NONE
30	MINE TRIALS ON MYNYDD PENARFYNYDD	MODERN	NONE	NONE
35	SEA DEFENCE AT TAN YR ALLT	MODERN	NONE	NONE
36	TAN YR ALLT	POST-MEDIEVAL	NONE	NONE
48	MINERAL TRIALS ON MYNYDD CILAN	MODERN	NONE	NONE
49	TRACKWAYS ON MYNYDD CILAN	MODERN	NONE	NONE
95	AIR-CRASH SITE AT Y GAMLAS	MODERN	NONE	NONE
111	DYKE 1 AT ABERDWYFOR	MODERN	NONE	NONE
112	DYKE 2 AT ABERDWYFOR	MODERN	NONE	NONE
113	DYKE 3 AT ABERDWYFOR	MODERN	NONE	NONE
114	QUAY AT ABERDWYFOR	MODERN	NONE	NONE
126	SEWAGE SYSTEM AT CRICCIETH	MODERN	NONE	NONE
128	ROAD AT CRICCIETH	MODERN	NONE	NONE
129	EXCAVATIONS AT YNYS CYNGAR	MODERN	NONE	NONE
149	MOUND AT PENRHYNDEUDRAETH	MODERN	NONE	NONE

151	POSSIBLE QUARRY AT PENRHYNDEUDRAETH	MODERN	NONE	NONE
158	PEDESTRIAN BRIDGE AT LLANFIHANGEL Y TRAETHAU	MODERN	NONE	NONE
229	TERRACED BEACH AT PICNIC ISLAND	MODERN	NONE	NONE
232	MINERAL TRIAL AT ABERTAFOL	MODERN	NONE	NONE
234	TRACKWAY AT ABERTAFOL	MODERN	NONE	NONE
236	TERRACE AT PANT EIDAL	MODERN	NONE	NONE
1	LYNCHET ABOVE PORTH MEUDWY	UNKNOWN	NONE	NONE
11	STRUCTURE AT PENRHYN MAWR	UNKNOWN	NONE	NONE
12	ENCLOSURE AT PENRHYN MAWR	UNKNOWN	NONE	NONE
110	ENCLOSURE AT ABERDWYFOR	UNKNOWN	NONE	NONE
127	PEBBLE BANKS AT CRICCIETH	UNKNOWN	NONE	NONE

EROSION *Stable*

CATEGORY E

16	ENCLOSED SETTLEMENT AT TRWYN GWNINGAER	PREHISTORIC	NONE	NONE
57	POSSIBLE THUMBSCRAPER AT PORTH CEIRIAD	PREHISTORIC	DUMPING	MONITOR
74	GLASS BEAD FINDSPOT AT ABERSOCH	PREHISTORIC	NONE	ASSESSMENT
85	NEOLITHIC AXE FINDSPOT AT LLANBEDROG	PREHISTORIC	NONE	ASSESSMENT
96	SPINDLE-WHORL FINDSPOT AT CARREG YR IMBILL	PREHISTORIC	NONE	NONE
97	MACEHEAD FINDSPOT AT CARREG YR IMBILL	PREHISTORIC	NONE	NONE
132	CHAMBERED CAIRN AT BORTH FECHAN	PREHISTORIC	NONE	NONE
100	LONG HUT AT PEN YCHAIN	MEDIEVAL	NONE	EVALUATION
67	FIELD BANK AT PENRHYN DU	POST-MEDIEVAL	NONE	NONE
51	HOLLOW ON MYNYDD CILAN	UNKNOWN	NONE	NONE
71	EARTHWORK AT PENRHYN DU	UNKNOWN	NONE	NONE
125	FIELD BANK AT CRICCIETH	UNKNOWN	NONE	NONE
179	WOODEN OBJECT FINDSPOT AT TAL Y BONT	UNKNOWN	NONE	ASSESSMENT

EROSION *Slight*

CATEGORY B

182	SUBMERGED FOREST AT MORFA DYFFRYN	PREHISTORIC	EROSION	ASSESSMENT
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202	HUT GROUP AT TY COCH	PREHISTORIC	EROSION AGRICULTURE	SURVEY
101	HMS GLENDOWER AT PEN YCHAIN	MODERN	NONE	NONE
104	RAILWAY AT AFONWEN	MODERN	NONE	NONE
154	RAILWAY BRIDGE AT TALSARNAU	MODERN	NONE	NONE
155	EMBANKMENT AT TALSARNAU	MODERN	EROSION	MONITOR
156	BOAT AT TALSARNAU	MODERN	EROSION	MONITOR
216	TURBARY AT TYWYN	MODERN	EROSION	MONITOR

EROSION *Slight* CATEGORY C

219	PEAT EXPOSURES AT TYWYN	PREHISTORIC	NONE	MONITOR
144	FIELD SYSTEM AT TRWYN Y PENRHYN	POST-MEDIEVAL	NONE	NONE
83	HOUSES AT LLANBEDROG	MODERN	NONE	NONE
108	HOUSE AT AFONWEN	MODERN	NONE	NONE
145	HOUSE AT TRWYN Y PENRHYN	MODERN	NONE	NONE
146	PILLBOX AT TRWYN Y PENRHYN	MODERN	NONE	NONE
152	EARTHWORK AT PENRHYNDEUDRAETH	MODERN	NONE	NONE
160	LIME-KILN AT LLANFIHANGEL Y TRAETHAU	MODERN	COLLAPSE	SURVEY
169	GROYNES AT LLANDANWG	MODERN	NONE	NONE
176	PILLBOX 1 AT MORFA DYFFRYN	MODERN	NONE	NONE
177	PILLBOX 2 AT MORFA DYFFRYN	MODERN	NONE	NONE
208	QUARRY AT FOEL LLANFENDIGAID	MODERN	NONE	NONE
217	FORESHORE STRUCTURE AT TYWYN	MODERN	NONE	NONE
221	PILLBOX 1 AT TYWYN	MODERN	EROSION COLLAPSE	SURVEY
222	PILLBOX 2 AT TYWYN	MODERN	EROSION COLLAPSE	SURVEY
223	PILLBOX 3 AT TYWYN	MODERN	EROSION COLLAPSE	SURVEY
224	PILLBOX 4 AT TYWYN	MODERN	EROSION COLLAPSE	SURVEY
225	PILLBOX 5 AT TYWYN	MODERN	EROSION COLLAPSE	SURVEY
227	PILLBOX 6 AT TYWYN	MODERN	EROSION COLLAPSE	SURVEY
237	SLATE QUARRY JETTY AT PANT EIDAL	MODERN	NONE	NONE
198	STRUCTURE AT ENCIL	UNKNOWN	NONE	NONE
209	OGOF OWAIN	UNKNOWN	NONE	NONE

EROSION *Slight* CATEGORY D

87	FIELD SYSTEM AT LLANBEDROG	POST-MEDIEVAL	NONE	NONE
84	SEA-DEFENCE AT LLANBEDROG	MODERN	NONE	NONE

226	BOULDER DUMP AT ABERDYFI	MODERN	EROSION	NONE
239	TIDE GATE E OF GOGARTH STATION	MODERN	NONE	NONE
240	DRAINAGE CHANNEL AT GOGARTH	MODERN	NONE	NONE
241	TIDE GATE 1 AT YNYS	MODERN	NONE	NONE
242	PEDESTRIAN BRIDGE AT YNYS	MODERN	NONE	NONE
243	TIDE GATE 2 AT YNYS	MODERN	NONE	NONE
199	FIELD BOUNDARY AT ENCIL	UNKNOWN	NONE	NONE

EROSION *Slight* CATEGORY E

178	SHIPWRECK AT TAL Y BONT	POST-MEDIEVAL	NONE	MONITOR
181	TIMBER TRACKWAY AT MORFA DYFFRYN	UNKNOWN	EROSION	EVALUATION
204	STRUCTURE AT CAE DU	UNKNOWN	EROSION	MONITOR

EROSION *Medium* CATEGORY A

58	FORT ON PARED MAWR	PREHISTORIC	EROSION	SURVEY/EVALUATION
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EROSION *Medium* CATEGORY B

79	QUARRY AT MYNYDD TIR CWMWD	MODERN	EROSION RECLAMATION	SURVEY
135	CEI BALAST	MODERN	EROSION	ASSESSMENT
197	LLWYNGWRIL CAMP	MODERN	EROSION	ASSESSMENT/SURVEY
211	TONFANAU CAMP	MODERN	EROSION	ASSESSMENT/SURVEY

EROSION *Medium* CATEGORY C

34	RHIW JETTY	MODERN	EROSION	SURVEY
60	PILLBOX AT PORTH CEIRIAD	MODERN	EROSION	SURVEY

EROSION *Medium* CATEGORY D

62	WALL AT PORTH CEIRIAD	POST-MEDIEVAL	EROSION	MONITOR
63	FIELD SYSTEM 2 AT PORTH CEIRIAD	POST-MEDIEVAL	EROSION	MONITOR
115	FIELD SYSTEM AT ABERDWYFOR	POST-MEDIEVAL	EROSION	MONITOR
105	GROYNE AT AFONWEN	MODERN	EROSION	MONITOR
47	LINEAR BANKS ON MYNYDD CILAN	UNKNOWN	EROSION	MONITOR/SURVEY
64	FIELD SYSTEM 3 AT PORTH CEIRIAD	UNKNOWN	EROSION	MONITOR

EROSION *Medium* CATEGORY E

13	FLINT WORKING SITE AT TRWYN Y PENRHYN	PREHISTORIC	EROSION	MONITOR
59	UNWORKED FLINTS AT PORTH CEIRIAD	PREHISTORIC	EROSION	MONITOR
80	ARROWHEAD FINDSPOT ON MYNYDD TIR CWMWD	PREHISTORIC	NONE	EVALUATION

107	COPPER CAKES FINDSPOT AT AFONWEN	ROMAN	EROSION	MONITOR
200	FIELD SYSTEM AT LLANGELYNIN	UNKNOWN	EROSION	EVALUATION
207	FELIN FRAENAN FIELD SYSTEM	UNKNOWN	EROSION AGRICULTURE	EVALUATION

EROSION Major CATEGORY C

121	TY MAWR, CRICCIETH	POST-MEDIEVAL	EROSION	MONITOR
37	RAF HELL'S MOUTH 1	MODERN	EROSION	SURVEY
38	MARINE WRECK AT HELL'S MOUTH	MODERN	EROSION	MONITOR
39	RAF HELL'S MOUTH 2	MODERN	EROSION	SURVEY
40	JETTY REMAINS AT HELL'S MOUTH	MODERN	EROSION	MONITOR
41	RAF HELL'S MOUTH 3	MODERN	EROSION	SURVEY
44	RAF HELL'S MOUTH 4	MODERN	EROSION	SURVEY
82	LIME-KILN AT LLANBEDROG	MODERN	COLLAPSE	SURVEY
88	TRAMWAY AT CARREG Y DEFAID	MODERN	EROSION	MONITOR
89	PILLBOX AT CARREG Y DEFAID	MODERN	EROSION	SURVEY

EROSION Major CATEGORY D

103	FORD AT AFONWEN	UNKNOWN	EROSION	MONITOR
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EROSION Major CATEGORY E

42	BURNT STONE AT HELL'S MOUTH	PREHISTORIC	EROSION	EVALUATION/MONITOR
43	WALL AT HELL'S MOUTH	UNKNOWN	EROSION	EVALUATION/MONITOR
45	RING-DITCH AT HELL'S MOUTH	UNKNOWN	EROSION	EVALUATION/MONITOR
46	STRUCTURE AT HELL'S MOUTH	UNKNOWN	EROSION	EVALUATION/MONITOR
102	MOUND AT AFONWEN	UNKNOWN	EROSION	EVALUATION

EROSION Severe CATEGORY A

8	ABERDARON CLAS	EARLY MEDIEVAL	EROSION	MONITOR
7	EGLWYS SANT HYWYN	MEDIEVAL	EROSION	MONITOR
10	EGLWYS SANT HYWYN CHURCHYARD	MEDIEVAL	EROSION	MONITOR
116	CRICCIETH CASTLE ADDITIONAL AREA	MEDIEVAL	EROSION	SURVEY

EROSION Severe CATEGORY C

9	SOCKET STONE IN EGLWYS SANT HYWYN	MEDIEVAL	EROSION	MONITOR
90	TRAMWAY AT CARREG Y DEFAID	MODERN	EROSION	MONITOR
94	TRAMWAY AT Y GAMLAS	MODERN	EROSION	MONITOR
123	JETTY AT CRICCIETH	MODERN	EROSION	MONITOR
