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COASTAL SURVEY 1997-98

THE DYFI ESTUARY CEREDIGION

Project Record No. 35311

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Grant aided by

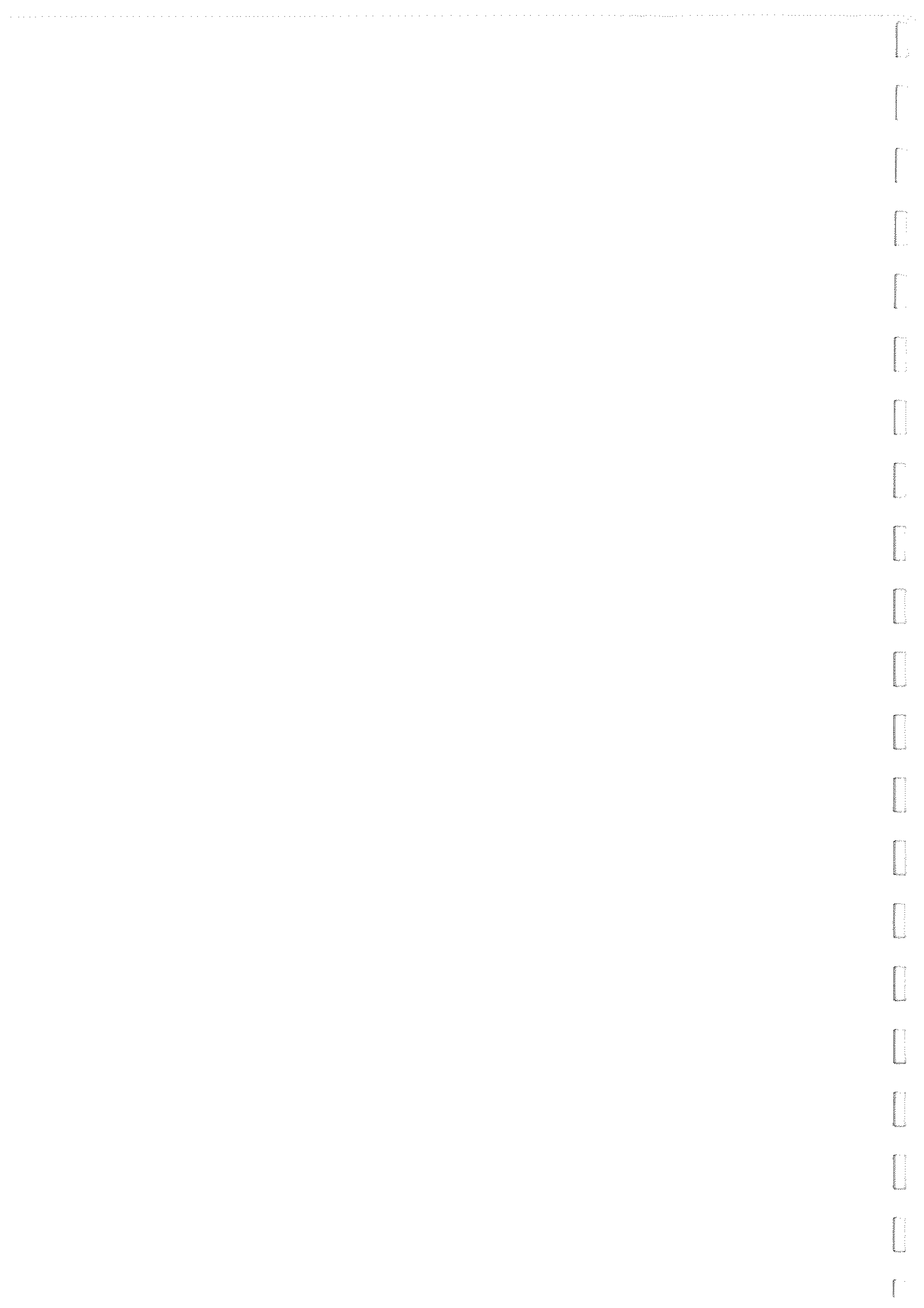
Cadw: Welsh Historic Monuments

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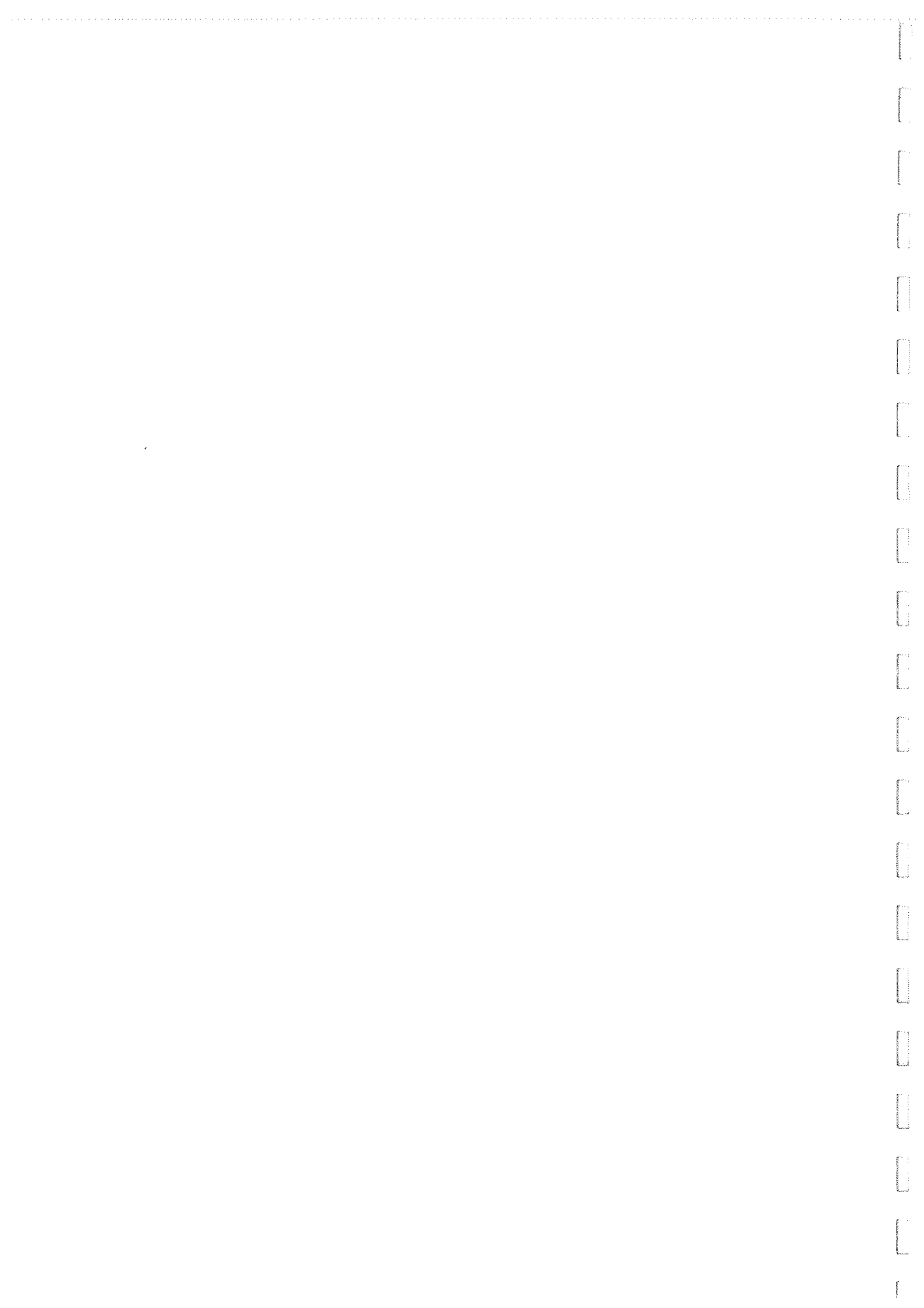


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COASTAL SURVEY 1997/8: THE DYFI ESTUARY

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SUMMARY

The Ceredigion shoreline of the Dyfi Estuary contains a complex record of natural processes and human actions. It has an extensive area of saltmarsh, as well as large areas of reclaimed land and a vast expanse of sand and mud uncovered at low water. For some of the survey area the Aberystwyth to Machynlleth railway line forms the primary sea defence, although many earlier defences survive. Some of these have had modern enhancement. Because of the extent of the saltmarsh there are only a few places where anything other than the highest tide reaches either the active, or former sea defences. Erosion was occurring along the seaward edge of the saltmarsh, but in general the area is stable.

A good number of new sites were recorded during the survey, all of post-medieval or modern date. Many of them related to the enclosure and defence of the marshes. Some features outside the sea wall suggest a possibility of an earlier defence line to seaward of the present wall. During the enclosure of the marshes several small rivers were canalised allowing tidal access by boat to industrial sites such as a saw mill and lime kilns.

With regard to future research and management recommendations the survey identified two areas that would repay further work. First, recording the features outside the sea wall that are suffering erosion; second, evaluation of the wetland landscape of Cors Fochno which backs the landward side of the survey area.

INTRODUCTION

This survey formed part of the pan-Wales initiative, grant-aided by Cadw: Welsh Historic Monuments, to assess the nature and vulnerability of the archaeological resource of the entire Welsh coastline. Over the last few years there has been increased public awareness of the pressures facing the environment, archaeology and ecology of the coastal zone, such as rising sea levels, coastal erosion, development and leisure activities. The pan-Wales initiative to record and assess the diversity, importance and vulnerability of the archaeological resource of the coastal zone will make an important contribution to future management strategies for the coastline of Wales. This report completes the Cardigan Bay survey carried out by Archaeoleg Cambria Archaeology (then Dyfed Archaeological Trust) in 1995/6 (Sambrook and Williams 1996).

METHODOLOGY

The methods employed were those developed during earlier surveys and comprised the extraction of existing records from the regional Sites and Monuments Record (SMR), cartographic and documentary searches and field visits.

LIMITATIONS AND CONSTRAINTS

This element of the coastal survey covered an area of saltmarsh and reclaimed land and was, therefore, different in character to most of the West Wales coastline. The special nature of coastal wetlands and their potential for archaeology has been demonstrated time and again elsewhere around the coastline of Wales and it is felt that linear surveys have limitations when dealing with this type of environment. Perhaps more than any other landscape, wetlands should be looked at in their entirety. Whilst any survey must have defined boundaries, in this case those boundaries meant that a coherent and complex landscape was arbitrarily divided, with the potential loss of understanding of certain sites and systems.

Furthermore, in a dynamic environment like the Dyfi Estuary with its developing saltmarshes the 'coastline' is advancing leaving many sites inland and often outside the survey area.

THE STUDY AREA

This project covered a stretch of coastline from Ynys Las (SN 60509500) to Dyfi Junction (SN 69629800), a distance of c.10km. The survey area was defined as a strip extending 150m inland from Mean High Water, plus the intertidal zone.

GEOLOGICAL AND GEOMORPHOLOGICAL BACKGROUND

The west end of the survey area from the sand dunes at Ynys Las to the Afon Leri consists of blown sand deposits. From the Leri eastwards the entire survey area is covered by alluvium, peat deposits and saltmarsh. There are at least three clear episodes of saltmarsh growth. These drift deposits overlie the solid geology of the Borth Mudstone Formation.

EFFECTS OF SEA LEVEL CHANGES ON THE COAST

Ice-sheet formation on the landscape during successive periods of glaciation effected marked a lowering of sea level, possibly by as much as 60m at maximum glaciation, as the freezing water became entrapped in glaciers and ice caps. The world-wide melting of the ice at the end of the Devensian, c. 12,000 BP, released the entrapped waters (the so-called Flandrian transgression) and led to a rise in sea levels. It is estimated that sea levels had risen to their modern levels by about 4000-3500 BC, so quite clearly the shoreline topography and environments experienced by early humans in and around the Dyfi Estuary would have been markedly different from those of today. Hunter-gathering groups of the late glacial and early post-glacial period would have occupied camps on the tops of inland cliffs overlooking woodland and coastal plains below, with the sea beyond; archaeological evidence in the form of numerous mesolithic flint working floors on the cliff tops of West Wales is abundant. It is likely that those former plains and shorelines, which now lie beneath the sea, yielded the flints and other raw materials for the manufacture of tools.

Partial evidence for the post-glacial sea level rise is the peat shelf, or submerged forest, which lies on the foreshore at several locations around the west Wales coastline including the mouth of the Dyfi Estuary. The formation processes of the peat shelf are reasonably well understood. As sea levels continued their rise from the last ice age and approached their modern limits, bars, spits or other barriers formed across bays and coves, enabling the formation of shallow, fresh water, lagoons behind them. Peat began to form in the lagoons, but development of the bars and spits was unable to keep up with the rising sea levels and these barriers were breached resulting in the submergence of the peat deposits.

THE ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Most of the survey area was blanketed by saltmarsh, which had an obvious effect on the visibility of archaeological sites. The saltmarsh was criss-crossed by numerous creeks and pills, giving good sections through the sedimentary sequence, although in all cases they appeared confined to fairly modern deposits. Interestingly, no peat was visible in any of the channels outside the sea wall, despite being present across all of the area behind the sea wall. It may be that this discrepancy was due to the mobile mud laid down by each tide masking the peat in the tidal channels, but not in the drains of the reclaimed marsh.

In the following period summaries only sites within the survey are given with their Primary Record Number (PRN). All but one of the sites in the survey area were post-medieval or modern, the exception being the Scheduled motte and bailey at Tomen Las (PRN 4031 - MAP 3).

PERIOD SUMMARIES

PREHISTORY

No prehistoric site, or features were recorded within the survey area.

THE ROMAN AND POST-ROMAN PERIODS

There were no Roman or post-Roman sites recorded during the survey, although, a Roman road from Caersws to Bow Street runs under the modern A487 along the foot of the high ground to the south.

MEDIEVAL ACTIVITY

The only identifiable medieval site was the motte at Tomen Las (PRN 4031 - map 3). It is likely that there was some medieval enclosure of the marsh. An historic ferry (PRN 12446) across the Dyfi from Twyni Bach to Aberdovey was in use at least as early as the mid-12th century (Ceredigion District Council, nd).

POST-MEDIEVAL AND INDUSTRIAL PERIODS

The present landscape was created primarily during the post-medieval period by enclosure of the marshes and the canalisation of the rivers Leri, Clettwr and Ddu and the embankment of the Afon Einion. Early enclosure and embankment occurred around Tomen Las (PRNs 35340; 35326; 35327; 35328 - map 3) and Lodge Park (PRNs 35317; 35316; 35320; 35325 - map 2) and was apparently piecemeal. The early enclosures were superseded by the construction of a sea wall (PRNs 35312; 35313; 35318; 35322; 35323; 35324 - map 2) from Ynys Las to Tomen Las sometime during the 18th century or the early-19th century, which was in turn partially replaced by the construction of the railway in the second half of the 19th century.

Once enclosed the land was drained, giving rise to the characteristic straight-sided fields visible today. The farmsteads are all post-medieval, although it is possible that some of them have earlier origins.

The canalisation of the rivers Leri, Clettwr and Ddu allowed access for boats to industrial sites at Pont Aber Leri and Lodge Farm. A sawmill operated at Pont Aber Leri during the 19th century (PRN 33514 - map 1) and lime kilns were established at Lodge Farm. The former saw mill site is now a boat builders yard.

MODERN STRUCTURES AND LEISURE FACILITIES

The enclosure awards plan of 1847 for Gennerglen (NLW Ref: Card C.C. Deposit 5) shows the locations of two public landing or watering places (PRNs 35333 and 35336 - both map 1) at Pont Aber Leri and at the mouth of the Afon Leri respectively. A current landing place at Pont Aber Leri is probably that shown on the enclosure award (PRN 35333) and there is a still ramp down to the river in the area of PRN 35336. Lying in the mud and sand of the intertidal zone to the northeast of the mouth of the Afon Leri are the remains of two wooden shipwrecks (PRNs 35337 and 25238 - both map 1). The first (PRN 35337) was c.17m x 8m and lying bow-on to the shore. It consisted of 21 starboard frames and 8 port side frames, with a section of mast laying a little way to the west. The second wreck (PRN 35338) was located some 100m to the east of the first. There was very little of this vessel visible, part of the stem or stern post and the tops of 5 frames. It measured c.5m x 2.5m.

Two WWII structures, a type 24 pillbox (PRN 35334 - map 1) and a reinforced rectangular structure (PRN 35335 - map 1), were noted. The pillbox sat on the main sea bank (PRN 35312 maps 1 and 2) between the Leri and Clettwr and the rectangular structure was located behind the sea wall at the junction of the sea wall and the railway line, a little way to the east of the pillbox.

DESIGNATION OF ARCHAEOLOGICAL IMPORTANCE

All sites within the study area have been assigned to a category of importance in order to allocate a value to each site. That value determines the archaeological significance of each site. The categories are those outlined in the *Design Manual for Roads and Bridges* (Department of Trade 1993, vol 11, Section 3, part 2) and are listed below.

Category A - Sites of national importance

Scheduled Ancient Monuments, Listed Buildings and sites which meet the criteria for scheduling or listing. It is recommended that category A sites are preserved *in situ*.

Category B - Sites of regional or county importance

Sites which do not quite meet the criteria for scheduling or listing, but which are of particular importance to the region. Preservation *in situ* shall be the preferred option for Category B sites, but where damage or destruction is unavoidable appropriate action will be taken.

Category C - Sites of district or local importance

Sites which are not of sufficient importance to justify preservation if threatened. Category C sites merit adequate recording prior to damage or destruction.

Category D - Minor or damaged sites

Sites of minor importance or sites so badly damaged that too little remains to justify their inclusion within a higher category. For Category D sites, rapid recording, either in advance of, or during construction should be sufficient.

Category E - Sites needing further investigation

Sites whose importance cannot be determined without further investigation in order to assign them to Categories A-D. These sites will be subject to field evaluation.

SITE CONDITION

One of the criteria used in assigning sites a value is their condition. The classification used throughout the Dyfed coastal survey is that used in the regional SMR. Seven categories have been used.

A - Intact

B - In good condition

C - Damaged

D - Badly damaged

E - Destroyed

R - Restored

U - Unknown

Sites only known through finds have been assigned to the U - Unknown category.

RECORDING THE COASTLINE

For survey purposes the coastline was divided into four main categories, which were sub-divided into further categories for recording. The categories used are those devised by the Gwynedd Archaeological Trust (GAT 1995).

The four main categories are: Coast edge type
Land edge type
Foreshore type
Erosion class

Coast edge type:

- Man-made wall
- Man-made bank
- Man-made mixed rubble dump
- Man-made boulder dump
- Man-made other
- Mainly rock
- Rock with drift cover
- Drift, boulder clay
- Drift, blown sand/sand
- Alluvial/marine mud
- Storm beach (storm bank)
- Other

Land edge type: Man-made structures
Arable
Improved pasture
Scrub/heath/rough pasture
Coppice woodland
Golf course
Military
Dunes
Other

Foreshore type: Rock
Boulder
Shingle
Sand
Mud
Marsh
Mixed
Other

Erosion class:

1. Stable - No erosion. Some accretion. Man-made protection*.
2. Slight - Some soil exposure, but good vegetation cover and post-medieval boundaries intact.
3. Medium - Widespread soil exposure, intermittent slumping. Post-medieval boundaries mainly gone.
4. Major - General soil exposure, frequent slumping, little vegetation, no post-medieval boundaries.
5. Severe - Widespread slumping, no vegetation, recent boundaries undercut.

**Erosion class 1. Stable differs from the original GAT definition by including the possibility of accretion and the presence of man-made protection.*

PRESSURES ON THE ARCHAEOLOGICAL RESOURCE

The archaeological resource within the survey area is facing a variety of pressures, some of which are general to the coastal zone and some of which are peculiar to coastal wetlands or to the survey area. To adequately assess the pressures and the appropriate archaeological response, it is first necessary to define those pressures. For this survey they can be divided into four groups:

1. Environmental pressures
2. Water management operations
3. Land management operations
4. Development proposals

ENVIRONMENTAL PRESSURES

The major environmental pressures are tidal erosion and rising sea-levels. These are especially evident along the creeks crossing the saltmarsh.

WATER MANAGEMENT OPERATIONS

The majority of the drains inside and outside the sea wall are maintained as an active drainage system, although some have been allowed to silt up, or been replaced by underground drainage. The tidal creeks across the saltmarsh form an important part of the drainage matrix in the region.

LAND MANAGEMENT OPERATIONS

Land management is an important consideration within the survey area. A large section of the eastern half of the area is managed by the Royal Society for the Protection of Birds as the Ynys Hir reserve. Drains are regularly cleared and banks are maintained by the reserve. The Countryside Council for Wales are proposing to reinstate some of the drainage across Cors Fochno which will require excavation through the peat in places.

DEVELOPMENT PROPOSALS

The environmental designations protect most of the area from heavy development, but the region has an important tourist industry and there may be future applications for leisure orientated development.

STATUTORY AND NON-STATUTORY DESIGNATED AREAS AND OTHER CONSERVATION PLANNING POLICIES

ARCHAEOLOGICAL DESIGNATIONS

Within the survey area there is only one Scheduled Ancient Monument (SAM).

SCHEDULED ANCIENT MONUMENTS WITHIN THE SURVEY AREA

PRN	NGR	NAME	TYPE	PERIOD	MAP No.
4031	SN 6872 9687	Tomen Las	motte	medieval	3

ECOLOGICAL DESIGNATIONS

A large section of the survey area is contained within the Royal Society for the Protection of Birds (RSPB) reserve at Ynys Hir. The estuary has both international and national designations. It is:

- A wetland of international importance, as defined by the Ramsar Convention of 1971.
- A Site of Special Scientific Interest (SSSI).
- A National Nature Reserve (NNR).
- An international Biosphere Reserve

RESEARCH AND MANAGEMENT RECOMMENDATIONS

RESEARCH RECOMMENDATIONS

The wetlands of the southern Dyfi Estuary are an extensive and complex landscape, which has evidence of use from at least the medieval period. There is also good reason to suppose that the area was exploited during prehistoric and Roman times as well. Therefore, it is recommended that an evaluation of the wetland environs of the area is carried out to study the development of the present landscape and to assess the potential of the buried deposits. It may be possible to incorporate a programme of archaeological sampling with any groundworks undertaken by the RSPB, the Environment Agency and CCW.

MANAGEMENT RECOMMENDATIONS

Management recommendations are few for this stretch of coastline and concentrate on those sites identified as being under threat from erosion. It is recommended that a programme of recording be carried out on the features outside the sea walls, namely the two wrecks sites (PRNs 35337 and 35338), the pitched stone walls and associated features (35340 and 35342) and the possible wooden sluice structure and associated features (35339).

APPENDIX ONE: DISTRIBUTION MAPS

Map 1:

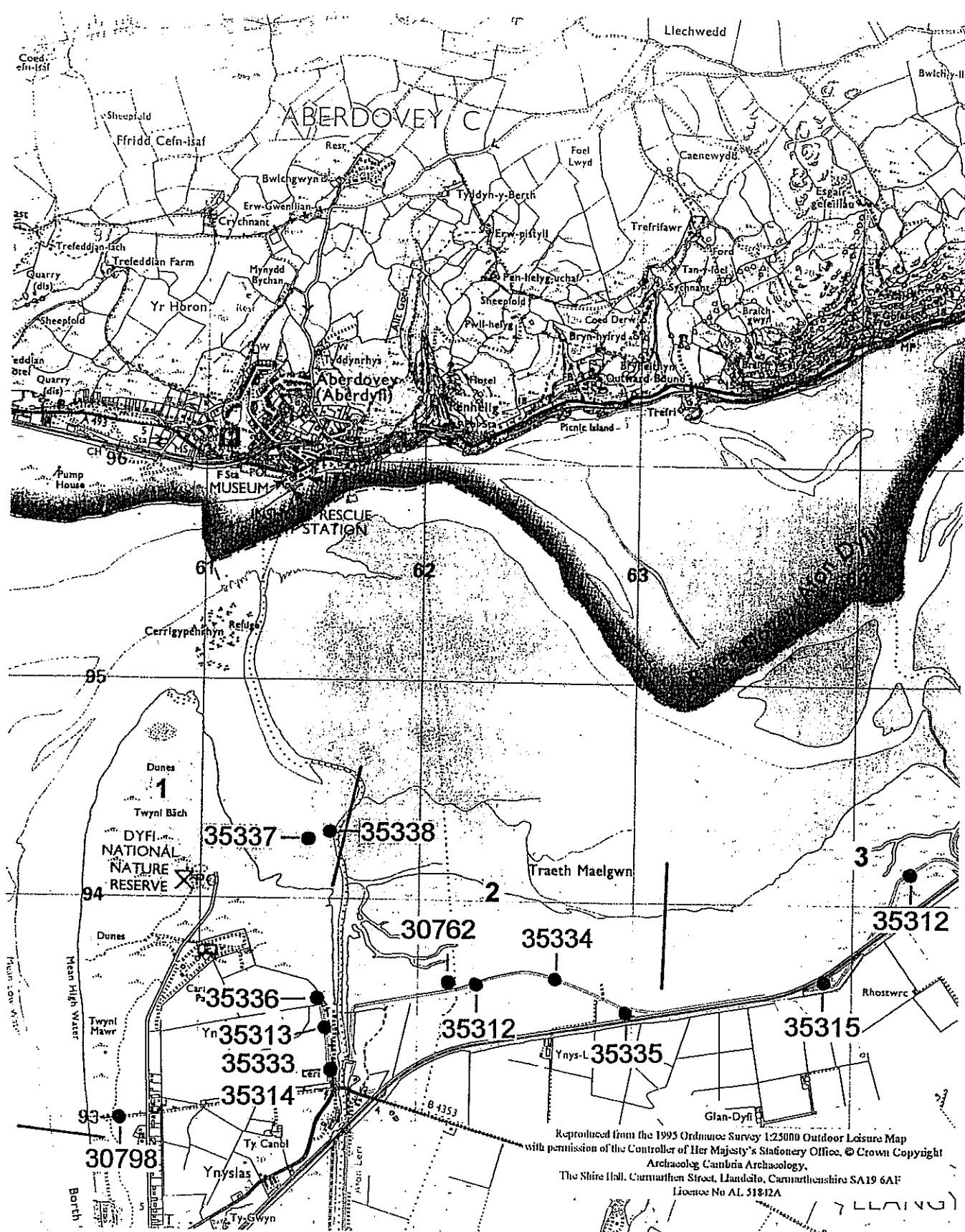
Archaeological sites

Bold PRNs = new sites

PRN	NGR	Description	Type	Period	Condition			Threats	Action
					Importance				
					Erosion class				
					Status				
30762	SN 62019361		Breakwater	post-medieval	B	D	1		
	SN 62039365								
30798	SN 60629300	A prefabricated concrete hut of probable WWII date.	unknown	modern	B	C	1		
35312	SN 61709318	Earth bank between and along the Afon Leri and Afon Clettwr. Until the arrival of the railway this bank was the primary sea defence of the area.	Sea defence	post-medieval	A	C	1		
	SN 65309302								
35313	SN 61569361	Bank constructed along the west bank of the Afon Leri when it was canalised during the 1840s.	Sea defence	post-medieval	B	C	2		
	SN 61629315								
35314	SN 61659320	Cartographic reference to a sawmill and railway siding.	Sawmill and railway siding.	post-medieval	E	D	1		
35315	SN 63859365	Site of a cottage shown on early cartographic sources.	Dwelling	post-medieval	E	D	1		
35333	SN 61659320	Landing place shown on tithe map (1845) and enclosure award map (1847).	Landing place	post-medieval	B	D	1		
35334	SN 62579367	Hexagonal (type 24) pillbox constructed on the sea wall.	pillbox	modern	A	C	1		
35335	SN 62959348	Fortified rectangular building with an observation slit along its west side, looking along the railway line. A WWII building of unknown function.		modern	A	C	1		
35336	SN 61569361	Landing place shown on enclosure award map (1847).	Landing place	post-medieval	U	D	3		
35337	SN 61509430	Remains of a wooden vessel. Twenty one starboard frames and eight port side frames visible plus a short length of mast.	Wreck	post-medieval	D	E	5		survey
35338	SN 61609430	Remains of a wooden vessel. Five frames and part of the stem or stern post visible.	Wreck	post-medieval	D	E	5		survey

Coastal units

No.	Length	Coast edge type	Land edge type	Forshore type	Erosional class	WLGLS code
1	4km	drift, blown sand	other, nature reserve	sand	1	6030; 6035
2	1.5km	man-made bank	improved pasture	mud	1	6360
3	6.62km	man-made wall	improved pasture	marsh	1	6010; 6015; 6020; 6340; 6350



Map 2:

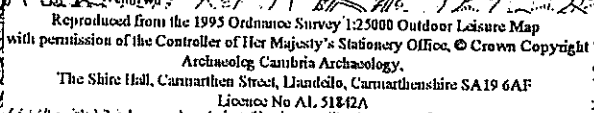
Archaeological sites

Bold PRNs = new sites

PRN	NGR	Description	Type	Period	Condition	Importance	Erosion class	Status	Threats	Action
30764	SN 65079461	A series of wooden breakwaters, now firmly landlocked in the saltmarsh.	Breakwater	post-medieval	C	D	1			
30799	SN 65609495 SN 66509440	An earth bank constructed along the west bank of the Affon Ddu sometime during the early 20th century.	Sea defence	modern	B	C	1			
30800	SN 66799628 SN 68369733	A series of five breakwaters. Shown on the 1887, 1901 and 1964 OS maps. Pitched stone construction.	Breakwater	post-medieval	C	D	2			
35316	SN 65229465 SN 65609495	A short length of earth bank shown on early OS maps running parallel to the Dyfi. Undated but likely to be early 19th century, but possibly earlier.	Sea defence	post-medieval	B	C	1			
35317	SN 65829412 SN 65809462	A curving earth bank shown on the early OS coverage enclosing an area to the north of Hen Hafod. Likely to be early-19th century.	Enclosure bank	post-medieval	U	C	1			
35318	SN 64659420 SN 65329305	Earth bank running along east bank of the canalised Afon Clettwr. Mid-19th century.	Sea defence	post-medieval	A	C	1		Some animal trampling.	
35320	SN 65229462 SN 65679432	Earth bank built to link banks 35316 and 35317. Probably mid-19th century.	Enclosure bank	post-medieval	U	C	1			
35322	SN 65509500 SN 65669508	A short length of earth bank. Part of the original sea wall, now superceded by the railway.	Sea defence	post-medieval	D	D	1			
35323	SN 65729511 SN 65899520	A short length of earth bank. Part of the original sea wall, now superceded by the railway.	Sea defence	post-medieval	D	D	1			
35324	SN 66269542 SN 66369546	A short length of earth bank. Part of the original sea wall, now superceded by the railway.	Sea defence	post-medieval	D	D	1			
35325	SN 66909582 SN 67409575	bank/boundary.	Flood defence	post-medieval	U	D	1			
35341	SN 66909587	Pitched-stone boundary bank, formerly a continuation of 35325 until cut by the railway in the mid 19th century.	Enclosure/boundary	post-medieval	D	D	3		erosion severe in places	survey
35342	SN 67959667 SN 67999695	Pitched-stone wall. Probably a breakwater. Now landlocked in the saltmarsh. Severe erosion in places.	Breakwater?	post-medieval	C	C	5		erosion severe in places	survey

Coastal units

No.	Length	Coast edge type	Land edge type	Forshore type	Erosional class	WLGLS code
1	4km	drift, blown sand	other, nature reserve	sand	1	6030; 6035
2	1.5km	man-made bank	improved pasture	mud	1	6360
3	6.62km	man-made wall	improved pasture	marsh	1	6010; 6015; 6020; 6340; 6350
4	1.62km	man-made bank	other, bird reserve	marsh	2	6330



Map 3:

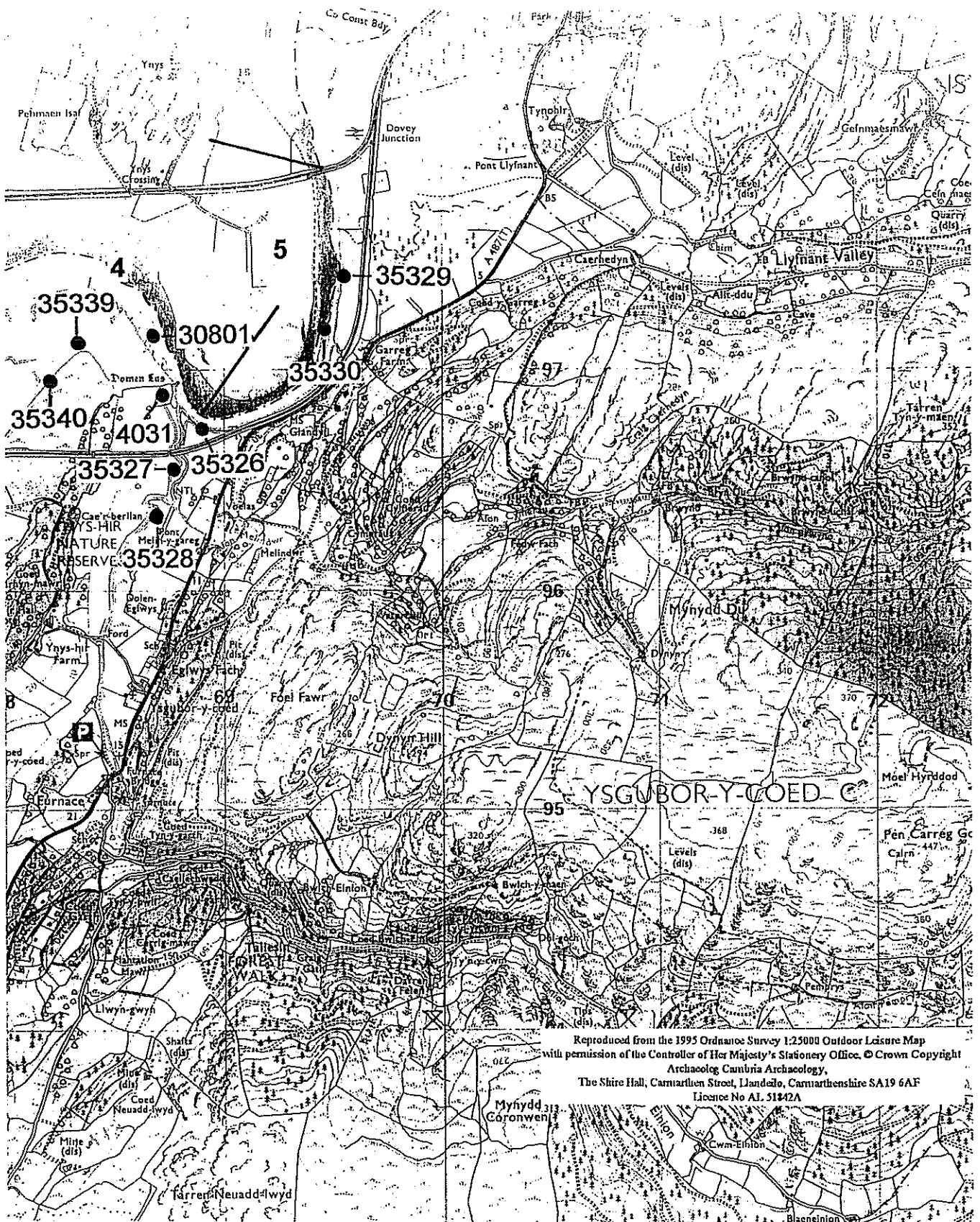
Archaeological sites

Bold PRNs = new sites

PRN	NGR	Description	Type	Period	Condition	Importance	Erosion class	Threats	Action	
Status										
4031	SN 68729687	Tree covered motte on the end of a spur of higher ground extending into the Dyfi. The motte is surrounded on three sides by a rock cut ditch and on its fourth side by marsh. A possible bailey lies to its north.	Domen Las, motte and bailey castle.	medieval	C	A	1	SAM Card 100	A track to one of the RSPB hides runs along the edge of the motte. Visitor access is having an affect.	Site visit to assess the potential affects of the visitor numbers.
30801	SN 68739694 SN 68579722	A series of breakwaters along the south bank of the Dyfi, just north of Domen Las.	Breakwaters	post-medieval	B	D	2			
35326	SN 68909625 SN 69009672	A bank that extends from Pont Melyn-y-gareg along the lower reaches of the east bank of the Afon Einion and then eastwards along the southern bank of the Dyfi.	Flood defence	post-medieval	B	C	2			
35327	SN 68429578 SN 68739684	A bank that extends along the west bank of the Afon Einion from Lodge to Domen Las.	Flood defence	post-medieval	B	C	2			
35328	SN 68639631 SN 68799633	A bank that extends south along the Afon Einion from Pont Melyn-y-gareg.	Flood defence	post-medieval	B	C	2			
35329	centred on SN 69509740	A series of 5 breakwaters shown on early OS maps.	Breakwaters	post-medieval	U	D	3			
35330	SN 69479720	Historic fording point shown on early OS maps.	Ford	post-medieval		D	5			
35339	SN 68329712	A wooden structure in the former course of a small creek. Probably a sluice. There is a low earth bank nearby which may be associated with the sluice structure.	Sluice	post-medieval	C	D	3			survey
35340	SN 67959665 SN 68479692	Curving bank which now forms the boundary of the RSPB reserve of Ynys Hir. Well maintained.	Sea defence	post-medieval	R	C	1			

Coastal units

No.	Length	Coast edge type	Land edge type	Forshore type	Erosional class	WLGLS code
3	6.62km	man-made wall	improved pasture	marsh	1	6010; 6015; 6020; 6340; 6350
4	1.62km	man-made bank	other, bird reserve	marsh	2	6330
5	1.75km	man-made wall	man-made structures	mud	1	5389; 6001



APPENDIX TWO: PRIMARY DOCUMENTARY AND CARTOGRAPHIC SOURCES

The cartographic and documentary searches were rapid and concentrated on easily available cartographic sources. Whilst this approach was not exhaustive it was felt to be of most value because it gave the best return of new information to time taken.

O.S. FIRST EDITION 6"

Cards I.SW (1890); I.SE (1891)
Cards II.SW (1890); II.NW (1887)

O.S. SECOND EDITION 6"

Cards I.SW (1902); I.SE (1901)
Cards II.SW (1906); II.NW (1902)

O.S. FIRST EDITION 25"

Cards I.11 (Part) (1888); I.16 (1889)
[Missing Cards I.8 (1889); I.10 (1888); I.12 (?); I.14 (?); I.15(1888)]

Cards II.1 (part)(?); II.6 (1888); II.9 (1888)

O.S. SECOND EDITION 25"

Cards. I.12 (1901); I.14 (1901); I.15 (1901); I.16 (1901)
[Missing Cards. I.8 (1901); I.10 (?); I.11 (?)]

Cards II.1 (1901); II.2 (1901); II.5 (1901); II.6 (1901); II.9 (1905)

LAND UTILISATION MAP OF ENGLAND AND WALES

Sheet 69 and part of 68: Llanidloes and Aberystwyth. 1933-5.

BRITISH GEOLOGICAL SURVEY

Sheet 163 (Aberystwyth), 1:50,000 series Solid edition.
Sheet 163 (Aberystwyth), 1:50,000 series Drift edition.

TITHE AND ESTATE PLANS

O.S. Index to Tithe Survey; Sheet 59 (SE part), 1837

O.S. Original Survey Drawings; Sheet 336, Surveyed 1833-34

Tithe Map for the Parish of Llangynfelyn, Cardiganshire, annotated with field names and holdings. Apportionment: 1844

Tithe Map for the Parish of Llanfihangel Geneu'r Glyn, Cardiganshire (Township of Henlllys), annotated with field names and holdings. Apportionment: 1845

Tithe Map for the Parish of Llanfihangel Geneu'r Glyn, Cardiganshire (Township of Ysgubor y Coed), annotated with field names and holdings. Apportionment: 1845

'A New and Accurate Map South Wales....' Emannuel Bowen, 1729

Saxton's Map of Radnorshire, Brecknockshire, Cardiganshire and Carmarthenshire, 1578

W. Rees: South Wales and the Border in the fourteenth century, NW Sheet

Admiralty Chart: 1972: Cardigan Bay-Central Part. Published 1975

'Lodge Park in the Parish of Llanganfelin'. 1790. T. Lewis. (Plan and schedule). NLW Ref: NLW Vol 37 pp.1-3.

'Dolen Eglwys in Scuborycoed'. 1788. T. Lewis. (Plan and schedule). NLW Ref: NLW Vol 37 pp.14-15.

'Garreg and Cae Mainan in the Township of Scuborycoed'. 1788. T. Lewis. (Plan and schedule). NLW Ref: NLW Vol 37 pp.16-18.

Marshland near Ynys Fach and Hen Hafod - map showing frontages sold near r. Dyfi. n.d. NLW Ref: Gogerddan 89 131/2/37

'Plan of the outlines of Lodge Park, Hen Hafod, Trwyn y Buarth and Bodfagen with the intended canal from Trwyn y Buarth to the river Dovey'. 1788. T. Lewis. NLW Ref: Gogerddan 58.

'A map of Lodge Park in the county of Cardigan belonging to Edwd. Loveden Esqr'. 1779. T. Lewis. (Reference on map). NLW Ref: Map 7142 134/1/18.

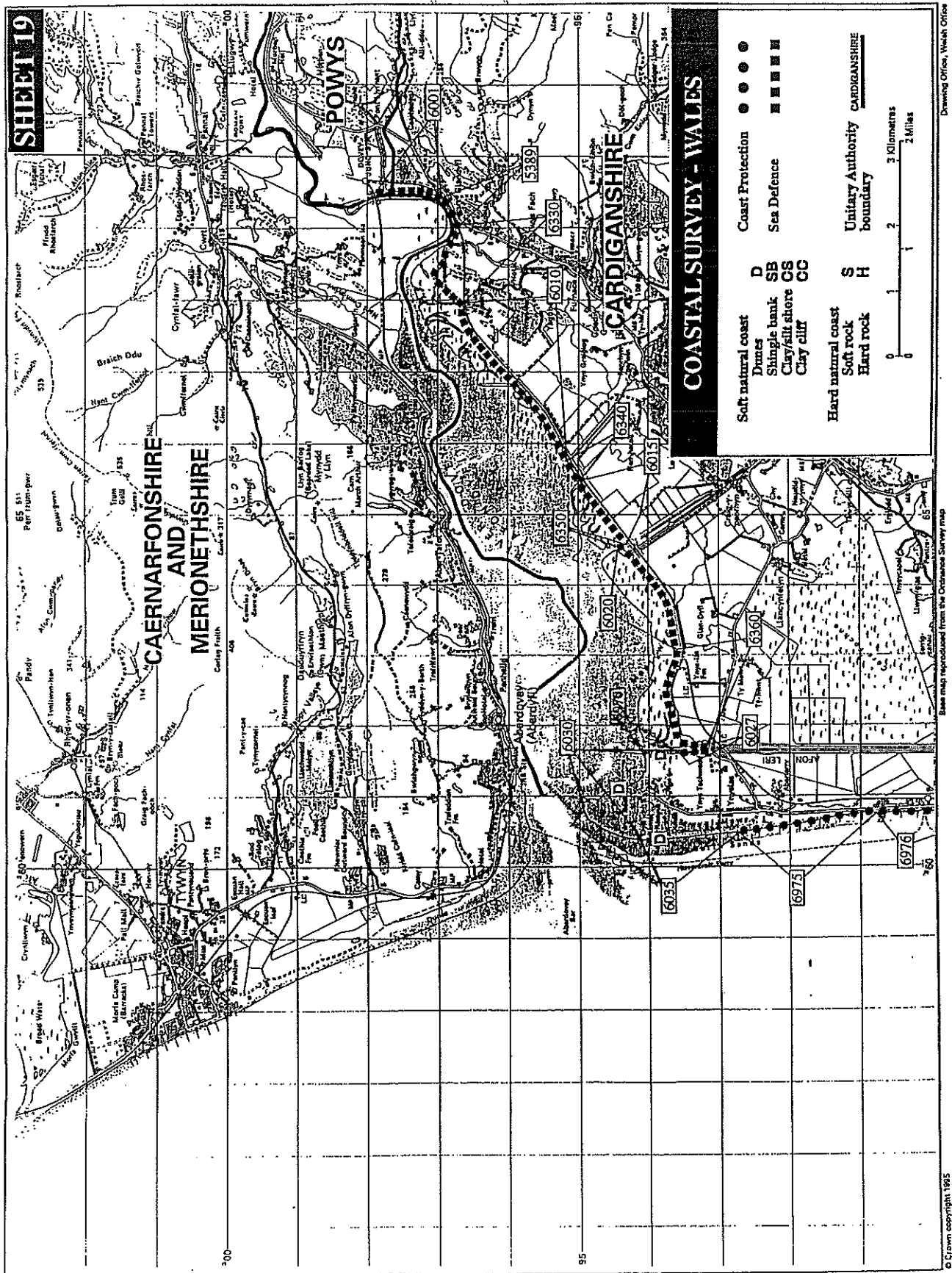
'Map of Cors Fochno and the several islands situate therein with part of the navigable river Dovey in the county of Cardigan'. 1790. T. Lewis. (Reference on map). NLW Ref: Gogerddan 108.

'Generglyn Inclosure Award of Mr. Thomas Jones Griffiths 1847 - Map A: Rivers, Drains and Embankments'. NLW Ref: Card C.C. Deposit 5.

'Generglyn Inclosure Award of Mr. Thomas Jones Griffiths 1847 - Map B: Roads and Allotments'. NLW Ref: Card C.C. Deposit 5.

'Generglyn Inclosure Award of Mr. Thomas Jones Griffiths 1847'. pp. 20-37 Part of award detailing embankments; drainage; bridges; sluices; quarries; wells; watering and landing places; turbaries'. NLW Ref: Card C.C. Deposit 5.

APPENDIX THREE: WELSH OFFICE GENERAL LEVEL OF SERVICE SURVEY



GENERAL LEVEL SERVICE FOR CERNIGION

Code	Map No.	Location	Owner	Grid reference start	Grid reference finish	Length (m)	Type of protection	Class	Degree of exp.	Land type	prop. at risk Dmat. Comm.
W.22.6001	19	Glandyfi	N	SN 6948/9790	6944/9694	1,000	Revetment	SD	Lw	A	E D
W.22.5389	19	Glandyfi Wall & Pitching	R	SN 6944/9694	6900/9672	340	Embankment Revetment	CP	Lw	A	E D
W.22.6330	19	Domen Las (1)	N	SN 6900/9672	6794/9663	1,250	Embankment	SD	Lw	D	E E
W.22.6010	19	Domen Las (2)	R	SN 6794/9663	6578/9516	2,900	Embankment	SD	Lw	A	D E
W.22.6340	19	Afon Ddu outfall	N	SN 6578/9516	6547/9494	380	Embankment Revetment	SD	Lw	C	C D
W.22.6015	19	Afon Ddu to Afon Clettwr	R	SN 6547/9494	6455/9431	1,100	Embankment	SD	Lw	A	D E
W.22.6350	19	Afon Clettwr	N	SN 6455/9431	6449/9449	100	Embankment	SD	Lw	A	C D
W.22.6020	19	Glamorfa	P	SN 6449/9449	6310/9365	1,500	Embankment	SD	Lw	A	D E
W.22.6360	19	Ynys-Las Farm	N	SN 6310/9365	6166/9316	1,850	Embankment	SD	Lw	D	D E
W.22.6027	19	Shipyard Ynys-Las	P	SN 6166/9316	6162/9356	400	Sea Wall	CP	Lw	B	D D
W.22.6030	19	Twyni Bach (1)	P	SN 6162/9356	6040/9420	1,350	Dunes	S	Lw	E	E E
W.22.6035	19	Twyni Bach (2)	P	SN 6040/9420	6053/9278	1,500	Dunes	S	Hl	C	D C

APPENDIX FOUR: LIST OF RECIPIENTS OF REPORT

Cadw: Welsh Historic Monuments

Dr M Yates, Cadw: Welsh Historic Monuments, Crown Building, Cathays Park, Cardiff, CF1 3NQ.

Ceredigion County Council

Mr I Dutch, Principal Planner, Coast & Countryside, Ceredigion County Council, Nuadd Cyngor Ceredigion, Penmorfa, Aberaeron, SA46 0PA

Mr R G Jones, Director of Highways, Property and Works, Cyngor Sir Ceredigion, County Hall, Market Street, Aberaeron SA46 0AT

Mr D A Lewis, Assistant Director of Economic Development and Tourism, Ceredigion County Council, Nuadd Cyngor Ceredigion, Penmorfa, Aberaeron, SA46 0PA

Countryside Council for Wales

Mr M Bailey, Countryside Council for Wales, Plas Gogerddan, Aberystwyth, Ceredigion, SY23 3EE

Mrs C Davies, Maritime and Earth Sciences, Countryside Council for Wales, Fford Penrhos, Bangor, Gwynedd, LL57 2LQ

Clwyd-Powys Archaeological Trust

Mr B Sylvester, Clwyd-Powys Archaeological Trust, 7a Church Street, Welshpool, Powys, SY21 7DL

Environment Agency

Mr B Jones, Conservation, Recreation and Navigation, Environment Agency, Llwyn Brain, Ffordd Penlan, Parc Menai, Bangor, Gwynedd, LL57 4DE

Glamorgan-Gwent Archaeological Trust

Mr M Locock, Glamorgan-Gwent Archaeological Trust, Ferryside Warehouse, Bath Lane, South Dock, Swansea, SA1 1RD

Gwynedd Archaeological Trust

Mr A Davidson, Gwynedd Archaeological Trust, Craig Beuno, Ffordd y Gath, Bangor, Gwynedd, LL57 2RT

Nautical Archaeology Society

Mr A Aberg, Society Chairman, Nautical Archaeology Society, c/o 19 College Road, HM Naval Base, Portsmouth, PO1 3LJ

Royal Commission on Ancient and Historic Monuments for Wales

Mr G M Edwards, National Monuments record, RCAHMW, Crown Building, Plas Crug, Aberystwyth, Ceredigion, SY23 1NJ

Royal Society for the Protection of Birds

Mr R Squires, RSPB, Ynys Hir Reserve, Glandyfi, Ceredigion.

BIBLIOGRAPHY

Ceredigion and District Council *Ceredigion's Coastal Heritage.*

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