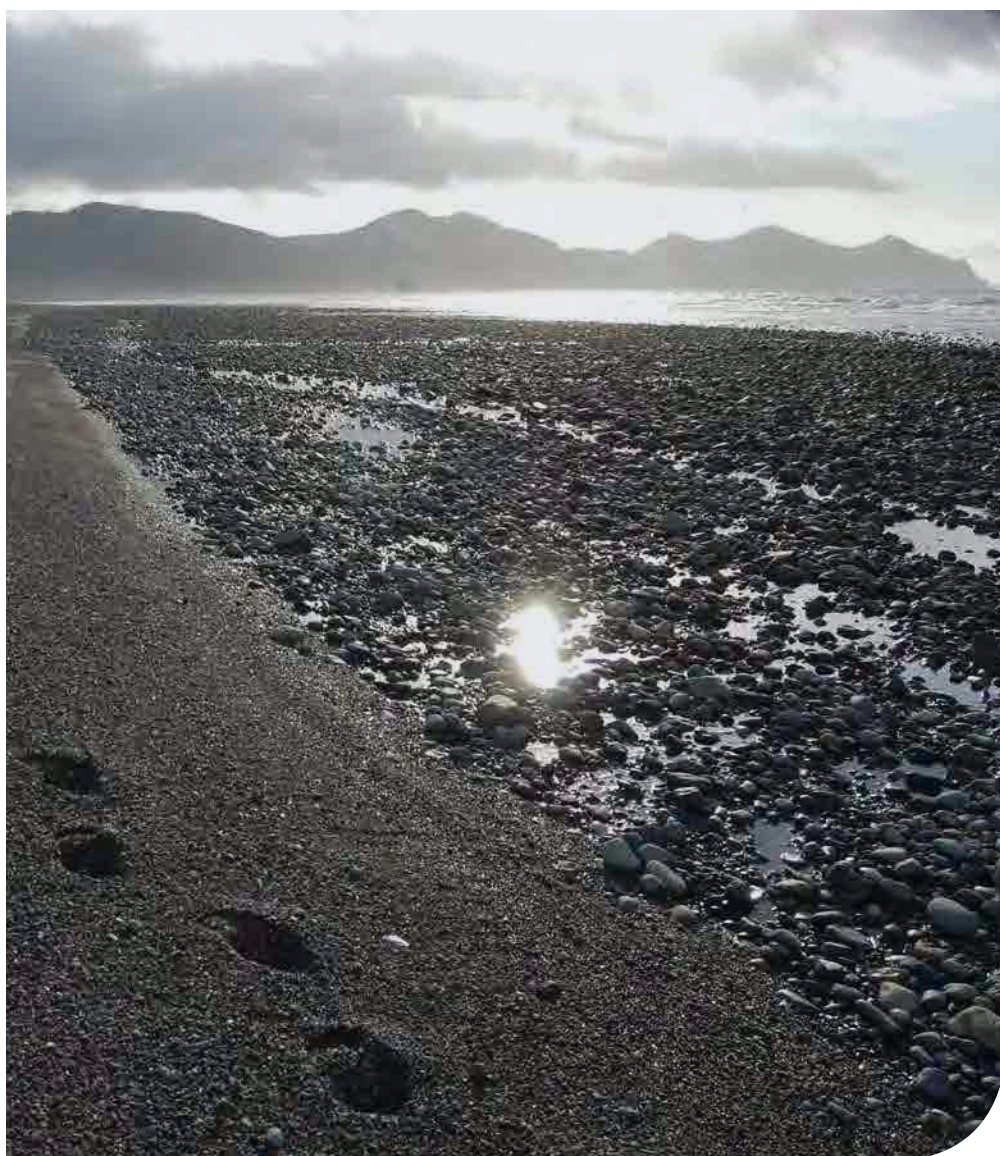


Arfordir Coastal Heritage

Final Report



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Arfordir Coastal Heritage

Final Report

Project No. 2072

Prepared for: Cadw

March 2012

Report No.1044

By: Iwan Parry, Laura Parry, Robert Evans
David Hopewell, Andrew Davidson
Tegid Williams and Tanya Berks

With special thanks to all volunteers
who assisted with the project

Illustrations by: Iwan Parry

Cyhoeddwyd gan Ymddiriedolaeth Archaeolegol
Gwynedd
Ymddiriedolaeth Archaeolegol Gwynedd
Craig Beuno, Ffordd y Garth,
Bangor, Gwynedd, LL57 2RT

Published by Gwynedd Archaeological Trust
Gwynedd Archaeological Trust
Craig Beuno, Garth Road,
Bangor, Gwynedd, LL57 2RT

Cadeiryddes/Chair - Yr Athro/Professor Nancy Edwards, B.A., Ph.D, F.S.A.
Prif Archaeolegydd/Chief Archaeologist - Andrew Davidson, B.A., M.I.F.A.

Mae Ymddiriedolaeth Archaeolegol Gwynedd yn Gwmni Cyfyngedig (Ref Cof. 1180515) ac yn Elusen (Rhif Cof. 508849)
Gwynedd Archaeological Trust is both a Limited Company (Reg No. 1180515) and a Charity (Reg No. 508849)

Figures

Figure 01: Map showing erosion severity in study area.
Compiled from data collected 1993-1998

Figure 02: Map of Gwynedd showing all coastal sites
recorded between 1993 and 2012.

Figure 03: Map of Gwynedd showing areas walked
2009 - 2012.

Figure 04: Plan of Dinas Dinlle hillfort showing results
of 2012 coastal erosion survey with data
from previous surveys
(after National Trust drawing DD01 rev2).

Figure 05: Section of Bronze Age pit, Glanllynau

Figure 06: Section of Nefyn Maritime Museum Log
Boat

Figure 07: Plan of Nefyn Maritime Museum Log Boat

Figure 08: Results of 2012 erosion survey at
Glanllynau against the 1891 1st edition
Ordnance Survey map.

Figure 09: Location of sites to be investigated by
geophysical survey in Dinas Dinllaen

Plates

Plate 01: Aberffraw introduction talk, Andrew Davidson of GAT giving training in recording and fieldwork

Plate 02: Aberffraw AONB/GAT coastal heritage day

Plate 03: Nefyn Logboat

Plate 04: Artwork produced by local schoolchildren with the aid of local artist Julie Williams

Plate 05: Volunteer pack for monitoring walks

Plate 06: Dinas Dinllaen, Area of Outstanding Natural Beauty

Plate 07: Volunteer excavating one of six test pits at Penychain

Plate 08: Fully excavated test pit, TP 6, at Penychain

Plate 09: Abererch standing stone June 2010

Plate 10: Abererch standing stone February 2011. Note the change in cliff exposure due to sand movement

Plate 11: Abererch standing stone at the limit of excavation, seen slumping slightly to the NW

Plate 12: Nefyn Golf course at Dinas Dinllaen, showing the three banks of the Promontory Fort

Plate 13: Volunteers recording the first bank during excavations at Dinas Dinllaen Promontory Fort

Plate 14: Volunteers excavating the second bank of Dinas Dinllaen Promontory Fort

Plate 15: Geophysical Survey at Dinas Dinllaen with help from a volunteer

Plate 16: Aberdesach, possible buried soil and prehistoric pits found in eroding section

Plate 17: Aberdesach, possible standing stone in the shingle on the beach

Plate 18: Lime kiln at Aberdesach

Plate 19: Extensive peat deposits at Abererch

Plate 20: Concrete WWII gun emplacement at HMS Glendower, Penychain

Plate 21: Collapsed/breached sea defence wall at Brynsiencyn

Plate 22: A boathouse, castellated tower and gateway to a 'secret garden' at Brynsiencyn

Plate 23: Concrete cylinders at Caernarfon, possible anti-tank defences (inset: close up showing cross mark)

Plate 24: Cemlyn Bay, area of erosion where one of three flint scatters were recorded

Plate 25: Stone and mortar 'quay' at Cemlyn Bay

Plate 26: Stone lined pit at Criccieth

Plate 27: Clawdd boundary eroding from cliff at Criccieth

Plate 28: An old photograph dating to the 1920's showing the stone built quay in use

Plate 29: The quay at Dwyfor 2011, no longer in use and overgrown

Plate 30: Area of prehistoric activity associated with a buried soil layer west of Dinas Dinlle

Plate 31: Previously unrecorded WWII pillbox, Dinas Dinlle

Plate 32: Bronze Age pottery eroding from a pit at Glanllynau, Llanystumdwy

Plate 33: Landowner Mr Hywel Richards observing exposed peat and possible fish trap at Glanllynau, Llanystumdwy

Plate 34: Area of exposed clay containing preserved wood and possible footprints, Morfa Conwy

Plate 35: Possible anti-tank columns re-used for erosion control, Morfa Conwy

Plate 36: Machinery and storage bin, Porth y Nant quarry

Plate 37: Degrading storage bins of Cae'r Nant quarry

Plate 38: Wooden trough of a Bronze Age burnt mound excavated at Porth Neigwl in 2008

Plate 39: Recording the backstop of an aircraft tail gunner training range at RAF Hell's Mouth, Porth Neigwl

Plate 40: Stone revetment wall at Porth Namarch granite quarry, Holyhead

Plate 41: The current lifeboat house at Porthdinllaen

Plate 42: Porth Trecastell or Cable Bay, looking towards the possible promontory fort

Plate 43: The disguised WWII gun emplacement at Godreiddi Bach, Red Wharf Bay (Inset: The emplacement as it looked shortly after the war)

Appendices

Appendix A

Original and re-designed recording forms and guides

Appendix B

Dinas Dinllaen excavation report

Appendix C

Penychain excavation report

Appendix D

Abererch excavation report

Appendix E

Geophysics Report

Appendix F

Gazetteer of sites

1. INTRODUCTION.....	3
2. METHODOLOGY	4
2.1 Fieldwork	4
2.2 Outreach	4
2.3 HER Enhancement.....	7
2.4 Additional Funding.....	7
3. RESULTS	8
3.1 Excavations	8
3.1.1 Penychain Flint Scatter.....	8
3.1.2 Morfa Abererch Standing Stone.....	8
3.1.3 Dinas Dinllaen Promontory Fort.....	9
3.2 Geophysical and Topographic Survey	11
3.2.1 Dinas Dinllaen	12
3.2.2 Glanllynau	13
3.2.3 Morfa Abererch.....	14
3.2.4 Dinas Dinlle	14
3.3 Monitoring Walks and Rapid Survey	15
3.3.1 Aberdesach	15
3.3.2 Abererch	16
3.3.3 Brynsiencyn.....	18
3.3.4 Caernarfon	19
3.3.5 Cemlyn Bay.....	20
3.3.6 Criccieth	21
3.3.7 Dinas Dinlle	22
3.3.8 Dyffryn Ardudwy	23

3.3.9 Glanllynau	24
3.3.10 Morfa Conwy.....	25
3.3.11 Nant Gwrtheyrn	26
3.3.12 Porth Neigwl	27
3.3.13 Porth Namarch Granite Quarry, Holyhead	28
3.3.14 Porthdinllaen.....	28
3.3.15 Rhosneigr – Cable bay	30
3.3.16 Traeth Coch	31
3.3.17 Traeth Lafan	31
3.3.18 Trefor	32
3.3.19 Tywyn, Merionydd	33
3.3.20 Wylfa to Cemlyn landscape	35
3.3.21 Valley	35
4. CONCLUSION.....	37
4.1 Archaeology and Erosion	37
4.2 Volunteer Involvement	38
4.3 Working with the Welsh Trusts	38
4.4 Future Aims and Developments.....	39
5. BIBLIOGRAPHY	41

1. INTRODUCTION

The aim of the Arfordir/Coastal heritage project was to examine the potential impact of climate change and rising sea levels on coastal archaeology, and to involve local interest groups in the assessment process. The three year project built upon the results of earlier coastal assessments undertaken between 1993 and 1998. In Scotland, SCAPE, through their project Shorewatch, successfully integrated enthusiastic community interest with the need to assess, monitor and record archaeological remains within the eroding coastline. It was proposed that an approach be made to local communities in Wales to set up interest groups to undertake similar monitoring and recording tasks. Initially this approach was made to existing historical groups and community groups.

This report incorporates the findings of all three years of the Arfordir project carried out by GAT between April 2009 and March 2012, and includes information previously submitted in progress reports in 2010 and 2011 (GAT report numbers 861 and 941).

Fieldwork formed a major component of the project. This was carried out both by GAT staff and volunteers. As part of the survey process a number of factors were recorded, including: the significance of archaeological sites and historic landscapes in relation to heights above sea level, the nature of the coast edge and foreshore, and the rate of erosion. Similarly the pressures and impacts on sites from increases in extreme weather patterns and rising sea levels were identified, and mitigation strategies proposed.

All work was undertaken in conjunction with the Dyfed Archaeological Trust, who undertook a similar project in association with the Pembrokeshire Coast National Park, and Glamorgan Gwent Archaeological Trust. Close liaison was maintained with GGAT and DAT during the course of the project and meetings of the Welsh Coastal Heritage Environment Research Group were attended, the last of which was held in January 2012.

Initially the project was to be limited to the Cardigan Bay coast during the first year. Due to general interest from Anglesey and Llŷn the project was, however, extended to include the entire Gwynedd and Anglesey coastline.

In the second year of the project, work largely concentrated on the Llŷn and Anglesey coastlines and enjoyed continuous input from local volunteers.

The final year of the Arfordir project included excavations on Dinas Dinllaen promontory fort at Porthdinllaen on the Llŷn Peninsula, which was run as a community excavation and attracted a number of local volunteers. Geophysical surveys were carried out at Glanllynau, Abererch and within Dinas Dinllaen promontory fort. The walking of coastal areas by volunteers and GAT archaeologists continued and yielded a wealth of information on a variety of sites, known and unknown.

2. METHODOLOGY

The project utilised the information gathered during the original Coastal Erosion Surveys conducted by GAT between 1993 and 1998 (GAT Report Numbers 79, 198 & 251) and little further desktop work was undertaken.

2.1 Fieldwork

Fieldwork formed a large part of the project methodology, both in terms of the work directly done by GAT, and by volunteers working as part of the project.

The majority of this fieldwork was in the form of rapid coastal survey, involving the walking of sections of coastline and recording all new archaeology found, and assessing the condition of previously identified sites. In order to prioritise which sections of coastline were most at risk of erosion, and thus in need of attention, full use was made of the existing Coastal Erosion Survey data (*Fig.1*).

During surveys photographs were taken of all features identified, and locations recorded using a handheld GPS with an accuracy of $\pm 3\text{m}$. Some areas were visited on numerous occasions in order to assess any changes in condition and as a reaction to storms and high tides which shifted vast amounts of sand from some beaches.

Additional fieldwork was conducted in reaction to the information gathered during surveys. This took the form of detailed electronic survey of areas of erosion and newly identified features using a total station and GPS rover, both with an accuracy of around $\pm 3\text{cm}$, geophysical survey using a fluxgate gradiometer, and excavation.

2.2 Outreach

In order to reach as wide an audience as possible, outreach was an essential part of the project. Volunteer involvement was always seen as an important element of the project and an effort was made to engage with local communities and to recruit individuals and groups to monitor sections of coastline whilst feeding information back to GAT.

It was realised from the outset that the people best placed to monitor the ever changing coastline were those who were there most often. A person walking an area on a regular basis would be in a much better position to notice changes than an archaeologist who may only have the opportunity to visit once every year or two. For this reason coastal communities and history groups in these areas, were seen as a rich source of potential volunteers.

Each year an area was selected to host a presentation which was followed by a guided walk which also acted as a training session in the recording process for the project. During additional talks given throughout the life of the project the volunteer aspect was explained and promoted, with an invitation extended to those wanting to join GAT staff during monitoring walks.

A series of initiatives were made each year in order to increase awareness of the project, to create links with local groups and to recruit volunteers. These are summarised below:

2009-10

In the first year, introductory talks and training in fieldwalking and recording were given in the initial meetings at Aberffraw (*Plate 1*) and Llanaelhaearn. Talks were also given to Friends of Gwynedd Archaeological Trust, Anglesey Antiquarian Society and Talwrn Archaeology Group. The Arfordir project was promoted at other events including the National Eisteddfod and the AONB open day at Holyhead, Anglesey. The latter was then followed up with a joint ANOB/GAT coastal heritage day (*Plate 2*).

2010-11

The main public meeting of the second year was held in the Memorial Hall in Harlech, which was open to all members of the public. The meeting was well promoted with flyers placed in local shops and on community notice boards in the area, and an announcement had been made on BBC Radio Cymru. The event was also promoted amongst Harlech Historical Society members and flyers were handed out during other GAT talks in the locality.

The meeting was mostly attended by members of the Harlech Historical Society and also by a member of the public who had seen the flyers locally. This was followed by a guided walk along a section of coastline at Ynys Llanfihangel-y-Traethau where the recording process was fully explained.

A presentation on the project's work to date and future plans was given to members of The Campaign for the Protection of Rural Wales in Llanfairpwll, Anglesey. Feedback at all the meetings and talks were positive with some new information being submitted by those who attended.

Additional training in recording techniques was offered after a request was made to GAT to assist with the recording of a log boat held in the collections of a small maritime museum in Nefyn on the Llŷn Peninsula. This was seen as having a direct link to coastal archaeology and heritage and that the work could be undertaken as part of the Arfordir project. Response was good with 10 volunteers attending the session (*Figs. 6 & 7, and Plate 3*).

It is believed that the boat was discovered on a sandbank in the Menai Straits, however this has not been confirmed and the date of the discovery is unknown. It was acquired by Nefyn Maritime Museum in the 1970s and prior to this it had been stored in garages, first in Caernarfon and then in Nefyn

Durham University student Jamie Davies has recently been researching the boat and has made some significant discoveries. He submitted samples of the wood to Museum of London Archaeological Services (MOLAS) and Durham University for analysis. MOLAS stated that the wood was probably Teak, likely to have originated in south-east Asia; however Durham University stated that the wood was a tropical hardwood likely to have originated in West Africa. Recent ethnographic research has concluded that the boat is typical of those found in West Africa and is likely to be 19th century or later in date.

2011-12

During the third year, additional funding was obtained from a number of separate sources, allowing the scope of the project to be expanded beyond its core work programme. This provided

funds for more detailed topographic survey, geophysical survey, excavation, and increased outreach activities.

The main public meeting for the third year of the project was held at Canolfan Iorwerth Rowlands, Beaumaris in June, with a walk along the coast at Aberlleiniog. A presentation was given about the project and recent discoveries. The walk was again an opportunity to train potential volunteers in the fieldwalking and recording process. Further talks were given at Llanbedrgoch, Pwllheli, Bryn croes and the project was promoted during other talks, walks and guided tours given by GAT.

A number of volunteers were reached through other Trust projects. An outreach excavation at Tai Cochion Roman settlement, which was attended by no less than 20 volunteer diggers, included many organised school visits and activities and a very successful open day attracting over 500 people. This provided the perfect environment to promote the Arfordir project to people who were already enthusiastic about archaeology, history and heritage. This also allowed us to promote an Arfordir excavation planned for later in the year, on Dinas Dinllaen promontory fort. The excavation was a success and the results along with artwork produced by schoolchildren were unveiled to the public, at an event, held at Nefyn and District Golf Club (*Plate 4*). This was attended by parents, local councillors, and representatives from the National Trust, Llŷn AONB, Careers Wales and Cynnal.

The outreach events provided useful feedback on the project and allowed the methodology to be revised where necessary:

The recording forms were found to be over-complicated and these were revised and simplified in the second year of the project.

Establishing the accurate location of sites was found to be a problem without a GPS unit and not all volunteers had access to digital cameras. It was therefore decided to make equipment packs available (*Plate 5*). Funding from the AONB (see below) allowed five packs to be purchased

Each pack comes in a waterproof bag and contains:

- Handheld GPS
- Waterproof compact digital camera with memory card
- 30m and 5m tape
- 1m ranging rod
- Stationary
- Extra batteries for camera and GPS

Since introducing the packs interest in the project has increased and most packs have been in use almost permanently since they were made available.

A community excavation providing members of the local community to gain experience in aspects of excavation and survey was held at Dinas Dinllaen promontory fort with the aid the additional funding (*Plate 6*).

In association with an excavation at Dinas Dinllaen, local schools were invited to visit the excavation and take part in associated educational activities. A very successful programme of activities was devised and delivered by the GAT outreach and education team for three local primary schools.

2.3 HER Enhancement

One of the aims of the project was to enhance the regional HER, both through the information collected by GAT and submitted by volunteers.

Enhancement of the project database started during the second year of the project. This was done by incorporating the databases from the Coastal Erosion Survey undertaken between 1993 and 1998, which assessed and recorded coastal erosion and archaeological sites under threat. This provided a comprehensive list of known archaeological sites along the entire Gwynedd and Anglesey coastline, and by using GIS software, a map showing all sites along with severity of erosion (*Fig. 2*). This proved invaluable for providing volunteers with maps on which they could see the previously identified sites and mark on any new ones they discovered.

Standard recording forms devised during the first year of the project, and simplified during the second, allowed for the easy transfer of information to the project datasets and ultimately into the HER (*See Appendix A*).

Walks undertaken by Trust archaeologists and volunteers produced sites which have given a better overview of the coastline of Gwynedd and Anglesey (*Fig. 3*). Since the beginning of the project over 200 new sites have been discovered and many known sites revisited and their state reassessed.

2.4 Additional Funding

During the third year of the project, additional funding was obtained from a number of separate sources, allowing outreach activities and fieldwork to be expanded.

A 6 month Heritage Lottery Fund IfA workplace learning bursary in education and outreach, and 12 month CBA education and outreach placement, both of which were secured by the Heritage Management department at GAT, were used to support aspects of the project.

The holder of the IfA Bursary in Education and Outreach was actively involved in the organisation and implementation of all aspects of the project. The additional time provided by the bursary made it possible to dedicate far more time to volunteers and their needs; due to this volunteer involvement increased substantially. The placement holder was also able to identify and secure additional funding from the Llŷn AONB Sustainable Development Fund as part of his training.

A CBA Community Archaeology bursary holder was pivotal to the devising and delivering of the education programme linked to the excavation at Dinas Dinllaen.

Dinas Dinllaen lies within the boundaries of the Llŷn Peninsula Area of Outstanding Natural Beauty, and is a Special Area of Conservation; parts of the site have also been designated Sites of Special Scientific Interest. An application was made to the AONB Sustainable Development Fund for additional funding to host a community project to investigate the fort's defences, giving local volunteers the opportunity to take part in fieldwork and provide local primary schools with educational visits. The grant also made it possible to purchase equipment packs which could be used by volunteers to monitor and record sites as part of the Arfordir project. Following the success of this initial phase the second phase was implemented, this time conducting geophysical and topographical survey as well as continuing to work with local schools (*See Appendix B*).

In total £13,350 was obtained from the Sustainable Development Fund, £10,350 for the first phase of the project and £3,000 for the second.

3. RESULTS

3.1 Excavations

Three excavations have taken place over the course of the project, all on sites that were directly affected by erosion, or were in imminent danger of being lost.

3.1.1 Penychain Flint Scatter (PRN 6787)

(See Appendix C)

The first, if somewhat brief, reference to flints being found at Penychain comes from 1923 when it is mentioned that flints had been found along with ox bones at the site (Hemp, 1923). The site (at SH43533531) was included in the Gwynedd Lithic Scatters Project (GAT Report 354) and re assessed by a volunteer working for the Arfordir project. The site was subsequently visited by GAT staff on numerous occasions, with newly eroding flints recovered on each visit.

It was hoped that the fieldwork would identify any buried ground surfaces present in areas where lithics had been found falling out of eroding edges (PRN 6787). To do this it was decided to excavate a number of meter square test pits close to the eroding edges and on a flat plateau that is under threat from erosion.

Five test pits were located on the plateau where a 10m² grid was laid out. A test pit was located at each corner of the grid and an additional one placed in the centre. A sixth test pit was located close to an edge which had produced a number of lithics during previous visits. Unexpectedly the sixth test pit was the deepest of all excavated and produced flint and a definite buried soil under wind-blown sand (*Plates 7 & 8*).

The results showed that there may be at least two phases of human activity at the site. Test pit 06 showed a clear ground surface containing no sand which suggests activity at the site before any sand encroachment; whereas flints in four other test pits were found in deposits containing sand showing that a degree of encroachment had occurred prior to the deposition of the flints. It is possible that some of the flints had been displaced by animal burrowing but it is unlikely that all had been moved from their original contexts. It is also worth noting that all of the possible buried ground surfaces in test pits 01, 02, 03 and 04 contain sand suggesting that the sand was present when the ground surfaces formed. This seems to indicate that there are either two episodes of initial sand encroachment or two episodes of prehistoric activity at the site. It was hoped that this could potentially be resolved by processing the samples collected to try and extract material suitable for radiocarbon dating. Two samples were collected during the excavation; one of these samples was from a possible ground surface containing sand in test pit 04 and the other from a definite ground surface containing no sand in test pit 06. Unfortunately neither of the samples contained material suitable for radiocarbon dating.

3.1.2 Morfa Abererch Standing Stone (PRN 18400)

(See Appendix D)

The standing stone (PRN 18400) was first reported to GAT in 2004 after a walker noticed the stone following a storm (SH41263576). The site was visited by George Smith of GAT shortly after who reported that the stone could be a prehistoric monument or a medieval boundary marker. No excavation took place as part of the assessment, and no work took place subsequently. The stone was visited and re-recorded by a volunteer working as part of the Arfordir project in 2010. Subsequently a visit was

made by GAT during which a possible buried soil, flint scraper and debitage were discovered in the area (*Plates 9 & 10*).

It was decided that test pits would be used to try and determine the date of the standing stone and to try and identify the extent of the buried soil so as to gain better understanding of the ancient landscape of the area.

The test pit was located immediately in front of the standing stone and was excavated to a depth of 1.1m before being abandoned due to safety concerns.

A total of 0.95m of blown sand had built up against the stone. This was contrary to what could be seen in the eroding section where there was clearly less blown-sand. It appeared that more of the stone may have been visible at when it was initially found, or that someone had excavated next to the stone around the time of its discovery, as beer cans with best before dates of November 2004 were found at a depth of around 0.4m.

A grey clay deposit was found at a depth of 1m. This layer appeared to contain frequent charcoal specks. A sample was collected for possible dating and environmental analysis. Processing of the soil samples collected showed that grains of indeterminate species were present within this deposit; however, they were not suitable for radiocarbon dating. A piece of red ochre and flint were recovered from the deposit. A similar clay deposit has been encountered during other excavations in the area and has been dated to the Roman period (G. Smith pers comm.).

The base of the stone was not identified within the test pit and neither was the cut of the hole in which the stone was erected. The full height of the stone is still unknown but it can now be said to be a minimum of 2.05m tall. The stone appeared to be fairly stable but had clearly started to slump back to the north west (*Plate 11*).

3.1.3 Dinas Dinllaen Promontory Fort Outer Defences (PRN 31927)

(See Appendix B)

The excavation at Dinas Dinllaen Promontory Fort (PRN 421) was undertaken as part of a wider community project which was partly funded through the grant obtained from the Llŷn AONB.

Erosion to the banks of the fort had been highlighted during a visit to the site by a member of GATstaff. Both the second and third banks were actively eroding; the second at its exposed western edge; and the third where it had been previously cut by a road leading to the end of the headland.

The main focus for the excavation was to investigate the outer defensive line (PRN 31927; centred on SH27454156) which comprises two banks and infilled ditches. It was decided that trenches would be excavated over both ditches in an attempt to recover datable material, either artefactual or environmental. The eroding areas of the two banks were utilised in order to provide complete sections where stratigraphy could be recorded whilst minimising additional impact (*Plate 12*).

In all four trenches were excavated.

- Trench 1 investigated the second ditch.
- Trench 2 investigated the first ditch.
- Trench 3 investigated the first bank.

- Trench 4 investigated the second bank.

The excavation was successful in identifying two phases of construction in the first bank and four in the second; the full profile of both ditches was also identified. The defences seemed to show development over a fairly long period of time with the initial establishment of the earthworks appearing to serve a more symbolic function than a defensive one. The second bank showed the clear development of the earthwork into a formidable defensive structure. In its final phase the second bank would have been approximately 9m wide and at least 1m high, with a palisade running along its crest. The first bank would have also been a formidable obstacle when coupled with both ditches, the first being 6.5m wide and 2.5m deep, and the second 5m wide and 1.4m deep. The bank itself appears to have been slightly smaller than the second at approximately 4.5m wide and 0.75m high. Anyone unfortunate enough to find themselves at the bottom of the first ditch would have had to climb around 3m up a near vertical slope to reach the top of the first bank (*Plates 13 & 14*).

As would be expected from an Iron Age site in north-west Wales very little was found in terms of datable artefacts. In order to date the features, bulk soil samples were collected from deposits likely to hold carbonised material suitable for radiocarbon dating. From the 18 samples collected only one contained material suitable for dating. The suitable material originated in the primary silting layers of the second ditch; samples have been submitted for dating and the results are pending.

As well as volunteer involvement in the fieldwork one of the main aims of the Dinas Dinllaen excavation was to engage with primary schools from the communities surrounding the site. During the planning stage of the project three local primary schools were contacted to gauge interest; all expressed an interest, one expressed a desire to arrange the term's work around the project.

The grant allowed for the provision of a bus to ferry pupils and teachers to and from the site, the planning and delivery of the activities were funded from other sources including a CBA placement at the Trust.

The visits provided the opportunity for pupils and teachers to see a working archaeological excavation, the visits were intentionally arranged towards the end of the excavation so that features could be clearly shown and explained. The activities focused around two significant periods in Porthdinllaen's history; the Iron Age and the promontory fort, and the 19th century and the proposed development of the port as a major communication link with Ireland. Activities looked at the way which Iron Age forts were built, defended and attacked, and how the footprint of a round house would have been laid out. Topographic survey techniques were used by the pupils to draw the layout of Navy huts that can be seen as earthworks at the end of the headland, and think about how the development of the port would have changed the area if it would have gone ahead in the 19th century. They also looked at a number of photographs tracking the history of the lifeboat house which is situated on the headland; looking at the way the building, boats and people's styles changed over the years.

As well as providing the pupils with the opportunity to learn about the history of the site, teachers were also provided with information that could be passed on in future. The aim of this was to extend the impact of the project beyond the current pupils, enabling the information to be passed

on through the teachers for years to come both in the classroom and during independent visits to the site.

Feedback from schools was very positive with all schools expressing an interest in further collaboration in future.

Once a second grant was secured from the Llŷn AONB Sustainable Development Fund an additional programme of activities was devised for the schools.

Thanks to local artist, Julie Williams, giving her time to the project as a volunteer it was decided that the schools would create pieces of artwork based on the history and development of the site (*Plate 04*). The artwork would take the form of a triptych on canvases; one focusing on the Iron Age fort, one on the site as it is today, and one imagining the site as it would have been if it had been developed in the 19th century.

The schools were visited a number of times over the course of three months by the Trust's outreach and education team and Julie Williams, in order to give further information about the history and development of the site and to gather ideas for the artwork. In order to give a better idea of how the area may have developed; the pupils were taken on a field trip to Holyhead port where volunteers from Holyhead Maritime Museum joined the group to share their expertise. Pupils were also given a tour of the current port by Stenna Line staff, some were even lucky enough to be given a tour of one of the company's ferries. The trip was invaluable in getting the children to think about how the relatively rural area where they live could have developed if the port had been chosen instead of Holyhead.

Julie Williams worked with the pupils in their classrooms to create the mixed media artworks, a process enjoyed by all involved; including the Trust's outreach and education team. The artwork was revealed to the public along with the preliminary results of the excavation at an event held at Nefyn and District Golf Club. It was an opportunity to bring together everyone who had been involved in the project and for parents to see their children's work. The event was also attended by representatives from the local council, Llŷn AONB, the National Trust, and local educational bodies; all of which gave positive feedback on the project.

The artwork will be given a permanent home in a National Trust building in Porthdinllaen where each canvas will be displayed on rotation.

3.2 Geophysical and Topographic Survey

The geophysical surveys were conducted using a Bartington Grad 601-2 dual Fluxgate Gradiometer. The instrument detects variations in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetised iron oxides which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil therefore contain greater amounts of iron and can therefore be detected with the gradiometer. This is a simplified description as there are other processes and materials which can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs which usually produce very high readings and can mask the relatively weak readings produced by variations in the soil. Strong readings are also produced by archaeological features such as hearths or kilns because fired clay acquires a permanent thermo-remnant magnetic field upon cooling. This material can also get spread into the soil leading to a more generalised magnetic enhancement around settlement sites.

Not all surveys can produce good results as anomalies can be masked by large magnetic variations in the bedrock or soil or high levels of natural background “noise” (interference consisting of random signals produced by material within the soil). In some cases, there may be little variation between the topsoil and subsoil resulting in undetectable features.

Volunteers were involved in surveying all three sites, although opportunities for volunteer involvement were much less than during the first phase of fieldwork (*Plate 15*).

3.2.1 Dinas Dinllaen (PRN 421)

Geophysical Survey

(See Appendix E)

Three areas were chosen for survey at Dinas Dinllaen (fig 9). Although the excavation had shown that there were a number of phases to the first and second banks it had not been possible to investigate the third bank or identify the original entrance. For this reason an area of 0.8 hectares was surveyed; taking in some of the visible defences, the areas of excavation and the likely location of the entrance. (area A). The second area (area B) was a circular earthwork resembling a hut circle (PRN 31926; SH27594166) which had originally been earmarked for trial excavation; instead a small area of 0.1 hectares was surveyed. At 1.15 hectares the largest area surveyed (area C) was in the interior of the fort; it is unlikely that excavation will ever take place here due to the immaculately manicured golf course fairways that now occupy the site.

The area of the defences and entrance were surveyed at high resolution (0.5 x 0.25m) to provide better detail in the results and to compensate for rough ground. The results in this area were useful despite, high readings produced by the bedrock that masked parts of the survey. The survey appeared to show that a palisade slot, like that identified during excavation on the second bank, was present along the crest of the third bank. Hints of a possible ditch and track could also be seen to the south of the third bank. The entrance area didn't instantly seem to show any features indicating the exact location of the gate; however, closer inspection after processing seems to show a section of palisade slot which terminates at a fairly large anomaly. In the same area other anomalies seem to show the terminus of the second ditch and first bank, possibly defining one side of the entrance.

The second area was somewhat more problematic as a cable or pipe runs through the middle of the feature. This masked any potential archaeology but the lack of anomalies of any sort at the fringes of the feature (PRN 31926) suggests that the earthwork consists of sand and is likely to be modern.

Finally, in order to try and identify any internal features a large area of 1.15 hectares was surveyed at standard resolution. Once again the underlying geology proved to be somewhat problematic, with the bedrock giving very high readings; masking any archaeology that might be present in some areas. Areas where the background readings were lower clearly showed features associated with the golf course and a number of sub circular anomalies that may be associated with settlement within the fort. Local antiquarian John Daniel stated in 1892 (ref) that a number of hut circles were visible on the headland; the sub circular anomalies could potentially relate to these features. The anomalies measured on average between 10 and 12m in diameter, consistent with other examples of Iron Age roundhouses. As the anomalies are fairly weak it is possible that they represent clay walled structures or deeply buried stone walls. It is also possible that these are

simply natural depressions which were filled in during the construction of the golf course; without excavation it is not possible to know for certain.

Topographic Survey

(See Appendix B)

In order to aid understanding of the defences a topographical survey was conducted. Previously, the only accurate plans of the site were those from Ordnance Survey maps. These do not appear to give a clear and accurate representation of the features as they appear today. A GPS rover with accuracy of 2-3cm was used to plot the main features that can be seen on the ground. The new survey will be beneficial for future work at the site and will be used in the production of material for the interpretation board which will be located at the site. The new survey data has provided a more accurate representation of the features as they appear today, and has shown that the Ordnance Survey data was not completely accurate.

3.2.2 Peat exposure (PRN 31661) and Bronze Age pit (PRN 31689), Glanllynau

Geophysical Survey

(See Appendix E)

At Glanllynau, Llanystumdwy, a volunteer taking part in the Arfordir project reported an alignment of posts in an area of exposed peat on the beach (PRN 31661) (SH46533727). When Trust staff visited the site to inspect the feature a brief assessment was made of the low eroding cliffs of glacial drift at the site. During this assessment a sherd of decorated Bronze Age pottery was found behind coastal defence boulders. Further investigation showed that the pottery was within a shallow pit which also contained worked flint and charcoal (PRN 31689, SH46423732). No other features were present in the eroding section. A fairly large amount of firecracked stone was, however, present in the topsoil, something that can be associated with prehistoric domestic activity.

The geophysical survey aimed to establish if there were further features associated with the pit seen eroding from the cliff section. The field where the pit was located was fairly level and appeared to be a suitable location for a settlement. It was also free of obstacles and an ideal location for a geophysical survey. A square area of just under 1 hectare was surveyed at standard resolution (1.0m x 0.25m).

The survey identified a number of diffuse linear anomalies that may be the remains of ploughed out or deeply buried field-banks with no obvious ditches. These do not appear on the first edition map and do not seem to be aligned with current field boundaries, suggesting that they may be fairly early features. Other anomalies could be interpreted as irregular prehistoric enclosures but are more likely to be modern features associated with the construction of the nearby railway. None of the features identified in the survey can be firmly associated with the Bronze Age pit.

Topographic Survey

The eroding edge and possible fish weir at Glanllynau were surveyed using a GPS rover. The data collected was compared with the first edition Ordnance Survey map of 1891. This showed that over 50m of land had been lost in places, making it a distinct possibility that the majority of features have already been lost.

3.2.3 Morfa Abererch standing stone (PRN 18400)

Geophysical Survey

(See Appendix E)

Following a stormy period in 2004, it was reported to the Trust that an orthostat (PRN 18400) was eroding from dunes at Morfa Abererch, near Pwllheli. As described above, a test pit was excavated against the stone in 2010 as part of the current project. This showed that the stone would have originally stood at a height of over 2m and was almost certainly a Bronze Age monument.

Excavation at the site is extremely limited due to the close proximity of the stone to the eroding cliff (approximately 2m), and the large amount of sand overlying the area in general. It was therefore decided that geophysical survey in the field behind the stone would be the best option for identifying any additional features associated with the stone.

An area of 0.5 hectares in a field to the north of the standing stone was surveyed at high resolution (0.5m x 0.25m). Unfortunately the survey did not reveal any features or buried ground surface associated with the standing stone. This was probably due to the depth of sand which covers the area being thicker than the maximum range of the instrument.

Shifting sand on the beach has revealed that there are significant peat deposits containing archaeology on the beach itself, and a buried ground surface can be seen in the eroding cliff on which the stone is situated. It is unfortunate that the current limitations of the technology available were unable to identify the extent of these features; future surveys may be more successful.

3.2.4 Dinas Dinlle (PRN 1570)

Topographic Survey

In order to assess the ongoing erosion at Dinas Dinlle hillfort (SH43705635) a new survey of the eroding edge was conducted and the results compared with data collected in previous years (*Fig. 4*).

The results show that the edge of drift cliff is certainly receding. The ongoing erosion appears to be worse in some areas than others, with the southern end of the fort appearing to be suffering the brunt of the erosion at present.

What is very worrying is slumping observed further inland, away from the steep cliffs. The slumping shows that large sections have been displaced, slumping slightly, but remain attached to the main land mass. It is not known how stable these are but their appearance seems to suggest that they could potentially become dislodged, resulting in dramatic landslides. These areas of slumping were also recorded during a survey commissioned by the National Trust in 2003, and appear to be largely unchanged.

Slight discrepancies were observed when combining the current survey with previous data, with the most recent survey showing the erosion in certain places to be less than previously recorded. This appears to be caused by a degree of distortion in an earlier plan.

3.3 Monitoring Walks and Rapid Survey

(See Appendix F for gazetteer of sites)

Areas of known active erosion were visited and assessed. Records were made of both previously known and new sites. The aim was to identify any significant sites under active threat, within the early stages of the project, so that any necessary action could be scheduled for a later date. It also allowed volunteers to be directed towards those areas of greatest concern.

First year (April 2009-March 2010)

In the initial year of this project not many new sites were discovered but the main focus was reassessing known sites that were under threat of coastal erosion. Sites undergoing active erosion were identified at Porth Neigwl and at Trefor, on the south and north Llŷn coasts. New sites were identified on the Anglesey coast, and the function of several sites was reinterpreted.

Second year (April 2010-March 2011)

The subsequent year centred on discovering new sites and additional community involvement. Small excavations and GPS surveys were conducted on known and previously undiscovered sites. During the year the volunteers were invaluable to the project. The main focus was on the excavation and recording of archaeology before the chance was lost as a result of it becoming dangerous and inaccessible or eroding away.

Third year (April 2011-March 2012)

The focal point for this year was to recognise and record new sites to enter into the Arfordir database and therefore enhance the HER.

3.3.1 Aberdesach

Aberdesach is a small village located on the north-east coast of the Llŷn Peninsula; it largely consists of 20th century buildings, most of which are now holiday homes. The village represents the gateway into the Llŷn AONB and the choughs which can be seen on its logo regularly frequent the beach. Prior to the recent construction of holiday homes the village appears to have consisted of three farms. Nearby, at Borth, stood a terrace of fishermen's cottages and two lime kilns which show that there was some industrial activity, albeit on a small scale, possibly associated with local agriculture.

The whole area is steeped in Welsh mythology, with a number of sites in the locality being mentioned in the fourth branch of the Mabinogion (Rhys, 1906).

Prehistoric

A possible prehistoric site (PRN 31621) was identified eroding from a cliff face at Aberdesach. The area was monitored in winter, with the temperature low enough to freeze seawater in rockpools. As the section was walked, coastal erosion could be seen, and heard, in action due to the freeze-thaw process. Large stones tumbled down the cliff faces and movement could be observed in sections of the cliff. This site consists of a buried soil or relict ground surface which contained some flint flakes and several possible cut features (*Plate 16*).

A burnt hammer-stone was recovered from material that had collapsed from pit (PRN 31618). This feature had suffered a recent section collapse, probably due to the frozen conditions and freeze thaw erosion which was occurring at the time of the visit. The fill still *in situ* contained a large burnt stone and charcoal inclusions. Two possible pits (PRN 31619) were identified in the same area, one appeared to be filled with a single large stone and the other with a fill of smaller stones. Another area of distinct human activity (PRN 31620) was an eroding deposit, approximately 1.5m in length, which had a high concentration of burnt stones and charcoal. Although relatively contained the deposit did not appear to be within a cut.

A single struck flint (PRN 31625) was found in a very distinct stony layer containing beach pebbles which appeared to be lying on the natural subsoil, and was overlain by a thick layer of dark topsoil.

A possible standing stone (PRN 38057) which was first identified during the original coastal project in 1993 was re-recorded and photographed by a volunteer and GAT staff. The stone had clearly been reused as gate post and now lies on the beach due to the erosion of the drift cliffs. The upper portion of the stone is tapered and appears to have been dressed to shape, whereas the lower portion is rough and sub-rounded (*Plate 17*).

Post Medieval

A lime kiln (PRN 3185) was revisited to assess condition (*Plate 18*). This appears to be stable and is sympathetically maintained by the landowner. It appears to be a fairly early kiln as it is marked as an 'Old Limekiln' on the first edition Ordnance Survey map.

Map regression (from the 1889 25 inch map onwards) shows that a terrace of fishermen's cottages (PRN 31627) once stood on the coastal edge at Borth, to the east of Aberdesach. No evidence of these can be seen today although it is said that they were still standing in the 1970s but were demolished once they became unstable due to coastal erosion.

3.3.2 Abererch

This section of coast is largely a sweeping sandy beach which stretches from Pwllheli at its western extreme to Penychain headland in the east. The Penychain headland is a rocky outcrop which is largely grassy with commanding views of the Llŷn Peninsula to the west and Cardigan Bay to the east and south. Along this sandy stretch both dunes and drift cliffs can be seen eroding, with significant archaeology under imminent threat.

Prehistoric

A section of low glacial drift cliff, approximately 40m in length, on which the Morfa Abererch standing stone (PRN 18400) is located is one of the most actively eroding areas in the bay (*Plates 9, 10 & 11*). A denticulated flint scraper and a flint waste flake (PRN 31692) were recovered from a relict ground surface which had become exposed due to the erosion of dunes on top of the cliff; this band of buried soil could also be seen in the eroding section.

During a visit to the standing stone in February 2011, following a storm; previously unidentified extensive peat deposits were found (PRN 31691) (*Plate 19*). Clear signs of human activity were present and directly associated with the peat; including burnt stones (PRN 31693), an oak post within a posthole (PRN 31694), and a possible stone axe roughout (PRN 31609). These deposits were surveyed with a handheld GPS but have not been seen since. It was clear that a substantial amount of sand had been shifted from the beach to

reveal the deposits as all of the timber posts installed to reduce the dune erosion were strewn along the shore.

Flint scatter (PRN 6787) on the Penychain headland has been visited on numerous occasions over the course of the project with eroding flints being recovered each time without fail. Small bladelets have been the most diagnostic fragments recovered, suggesting that the scatter is likely to be late Mesolithic or early Neolithic in date.

Medieval

A previously identified medieval long hut (PRN 1332) was re-recorded by a volunteer who mistook the earthwork for a roundhouse. The feature remains in the same condition as it was when first recorded. Newly identified field banks and terraces may be associated with the long hut.

WW2

The area contains many features associated with military training and home defence dating from the Second World War. To the east of Penychain, the naval training camp HMS Glendower (PRN 7248) was established to train recruits for both the admiralty and merchant navy; its most high profile recruit being Philip Mountbatten, who later became the Duke of Edinburgh. The location was selected by Billy Butlin, at the government's request, who purchased the site as a holiday camp at the end of the war.

Very little of the original camp remains as it has continued to be developed and is still a holiday camp today. Features associated with its military past can still be found on the Penychain headland itself (*See Appendix C*). The most obvious of these are two large concrete gun emplacements with iron fittings (PRN 31543), numerous other smaller gun emplacements and concrete plinths are scattered over the headland (*Plate 20*). The only surviving building associated with the gunnery training is a brick and concrete built munitions building (PRN 31527). Until recently another stood on the headland (PRN 31518); this was, however, demolished due to safety concerns. At the western end of the headland is a shooting butt (PRN 31519), this would have been used in conjunction with two firing points (PRN 31512 & PRN 31513) down on the pebble beach; a patch of vegetation similar in size to the visible concrete firing points may represent a third (PRN 31514).

Modern

Butlin's holiday camp (PRN 31505) opened at the site of HMS Glendower in 1947 with a capacity of 5000. The camp was especially popular with holidaymakers from Liverpool and it was here that a young James Paul McCartney performed on stage for the first time, giving a rendition of "Long Tall Sally", whilst on a family holiday (Frame, 1999). Ringo Starr also had a residency at the camp for two seasons in 1960 and 1961 with Rory Storm and the Hurricanes; he went on to join a band called The Beatles, of which Paul McCartney was already a member, in 1962 (Starkey, 2000).

A number of features associated with the early days of the holiday camp were recorded including the former location of a miniature railway (PRN 31542) and a cable car ride (PRN 31539) which terminated at the Penychain headland.

Although not archaeological, a note was made of modern walls and garden features eroding from Abererch Sands Caravan Park. In this area the dunes are clearly eroding as patios and breeze block walls can be seen overhanging the tops of the dunes, and building material is scattered across the area.

Unknown Period

On the Penychain a volunteer identified a feature that seems to resemble a prehistoric cist (PRN 31521). A visit by Trust staff was inconclusive in identifying the feature. As the feature was not in danger of eroding it was decided that disturbance would be avoided.

A circular earthwork (PRN 31540) was originally recorded by a volunteer as a possible roundhouse. When the site was visited by Trust staff it was noted that there was no apparent entrance visible. The bank of the earthwork was probed using a road pin and this appeared to show that the bank consisted of sand or earth. Although not certain; it is believed that the earthwork may be associated with the gunnery training that took place on the headland, and is likely to be a sandbagged emplacement.

3.3.3 Brynsiencyn

A stretch of coastline, close to the village of Brynsiencyn, on the bank of the Menai Strait was walked by a member of Trust staff, partly due to recent significant discoveries in the area. There is little doubt that this section of coastline has been a landing point for travellers from the mainland since prehistoric times; it is said that this may be where Gaius Suetonius Paulinus came ashore to campaign in Anglesey, and numerous ferries crossed the straits from here until the 1950s. There are a number of slipways, jetties and other features relating to this area's maritime history; today the area is largely used for recreational boating and fishing, although mussel and oyster beds show that some still make a living from this section of coastline.

Roman

In recent years GAT have undertaken a number of surveys and excavations at the newly discovered Roman site of Tai Cochion (PRN 28425). There are reports of Roman artefacts being found at the site since the 19th century; more recently attention was drawn to the area through the Portable Antiquities Scheme when metal detectorists started reporting their discoveries. A magnetometer survey was conducted which showed numerous buildings, enclosure ditches and a Roman road. Excavations undertaken in 2010 and 2009 confirmed the date of the features as Roman, and showed that this was a long-lived settlement with artefacts ranging in date from the late 1st to the mid 4th centuries. The discovery is unique in north-west Wales as it appears to be a civilian settlement with no evidence of military involvement or evidence that the site developed from a native settlement. The site's location on the banks of the Menai Straits, almost directly opposite Caernarfon where the Roman fort of Segontium is located, makes it likely that this was one of the crossing points used to link Anglesey with the mainland and it appears that the site is a trading settlement that flourished at the crossing.

Due to the probable maritime nature of the site, the current coastline adjacent to the site was walked. It is clear that this section of the coast is eroding and it is likely that the actual landing site for the site; whether it was a beaching area, jetty or small port, has long since been lost to erosion. The area has suffered from some erosion recently as sections of collapsed walls can be seen on the foreshore; however, at present this erosion seems to be fairly consolidated through the growth of brambles and other plants. No features or artefacts associated with the Roman site were found during monitoring.

Post medieval

There are fairly extensive post medieval sea defences in the form of walls and revetments, however most of these are in disrepair; some areas look like they may have been breached purposefully, perhaps to gain easy access to fields (*Plate 21*). The sea defence walls to the west of the Roman site appear to enclose former shingle banks and therefore indicate that there has been some land reclamation in this area. There were a number of intriguing sites recorded within some of the sea defence walls. Among some of the more interesting discoveries was a recess within revetment (PRN 31655), the function of this is not entirely clear but its appearance may suggest that it was once a gateway or outlet of some sort. One of the most aesthetically pleasing features was a round castellated tower (PRN 31658), the original entrance to which had been blocked, on the corner of a property's boundary wall (*Plate 22*). Within the same wall was a gateway to what now looks like a 'secret garden' and a boathouse (PRN 31657).

3.3.4 Caernarfon

The Royal town of Caernarfon is situated on the south bank of the Menai Strait. It has a long military history which probably starts with an Iron Age hillfort, believed to have been located in the Twthil area. This is followed by the establishment of the Roman fort of Segontium by Agricola around 78 AD, as part of the conquest of Britain. In the 11th century William the Conqueror ordered the construction of a motte-and-bailey castle in the area and finally the castle that still dominates the town to this day was built by Edward I to suppress Welsh rebellion following the English conquest in the 13th century.

Post medieval

A section of coastline on the south bank of the Menai Strait was walked from the mouth of the Seiont, opposite the castle, heading east towards the impressive medieval fish weir of Cored Gwyrfa. During the walk many friendly locals asked about the project and were keen to share little snippets of local history and of how proud they are of their town.

This stretch of coastline had general feeling of a lost maritime tradition, as with the other side of the Strait on Anglesey. Various sea defences were present on the foreshore including gabions and steel reinforced concrete cylinders, (PRN 31685) which may have also been set up as anti-tank defences during the Second World War (*Plate 23*); identical examples were found at Morfa Conwy (PRN 31725) (*Plate 35*). Identical parallels for these have not been found in literature relating to WW2 defences and they may alternatively have been originally intended as erosion defences. Two iron mooring rings were discovered at separate parts of the foreshore, the first (PRN 31674) was spotted in a boulder not far from the castle. The second (PRN 31684) was set into a boulder which formed sea defences on the edge of the road that runs along the coast.

There were a number of concrete steps and slipways leading down to the foreshore from the road. These are all quite modern and seem to be used for access to the Straits for recreational purposes rather than for commercial reasons.

Wooden bridge staging (PRN 31673) was recorded. This was located in the river Seiont which enters the Strait at the base of the castle. The current pedestrian swing bridge (PRN 18431), which is an electric powered concrete and steel structure which is supported on wooden staging, was built in 1970 after the original bridge which opened in 1900 was demolished.

The Cored Gwyrfa fish weir (PRN 14601, CN334) was also revisited and this was where this stretch of the walk ended. It is a massive fish trap and can be clearly seen on aerial photographs, although it was more difficult to see from the ground as it is so vast. It was visited during low water and is located on the end of a natural shingle bank that spurs out into the Straits where a long wall can be seen. A jetty was also recorded on the shingle spur (PRN 38065) which is made up of red bricks, concrete, metal bars and some wooden posts.

3.3.5 Cemlyn Bay

Cemlyn Bay, on the north-west coast of Anglesey is a rocky cove where a shingle bar has resulted in a tidal lagoon being cut off from the sea. The bay is located about 1km west of Wylfa nuclear power station and is the location of a 19th century tidal powered corn mill. In 1748 the early Welsh hydrographer Lewis Morris charted the area, showing the locations of two forts, one at each end of the shingle bar. No evidence of these forts can be seen on the ground today, although the western fort may be obscured by later buildings which once would have held coal and cargo for the ships that moored in the bay.

Prehistoric

Flint scatters were recorded at Cemlyn Bay where the top of the high cliff was very exposed to the sea (*Plate 24*). Field boundary walls and some revetment, on the cliff edges, had mostly collapsed and not been rebuilt, or had possibly been taken down intentionally in places. This exposed the eroding edges to trampling by livestock which has increased the erosion threat. Flint scatters were found along the south-western side of the Bay (PRN 31584, 31928, 31929), with others on the peninsula to the north-east of the Bay (PRN 31930, 31931). The flints are yet to be firmly dated. They are on small flint pebbles and there is nothing to securely suggest a Mesolithic dated despite their coastal location.

Post medieval

A dry stone wall or revetment (PRN 31585) was located on the edge of a small pebble beach. This was probably a post medieval field boundary to stop livestock wandering over the cliff edge. A badly eroded or partially demolished field boundary wall was also recorded (PRN 31587); it survives to about 5 courses high in some places. Also along the top of the cliff heading east towards Wylfa was a natural spring (PRN 31589) which appeared to have some structure which may have formed a pool. It is now silted and overgrown.

A collection of sites and features possibly relating to one another, although possibly showing two phases to the maritime history of the area, were recorded.

It is likely that the possible small quay (PRN 31593), which is of concrete construction with slate footings, is associated with the first lifeboat to be established on Anglesey. A lifeboat was present in Cemlyn Bay sporadically from 1828 to 1918 when it was finally closed.

It is likely that a stone built and partially mortared 'quay' (PRN 31594), is associated with the general maritime history of the bay, providing safe mooring for the ships that transported cargo in and out of the area (*Plate 25*). The exact date of the structure is unknown as it does not appear on either Lewis Morris' chart of 1748 or the 1st edition Ordnance Survey map. Morris does however show that there was safe anchorage in the area.

A number of other maritime sites in the vicinity included: Ironwork set into rock (PRN 31592), probably making up part of some crude moorings, an iron mooring ring (PRN 31595), a large iron chain (PRN 31596); each link measured approximately 0.2x0.15m and up to 6m of the chain was visible. The chain was only seen at low tide, it is possible that the majority of the chain was buried.

Unknown period

There were a number of sites identified for which a period was not able to be given without further investigation. These sites included a small shelter (PRN 31586) which consisted of a recess in the rocky cliff with a 'floor' of very roughly paved rounded stones. It was difficult to assign it to a period; it may be old but has had continuous use up to the present.

A possible clearance cairn (PRN 31591) which was covered in gorse and brambles is likely to be the result of the landowner improving the land for pasture. This is most likely to be a modern feature, however, some modern clearance cairns are placed on earlier examples.

A low earthwork (PRN 31588) which may be the remains of a rectangular/oval building was recorded on a relatively flat plateau overlooking the sea. Other lumps and bumps visible nearby may be associated with the earthwork. Again with this feature, period identification was difficult without further investigation. There is no record of any building on any OS maps. The same is true of a possible bank (PRN 31590), which may be part of a larger buried structure.

3.3.6 Criccieth

The very prominent 13th Century Welsh castle at Criccieth is situated on a headland that overlooks two beaches and the seaside town of Criccieth itself. This medieval town and castle saw the last major Welsh rebellion against the English in the 15th century. The coming of the Cambrian Railway in 1867 allowed an influx of visitors; which saw it become a popular tourist resort. Apart from the rocky promontory on which the castle is situated, the boulder clay and till of this part of the coastline is weak and unconsolidated and is very easily eroded. A promenade protects the town itself from erosion and boulders and gabions have been installed to reduce the erosion in exposed areas.

Prehistoric

Criccieth has been visited a number of times by both volunteers and Trust staff over the 3 years of the project. There are large areas of cliff slippage and chunks of the cliff edge can be found broken off and lying on the beach. Criccieth has yielded possible flint scatters, pits and cists, over the course of the project these features were visited on several occasions in order to gauge erosion.

Stone lined pits 1,2 and 3, (PRN 31554, PRN 31556 and PRN 31557) were recorded in August 2011 and revisited in 2012, after there had been freezing conditions, to see how the freeze thaw action had affected them (*Plate 26*). On inspection in there was no obvious erosion, as no stones had fallen out of the fill of the features. Although this is positive news, it also known that large sections of the coast can give way at any time, especially after large storms. All of these pits or cists are located approximately 350m from the Caer Dyni burial chamber which would have overlooked the location; if these are prehistoric features they would have been located on a relatively flat plateau. This is now the location of a pitch and putt golf course, overlooking the sea.

In two areas large stones (PRN 31614 and PRN 31615) were seen protruding out of the eroding section. These were set in a light grey clay with flecks of charcoal, flint debris was also present

around PRN 31615. The function of both of these features is not apparent but the presence of flint does suggest that they may be prehistoric.

Post medieval

Although there have been no medieval features or finds identified by walking in Criccieth there have been an abundant amount of post medieval sites recorded. They include 7 clawdd boundaries eroding from the cliff face with at least two, (PRN 31561 and PRN 31564), being at a high risk of being lost very soon (*Plate 27*). There have been a number of groynes recorded by a volunteer who was interested in their development after noticing examples in early photographs. The same volunteer also found early photographs of a small quay at the mouth of the Dwyfor which had previously been re-assessed as part of the project (*Plates 28 & 29*).

3.3.7 Dinas Dinlle

This west-facing beach offers views of a beautiful landscape along the Llyn Peninsula, including the Rival Mountains, to the south west and Ynys Llanddwyn on Anglesey to the north. The Iron Age hillfort that gives its name to this is mentioned in the fourth branch of the Mabinogion and legend says that it was once home to Lleu Llaw Gyffes. The rapid erosion of the hillfort has been well documented. There seems to be other prehistoric activity in the area, both eroding out of the cliff face and being revealed at low tide.

Prehistoric

Dinas Dinlle hillfort (PRN 1570, CN048) is a roughly oval defended enclosure, set on the summit of a drumlin. It measures about 150.0m north-south by 110.0m and is defined by double ramparts with an intermediate ditch; there is an entrance in the south east. The enclosure has suffered considerable coastal erosion on the west side and from the beach below and the original ground surface beneath the Iron Age ramparts along with other details are clearly visible in the eroded cross-section. Within the eastern part of the interior are traces of circular or rectangular structures or enclosures, one being a possible sepulchral mound or alternatively a Roman pharos or lighthouse.

To the west of the fort a buried soil deposit (PRN 31577) which contained a number flint flakes was encountered (*Plate 30*). Burnt stone and charcoal were also present within this possible relict soil layer, possibly indicating the presence of a prehistoric site which pre-dates the Iron Age fort. Nearby a small area of peat (PRN 31579) could be seen at low tide. This contained wood and twig fragments as well as bark and reeds. It was likely to part of a prehistoric submerged forest, no archaeological artefacts could be seen in the deposit.

Post medieval

A possible man made bank (PRN 31580) that runs along the edge of the beach, west of the hillfort may have been constructed to protect farmland from ingress by the sea. It consists of pebbles and could potentially be a natural feature, although it appears to have been reinforced in places.

WW2

The seagull trench (SAM CN396, PRN 25280) which is a modern WW2 defensive structure, is a Scheduled Ancient Monument. It was noted that access had been gained to the interior by vandals by digging at the back of the structure. The trench now has rubbish, graffiti, and evidence of fires being set within it.

A stone and concrete-built pillbox (PRN 31581) (recorded on the NMR as NPRN 270423), was recorded on the beach (*Plate 31*). The pillbox now appears to be used as an outbuilding for a former hotel which now operates as a café during the tourist season. It has small square windows in the wall faces and openings which appear to be drainage pipes at its corners, probably for providing visibility in potential blind spots and a wider range of fire. This pillbox is not very far from the seagull trench.

Unknown period

A possible cut feature (PRN 31565) visible in section to the west of the hillfort, has a dark orangey brown fill, no other distinctive features. This could be an animal burrow or potentially a prehistoric pit.

3.3.8 Dyffryn Ardudwy

Dyffryn Ardudwy is a small village located on the thin coastal strip between Harlech and Barmouth. The village is virtually merged with the nearby village of Tal y Bont and with the construction of houses along the road that joins them it is difficult to distinguish where one ends and the other begins. The area is home to one of the best preserved prehistoric landscapes in Wales and has a high concentration of Neolithic funerary monuments including chambered cairns and portal dolmens, one of which can be seen in the village itself.

In the 16th century the Cors y Gedol estate was founded, this continued to be developed up until the 19th century and has shaped much of the surrounding landscape.

With the outbreak of the Second World War there was intensive training in the area, mostly associated with the airfield at Llanbedr, to the north. At this time the coastline at Dyffryn Ardudwy and Tal y Bont was largely used for air to ground gunnery training by both the RAF and USAF. Targets would have been set up on the beach and on floating rafts offshore, and shot by fighter aircraft such as Spitfires, Hurricanes and American P-38s.

This stretch of coastline is very popular with metal detectorists, many of whom are visitors who stay in the numerous caravan parks located along the beach. It is probable that the majority only find ammunition cases and shrapnel associated with the wartime activity but some have recently found more historically important artefacts. The area is known to have extensive peat deposits that have produced red deer antler so, although relatively rare, it is no real surprise that a Bronze Age spearhead (PRN 24728) was found in the area. What is slightly more unusual is the recent discovery of well preserved Roman artefacts on the beach, including a silver denarius of the Emperor Hadrian, a disc wheel brooch and dolphin brooch, PAS ID 454072, 454063, 454056 respectively. It is not known whether these are casual losses deposited at the location in the Roman period or whether there is a Roman era wreck in the vicinity from which the items have been recently displaced. All of the items were recorded by the Trust through the Portable Antiquities Scheme.

Other features previously recorded in the area include a medieval timber trackway (PRN 7294) which is believed to be associated with the exporting of quarried stone from the area. Unfortunately during the visits made by Trust staff this feature was not visible and metal detectorists working in the area never remembered it being visible.

WW2

The only feature identified in this area was a building associated with the Second World War firing range. Initially the feature (PRN 31666) was thought to be a pillbox; however, closer inspection

seems to suggest that this was probably an observation point from which the training could be watched safely. The windows in the feature allow a person inside to see along the beach but the range of fire would be very narrow and ineffective.

A range of empty ammunition cases from this area was given to the project by a metal detectorist, these range in size from 20mm cannon rounds to 9mm and .38 pistol rounds, showing that as well as the air to ground training, some small arms firing also took place at the site.

3.3.9 Glanllynau

This section of coastline is located between the estuaries of the Dwyfor to the east and Afon Wen to the west. The area was first brought to the attention of the Trust by a volunteer who had been metal detecting on the beach. Map regression shows that up to 50m of land has been lost in the area since the 1st edition Ordnance Survey map was published in 1891 (*Fig. 8*). Boulder coastal defences have been installed along part of the coastline to protect a cottage, but the erosion continues at an alarming pace in other areas.

The Trust volunteer who had been metal detecting in the area reported that areas of peat (PRN 31661) were visible during low tide. He also reported a number of wooden stakes protruding from the peat forming a straight line which were likely to be part of a fish trap (PRN 31690). The site was initially visited by an archaeologist to confirm the discovery and to conduct a handheld GPS survey of the feature and peat deposit.

Within the peat was a fair amount of preserved organic material including branches of birch, coniferous bark, reeds and hazelnuts showing that the area was once likely to be covered in mixed woodland.

Prehistoric

During the visit to survey the peat and fish trap a short section of the coastline was walked as the edge was clearly eroding quickly. Blocks of topsoil and clay could be seen falling from the edge every few minutes. The walk resulted in the discovery of a sherd of decorated Bronze Age pottery which was exposed in the eroding edge, behind coastal defence boulders. Further investigation showed that the pot was within the fill of a shallow pit (PRN 31689) which also contained a flint bladelet, retouched flake, charcoal flecks and heat affected stone (*Fig. 5 & Plate 32*). Further heat affected stone was found throughout the topsoil in the general area of the pit, which along with two flint flakes suggests that there may have been fairly intensive prehistoric activity in the area.

Geophysical survey in the area where the pit was located did not reveal any associated features (see above).

Unknown Period

The stakes or posts (PRN 31690) within the peat appeared to be fairly small in circumference at first glance, however upon further investigation it appeared that they would have originally been larger. Within the peat the circumference of the majority of the posts was larger than expected; this appeared to have been caused by the erosion or decay of the sapwood above the line of the peat leaving only the heartwood visible. The posts, of which there were at least 43, could be seen forming a line approximately 31m in length orientated north-west to south-east at an angle from the shore (*Fig. 8 & Plate 33*). This would be consistent with a fish trap or weir designed to trap fish as the tide retreated which in this area would occur from the west to the east. If this is the case the

visible post alignment which forms the inner arm would stretch to the low water mark and an outer arm would extend towards the west forming an apex in which the fish would be trapped. The only concern with this interpretation is that the inner arm extends further than expected towards the shore and appears to be at a fairly extreme angle, although this may have changed closer to the low water mark.

It is possible that the fish trap is much earlier than other examples found in Gwynedd which are generally medieval and post medieval in date. It appears that the estuary of the Dwyfor may have once been located around the area where the fish trap was discovered. If this is the case then the trap would have been located at the mouth of the river or within the river channel and may have been used to catch salmon as they swam to sea. It would be desirable to collect samples of the posts for radiocarbon dating and potentially dendrochronological dating which would enable us to make a more educated interpretation of the feature and help formulate a strategy for future work in the area.

3.3.10 Morfa Conwy

Morfa Conwy lies at the mouth of the Conwy estuary and is an area that is popular with both locals and tourists during the summer months. At low tide the beach is a vast expanse of sand, beyond which the Great Orme can be seen overlooking the seaside town of Llandudno. Mussel beds at the water's edge show that this was, at one time, a working coastline, something that has largely been overtaken by recreational use.

During the Second World War Morfa Conwy saw the construction of Mulberry Harbour prototypes. These were floating harbours that were essential in the allied invasion of Europe, playing a pivotal role in the success of the D-Day landings. Local civil engineer Hugh Iorlys Hughes was given the task of testing the prototypes, one of which he had been involved in the designing of, at Morfa Conwy (Hughes, 2001).

Prehistoric

The area was visited due to a report of possible auroch and child footprints (PRN 31550) in an area of exposed clay.

Upon investigation it appeared that the footprints that were previously visible had become re-covered by sand. Another area of clay was exposed but very few features that could be interpreted as footprints could be seen (*Plate 34*). One possible footprint was identified, cleaned and photographed; this however appeared to be that of a horse, possibly associated with the mussel beds in the area. As there appeared to be only one visible, this interpretation is not secure.

A fair amount of preserved wood and bark was evident in the clay. Some sections of wood were quite large, measuring approximately 2m in length, none of those inspected closely showed any evidence of tool marks.

WW2

Some previously unrecorded WW2 features were found in the area.

Possible anti tank columns (PRN 31725) were seen at the base of the sand dunes (*Plate 35*). These measured 0.57m in diameter and were at least 0.97m high. The top of the columns had a central circular hole and a cross had been incorporated into the design of the cast. These columns now appear to form part of the coastal defences, presumably to slow down the erosion of the dunes.

Although these appear to be of the right dimensions to have functioned as anti tank defences it can not be ruled out that they may simply be columns created for the erosion defences.

Two concrete structures were also noted on top of the dunes. At first the function of these was unclear but these are clearly marked on OS maps as disused rifle butts. The first of these structures (PRN 31551) was constructed of cast concrete and is typical of WW2 military features. In plan the feature is L shaped, open towards the sea to the north-west. It has a straight back wall and a stepped (again L shaped, but in elevation) wall to the north-east. The footprint of the structure measured 6.03m x 3.43m with the back wall standing to a height of 2.2m.

The second (PRN 31552) was located to the south-west and was basically a mirror image of the first although slightly smaller; measuring 5.76m x 2.32m. It stood slightly higher than the first at a height of approximately 2.5m.

Map regression shows that there were targets located close to these features in the area now occupied by the golf course. These are likely to have been associated with a camp for volunteers, presumably local militia.

3.3.11 Nant Gwrtheyrn

Nant Gwrtheyrn is a steep sided valley located on the north coast of the Llŷn Peninsula, around 2km north-west of Llithfaen. Nant Gwrtheyrn itself plays a very important role in the folklore of post-Roman Wales. The name Gwrtheyrn, Vortigern in English, is thought to derive from *gor* meaning super and *teyrn* meaning 'king', suggesting associations with local elites who gained power after the collapse of Roman authority (Evans & Davidson, 2007). Vortigern is said to have been a 5th century Kentish prince who was forced into exile after inviting Saxon mercenaries to settle in Kent; it is said that a barrow in the valley (PRN 624) is his final resting place. The valley is now home to the Nant Gwrtheyrn Welsh Language Centre which was established in the 1978 and was previously a quarrying community. Numerous granite quarries were located around the village including Porth y Nant, Cae'r Nant and Carreg y Llam; the features associated with these are abundant in the area, standing testament to this once thriving industry.

The shingle and sand bay where Nant Gwrtheyrn is located was walked from Trwyn y Gorlech in the north to Carreg y Llam in the south.

Post Medieval

The majority of visible features in this area are associated with the 19th and 20th century quarry workings. The eastern end of the bay was the location of the Carreg y Llam quarry (PRN 25786); the end of this headland now looks like a lunar landscape, with a barren open area strewn with crushed granite. Around the headland there are features that are clearly associated with the quarrying operations, including the remains of a small quay (PRN 31669) and the remains of footings for a pier, (PRN 31667), that are shown on the 1st edition Ordnance Survey map of 1889.

The Porth y Nant quarry was located towards fairly close to the village of Nant Gwrtheyrn itself; it is features associated with this quarry that are most abundant in the area (*Plate 36*). Buildings associated with the quarry can be seen high above the village with the storage bins for crushed stone and pier footings, (PRN 31671). Pieces of broken quarry machinery, (PRN 31670), were also found on the beach. These appeared to be incline trucks, although their poor condition did not aid positive identification.

At the northern end of the beach are the remains of the Cae'r Nant quarry. Here large reinforced concrete storage bins, (PRN 31672), some still containing crushed stone, are the main visible features. The bins themselves are slowly degrading, with some of the walls starting to ominously 'spread' outwards; presumably as the concrete decays (*Plate 37*). On the beach itself the remains of a third pier can be seen, although most of the footings are no longer present.

Most of the features identified in this area are associated with the later life of the quarries when crushed granite for road building was the main export. Prior to this the quarries would have exported granite setts which were shaped by skilled workers on site, a single sett was seen on the beach in the Porth y Nant area.

Unknown Period

In an area that was not easily accessible a number of stone walls forming small enclosures were noticed and photographed (PRN 31696). These areas were later checked on aerial photographs, on which they are clearly visible. It is not known when these date from but their nature seems to suggest that they predate the large scale quarrying. Some of the features are included on the 1st edition Ordnance Survey map but others are not, possibly suggesting that they were already in a poor state of repair when the maps were compiled.

3.3.12 Porth Neigwl

Porth Neigwl is a dynamic stretch of coast which is a regular haunt for surfers. It has the English name of Hell's Mouth; this conjures vivid images of this dramatic piece of coastline that is known for its rough seas and stormy weather, which has wrecked many a ship. This stretch of the coast line has been visited during each year of the coastal project and there has been a noticeable amount of erosion from the dunes and the cliff faces.

Coastal survey was carried out along the sweep of the long alluvial Port Neigwl, where the tall cliffs were known to be eroding badly. A burnt mound was excavated recently here because of erosion. In the vicinity of this site the cliffs are of much more modest height. The most abundant remains in this section of the coast date from the modern period, although the evidence for prehistoric activity is also of great significance. Over several years, David Chapman an archaeologist of the Ancient Arts Company, Llandudno, visited the beach at Porth Neigwl and found a number of pieces of worked flint and stone, including a scraper, a retouching tool and re-worked stone axe. These objects were eroding out of the clay and sand cliffs, at the upper part of which is a buried old land surface.

Prehistoric

Prehistoric features were reported at Porth Neigwl in previous years. A Bronze Age burnt mound (PRN 29933) was found to be eroding out of the section with the remains of a wooden trough being found to be at immediate risk of erosion (*Plate 38*). Cadw therefore provided funding for a rescue excavation in November 2008. Since then a possible prehistoric pit (PRN 35030) was located close to the burnt mound during the first year of this project. Although the newly identified features in this area do not appear to have been severely affected since they were first identified, the area of the excavation which was re-instated is eroding badly.

A flint scatter (PRN 31604) was seen eroding out of the cliff sections and was recorded by Trust archaeologists. It was located away from the burnt mound and was probably not associated with it. There was also a possible pit (PRN 31599) with a pebble fill which was dug into natural but no

cut was visible in the overlying soils, suggesting it may be very early. A second pit (PRN 31600) was less convincing, due to there only being a clear edge on one side. The other side was diffuse possibly suggesting that it was a natural feature. However 19 flints were found near the pit. A concentration of burnt stone (PRN 31601) was also recorded and thought to be possible evidence of prehistoric activity.

WW2

During WW2 Porth Neigwl, or RAF Hell's Mouth (PRN 29445) was a grass airfield and military training camp. It was commissioned in 1937 and decommissioned in 1945 and its use only lasted to the end of the war. Over the course of the project a notable amount of WW2 structures and debris from the camp was identified and recorded.

A reinforced trapezoid concrete military structure (PRN 31501) is one of the most obvious features. This structure formed part of an experimental firing range for the training of aeroplane tail gunners, forming a backstop for stray bullets (*Plate 39*). Blast holes are seen in the northern elevation. A polygonal brick pillbox described in the original coastal survey no longer remains except for building debris on the beach. It was noticed during the third year of the project that the sand dunes in this area have started to shift, exposing wires and debris that are likely to be associated with the firing range. There is also evidence of continuing vandalism in the form of graffiti and fire setting.

Rusted metal wires (PRN 31598) were found eroding from dunes. They were probably associated with gunnery training system or other activity at RAF Hell's Mouth. A concrete plinth with red brickwork (PRN 31603) which had clearly formed some sort of circular structure, was found below the high water mark. These had not been visible during previous visits and are likely to have been part of a small gun emplacement or pillbox.

3.3.13 Porth Namarch Granite Quarry, Holyhead

A new site was reported to the Trust by a member of the public following a talk about the Arfordir project. This was a quarry (PRN 31699) on the north side of Holyhead Mountain some 400m south-east of North Stack and alongside a deeply indented steep sided gully. A levelled area is terraced into the slope above the gully and above the coast edge, and supported on the lower, seaward, edge by a high stone revetment wall some 2m high and 30m long (*Plate 40*). The wall is not visible from the landward side, but is clearly visible from out at sea. Within the terraced area are two small masonry towers 1.2m high and 2m square. Alongside one is a circular stone 1.45m in diameter, 0.38m thick with a square central hole 0.32m across. From its dimensions and appearance it may have been used, on edge, to crush stone. Piles of crushed granite lie close by. The site is best interpreted as a small stone quarry producing road-stone, and was probably operational in the early 20th century.

3.3.14 Porthdinllaen

Porthdinllaen is located close to the town of Nefyn, on a relatively level plateau that has the sea to the west and the steep slopes of Mynydd Nefyn and Garn Boduan to the east. At the coast edge the long crescent bays of Nefyn and Dinllaen are each ended by promontories of hard rock; Penrhyn Nefyn and Trwyn Porth Dinllaen. The promontories protected the bays from the worst of the prevailing winds, and harbours of regional significance with localised shipbuilding industries developed in the lee of each, though neither developed any major infra-structure.

Prehistoric

Dinas Dinllaen promontory fort (PRN 421) which is located on a functioning golf course, was the location of the largest excavation undertaken during the project, funded in part by grant secured from the Llŷn AONB. The site consists of three banks and two ditches which enclose an area of about 14 acres. The defences of the fort have been mutilated in the past by the construction of the golf course. Excavation and subsequent geophysical survey showed that the defences were developed in multiple phases and the two inner banks would have been topped by timber palisades. Dinllaen is the ancient name of the fort, a form which is derived from that of the commote in which it stands.

Medieval

Carreg Oysters Fish Trap (PRN 14614) may possibly medieval, or perhaps a natural feature. Carreg Oysters is a large outcrop forming a small island off Porth Dinllaen. A bank of sand land joins this to the beach. This appears to be natural but could be artificial. There is however no conclusive reason to believe that it is a fish trap, although it has been interpreted as such.

Modern

A lifeboat house and Slipway, (PRN 29834), was originally built in 1864, however most of the surviving material dates from a substantial rebuild of the station in 1925 to 1926 (*Plate 41*). It is a rectangular building with a cross gable, built of granite from Trefor quarry. It has undergone a number of phases of significant redevelopment and alterations, the most recent being in 1993. A modern watchtower (PRN 31721), built on the Porthdinllaen headland was noted. The footprint of an earlier watchtower (PRN 31722) survives on Nefyn Golf Course, it used to provide early warning to the lifeboat station of ships in trouble at sea

A substantial breakwater (PRN 29835) was recorded which is situated approximately 50m north of the lifeboat station, and was built to protect it between 1918 and 1927. It is constructed of irregular coursed shale blocks, approximately 1m high, capped with concrete, adding an additional 1.2m to its height. It has a substantial batter on its northern side. At approximately 3.3m from the low water mark, it incorporates a fragment of walling that formed part of an early 19th century pier towards its seaward end.

Possible Shipbuilding features (PRN 16610) were recorded comprising a straight, double linear feature over 100m long lying parallel to the shore at around the mean low water mark in the bay. There was a large fishing and boat-building industry here, and there are boat sheds on the nearby promontory and a former customs house. The parallel track nature of this feature suggests it might have been a slipway but on the other hand it does not run into deeper water and seems to be too far out to connect to the land. It may possibly have been some kind of mooring device.

A former pier or slipway was located (PRN 29837). It consists of a double line of stones extending eastwards into the bay. It is visible on the aerial photographs examined dating back to 1945 and is located on the 2nd edition Ordnance Survey map of 1900 but not the first edition of 1889. A pier can be seen at this location on the tithe map of 1841, and on the earlier Glynllifon estate map, where it is referred to as the 'old pier'. There is a building located on the foreshore on the tithe and subsequent maps that was probably formerly a warehouse. It is likely that the origins of this pier date to the early 19th century and it was constructed by the Porthdinllaen Harbour Company.

3.3.15 Rhosneigr – Cable bay

This area was specifically walked due to the level of erosion recorded by the original coastal survey.

Traeth Lydan is a sweeping sandy bay that extends south from the village of Rhosneigr, at its southern end is a rocky promontory with two relatively low hills. Both of these hills have burial mounds at their peaks, the largest of which is the reconstructed cruciform tomb of Barclodiad y Gawres (PRN 3032, AN 032). Beyond the promontory lies Porth Trecastell, or Cable Bay as it is known in English. The Welsh name refers to a possible promontory fort that is located on the rocky cliffs at the southern end of the bay, the English name refers to the transatlantic communication cables that came ashore here (*Plate 42*).

Prehistoric

Within an eroding section on the sandy beach a dark, fairly organic band could be seen. This was presumably a buried ground surface from which a piece of flint debitage (PRN 31545) was recovered. Further south of this point there did not seem to be any evidence of buried surfaces and no archaeological features could be seen.

The cairn (PRN 3038, AN 149) to the north of Barclodiad y Gawres was briefly investigated. It appeared to be stable and showed no sign of recent erosion or vandalism, the remains of a possible cist could be seen in the centre of the feature.

Modern

To the west of the Trecastell promontory there is a brick built disused pumphouse (PRN 31548). This has a doorway facing north-east and a pipe exiting through the south-west facing wall. The roof of the structure is reinforced cast concrete which is corrugated on the interior of the building.

Unknown Period

A stone was found in the small bay that lies to the north, below Barclodiad y Gawres which appears to have been carved with possible lettering (PRN 31546). The three characters are not very clear and may not actually be letters. They do not appear to be prehistoric and the narrowness of the lines suggests that they were carved with iron or steel tools. The letters may be illegible due to the rough nature of the carving and may simply be initials. There is nothing to suggest a date although they are likely to be post medieval; possibly mid-20th century.

The main known feature which was investigated was the possible promontory fort at Trecastell (PRN 3037). The coastal path now runs through the area where defences would be expected and although there is a depression where the path is located it is not overly convincing as a defensive ditch. Within the interior, or on the headland, there are clearly a number of earthworks that may be buildings. It is unclear what date these may be, as buildings associated with the Atlantic Telegraph cable once stood at the site. Some modern rubbish was seen eroding out of a section on the western side of the promontory.

Revetment could be seen either side of the 'path' leading into the promontory. Similar revetment can also be seen on the eastern edge of the promontory, this does not appear to be a recent modification although it could easily be post-medieval. All in all, the interpretation of the promontory as actually being a fort is a little dubious although earlier features may simply be obscured by more recent activity.

Two orthostats can be seen to the east of the promontory (PRN 31547). The function of these is unclear but they are too close together to be a doorway or gate. Their location close to the path suggests that they are simply markers.

3.3.16 Traeth Coch

Traeth Coch, or Red Wharf Bay, is located on the east coast of Anglesey between Penmon and Benllech. A Viking period settlement, found close to the bay at the village of Llanbedrgoch, suggests that there would have been a landing point or harbour close to the present village of Red Wharf Bay. At the eastern end of the bay is the Llanddona fish weir (PRN 7204, AN 137) which is a scheduled ancient monument and is post-medieval in date.

In recent history the bay was the location at which the Land Rover was first conceived by Rover's chief designer Maurice Wilks, who owned a farm in the area. Prototypes were tested on the beach in 1947 before the first 50 pre-production vehicles were sold in 1948; over 2 million have been sold since.

WW2

At the eastern end of the bay, on cliffs above the Llanddona fish weir is a cottage called Godreddi Bach. During the war this was the site of an elaborate gun emplacement (PRN 31502) which overlooked the bay (*Plate 43*). The concrete structure was fitted with a false roof and painted white to resemble a cottage, thus hiding its true function from potential invaders. The structure is now used as a shed and has been slightly modified. Associated concrete platforms nearby are also presumably associated with the site's use during the war.

3.3.17 Traeth Lafan

Traeth Lafan, or Lafan Sands, is a large expanse of intertidal sand and mud banks at the eastern end of the Menai Straits between Bangor and Llanfairfechan. It is believed that the battle of Moel y Don took place here in 1282; fought between Llywelyn ap Gruffudd, prince of Gwynedd, and Luke de Tany who had captured Anglesey in the name of Edward I. The battle resulted in an overwhelming victory for the Welsh, with many of the English, including de Tany, perishing in the straits (Smith, 1998).

Today the area is home to a nature reserve which is very popular with bird watchers. To the west, on the Bangor flats, is the large Ogwen fish weir, large scale fishing is no longer undertaken in the area but cockling has recently become popular due to the closure of other beds in the north-west of England.

Post Medieval

A possible field boundary and midden (PRN 31688) were spotted close to the mouth of the Ogwen. A piece of glazed pottery was found within the midden material suggesting that it probably dated from the 18th or 19th century. Another midden (PRN 31723) was identified in an area close to the former location of a cottage marked on the 1st edition Ordnance Survey map. This contained a lot of cockle shells and was probably directly related to the cottage.

3.3.18 Trefor

Trefor is a coastal village on the north coast of the Llŷn Peninsula at the base of the Rival Mountains. In the 19th and early 20th centuries the small harbour and piers would have been busy, exporting granite quarried from the surrounding hills.

Prehistoric

An early Neolithic flint spread site (PRN 1477) was located at 10-20m OD, on the end of a cliff-edge promontory overlooking the mouth of a small valley. This site was discovered about ten years ago as a result of a casual find from a coastal footpath. It was then visited as part of the coastal project in 1993 when the site was identified as being of high potential and further evaluation was recommended. The site has produced the largest purely surface-collected flint assemblage in north-west Wales and several further collections have been made by different visitors.

The lack of microlithic material suggests that this may be a site of earlier Neolithic date and can be compared to the coastal flint industries of south-west Scotland. The high proportion of waste to retouched pieces suggests that main object of manufacture was just simple flakes. These could have been utilised without further working. The lack of signs of utilisation suggests that this was a kind of 'factory' site, producing flakes for use elsewhere. This is supported by the location of the working area on an exposed cliff spur that is unsuitable for actual settlement. This can be compared to several other coastal lithic sites in north-west Wales, particularly those around the cliffs of southern Llŷn. The quantity of lithic pieces present shows that there must have been a good source of raw material close by. This could have come from the beach or from *in situ* drift deposits. Observation suggests that flint pebbles are rare on the beaches around here although it is possible that more beach material may have been available during a period of lower sea level. Occasional concentrations of flint pebbles can be found in the glacial drift and it seems likely that there was a substantial deposit of this type close by although no such deposit has been located. It could have been removed by coastal erosion as sea levels rose or have been masked by 19th century quarrying operations.

The finds have come from the sloping end of a grassed-over rocky ridge that lies parallel to the sheer cliff edge here. The end of the ridge overlooks a small, shallow valley that has been partly infilled with rubble to provide a storage area for granite that was brought from the nearby quarry before being loaded on ships at the 'new' pier to the east of the valley. At an earlier and smaller-scale phase of quarrying the stone was brought down on a tramway closer to the flint site and loaded onto smaller ships from a small pier at the west of the valley. The finds have come from three places within a small area: first from the rocky surface of the cliff edge, second from eroding colluvium at the foot of the slope and third, from eroding colluvium in the exposed section of an old mining trial level. The finds occur in a quite steeply sloping layer of colluvium and are oriented at different angles, showing that the material must have derived from a working area further upslope where there is a slightly more level area that is likely to have been used.

Post Medieval

At the north side of the ridge where the flints were found were the remains of a narrow stone wall alongside the cliff edge, and parallel to it, to the south, an earthen bank. The area between was slightly terraced and was probably a trackway leading to other mining levels further west along the ridge (PRN 31724).

3.3.19 Tywyn, Merionydd

The older, central part of Tywyn town lies upon a low promontory that is raised above the coastal plain. Newer parts of the town extend onto the lower-lying land where they are at risk from flooding. The lower land is also crossed by a main railway line that runs across the coastal plain and along the coast-edge north of Tywyn before crossing the Afon Dysynni. Analysis of the 1st Edition Ordnance Survey maps of the area, dating from 1889, indicates that there has been a considerable amount of coastal erosion in the area, particularly prior to the building of Corbett's promenade in the mid 1880s. Subsequent attempts at sea defences have attempted to control this. The coastal area is characterised both by an attempt at 19th century seaside development, and also military activity during the Second World War, when the seafront area was taken over by the military. After the war, 34 groynes of African green-heart wood were constructed on the beach.

Prehistoric

Ancient peat-beds (PRN 16601) extend for about a kilometre along the shore here. North of the outfall they are more eroded than to the south of the outfall. Previous visits only identified isolated patches to the north of the outfall. However, during the recent visit in November 2004 for the current study, the area north of the outfall happened to be better exposed than previously. The peat surface was seen to extend further north than had been previously seen and almost certainly still continues further north under the sand because, in three places, *in situ* pieces of ancient trees were seen protruding through the sand. The creation of the promenade wall probably means that the foreshore in front of the promenade has been subjected to greater erosion than elsewhere and it is possible that any peat beds have been eroded away. There are patches of eroded cemented shingle and occasional glacial erratic boulders close to the low water mark, but no evidence of any peat or ancient timbers. This is almost certain to be true around the slight rise in ground around Bryn-y-mor. However, there is still a possibility of peat surviving below the sand in the intertidal area north of Bryn-y-mor.

In the exposure as a whole there are, in places, large *in situ* tree stumps and in others large fallen trunks that have been exposed by peat cutting. The peat is at least a metre deep and consists of more than one horizon, some of it woody and fibrous, other much finer. The peat beds can be seen to run back under the shingle bank and may continue under the Penllyn marshes to the east. The peat represents a buried and preserved ancient landscape in which well-preserved archaeological remains may occur. Sometimes objects are discovered by chance that show the presence of human activity but there are none reported from here. However, samples were taken as part of a previous survey of intertidal remains and these showed the presence of charcoal, which is taken to be a good indicator of human activity nearby. *Description taken from Smith (2004)*

Post Medieval

A number of modern sites were recorded and reassessed. The Afon Dysynni entrance wall (PRN 24001) is a massive 20th century wall of laid slate slabs that provides a protective wall on the south side of the entrance to the Dysynni channel. This does not look like modern work, but does not appear on the 1888 or 1901 maps. It seems to be associated with the changed shape of the river entrance seen on more recent maps, where the entrance has been canalised and a flood bank built further upstream.

The Cambrian Coast line was opened in 1864. It runs on its original embankment (PRN 24005) and bridge across the Dysynni. The railway line runs close to the coast edge for about 1.5km of the northern part of the study area. It seems to have made use of a pre-existing shingle storm bank along some of this

route. At the south it is protected by a concrete sea-wall (PRN 24002) and to the north by a rubble bank. In the central part however, it has no protection, possibly because the rubble bank has been eroded by the sea and recent highest tides have come within a few centimetres in height and a few metres in distance of the railway line.

A turbary consisting of 18th-19th century peat pits (PRN 7286) has been noted. Beneath the beach shingle and dunes is a buried ancient peat-bed. This is frequently hidden by sand and only visible after particular tide and wind conditions. However, it has been visited previously when exposed (Gwyn and Dutton 1995 and Smith 2002). The peat bed is at least 1m deep and in its surface are many neatly cut rectangular pits, the remains of peat cutting for fuel. These are so well preserved that spade marks are still visible in some faces. There have been no artefacts to date the pits and no specific historical records of their cutting. However, there are general mentions of exploitation of peat around Tywyn in the 18th century and like other parts of north Wales this probably continued into the mid-19th century at which time the construction of the railways meant that cheap coal became available (the Cambrian Coast railway through Tywyn was opened in 1863). Peat cutting in moorland usually manifests as long advancing faces, which are sometimes visible as slight terraces. The pits here seem to have been cut as neat separate features, probably in order to avoid water-logging so that each pit was separated by a peat 'wall' from its neighbour which would have been filled with water between tides. Some of the pits are even provided with neat drainage channels.

The best-preserved area of pits extends from just south of the outfall of the Afon Dyffryn Gwyn for some 200m. However, the recent visit showed that the area of peat-cutting also extends some way north of the outfall and is likely to extend further, where the peat bed is hidden beneath the sand. The peat beds can also be seen to extend eastwards under the shingle bank but it is uncertain if the peat-cutting pits also do, although they approach it quite closely. Clearly if they do then the shingle storm bank must have formed since the peat beds were cut.

On the beach is the piped outfall (PRN24006) of the river Afon Dyffryn Gwyn. This stands on concrete supports exposed at a high level above the beach. This allows water to exit at all but highest tides. The marshes were drained in 1862 (Anon 1886) and this must have included construction of drainage channels and tidal gates and outfalls for the Afon Dyffryn Gwyn and Afon Dysynni marshes. The outfall appears to have become exposed because of coastal erosion, which has either reduced the width of the shingle bank or driven it back further east.

The Tywyn sea-front (PRN 7285) between Pier Road and Neptune Road was noted. It was gentrified by the construction of the Marine Parade and Promenade that was inaugurated in 1889 by the Corbett family. It was to have been supplemented by the construction of a pier at the end of what is still Pier Road. The promenade has been more recently improved in 1977. A plaque recording the inauguration of the original promenade has been preserved in a wall. The current parapet to the promenade is of late 20th century construction.

WW2

A Second World War coastal Pill-box (PRN 1839) lies about 150m to the south of the study area. It forms the northern most of a line of such pillboxes that start at the mouth of the Dyfi Estuary (RCAHMW NPRNs 270343, 270342, 270341, 270340, 270339) and these decline in condition from south to north. The southernmost of those, alongside the Penllyn Marshes, is intact while the northernmost has collapsed and now consists of just a group of horizontal concrete slabs lying on the beach. It would seem possible that this defensive line once continued further north along the

Tywyn sea-front. Traces of other pillboxes may therefore occur within the survey area as tumbled masonry.

3.3.20 Wylfa to Cemlyn landscape

This landscape is dominated by the presence of the Nuclear Power Station at Wylfa, and it is possible that soon a second power station will be built alongside. Within the coastal landscape lie two gardens or created landscapes of particular interest.

The first, at Cestyll (PRN 4460), is a garden included in the Register of Parks and Gardens. The garden was developed in a narrow valley, alongside a mill stream. The site was originally part of Cafnan farm, owned by the Carreglwyd estate. A substantial square house had been built here by 1889, as shown on the OS map of that date, with a large walled garden to the north, and ornamental gardens to the west. Cestyll was bought by William Walter Vivien in 1918, who gave it to his niece Violet Vivien, daughter of Lord Bodmin. Violet Vivien took holidays there, and in time made Cestyll her home. From 1922 onwards she began to construct a garden in the valley of the Cafnan west of the house. The garden is described as 'an informal plantsman's garden which has many small, separate but linked areas, in many cases defined by the bends and loops of the stream, which give it a very intimate atmosphere' (Cadw 1999, 15). Whilst the garden within the valley remains intact, now managed by the Nuclear Power Authority, the house of Cestyll was demolished in 1991. The walled garden is still present, but very overgrown. The essential setting within the Cadw register includes the site of the former house at Cestyll. Further east along the coast, outside the defined essential setting, are two further sites associated with Violet Vivian. Both were identified on the first coastal survey. The first was identified as a limekiln (PRN 7186). However, following its demise as a kiln, the entrance to one of the stoke-holes was narrowed and a door placed in the remaining opening to create a small room. This was, by local repute, created as a bathing house, or changing room, for Violet Vivian. The structure further to the east was identified as simply a 'ruined stone building' (Record No. 423, SH34799364, PRN 36575). This was the boat house associated with Cestyll, and also, according to local tradition, used by Violet Vivian.

The second created landscape is that designed by Sylvia Crowe during the construction of the power station. This latter was designed by Farmer and Dark, and although it completely dominates the landscape, the pastel colours and varied skyline help mitigate this, especially when the site is viewed from a distance. The landscaping and planting by Sylvia Crowe cleverly hides the power station when closer. The design focuses around two low hills created from material excavated during construction of Wylfa A which were subsequently planted with trees. Sylvia Crowe was a significant figure in landscape design in the decades after the Second World War, and her earlier work at Trawsfynydd Power Station is a registered II* garden (Cadw 2008).

3.3.21 Valley

The erosion at Valley by the Cob has been an area for concern as houses and holiday bungalows are very close to the cliff edge. On visiting this area there seems to have been a proliferation of recent coastal sea defences in the form of gabions or 'caged' boulders, and stone.

Post medieval

The Newlands fish weir (PRN 7193, AN 145) was photographed and observed from a distance. This consists of a long wall of boulders going out to sea creating a fish trap at the mouth of the Alaw estuary. There are large breaches within the line of boulders which indicate that it is being eroded. The fish trap is 'L'-shaped in plan with its longest side running parallel to the coast from exposed bedrock at the southern end. The possible remains of walling can also be seen in aerial photographs at the north end. This site is at least half a mile long and is recorded on the 1925 12" OS map, as is a small structure called 'The Weir'. The road which leads down to the beach is called 'Gored Road' to the present day.

Modern

A possible concrete groyne (PRN 31610) was recorded; however the function of this feature is not certain.

Unknown period

A 'V' cut ditch (PRN 31608) was identified during a monitoring walk. This ditch measured approximately 1x1m with a possible re-cut. It has been suggested that this is Roman due to the due to its V-shaped profile. There were no other associated features close by. Close observation could not be achieved due to the high cliff.

4. CONCLUSION

The information gathered through the Arfordir project is invaluable in developing our understanding of coastal erosion, and the impact it is having on archaeology. The project has also given an insight into how local communities can make valuable contributions to the archaeological record of their area.

4.1 Archaeology and Erosion

What has become increasingly evident over the course of the project is that important archaeology is under constant threat from the elements and, with climate change in mind, the problem is going to get worse. The original coastal survey projects undertaken between 1993 and 1998 provided a good starting point for the Arfordir project, creating GIS layers from the original files made the presentation of information to volunteers easy and effective. It also provided us with the information needed to prioritise what areas were most at risk. It was found that the information gathered nearly twenty years ago was still largely accurate due to the nature of the geology; 'hard' areas of bedrock are stable and 'soft' areas of drift are still eroding. It has, however, become evident that while the areas of hard geology are stable there is some on-going erosion of the overlying shallow soils. This has been shown to have resulted in the loss of some archaeology, in particular some flint scatters have been shown to be at risk.

Over 200 new sites have been recorded by both volunteers and Trust staff over the course of the project. What has become clear from the new sites is that no matter how many times an area has been surveyed in the past, there is still potential for the discovery of new archaeology that is being exposed through erosion. The re-visiting of previously recorded sites has shown that some remain largely unchanged but that others are under threat from numerous pressures.

Vandalism is a clear threat to 20th century sites which are often subject to graffiti, fire setting and intentional demolition. Prehistoric sites appear to be spared the brunt of the vandals' attentions although, some of these are in serious danger of being lost or damaged through natural erosion before they are fully understood and appreciated.

Three excavations undertaken during the course of the project were all successful in fulfilling their aims. Amongst the highlights of these was the confirmation of the existence of a Bronze Age standing stone in an actively eroding area and the discovery of multiple phases of an Iron Age promontory fort. Volunteer involvement in the excavations was essential to their success and provided those who had drawn attention to the sites with an opportunity to see their efforts making a difference.

The project has been successful in increasing our understanding of the threats that coastal archaeology is currently facing in Gwynedd and Anglesey. The number of newly identified sites has shown that erosion is constantly revealing new archaeology; equally the re-visiting of sites has demonstrated how they can be very quickly re-buried by shifting sands.

4.2 Volunteer Involvement

The sometimes sporadic volunteer involvement has shown that getting consistent participation and results can be a problem. It is clear that the more time available to dedicate to the volunteer interaction, the better the results will be.

Although an important part of the project; the talks given to local history groups were not successful in recruiting many volunteers. It was found that the age-range of those who attended was generally 65+, and many did not possess the level of fitness required to walk sections of coastline. This is probably why the level of interest when giving the talks was good, but very little information, was fed back to the project. It is still clear that these talks were important in raising awareness of the issues of erosion, and on occasions provided snippets of local knowledge.

The targeting of volunteers that had been involved in other projects within GAT was more successful in getting volunteers who were keen to be actively involved.

Another group which were very active in general were mature university students; by far the most information gathered by volunteers came from this group. The majority of mature students already involved in the project have expressed the desire to continue monitoring; this will be encouraged and nurtured as much as possible. One such volunteer has already expressed an interest in designing his dissertation on a section of coastline which he monitored as part of the project. Further efforts will be made to recruit more university students as they are often keen to work independently, especially when their interests are associated with coastal archaeology and they are capable of providing high quality records.

Obtaining additional funding from external sources clearly aided the project, especially in its implementation of outreach and education. Both the IfA and CBA bursaries meant that additional time could be allocated to the project, resulting in better results from volunteer involvement and a well-planned and implemented education programme for schools. The volunteer equipment packs were very successful in getting people who would not usually have access to a GPS and digital camera to actively go out and survey areas, the quality of information regarding the location of sites was also much more accurate.

It has been clear that there is an appetite for volunteer involvement in work of this kind among members of the public in Gwynedd and Anglesey. What has also become apparent is that without regular contact, interest and results can begin to suffer. Monitoring should therefore not end with the completion of the third year of the project. Those involved in the project should be encouraged to continue their work, and new volunteers will always be appreciated. Awareness of the project should also continue to be raised; the sites discovered by those involved should act as inspiration to others,, showing that exciting and important archaeology can be found by anyone, even those not intentionally looking for it.

The threats that coastal archaeology faces will increase as time goes on; more archaeology will be affected and in some cases will inevitably be lost. Awareness of the plight of coastal archaeology, and the need to report affected sites, clearly needs to continue to be raised among the general public.

4.3 Working with the Welsh Trusts

Contact with the other Welsh Trusts was maintained through Welsh Coastal Historic Environment Research Group meetings, held twice a year at the RCAHMW in Aberystwyth. These provided an

opportunity to give project updates to all involved, and to discuss any issues affecting Welsh coastal archaeology in general. All other trusts were also easily contactable to discuss aspects of the project, and to seek specialist information when needed.

4.4 Future Aims and Developments

One of the main problems encountered during the course of the project was the difficulties in identifying archaeology where high glacial drift cliffs are eroding. Substantial features such as ditches, drains and walls can be seen, but sites such as flint scatters and more ephemeral cut features go unnoticed. Mesolithic archaeology provides virtually no substantial features and the majority of evidence we have from this period comes from coastal sites. Due to the limitations of surveying these areas it not known how many sites go unnoticed; it is possible that technology may provide a solution to this problem. David Hopewell of the Trust has been instrumental in developing a process to reduce drawing time on site by recording areas using vertical photographs with a camera mounted on an extending pole. A similar process could potentially be developed to survey these inaccessible areas; this could be done using a pole mounted video camera, possibly a high quality webcam, with a link providing real-time footage on a laptop or tablet computer. This would mean that high drift cliffs could be monitored by walking along the top with the camera suspended over the cliff, keeping the operator away from the dangerous edges.

Geophysics could also be used to a greater degree in areas where the erosion is severe. Many areas are rapidly eroding and large sections can be lost in single events such as landslides. Areas of this nature could potentially be surveyed before archaeology is affected; this would provide knowledge of what features are in these areas and how far they are from the eroding edge, giving time to formulate plans of action before sites are lost. This method would, however, have limitations as far as ephemeral archaeology is concerned. The geophysical surveys conducted during the third year of the project certainly gave mixed results and features associated with Mesolithic activity are unlikely to show up on such surveys.

It is clear that websites can be used to great effect in terms of getting information to the public and as technology advances, projects like Arfordir could seize upon these new advancements to ease the transfer of information between the Trust and volunteers. Smart-phones and tablets have become essential technology for many people, becoming items that some carry with them 24 hours a day. These new technologies could potentially provide the public with the means to report discoveries swiftly and with very little effort. For a project such as Arfordir, simple software applications could be developed where basic information could be inputted using drop down menus and linked to geo-referenced photographs; these could then be instantly uploaded to a website or emailed to Trust staff.

Working with the Trust's outreach and education team has also made it clear that there is a need to present results in a number of ways tailored to specific audiences; this is again something that could be done utilising smart-phones, tablets and the internet. Interactive websites would provide members of the public with information presented in a way which is entertaining, links to academic reports could be integrated into these sites for those who want a greater depth of information.

Information could also be presented to volunteers and the general public in the field. QR codes (Quick Response Codes) could be integrated into interpretation boards providing additional

information on the site, other sites nearby, or even areas of known erosion in the locality. Guided walks could also be downloaded to smart-phones and tablets, giving users a route along which information could be presented, features could also allow users to report any changes in condition of sites or new discoveries on the route. Taking this one step further augmented reality could be used to present information on some sites by simply viewing them through a device's camera, providing historical photographs, reconstructions and videos.

There is no doubt that the initial investment in creating some of these applications would be substantial; however, the potential benefits could easily justify this. The technology used for these applications is constantly improving and becoming more affordable, and as this happens more and more people are seeing the advantages they bring to everyday life.

5. BIBLIOGRAPHY

Berks, T., Davidson, A. & Evans, R. 2010. *Arfordir/Coastal Heritage: Gwynedd* (Unpublished GAT Report 861)

Davidson, A. (ed.) 2002. *The coastal Archaeology of Wales*, Council for British Archaeology, York

Evans, R. & Davison, A. 2007. *Porth Y Nant Quarry, Nant Gwrtheyrn, Llithfaen, Gwynedd* (Unpublished Gat Report 703)

Frame, P. 1999. *Rockin' Around Britain: Rock 'N' Roll Landmarks of the UK and Ireland*, Omnibus Press, London

Gresham, C. A. 1973. *Eifionydd: A Study of Landownership from the Medieval Period to the Modern Day*, University of Wales Press, Cardiff

Gwyn, D. & Dutton, L. 1996. *Coastal Erosion Survey: Aberdaron to Aberdyfi* (Unpublished GAT Report 198)

Hemp, W.J. 1923. Flint Barbed Arrow-Head From "The Rivals". *Archaeologia Cambrensis*, 78, p. 148.

Historic Environment Record, Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, Gwynedd, LL57 2RT

Hopewell, D. 2000. *An Assessment of Coastal Fish Weirs and Traps (G1589)*, Gwynedd Archaeological Trust Report No. 363

Hughes, M. 2001. *Conwy Mulberry Harbour*, Llygad Gwalch Cyf, Pwllheli

Jones, I. 2008. *Airfields and Landing Grounds of Wales: North*. The History Press Ltd, Stroud

Jones, S. 1997. *Coastal Erosion Survey: Anglesey* (Unpublished GAT Report 251)

- Lowry, B. 1996. *20th Century Defences in Britain: An Introductory Guide*, Council for British Archaeology, York
- Lynch, F. 1995. *A Guide to Ancient and Historic Wales: Gwynedd*, Cadw: Welsh Historic Monuments, Cardiff
- McCartney, J.P. et al. 2000. *The Beatles Anthology*, Crassell & Co, London
- Parry, I. 2011. Arfordir/Coastal Heritage: Gwynedd (Unpublished GAT Report 941)
- Rhys, E. (ed.). 1906. *The Mabinogion*, J. M. Dent & Sons, London
- Smith, G. 2001. *Gwynedd Lithic Scatters Project: Evaluation of the Early Prehistoric Landscape through Lithic Finds* (GAT Report 354)
- Smith, G. 1993-4. *Coastal Erosion Survey: Aberdaron Bay to Great Orme* (Unpublished GAT Report 79)
- Smith, G. 2004. *Tywyn Coastal Protection Scheme: Archaeological Assessment* (Unpublished GAT Report 555)
- Smith, G. 2008. *Nant Farm Prehistoric Activity Area, Porth Neigwl, Llyn: Preliminary Report On Archaeological Rescue Recording* (Unpublished GAT Report)
- Smith, J.B. 1998. *Llywelyn ap Gruffudd: Prince of Wales*. University of Wales Press, Cardiff
- Starkey, R. 2000. Ringo Starr. In: McCartney, J.P. et al. 2000. *The Beatles Anthology*, Crassell & Co, London, pp. 33-39.

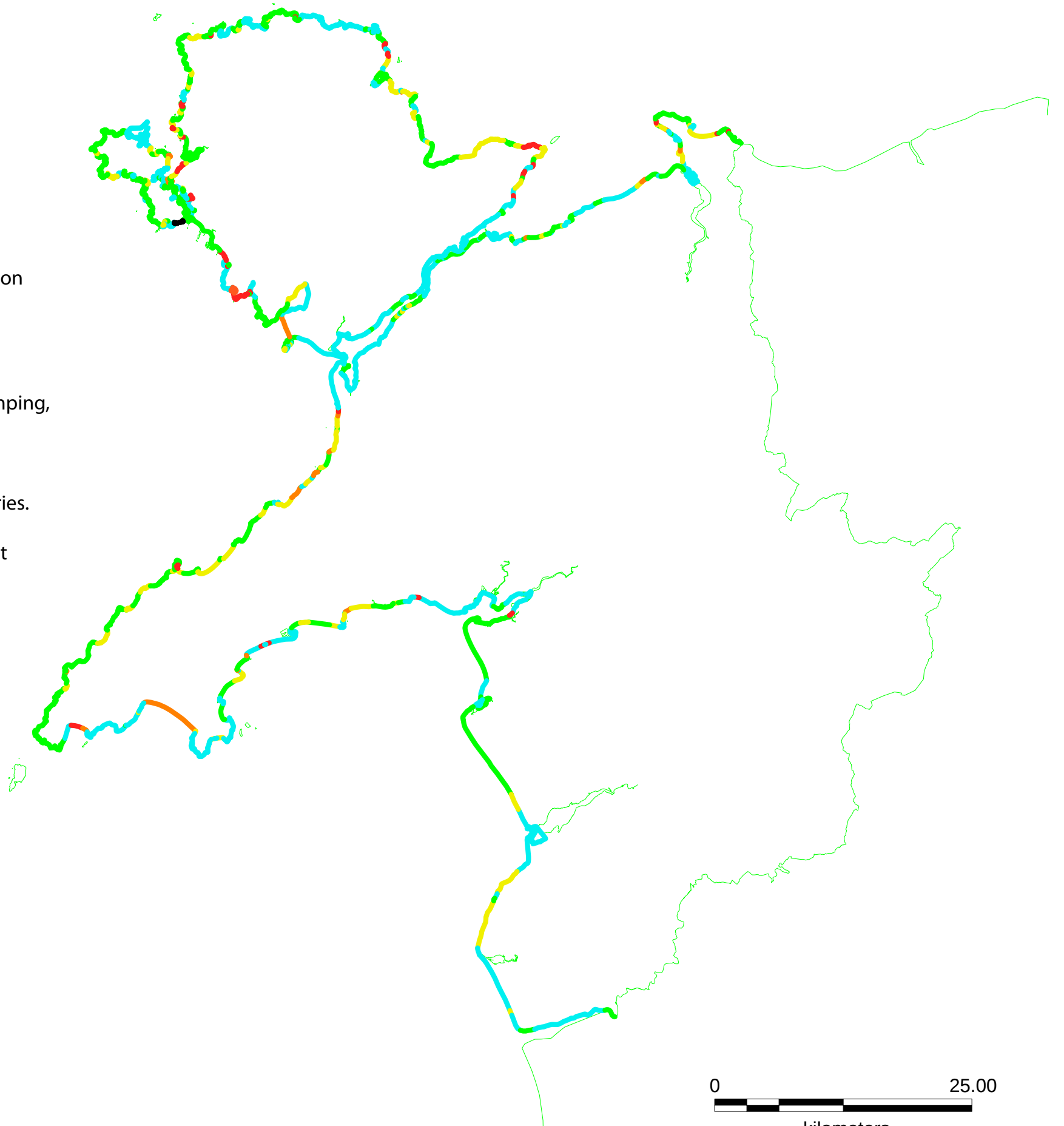
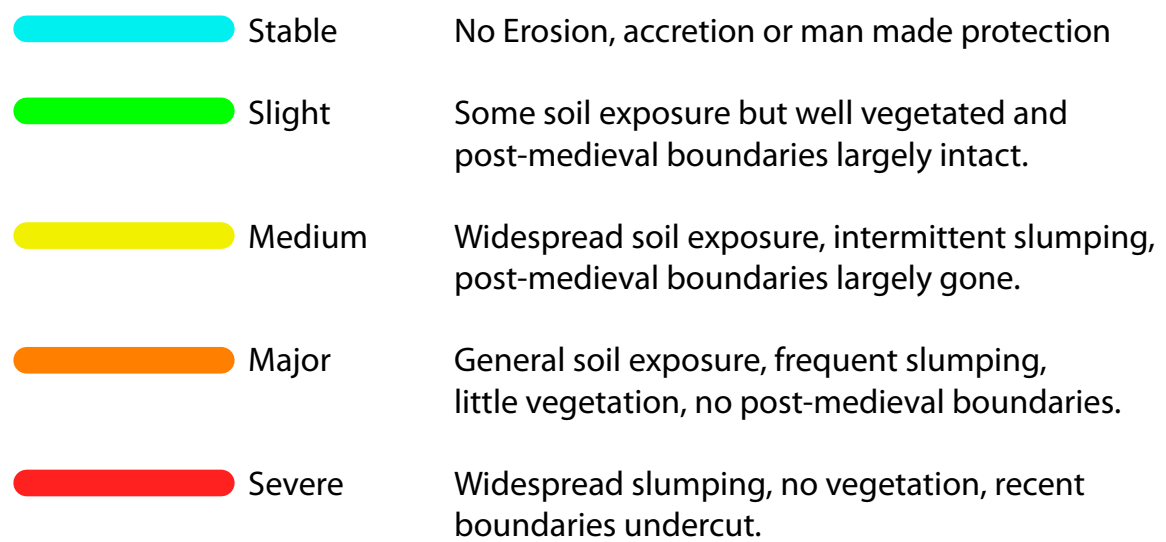


Fig. 1:
Map showing erosion severity in study area.
Compiled from data collected 1993-1998

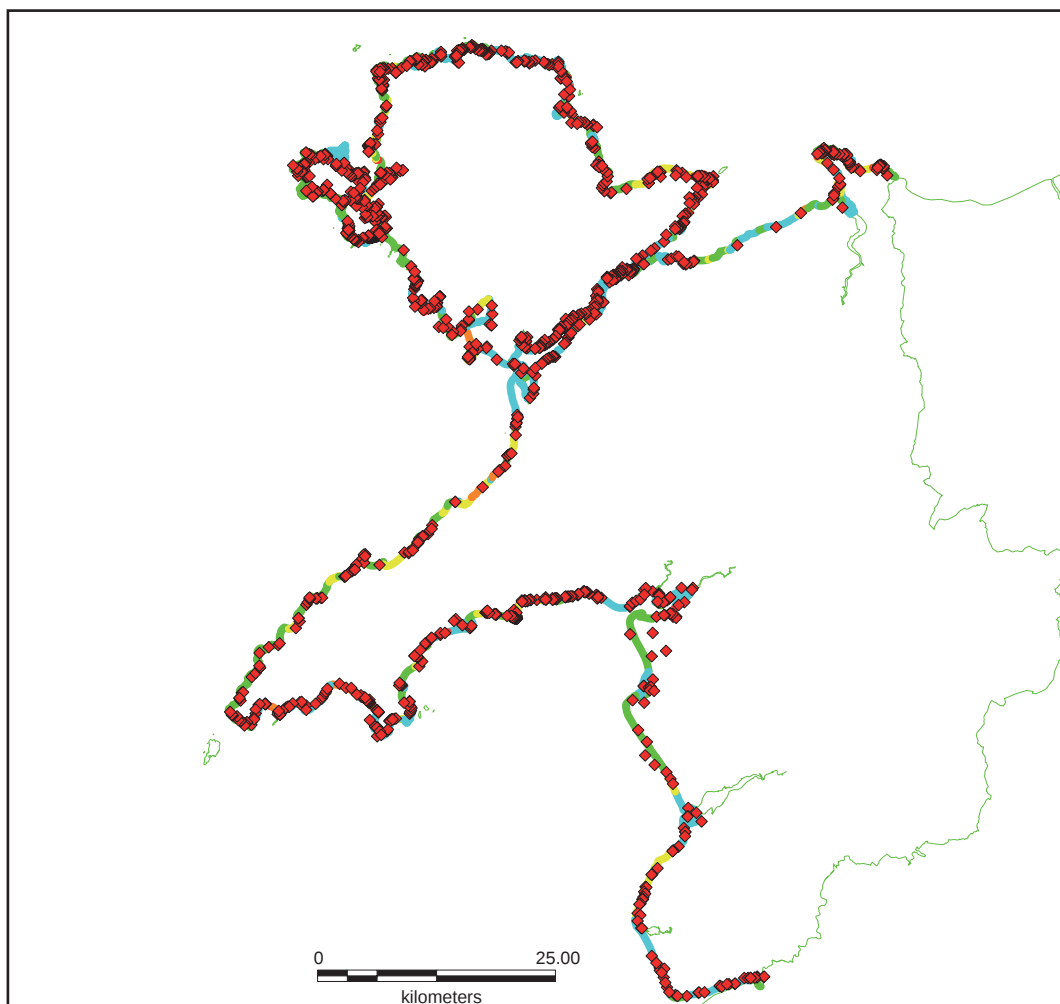
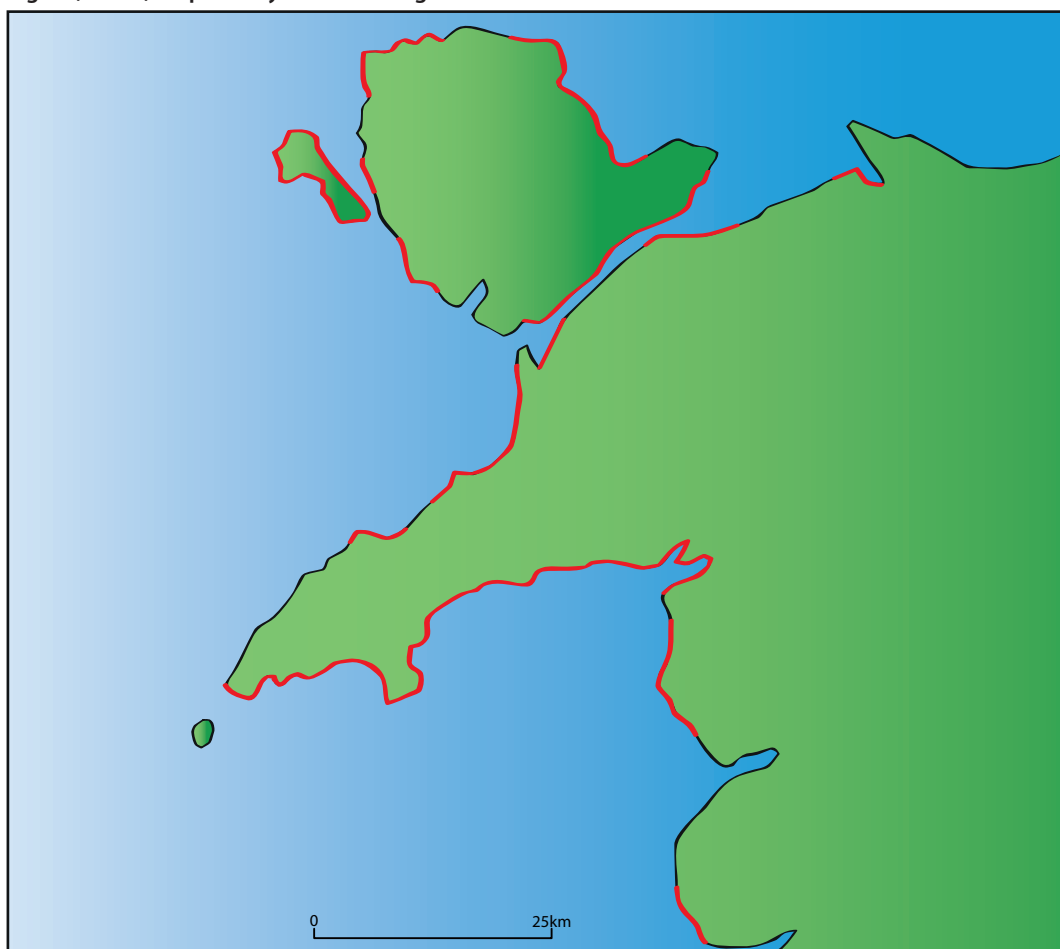
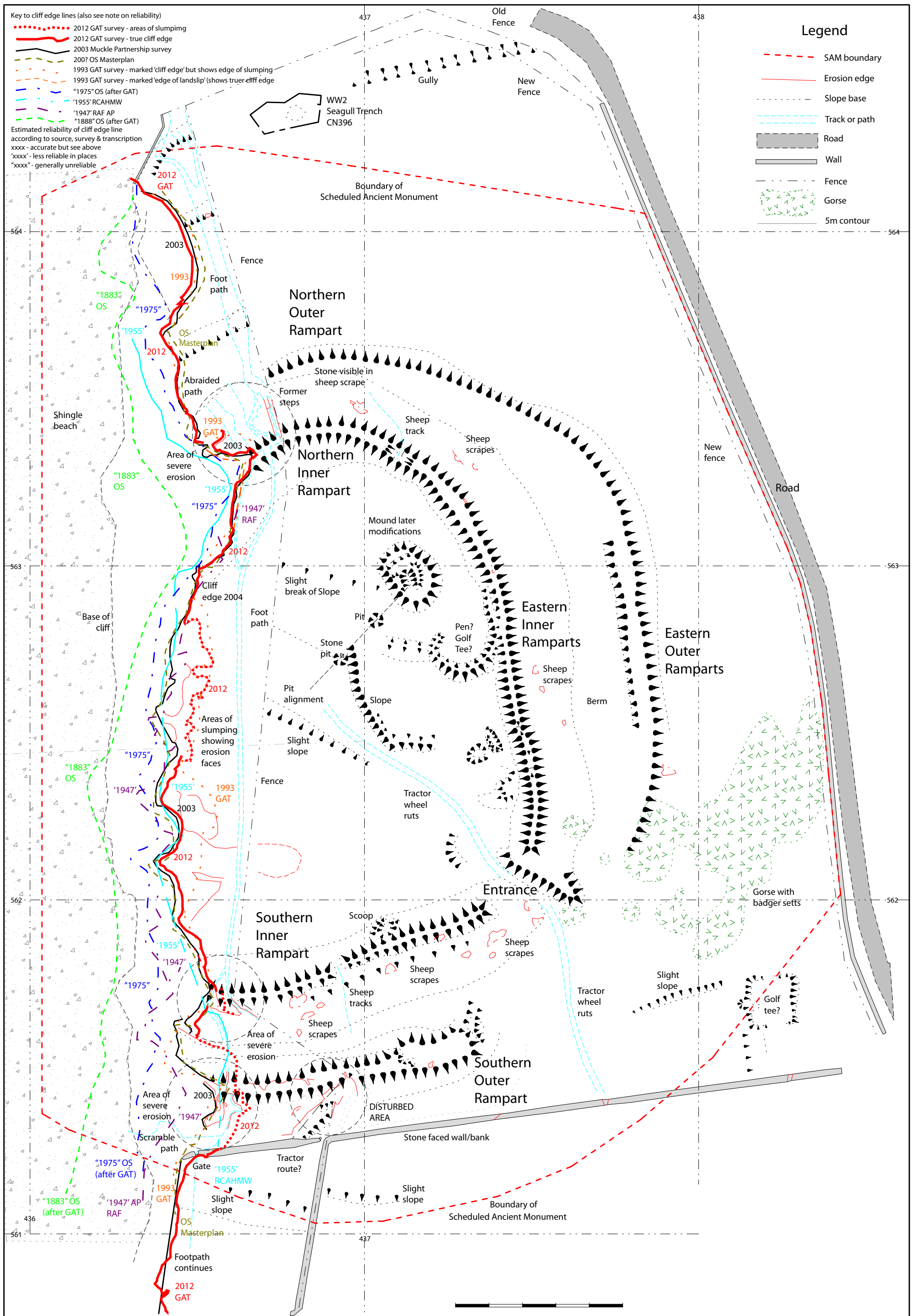


Fig. 2. (Above) Map of Gwynedd showing all coastal sites recorded between 1993 and 2012.

Fig. 3. (Below) Map of Gwynedd showing areas walked 2009 - 2012.





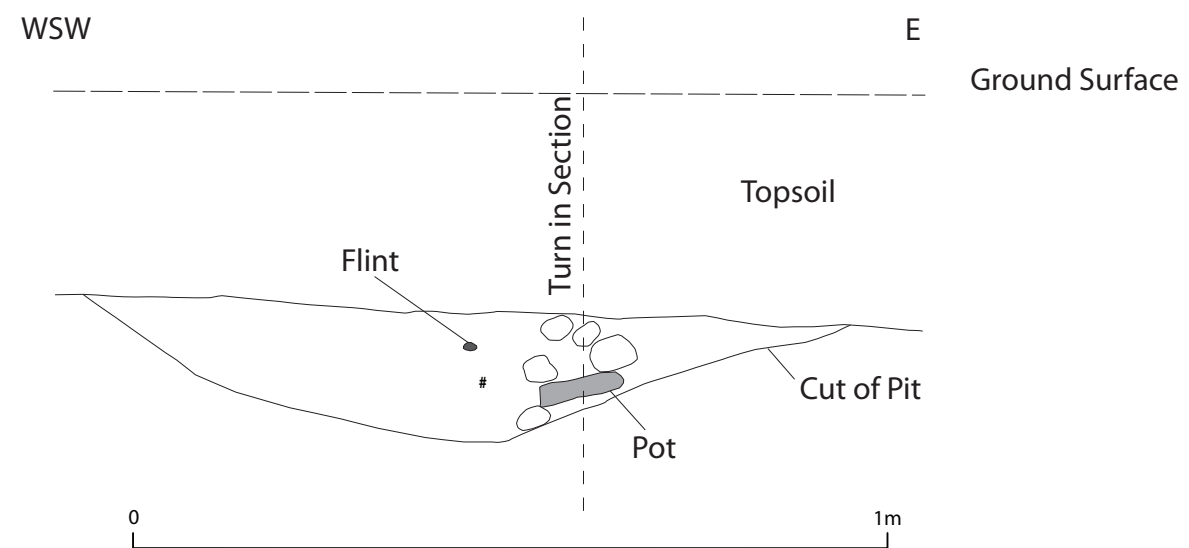


Fig. 5: Section of Bronze Age pit, Glanllynau

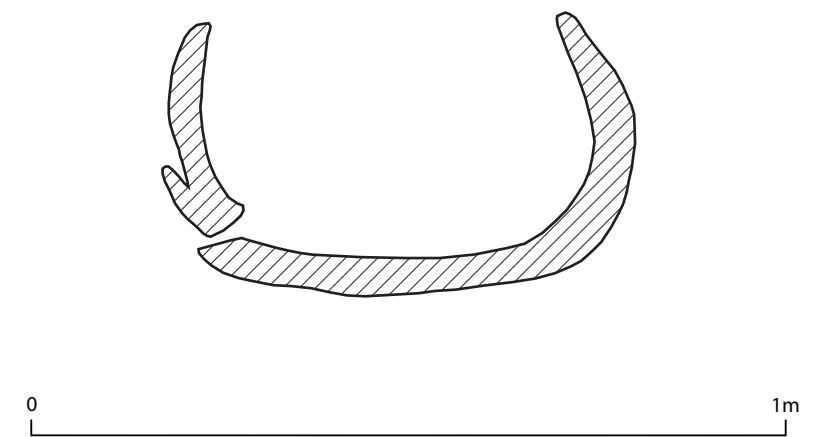


Fig. 6: Section of Nefyn Maritime Museum Log Boat

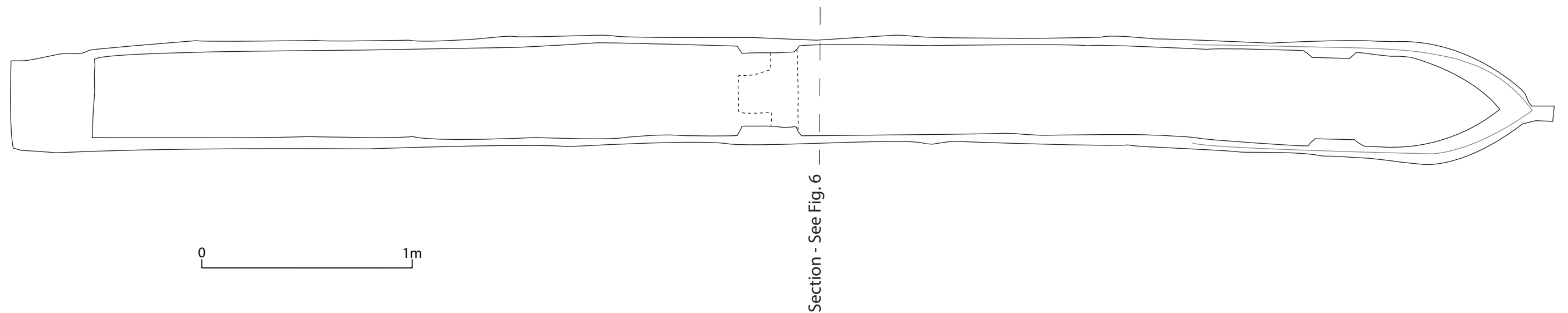


Fig. 7: Plan of Nefyn Maritime Museum Log Boat

Fig. 8: Results of 2012 erosion survey at Glanllynau against the 1891 1st edition Ordnance Survey map.

Current eroding edge ———
Post alignment - possible fish weir ■■■■■
Location of Bronze Age pit ○

0 50m

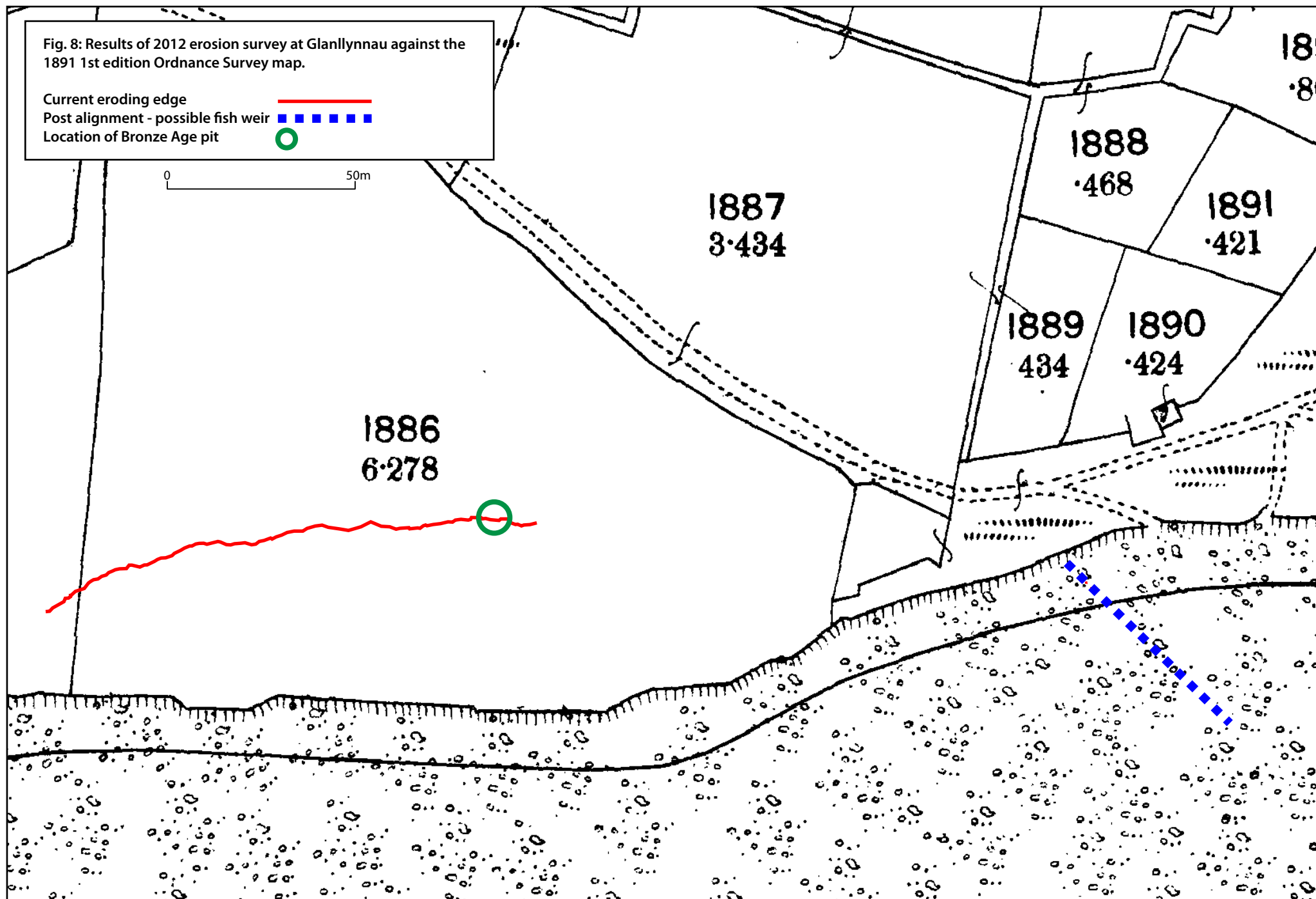




Plate 01: Llanaelhaearn introduction talk, Andrew Davidson of GAT giving training in recording and fieldwork.



Plate 02: Aberffraw AONB/GAT coastal heritage day



Plate 03: Nefyn Logboat



Plate 04: Artwork produced by local schoolchildren with the aid of local artist Julie Williams.



Plate 05: Volunteer pack for monitoring walks



Plate 06: Dinas Dinllaen, Area of Outstanding Natural Beauty.



Plate 07: Volunteer excavating one of six test pits at Penychain.



Plate 08: Fully excavated test pit, TP 06, at Penychain



Plate 09: Abererch standing stone June 2010.



Plate 10: Abererch standing stone Febuary 2011. Note the change in cliff exposure due to sand movement.



Plate 11: Abererch standing stone at the limit of excavation, seen slumping slightly to the NW.



Plate 12: Nefyn Golf course at Dinas Dinllaen, showing the three banks of the Promontory Fort.



Plate 13: Volunteers recording the first bank during excavations at Dinas Dinllaen Promontory Fort



Plate 14: Volunteers excavating the second bank of Dinas Dinllaen Promontary Fort



Plate 15: Geophysical Survey at Dinas Dinllaen with help from a volunteer



Plate 16: Aberdesach, possible buried soil and prehistoric pits found in eroding section



Plate 17: Aberdesach, possible standing stone in the shingle on the beach



Plate 18: Lime kiln at Aberdesach



Plate 19: Extensive peat deposits at Abererch



Plate 20: Concrete WWII gun emplacement at HMS Glendower, Penychain



Plate 21: Collapsed/breached sea defence wall at Brynsiencyn



Plate 22: A boathouse, castellated tower and gateway to a 'secret garden' at Brynsiencyn



Plate 23: Concrete cylinders at Caernarfon, possible anti-tank defences (inset: close up showing cross mark)



Plate 24: Cemlyn Bay, area of erosion where one of three flint scatters were recorded



Plate 25: Stone and mortar 'quay' at Cemlyn Bay



Plate 26: Stone lined pit at Criccieth



Plate 27: Clawdd boundary eroding from cliff at Criccieth



Plate 28: An old photograph dating to the 1920's showing the stone built quay in use.



Plate 29: The quay at Dwyfor 2011, no longer in use and overgrown.



Plate 30: Area of prehistoric activity associated with a buried soil layer west of Dinas Dinlle.



Plate 31: Previously unrecorded WWII pillbox, Dinas Dinlle.



Plate 32: Bronze Age pottery eroding from a pit at Glanllynau, Llanystumdwy.



Plate 33: Landowner Mr Hywel Richards observing exposed peat and possible fish trap at Glanllynau, Llanystumdwy.



Plate 34: Area of exposed clay containing preserved wood and possible footprints, Morfa Conwy.



Plate 35: Possible anti-tank columns re-used for erosion control, Morfa Conwy.



Plate 36: Machinery and storage bin, Porth y Nant quarry.



Plate 37: Degrading storage bins of Cae'r Nant quarry.



Plate 38: Wooden trough of a Bronze Age burnt mound excavated at Porth Neigwl in 2008.



Plate 39: Recording the backstop of an aircraft tail gunner training range at RAF Hell's Mouth, Porth Neigwl.



Plate 40: Stone revetment wall at Porth Namarch granite quarry, Holyhead.

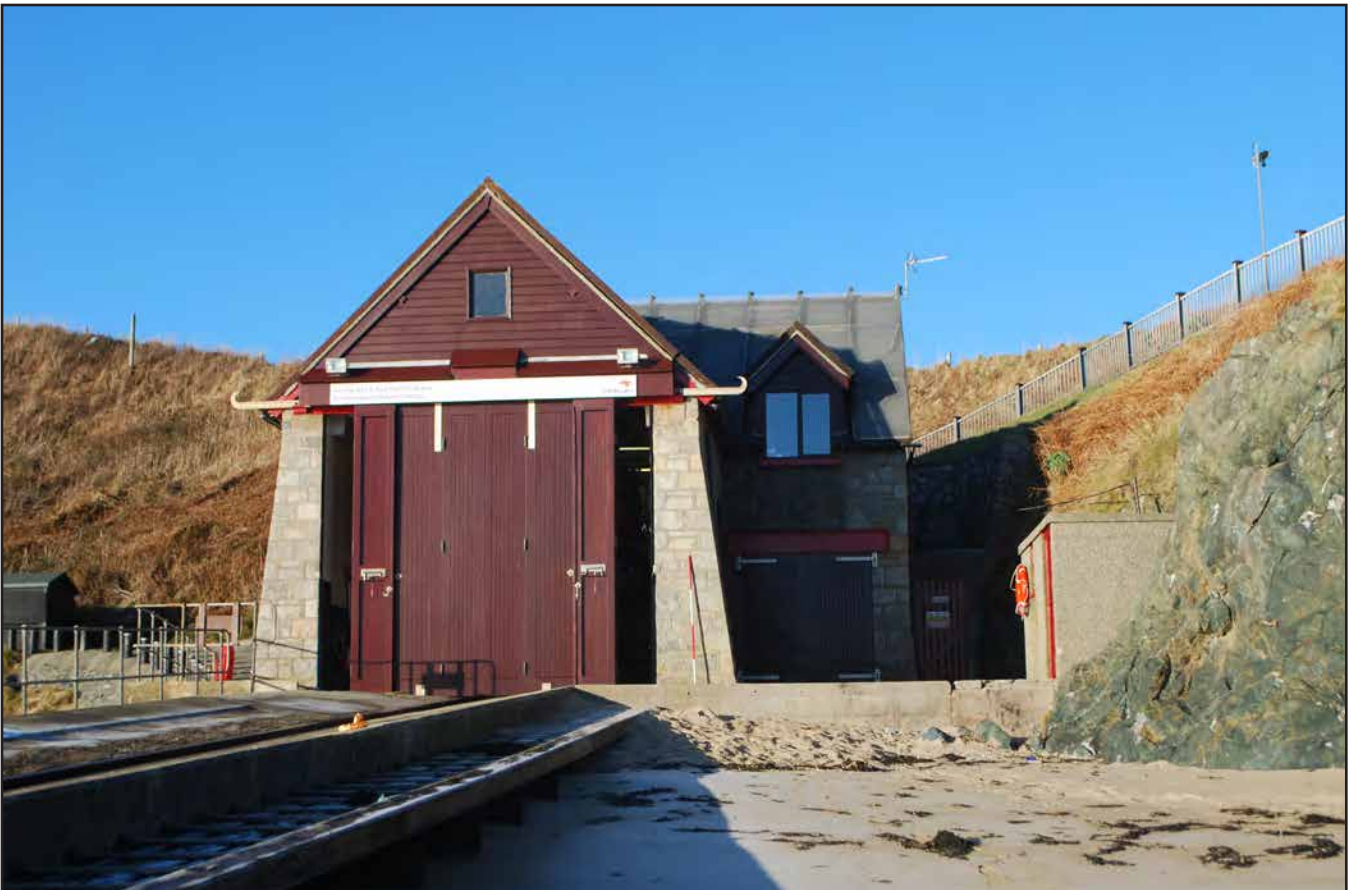


Plate 41: The current lifeboat house at Porthdinllaen.



Plate 42: Porth Tre Castell or Cable Bay, looking towards the possible promontory fort.



Plate 43: The disguised WWII gun emplacement at Godreddi Bach, Red Wharf Bay
(Inset: The emplacement as it looked shortly after the war)

Appendix

A

Original and Re-designed
Recording Sheets and Guides

Original Recording Sheet and Guide

Designed 2009

ARFORDIR - RECORDING FORM

SITE ID This information will be used to distinguish the site from others

PRN No. (if any)

Coastal Survey No. (if any)

LOCATION OF THE SITE This information will help you and others to return to the site *

Site Name and Location (topographical description, nearest map name, nearest town and county)

National Grid Reference (NGR) *

Map Square

Easting

Northing

Altitude

SITE DESCRIPTION The description will help to identify the site type, function and date *

Site dimensions

Length

Width

Orientation

Height/Depth

Dist to High Water

Full description

continue on back page if necessary

Site class

Site type

Estimated period
(if possible)

Evidence used to
make this estimate

SITE CONDITION This information will help to assess the condition of the site and threats to its survival *

Soil type and vegetation on site

Condition of site

Threat 1 type

Threat 2 type

Threat 3 type

Threat 1 class

Threat 2 class

Threat 3 class

Threat 1 time

Threat 2 time

Threat 3 time

YOUR RECORDS This will help to cross reference to other records and to things that you have found

Plan nos.

Section nos.

Other drawings

FINDS ASSOCIATED WITH SITE

Description

Action taken

Find photo No (relating to photo record on reverse)

FIELDWORK INFORMATION This will remind you and others about the actual survey

Recorded by

Date

PHOTO RECORD FOR FILM AND DIGITAL							
Shot No.	PRN/CSN <i>If any</i>	Description	View from	Print	Digital	Initials	Date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ARFORDIR - RECORDING FORM

Sketch drawings

SKETCH LOCATION DRAWING: a drawing showing the location of the site in relation to other features, (with distances), the location of the coast edge (if relevant) and the approximate position of north (usually north is at the top of the drawing).

DETAILED SKETCH PLAN / SECTION: a more detailed drawing showing the principal elements of the site, either in plan, section, or both. Show the dimensions of features and the approximate position of north.

THE ARFORDIR RECORDING FORM GUIDE

Using the Arfordir form will ensure that all relevant information about a site is recorded. The data is compatible with that held by the HER. This means that information you collect can be entered into the Arfordir database, allowing new records to be generated or existing records to be updated.

The form will also help remind you of the condition of the site at the time of your first visit, allowing you to compare how much it changes. If you make a follow-up visit to your sites, you will be able to use the completed forms to evaluate any differences.

Ideally, the form should be completed in the field, but this is sometimes impractical due to strong winds or heavy rain. If this is the case, the form can be completed after you return home. If you leave it until later, try to complete the form as soon as possible, while things are fresh in your mind.

If you are not completing the form in the field, take notes about your site, recording them in a notebook or on a piece of the waterproof drafting film in order to remind you of the information required on the form when taking notes, use the Arfordir recording form guide. Laminated field guides are available from the Tanya Berks, Gwynedd Archaeological Trust.

It is essential that certain bits of information about a site are recorded, as without them, the record is incomplete. The boxes for this information are marked * and must be completed in order to make a meaningful record. Other boxes should be filled in wherever possible, but some will not be relevant for your site.

You don't need to use block capitals, but you should write as clearly as possible so that others can read the form later.

Once the form is completed, send a copy to Tanya Berks, Gwynedd Archaeological Trust, Craig Beuno, Bangor, Gwynedd, LL57 2RT.

The following describes the various sections of the Arfordir form, and explains the type of information required in each of the boxes.

1. **SITE ID** This information will be used to distinguish the site from others

Some sites will have been examined before, and a record already made in the HER. If this is the case, use their information to complete the relevant boxes, making notes if you think their information is incorrect.

PRN (if any)	If the site has been recorded on the Historic Environment Record for Gwynedd write the number here
Coastal Survey Number (If any)	If the site was included in the GAT 1996 Coastal Survey write the number here

2. **LOCATION OF THE SITE** This information will help you and others to return to the site.

It is extremely important to be able to return to a site after you have found it. You should record both the name of the site, including any topographic reference, nearest map name, the nearest town, the parish and Local Authority area, and a grid co-ordinate. Although a site may appear obvious at

the time of your visit, it may not be so easy to find a second time, once bracken has grown up around it or the coast edge altered after a severe storm. Recording the location as precisely as possible increases the chances of finding the site again. The grid co-ordinate can be determined from maps or can be taken using a Global Positioning Satellite (GPS).

* Site Name and Location (address or description)	If the site has already been recorded in the HER, use the name that they have given. Only record the main name of the site, not the alternatives. If you think the name they have given is incorrect, record this name, stating why you think it is wrong, and write in the correct name. If the site has not been previously recorded, please write your own name for the site. The name given is usually that of the nearest marked point on the Ordnance Survey map. Include, if necessary, a description of where the site is in relation to this place (for example, <i>the south end of Trefor Pier</i> or <i>200 metres north of Penrhyn Bay</i>). If the site is in a town, village or other easily identifiable place, enter the postal address.
* National Grid Reference (NGR)	Record the full Ordnance Survey National Grid Reference (NGR), separating it into Map Square; Easting; and Northing. This is most easily done with a hand held GPS, however if you are using a map to determine the grid reference, use the largest scale possible.
Map Square	Write down the two letter code which identifies the Ordnance Survey 100km square. The map square is displayed by a GPS and is shown in the margin and the top left corner of an OS map. Note that the code changes when the first two numbers of either the Eastings or Northings equal '00'.
* Easting	Eastings are the numbers at the bottom of a map, and are the first numbers given by a GPS.
* Northing	Northings run up the side of a map, and are the second numbers given by the GPS.
Altitude	This is you're location above sea level. If you're site is on sea level write 0.
Distance to high water	Record the distance of the site from the high water mark. If it is within 20m you can do this easily with a tape - if it is over 30m, estimate the distance (for example, by pacing it out) and write 'approx' after the measurement.

3. SITE DESCRIPTION The description will help to identify the site type, function and date

Many archaeological sites are a distinctive shape or size, due to when they were built or what they were used for. By describing a site, you can help determine the nature, function and date of the archaeological remains. Often, looking carefully at a site in order to write the description can help you to start thinking about the remains in a different way, making you notice clues about the site which may help with its interpretation.

When writing the description, imagine that you are writing for someone who is not present and cannot see what you are looking at. Remember that in many cases, a photograph can often be worth hundreds of words, so photograph parts of the site and make reference to these photos in the description. Even if you aren't able to guess the site's type and date, giving a detailed description and providing photos may help someone else to understand the significance of your find.

Even if only very little of the site is visible, for example, as remains eroding out of a sand dune or cliff edge, record what you can see with as much detail as possible.

Site Dimensions	Record the dimensions of the site. If only approximate, write <i>approx</i>. All measurements should be metric (metres, centimetres and millimetres).
------------------------	--

Length	Record the length of the site, and state which orientation the measurement relates to (for example <i>12.20m</i>).
Width	Record the width of the site, and state which orientation the measurement relates to (for example <i>6.45m</i>).
Orientation	
Height/Depth	Record the height of the site if above ground (for example, the height of standing walls or of a mound), or the depth if below ground (for example, a pit seen in an eroding section). It is usual to note the maximum height or depth. State what has been measured and whether the measurement given is 'height' or 'depth' (for example, <i>max. height of walls 0.45m; max. depth of pit 1.20m</i>).
* Full description	Use this space for a full description of the site. Where necessary, take photographs to illustrate features within the site. Describe the shape and form of the site (for example, <i>linear wall; rectangular building; or circular mound</i>) and if the site is a structure, state what it is made from and how it is constructed (for example, <i>mortared bricks; heap of loose stones</i>). Record other features that the site relates to (for example, <i>one of several mounds in the area</i>), and put it in its setting (<i>on a small hill overlooking Porth Neiwgl</i>). You can also record any local knowledge about the site that you may have. If necessary, continue writing the description on the reverse of the sheet (making sure you leave enough room for your sketches).
Site class	Enter the site class if known. For example Military, agricultural etc.
Site type	Enter the site type if known. This can be quite general (for example, firing range, <i>rectangular building, dry-stone wall</i>). If unsure, record what you think it may be, using a question mark at the end.
Estimated period	Record the period that you think the site belongs to. This can be quite hard, but certain periods are obvious, such as structures that include modern materials such as concrete. Previous archaeological work at the site, or the discovery of certain finds may also help to date a site. If you don't know the exact period, but can estimate an approximate period, put a question mark after the date. If there are no clues to the date, write <i>Don't Know</i> . This is the most usual thing written in this box.
Evidence used...	If you were able to give a period, state how you did so (for example, <i>previous archaeological work at site; local knowledge; site built of concrete and bricks</i>).

4. SITE CONDITION This information will help to assess the condition of the site and threats to its survival

This section allows you to record the condition of the site. This is important information and it helps to show how stable or vulnerable the site is. It also provides information from which future monitoring can be based and helps to show how the site changes over time. You also use this section to recommend any future work that needs to be done at the site.

Soil type and vegetation on site	Some types of soil are more prone to erosion than others, so record the soil type covering the site (for example, <i>sand; peat; topsoil</i>), or make a note if there is none. Also note down what type of vegetation is growing on the site. This will help determine whether the site is at risk from the plant cover (for example, <i>bracken; tree roots</i>), is being protected by the plants (for example, <i>grass</i>) or has no protection due to a lack of plants.
---	---

Condition of site	State the condition of the site using one of the standard terms below. Remember that you are describing the condition of an archaeological site, not a perfectly preserved building. The site will already have been damaged in the past - you are describing whether the site is in danger of further damage. Good (walls in stable condition, site showing no signs of being damaged). Fair (parts of walls collapsing, site showing some signs of damage but presently in a fairly stable condition). Poor (site in danger of collapse or of being destroyed in the near future). Destroyed (site known about from previous visits or through the records of others, but no longer existing). Only use the term <i>destroyed</i> if you are sure that the site no longer exists. If you can't locate a site previously identified, but suspect it may be buried or hidden under vegetation, write Not Found .
Threat type	State what threats you think there are to the site, (for example, <i>on-going coastal erosion, encroachment of sand, animal damage, vandalism</i>).
Threat class	State the extent of the threat entering low, medium or high
Threat time	State the time in which the threat will effect the site using active, low, medium or high

5. **YOUR RECORDS** This will to help cross reference to other records and to things that you have found

This section allows you to record cross-references to drawings of the site. By completing these boxes, you will help yourself and others to remember whether you made additional drawings at the site. It will also help you locate these things at a later date.

6. FINDS ASSOCIATED WITH THE SITE

Description	Normally, finds should be left where they are unless in danger of being lost. If objects are found relating to a site these should be photographed where they were found, especially if they are under threat. A National Grid Reference for finds should be recorded where possible
Action taken	It should be recorded whether a find was removed due to threat of being lost or left in situ
Find photo Number	The photo number added to the photo record on the reverse of this page should be added here.

7. **FIELDWORK INFORMATION** This will remind you and others about the actual survey

This section records who did the survey, who filled in the recording sheet and when the survey was done. This is key information as there may be things recorded on the form that need to be clarified or added to at a later date.

* Form recorded by	Write down the name of the person or people who filled in the form. Make sure you record who actually did the writing in the field, as sometimes they are in the best position to read their own writing, especially after a cold afternoon's recording!
* Survey date	Write down the date of the survey. This is important for monitoring the site as it shows when the site was in a certain state and allows the rate of change to be evaluated.

8. PHOTO RECORD FOR FILM AND DIGITAL CAMERAS

This form allows you to cross reference all photo's that you take on the site. These photo's need to be handed over with the filled out form to be added to the databases. If using a digital camera please renumber the photo's so that they relate to the number on the form. If using a film camera please write the correct number on the back of the photo so that it can be cross referenced.

When taking photo's please use a scale where possible, for example this could be a ranging rod, tape, ruler or a coin for smaller objects.

Shot number	This number cross references to the photo number. If using a digital camera please renumber the photo's so that they relate to the number on the form. If using a film camera please write the correct number on the back of the photo so that it can be cross referenced.
PRN/CSN	This relates to any number known for the site
Description	Please give a full description of the photo taken and why you choose to take it. It is very easy to forget why you took the photo after you have returned from site so describe the photo in as much detail as possible.
View from	This refers to which direction you were standing in when the photo was taken
Print/digital	Please tick either box to say whether a film or digital camera was used
Intitials	Please add you're intials so we know who took the photo incase there are questions at a later date
Date	Write down the date of the survey. This is important for monitoring the site as it shows when the site was in a certain state and allows the rate of change to be evaluated.

9. SKETCH DRAWINGS

Sketch-drawings convey a great deal of information, and one sketch often saves hundreds of words. They are very important as they help you to find a site again on subsequent visits. You can also use simple sketch-drawings to illustrate the principal elements of the site and its surrounding landscape, and you can refer to them in your written description.

Use the drawings to show the relative positions of features (for example, the position of the site in relation to an outcrop of rock or to a road) or to illustrate irregular shapes (for example, complicated building plans or architectural details such as doorways).

It is often easier to draw two sketches at different scales, one showing the site within the surrounding landscape, the other illustrating details of the site. It is not always necessary to make both sketch-drawings and sometimes just a single one is enough.

As you are only drawing sketches, you don't need to worry about great accuracy or drawing to scale. If you think that accurate and detailed plans are necessary, these can be done as separate drawings. Always place a north arrow on your sketch-drawing.

You should record distances on your sketches, as this will give necessary information about the size and position of the site. When recording distances, always use the metric system (metres, etc.), making sure that you have used the correct side of the tape when taking measurements (it is very easy to confuse the Imperial and Metric side of some tapes). If distances are only approximate, write *approx* after them.

- **SKETCH LOCATION DRAWING:** a drawing showing the location of the site in relation to other features (with distances), the location of the coast edge (if relevant) and the approximate position of north (usually north is at the top of the drawing).

The **sketch location drawing** shows the site within its surrounding landscape. Its purpose is to help you and others find the site again on subsequent visits. If the site is going to be easy to find (for example, it is marked on OS maps or is in a back garden), this sketch may not be necessary. If you think that finding the site again may be difficult, mark on as many things as possible that will help identify it in the future.

Try to use 'hard' features, things surrounding the site that are easy to spot and are unlikely to move. These could be natural (such as trees or outcrops of rock), or man-made (such as walls or buildings).

Mark the distances from the hard features to the site on the sketch. Use measuring tapes if the features are close enough, or pace out the distance if they are far way. If pacing out distances, try to get your pace as close to one metre as possible. If you want to practice, try stretching out the tape in the direction that you are going to walk and pace out the length of the tape, then continue walking towards the feature.

If using field boundaries to measure from, remember that one stretch of wall can look much like another, so try to show the overall shape of the field. Mark on the corners of walls, gates, etc. and where possible, take measurements from these positions rather than from a straight section of wall.

The sketch location drawing should show the position and distance to the coast, if it is nearby. It should also indicate areas under threat around the site (for example, eroding dunes, areas where the coast edge is retreating or areas of animal damage).

If you have several sites in the same area, and are going to complete a separate recording form for each of the sites, you needn't make a different location sketch for each. Draw a sketch on the first sheet, which identifies the position of all the sites to be recorded and on subsequent forms, refer to this location sketch, instead of copying the whole drawing each time.

- **DETAILED SKETCH PLAN / SECTION:** a more detailed drawing showing the principal elements of the site, either in plan, section, or both. Show the dimensions of features and the approximate position of north.

The **detailed sketch** is a more detailed drawing of the archaeological site described on the recording form. This sketch-drawing can be a plan, a section/elevation, or both. Remember, however, that it is a sketch whose purpose is to help you and others remember the layout of the site and its principal elements; it is not meant to be an accurate representation drawn at scale.

Draw as many relevant features as necessary. These could include areas where walling is exposed, places where the site's shape is visible as a bump in the ground, or places where the site has been damaged.

Don't forget to mark on the sketch-drawing the dimensions of the site and the position of north. If you have taken detailed photographs of parts of the site, you could mark the position of the photographed features on the sketch plan.

Revised Recording Sheet and Guide

Designed 2010

Arfordir Recording Form

SITE ID This information will be used to distinguish the site from others

PRN no. (if any)

Coastal Survey no. (if any)

Your Site no.

LOCATION OF THE SITE This information will help you and others return to the site

Site Name and Location (topographical description, nearest map name, nearest town)

National Grid Reference (NGR) – or mark on map provided

SITE DESCRIPTION The description will help to identify the site type, function and date

Dimensions (Metric) – If easier note measurements on a sketch

Length

Width

Height/Depth

Orientation

Dist to High Water

Full description – include as much information as possible – construction material, shape, unusual features, local information, possible function, estimated period etc.

Associated Finds/ Sites – include information of any finds or sites associated with the site e.g. if recording a pill box note any other defensive features in the area.

Condition and Threats – brief description of the condition of the site and any apparent threats e.g. erosion or vandalism.

FIELDWORK INFORMATION

Recorded by

Date

The Arfordir Recording Form : Guide

Using the Arfordir form will ensure that all relevant information about a site is recorded. The data is compatible with that held by the HER. This means that information you collect can be passed on to easily, allowing new records to be generated or existing records to be updated.

The form will also help remind you of the condition of the site at the time of your first visit, allowing you to compare how much it changes. If you make a follow-up visit to your sites, you will be able to use the completed forms to evaluate any differences.

Ideally, the form should be completed in the field, but this is sometimes impractical due to strong winds or heavy rain. If this is the case, the form can be completed after you return home. If you leave it until later, try to complete the form as soon as possible, while things are fresh in your mind.

If you are not completing the form in the field, take notes about your site, recording them in a notebook or on a piece of the waterproof drafting film in order to remind you of the information required on the form when taking notes, use the Arfordir field guide. Laminated copies of this are available from the Iwan Parry at Gwynedd Archaeological Trust.

Use a black pen to complete the form, as this is the most clear when photocopied. You don't need to use block capitals, but you should write as clearly as possible so that others can read the form later.

Once the form is completed, send a copy to Iwan Parry, Gwynedd Archaeological Trust, Craig Beuno, Bangor, Gwynedd, LL57 2RT.

The following describes the various sections of the Arfordir form, and explains the type of information required in each of the boxes.

SITE ID This information will be used to distinguish the site from others

These boxes ask you to give the numbers that you and others have given the site. Some sites will have been examined before, and a record already made in the HER. If this is the case, use their information to complete the relevant boxes, making notes if you think their information is incorrect.

Regardless of whether a site has been numbered before, you should always give your own unique number to it. Use this number to distinguish your site from others. This is particularly important in areas where there are several sites close to each other (for example, on the edge of a remote sandy bay or on the end of a promontory). If all the sites were given the same number (or given no number at all), it would be hard to recognise which site the record referred to. Identifying sites uniquely is also important for cross-referencing finds, photographs, drawings and other records which have come from the site.

Your Site no.	You should give every site that you record a unique number, regardless of whether it has already been given a number by another organisation. This is your own group's number and should be taken from your Site Register. Using the Site Register ensures that no two sites end up having the same number.
PRN no.	If the site has been recorded on the Historic Environment Record for Gwynedd, and you know its number, write the number here.
Coastal Survey no.	If you know the number assigned to the feature during the previous Gwynedd Archaeological Trust Coastal Erosion Survey note it here.

LOCATION OF THE SITE This information will help you and others to return to the site

It is extremely important to be able to return to a site after you have found it. You should record both the name of the site, including the parish and Local Authority area, and try to get a grid co-ordinate. Although a site may appear obvious at the time of your visit, it may not be so easy to find a second time, once bracken has grown up around it or the coast edge altered after a severe storm. Recording the location as precisely as possible increases the chance of finding the site again. The grid co-ordinate can be determined from maps or can be taken using a Global Positioning Satellite (GPS). Gwynedd Archaeological Trust can also provide you with printed maps of the areas that you intend to work so that sites can be marked directly on the sheet, once these are returned to us we can add the NGR to your sheets.

Site Name and Location (address or description)	If the site has already been recorded in the HER, use the name that they have given. Only record the main name of the site, not the alternatives. If you think the name they have given is incorrect, record this name, stating why you think it is wrong, and write in the correct name. If the site has not been previously recorded, please write your own name for the site. The name given is usually that of the nearest marked point on the Ordnance Survey map. Include, if necessary, a description of where the site is in relation to this place (for example, <i>the south end of Trefor Pier</i> or <i>200 metres north of Penrhyn Bay</i>). If the site is in a town, village or other easily identifiable place, enter the postal address.
National Grid Reference (NGR)	Record the full Ordnance Survey National Grid Reference (NGR), separating it into Map Square; Easting; and Northing. This is most easily done with a hand held GPS, however if you are using a map to determine the grid reference, use the largest scale possible. REMEMBER YOU CAN ALSO MARK THE LOCATION ON MAPS AVAILABLE FROM IWAN PARRY AT GWYNEDD ARCHAEOLOGICAL TRUST
Map Square	Write down the two letter code which identifies the Ordnance Survey 100km square THE MAJORITY OF GWYNEDD'S COASTLINE WILL BE SH THE EXCEPTION IS THE SOUTH IN THE TYWYN AREA WHICH IS SN .. The map square is displayed by a GPS and is shown in the margin and the top left corner of an OS map. Note that the code changes when the first two numbers of either the Eastings or Northings equal '00'.
* Easting	Eastings are the numbers at the bottom of a map, and are the first numbers given by a GPS.
* Northing	Northings run up the side of a map, and are the second numbers given by the GPS.

SITE DESCRIPTION The description will help to identify the site type, function and date

Many archaeological sites are a distinctive shape or size, due to when they were built or what they were used for. By describing a site, you can help determine the nature, function and date of the archaeological remains. Often, looking carefully at a site in order to write the description can help you to start thinking about the remains in a different way, making you notice clues about the site which may help with its interpretation.

When writing the description, imagine that you are writing for someone who is not present and cannot see what you are looking at. Remember that in many cases, a photograph can often be worth hundreds of words, so photograph parts of the site and make reference to these photos in the description. Even if you aren't able to guess the site's type and date, giving a detailed description and providing photos may help someone else to understand the significance of your find.

Even if only very little of the site is visible, for example, as remains eroding out of a sand dune or cliff edge, record what you can see with as much detail as possible.

Site Dimensions	Record the dimensions of the site. If only approximate, write <i>approx.</i> All measurements should be metric (metres, centimetres and millimetres).
Length	Record the length of the site, and state which orientation the measurement relates to (for example <i>12.20m N-S</i>).
Width	Record the width of the site, and state which orientation the measurement relates to (for example <i>6.45m E-W</i>).
Height/Depth	Record the height of the site if above ground (for example, the height of standing walls or of a mound), or the depth if below ground (for example, a pit seen in an eroding section). It is usual to note the maximum height or depth. State what has been measured and whether the measurement given is 'height' or 'depth' (for example, <i>max. height of walls 0.45m; max. depth of pit 1.20m</i>).

* Full description	Use this space for a full description of the site. Where necessary, take photographs to illustrate features within the site. Describe the shape and form of the site (for example, <i>linear wall</i>; <i>rectangular building</i>; or <i>circular mound</i>) and if the site is a structure, state what it is made from and how it is constructed (for example, <i>mortared bricks</i>; <i>heap of loose stones</i>). Record other features that the site relates to (for example, <i>one of several mounds in the area</i>), and put it in its setting (<i>on a small hill overlooking Porth Neiwgl</i>). You can also record any local knowledge about the site that you may have. If necessary, continue writing the description on the reverse of the sheet (making sure you leave enough room for your sketches). Enter the site type if known. This can be quite general (for example, <i>rectangular building</i>, <i>dry-stone wall</i>). If unsure, record what you think it may be, using a question mark at the end. Record the period that you think the site belongs to. This can be quite hard, but certain periods are obvious, such as structures that include modern materials such as concrete. Previous archaeological work at the site, or the discovery of certain finds may also help to date a site. If you don't know the exact period, but can estimate an approximate period, put a question mark after the date. If there are no clues to the date, write Don't Know. This is the most usual thing written in this box. If you were able to give a period, state how you did so (for example, <i>previous archaeological work at site</i>; <i>local knowledge</i>; <i>site built of concrete and bricks</i>).
Condition and Threats	This section allows you to record the condition of the site. This is important information and it helps to show how stable or vulnerable the site is. It also provides information from which future monitoring can be based and helps to show how the site changes over time. You also use this section to recommend any future work that needs to be done at the site. State the condition of the site using one of the standard terms below. Remember that you are describing the condition of an archaeological site, not a perfectly preserved building. The site will already have been damaged in the past - you are describing whether the site is in danger of further damage. Good (walls in stable condition, site showing no signs of being damaged). Fair (parts of walls collapsing, site showing some signs of damage but presently in a fairly stable condition). Poor (site in danger of collapse or of being destroyed in the near future). Destroyed (site known about from previous visits or through the records of others, but no longer existing). Only use the term <i>destroyed</i> if you are sure that the site no longer exists. If you can't locate a site previously identified, but suspect it may be buried or hidden under vegetation, write Not Found. State what threats you think there are to the site, (for example, <i>on-going coastal erosion</i>; <i>animal damage</i>; <i>plants growing on it</i>; <i>recreational use</i>). Record whether you think that these threats are likely to get worse.

FIELDWORK INFORMATION This will remind you and others about the actual survey

This section records who did the survey, who filled in the recording sheet and when the survey was done. This is key information as there may be things recorded on the form that need to be clarified or added to at a later date.

* Form recorded by	Write down the name of the person or people who filled in the form. Make sure you record who actually did the writing in the field, as sometimes they are in the best position to read their own writing, especially after a cold afternoon's recording!
* Survey date	Write down the date of the survey. This is important for monitoring the site as it shows when the site was in a certain state and allows the rate of change to be evaluated.

ARFORDIR - RECORDING FORM

Sketch drawings

Sketch-drawings convey a great deal of information, and one sketch often saves hundreds of words. They are very important as they help you to find a site again on subsequent visits. You can also use simple sketch-drawings to illustrate the principal elements of the site and its surrounding landscape, and you can refer to them in your written description.

Use the drawings to show the relative positions of features (for example, the position of the site in relation to an outcrop of rock or to a road) or to illustrate irregular shapes (for example, complicated building plans or architectural details such as doorways).

It is often easier to draw two sketches at different scales, one showing the site within the surrounding landscape, the other illustrating details of the site. It is not always necessary to make both sketch-drawings and sometimes just a single one is enough.

How...

As you are only drawing sketches, you don't need to worry about great accuracy or drawing to scale. If you think that accurate and detailed plans are necessary, these can be done as separate drawings.

It is normal practice to have north at the top of any archaeological drawing and if possible you should follow this convention. Exceptions occur when the space provided on the page does not match the shape of the site. Whichever direction north is pointing, always place a north arrow on your sketch-drawing.

You should record distances on your sketches, as this will give necessary information about the size and position of the site. When recording distances, always use the metric system (metres, etc.), making sure that you have used the correct side of the tape when taking measurements (it is very easy to confuse the Imperial and Metric side of some tapes). If distances are only approximate, write **approx** after them.

SKETCH LOCATION DRAWING: a drawing showing the location of the site in relation to other features (with distances), the location of the coast edge (if relevant) and the approximate position of north (usually north is at the top of the drawing).

The **sketch location drawing** shows the site within its surrounding landscape. Its purpose is to help you and others find the site again on subsequent visits. If the site is going to be easy to find (for example, it is marked on OS maps or is in a back garden), this sketch may not be necessary. If you think that finding the site again may be difficult, mark on as many things as possible that will help identify it in the future.

Try to use 'hard' features, things surrounding the site that are easy to spot and are unlikely to move. These could be natural (such as trees or outcrops of rock), or man-made (such as walls or buildings).

Mark the distances from the hard features to the site on the sketch. Use measuring tapes if the features are close enough, or pace out the distance if they are far way. If pacing out distances, try to get your pace as close to one metre as possible. If you want to practice, try stretching out the tape in the direction that you are going to walk and pace out the length of the tape, then continue walking towards the feature.

If using field boundaries to measure from, remember that one stretch of wall can look much like another, so try to show the overall shape of the field. Mark on the corners of walls, gates, etc. and where possible, take measurements from these positions rather than from a straight section of wall.

The sketch location drawing should show the position and distance to the coast, if it is nearby. It should also indicate areas under threat around the site (for example, eroding dunes, areas where the coast edge is retreating or areas of animal damage).

If you have several sites in the same area, and are going to complete a separate recording form for each of the sites, you needn't make a different location sketch for each. Draw a sketch on the first sheet, which identifies the position of all the sites to be recorded and on subsequent forms, refer to this location sketch, instead of copying the whole drawing each time.

DETAILED SKETCH PLAN / SECTION: a more detailed drawing showing the principal elements of the site, either in plan, section, or both. Show the dimensions of features and the approximate position of north.

The **detailed sketch** is a more detailed drawing of the archaeological site described on the recording form. This sketch-drawing can be a plan, a section/elevation, or both. Remember, however, that it is a sketch whose purpose is to help you and others remember the layout of the site and its principal elements; it is not meant to be an accurate representation drawn at scale.

Draw as many relevant features as necessary. These could include areas where walling is exposed, places where the site's shape is visible as a bump in the ground, or places where the site has been damaged.

Don't forget to mark on the sketch-drawing the dimensions of the site and the position of north. If you have taken detailed photographs of parts of the site, you could mark the position of the photographed features on the sketch plan.

Appendix B

Dinas Dinllaen
Fieldwork Report

Achub Archaeoleg Llŷn Dinas Dinllaen

Preliminary Excavation Report



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Dinas Dinllaen

Preliminary Excavation Report

Project No. 2229

Prepared for: GAT

March 2012

By: Iwan Parry, Tegid Williams & Dave Hopewell

Illustrations by: Iwan Parry

Cyhoeddwyd gan Ymddiriedolaeth Archaeolegol
Gwynedd
Ymddiriedolaeth Archaeolegol Gwynedd
Craig Beuno, Ffordd y Garth,
Bangor, Gwynedd, LL57 2RT

Published by Gwynedd Archaeological Trust
Gwynedd Archaeological Trust
Craig Beuno, Garth Road,
Bangor, Gwynedd, LL57 2RT

Cadeiryddes/Chair - Yr Athro/Professor Nancy Edwards, B.A., Ph.D, F.S.A.
Prif Archaeolegydd/Chief Archaeologist - Andrew Davidson, B.A., M.I.F.A.

Mae Ymddiriedolaeth Archaeolegol Gwynedd yn Gwmni Cyfyngedig (Ref Cof. 1180515) ac yn Elusen (Rhif Cof. 508849)
Gwynedd Archaeological Trust is both a Limited Company (Reg No. 1180515) and a Charity (Reg No. 508849)

Figures

Fig. 1: West facing section of first rampart

Fig. 2: East facing section of first ditch

Fig. 3: West facing section through second rampart

Fig. 4: West facing section through second ditch

Fig. 5: Interpretation of the phases of development

Plates

Plate 1: Trench 1, second ditch, post-excavation.

Plate 2: Trench 2, first ditch, post-excavation.

Plate 3: Trench 3, first rampart, post-excavation.

Plate 4: Trench 4, second rampart, post-excavation.

Appendix

Appendix A:
Dinas Dinllaen Environmental Report

1. INTRODUCTION

Dinas Dinllaen (PRN 421) is a coastal promontory fort located on a distinctive headland which protrudes into Caernarfon Bay on the northern coast of the Llŷn Peninsula (SH27454170).

The headland itself protects the small port of Porthdinllaen from all but north-westerly winds, providing over 100 acres of safe anchorage. Today Porthdinllaen is a quiet fishing port owned by the National Trust; however, in the late 19th century it stood on the verge of becoming a major commercial port, providing the main transport link between Britain and Ireland. Porthdinllaen eventually lost out to Holyhead and as a result the area remains largely undeveloped.

The land occupied by the promontory fort now forms part of the Nefyn and district golf course which was established in 1907. Landscaping associated with the golf has affected the majority of visible archaeological features but portions of the defences remain largely unaffected.

Coastal erosion is now slowly eating away at the softer glacial drift which forms parts of the headland, and in recent years has started to affect some of the archaeological features, in particular the second and third defensive banks.

The excavation of the promontory fort was conducted jointly through the Cadw funded Arfordir project and Achub Archaeoleg Llŷn. The aims of the project were to identify the date and significance of the remains by undertaking small excavations prior to stabilising the active erosion. It was also devised to provide opportunities for members of the public, especially those from local communities, to become involved in aspects of archaeological work.

The excavation took place between 17th of October 2011 and 4th November 2011. In total 15 local volunteers were involved in the excavation, and pupils from three local primary schools visited the site for a tour and associated educational activities.

2. BACKGROUND

Dinas Dinllaen is the largest of a handful of coastal promontory forts located along the coastline of Gwynedd and Anglesey. Two ditches and three banks located at the narrowest point at the neck of the headland enclose an area of some 14 acres surrounded by a combination of rocky, and steep glacial cliffs.

The earliest evidence of human activity at the site has been found in the form of struck flints eroding from the tip of the headland. These are likely to be Mesolithic in date and show that the site was occupied, probably on a seasonal basis, by hunter gatherers around 10,000 years ago.

Although the existence of the fort has been known since at least 1748, when it appears on a sea chart of the area by Lewis Morris, there is no evidence of any excavation taking place at the site by either antiquarians or archaeologists. One of the best literary references of the site comes from *Archaeologia Lleynensis*, written by local clergyman John Daniel in 1892. Daniel mentions that at the time of writing a number of hut circles could be seen in various locations in the interior of the fort and that human bones had been found at two locations, in or near to the fort, which were believed to be burial sites. Another interesting feature described by Daniel is the 'compass' which appears to have been an earthwork with four 'fingers' or points which indicated the cardinal points. The exact location of this feature is unclear but current golf course workers believe that it is located in an area within the fort where some earthworks can clearly be seen.

The Royal Commission also recorded the site for the Inventory of Ancient Monuments. At the time the site was recorded the golf course had already been established and the majority of the features in the interior of the fort had, presumably, already been removed. They do record the ramparts and ditches in some detail, something largely overlooked by Daniel, and dismiss some other internal features as the result of turf cutting.

One interesting feature mentioned by both Daniel and the Royal Commission is an earthwork at the very tip of the headland. This is still visible today as a collection of low banks outlining the footprint of either a four-celled rectangular building or four small 'terraced' buildings. Daniel and the Royal Commission associate the feature with Irish labourers that came to construct the road from Porthdinllaen to Chwilog, and to work on the port itself in anticipation of its future development; something which never materialised.

The small port of Porthdinllaen sits to the east of the fort; this is now accessed by a track which cuts between the first and second ramparts. This presumably developed in the depression of the second ditch which is still visible to the west. As the only natural harbour between Caernarfon to the east and Bardsey to the west, Porthdinllaen would have been used by fishermen, traders and travellers for millennia. The potential of the harbour was realised by William Madocks in the early 19th century when he envisaged the development of Porthdinllaen as the main port for communication with Ireland. Despite his best efforts and a degree of political support, Holyhead eventually came out on top, largely due to the completion of the Britannia Bridge and the rail links to London which it provided.

3. METHODOLOGY

3.1 Excavation

The main focus for the excavation was the outer defensive array which comprises two banks and infilled ditches (PRN 31927, centred on SH27454156). It was decided that trenches would be excavated across both ditches in an attempt to recover datable material, either artefactual or environmental. The eroding areas of the two banks were utilised in order to provide complete sections where stratigraphy could be recorded whilst minimising additional impact.

In all four trenches were excavated.

- Trench 1 investigated the second (inner) ditch.
- Trench 2 investigated the first (outer) ditch.
- Trench 3 investigated the first bank.
- Trench 4 investigated the second bank.

The excavation was successful in pinpointing the exact locations of both ditches and providing a full profile of both. Sections through the banks also proved to be very informative with clear evidence of phasing identified.

3.2 Results

3.2.1 Trench 1

(Fig. 4 & Plate 1)

Trench 1 was positioned to investigate the second ditch which is located between the first and second banks. The trench measured 6m x 2m and was on a roughly N-S alignment.

The line of the ditch was identified almost as soon as the turf had been removed; however, the actual edges were not initially clear due to subsequent sand ingress. Identification of the edges of the cut continued to be a problem throughout the excavation and as a result overcutting occurred on the northern side. The limits of the ditch could be seen relatively clearly in section once excavation was complete.

The ditch was found to be fairly shallow in profile and reached a depth of 1.4m from the current ground surface, and was approximately 5m wide. It had originally been cut into a firm sandy deposit with bedrock only being encountered at the base. There was no evidence of the ditch being re-cut at any point.

The ditch was filled by seven deposits all of which had fairly high sand content. The primary silting at the base of the ditch (**021**) is likely to provide the most significant material in terms of dating. A small amount of charcoal was visible in this deposit and the clayey nature of the deposit may have aided preservation of other organic material.

Other than the primary silting none of the other fills appeared to be very significant. Gravelly deposit **(018)** was material which had slipped from the second bank and collected on the northern side of the ditch once it had stopped being cleaned out. It appears that after the ditch became redundant it gradually filled with wind-blown sand.

3.2.2 Trench 2

(Fig. 2 & Plate 2)

Trench 2 was positioned to investigate the outer, or first, ditch of the promontory fort in an area where the first bank had been removed, presumably during landscaping for the golf course. The trench originally measured 9m x 2m and was orientated roughly N-S, it was extended to the north by 3m to locate the edge of the ditch and finally measured 12m x 2m.

Although the depression of the ditch was clearly visible prior to excavation the exact location was not instantly apparent during excavation. It was also clear that the area had been subject to some fairly recent disturbance and backfilling as the upper deposits contained a fairly large amount of modern 'rubbish' such as bottles, cables and plastic pipes. When finally excavated the first ditch was found to be substantially larger than the second. In profile it could be broadly described as a 'V' shaped ditch but with a rounded base. The outer edge was slightly less steep than the inner which was near vertical towards the top where it would have originally merged with the first bank. The ditch measured approximately 6.5m wide and reached a maximum depth of 2.5m and would clearly have been a formidable obstacle, especially when coupled with the first bank.

As with the second ditch, the only deposits within the ditch that appeared to be significantly different from the sand-rich filling deposits was the primary silting **(027)** identified at the base of the cut. Within this clay-rich deposit charcoal could clearly be seen and the potential for survival of other organic material is high, something clearly indicated by the sulphurous odours experienced during excavation. Banding within the deposit also seemed to show episodes of cleaning out of the ditch when it was in use. In all 4 bags, amounting to approximately 40 litres, of this material was collected for environmental analysis and retrieval of dating material.

No evidence of re-cutting could be identified in the section of the trench and the sandy nature of the majority of the fills seem to indicate that the ditch filled naturally after going out of use. Only the upper deposit **(001)** appeared to have been intentionally dumped as it contained a large amount of modern material.

An early 19th century clay pipe bowl was discovered in deposit **(003)** which suggests that the main episode of dumping in the area occurred sometime after this period. This would fit in with increased activity in the area associated with the potential

development of the port and the landscaping of the area with the development of the golf course.

3.2.3 Trench 3

(Fig. 1 & Plate 3)

Trench 3 was positioned to investigate the first bank. The western portion of this bank, in the area where trench 2 was located, was removed in the past, presumably for the purposes of the golf course. The trench was excavated to examine the surviving portion of the bank at its western limit. Examining the section was relatively easily done by removing material that had been recently placed at the end of the surviving bank to form a grassy slope. The trench measured approximately 0.7m x 4.4m, and was orientated N-S.

Excavation showed that there were two distinct phases of bank construction and these were clearly visible in section. Construction of the bank had also sealed the original turf ground surface **(011)** which was clearly visible as a grey band. Underlying the turf layer were two substantial deposits which were presumably the relict topsoil **(054)** and subsoil **(055)**. Unusually the topsoil layer appeared to be lighter and less organic than the subsoil below, presumably the result of leaching over time.

The first phase of bank construction consisted of a small bank measuring around 2.3m wide and 0.4m high. The bank was made up of three distinct deposits, **(009)**, **(010)** and **(057)**, all of which were firm and appear to have been deposited at the same time.

During the second phase of construction the bank was made substantially bigger with the addition of material to the top and rear of the bank. After the enlargement of the bank it measured roughly 4.5m wide and 0.75m high. It did not appear that any additional wall or additional defences were placed on top of the bank.

The bank now appears as a regular, smooth semi-circular earthwork; however, the section shows that originally it would have been higher towards the exterior, which would be favourable in a defensive situation. The build-up of blown sand at the back of the bank after abandonment is what gives the bank its present appearance.

3.2.4 Trench 4

(Fig. 3 & Plate 4)

The fourth trench was excavated to record the western limit of the second bank which was eroding due to its exposure to wave action and general weathering. Due to the erosion, not a great deal of excavation was necessary and the majority of the work involved cleaning the already exposed section. The trench measured 9.8m in length and approximately 0.6m wide, the trench was orientated N-S with the southern limit joining trench 1.

Excavation appeared to show four phases of bank construction.

During phase 1 a low bank similar to that seen in the first phase of the first bank was constructed. This measured 3.2m wide and was approximately 0.7m high. As with the first bank, the original ground surface had been sealed during its construction and a light grey turf line was clearly visible. The size of the bank suggests that the second ditch would have been smaller during this phase; although the dimensions could not be determined from the section in trench one as the later expansion had obliterated all evidence of the smaller ditch.

The bank was substantially enlarged during the second phase, increasing its width to approximately 7.7m and height to around 1m. It is almost certain that the ditch was enlarged to the dimensions recorded in section at the same time as the bank reached this stage in its development. This is because one of the last deposits **(032)** dumped on top of the bank in this phase consisted of broken bedrock, presumably removed from the bottom of the second ditch. This second phase bank appears to be much more convincing as a defensive structure, especially when coupled with the enlarged ditch.

During the third phase additional material appears to have been added to the back of the bank. One of the deposits of this phase, **(037)**, appeared to have consisted of several thin layers of material, possibly suggesting that it may have been the result of gradual build up over a fairly long period of time. Such build up could possibly be explained by constant trampling, something that is likely to have occurred if the defences were manned regularly. This additional material would have increased the width of the bank to approximately 9.1m.

During the fourth phase it appears that some additional material **(045)** was added to the rear of the bank although it does not appear as if this would have increased its width. The cut of a post hole or slot **(061)** was not clearly visible in section but the packing stones **(044)** within it were. This would have formed the foundation of a timber palisade; the void left by the rotting timber was clearly defined by a clean sandy deposit **(042)**. At this point the bank would have been a substantial defensive structure.

Excavation of this trench appears to have provided the most evidence of the chronological development of the defences. Soil samples were collected from a number of deposits from the various phases of the bank; it was hoped that these would provide material suitable for radiocarbon dating.

3.3 Finds

No finds relating to the Iron Age fort were recovered during excavation. The Iron Age in north-west Wales is generally aceramic and very little in the way of datable artefacts are usually found at sites of this period.

Some struck flints were found in the upper layers of the ditches but these were clearly not within sealed contexts and are likely to have been moved by recent activity, probably associated with the construction and maintenance of the golf course.

The sandy upper layers of the first ditch were full of modern rubbish, again probably deposited during the construction and maintenance of the golf course. An early 19th century pipe bowl (**SF 10**) decorated with a 'horn of plenty' on one side, and what may be a wheat-sheaf on the other was discovered in the upper deposits of the first ditch. This could have been deposited during the time that the port was being considered for development.

3.4 Environmental Results

(See Appendix 1)

Following the processing of the environmental samples it became apparent that very little potential dating material was present. Only a single sample contained a sufficient amount of material to be radiocarbon dated.

The material that could potentially be dated was recovered from the primary fill of the second ditch (**021**) and consisted of carbonised oak. Although oak is not considered to be the best material for radiocarbon dating, the samples recovered were sapwood which can still provide a fairly accurate date for activity at the site. Due to the fact that no dates have ever been determined for the site, it was decided that in this instance even gaining a broad date for the monument was worthwhile. Samples have been submitted and the results are pending.

3.5 Discussion

The excavation has clearly shown that the site was in use for long enough to be substantially modified on a number of occasions, suggesting a certain degree of longevity to the use of the site.

The turf layers sealed during the construction of the banks were essential in understanding the development of the site, showing the exact ground level at the point of construction. Recognition of this layer has allowed us to better understand the underlying soils prior to the establishment of the fort, giving hints of land use prior to the event. The relatively thick relict topsoil and subsoil appears to suggest that agriculture was firmly established and fairly intensive at the site. The amount of charcoal within these layers also indicates that there was fairly intensive activity in the area. The identification of oak, hazel and other unidentified charcoal could potentially be the remnants of initial clearance or more general domestic activity in the vicinity. This may be comparable to dark artefact-rich, thick, dark soil associated with early activity at the multi-phase site of Castell Odo (Alcock, 1960). At Castell Odo the deposit

was associated with late Bronze Age activity, prior to the construction of defensive banks. Parallels may also be drawn with dark earth occupation deposits and ephemeral midden deposits found under and against contemporary hilltop enclosures in southern Britain (Waddington, 2009). It is unfortunate that the deposits encountered at the site did not yield artefacts, however, this may simply be due to the relatively small scale of the excavation.

The development of the banks (*Fig. 5*) is reflected in most Iron Age enclosures in Britain; other local examples of similar development can be seen at Castell Odo and Dinas Dinorwig (Lynch, 1995). The defences at both of these forts were substantially strengthened over the course of their life.

Although we have clear evidence of the chronological development of the banks, what is missing is dating evidence to firmly establish when these events took place. The environmental samples did not contain material that could be used to ascertain accurate dates and no artefacts were recovered. It is possible that excavation on a larger scale would provide better evidence; however, this is unlikely to occur in the near future.

The lack of any Roman pottery from the ditches may suggest that the site had ceased to be used towards the end of the Iron Age. Once again, however, it has to be noted that only a relatively small portion of the ditches were investigated. Other defended sites that were clearly in use during the Roman period, including Dinas Dinlle and Tre'r Ceiri, have all produced Roman finds during excavations.

It can be concluded that Dinas Dinllaen was clearly a defended stronghold that developed over a period of time, and was established on land that had previously been improved for cultivation.

3.6 Reinstatement and Consolidation

The erosion of the second bank was one of the main reasons for selecting the site for excavation. Coastal erosion is a constant threat to archaeology; entire sites can be lost without ever being recorded with priceless information being lost forever. As well as excavating the site, the project also aimed to consolidate the second bank, reducing the risk of further erosion in the immediate future.

The western end of the second bank had clearly been eroding for some time, becoming completely exposed and void of vegetation. Exposed sections like this are not only under threat from wave action; they also suffer badly through the freeze-thaw process and wind erosion.

Following the excavation, the exposed section of the second bank was covered using perishable hessian sandbags filled with the material removed during excavation.

These not only provide instant protection from the elements, but should also provide a layer of consolidated material which will be eroded before any archaeology becomes affected. The sandbags will eventually be covered with additional soil from the same area, and finally covered in perishable erosion control fabric which will encourage the growth of local plants. Upon the advice of the golf-course greens-maintenance-team, the erosion control material will be installed in the spring when storms are less likely to hinder the consolidation process.

4. VOLUNTEER INVOLVEMENT

A total of 15 volunteers were involved in the excavation phase of the project. All of these were from Gwynedd and Anglesey and five were from the Llŷn Peninsula. Volunteers ranged in age from 17 to over 60 and came from various social backgrounds including 6th form students, university students, unemployed and retired. Two of those involved have already volunteered on other projects and all have expressed an interest in volunteering on future projects. In total, volunteers provided 700 hours of their time over a 3 week period.

5. SCHOOL VISITS

Three local schools visited the sites to observe the excavation and to take part in educational activities. The educational programme was devised and implemented by Gwynedd Archaeological Trust's education and outreach team. Activities looked at two main periods in the site's history; the Iron Age and the 19th century development of the site.

All schools were visited prior to the pupils coming to site so as to provide them with some background knowledge of the project and the site itself. These pre-visits also gave an opportunity for the children and outreach team to get to know each other, making the site visits more relaxed and enjoyable.

Upon arrival at the site the pupils and teachers were given a tour of the excavation, giving a brief explanation of the process of excavation and recording, and the reasons for excavating this site in particular. This was an opportunity to see the original depth of the ditches and the way that the banks were constructed.

Pupils learnt about the Iron Age fort by looking at the ways which people would have defended and attacked structures of this kind. Emphasis was placed on the height advantage provided by the high banks and deep ditches, and how daunting it would have been to attack such a formidable stronghold especially when being bombarded by a multitude of missiles from the ramparts. The domestic element of life in a fort was

explored by laying out the footprint of a typical Iron Age roundhouse using string and canes.

The 19th century development of the port, which never came to fruition, was explored by looking at the features that remain from this exciting time in the port's history. Pupils conducted a measured survey of Navy hut ruins which are still visible; these would have been home to labourers that came to work on the development of the port. The history of the lifeboat was investigated by looking at a series of photographs and taking into consideration the changes in the lifeboat house, the boats themselves and the people in the photographs. Contemporary plans of the proposed 19th century development were studied so that the pupils could imagine how the port might look today if the development had taken place.

The visits were very well received and as a result an art project was conceived with the aid of local artist Julie Williams. The project was expanded in the second phase of the Achub Archaeoleg Llŷn project with Julie generously giving her time as a volunteer.

6. BIBLIOGRAPHY

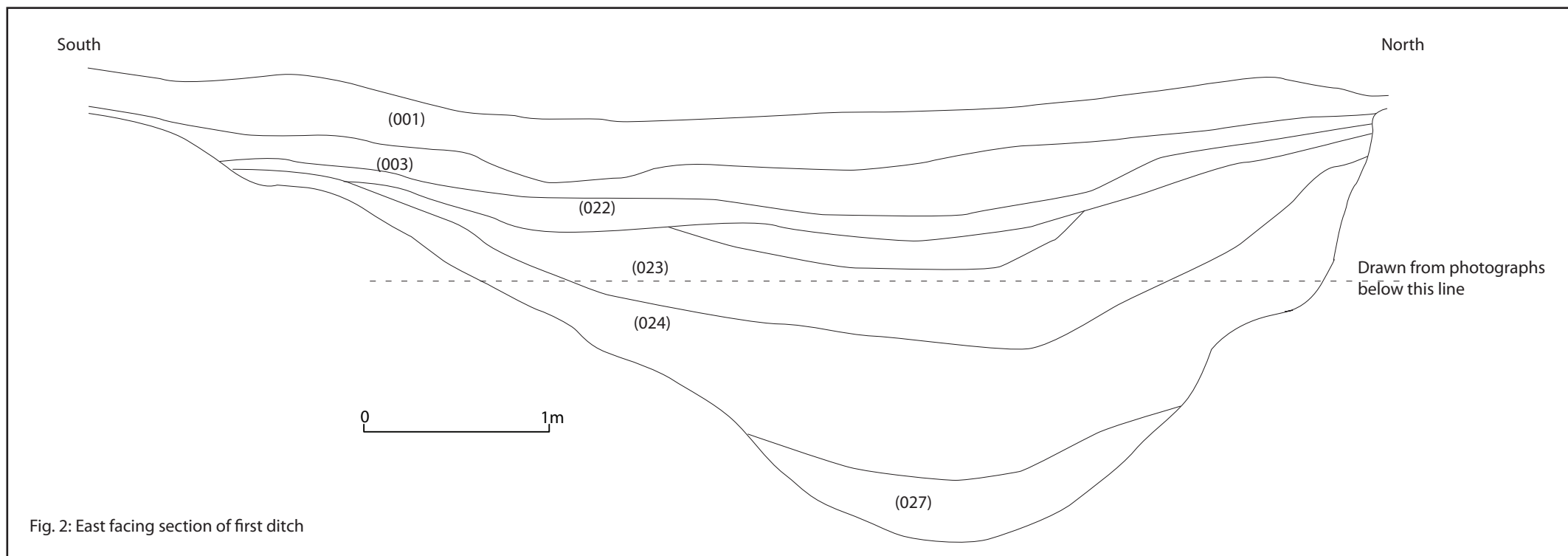
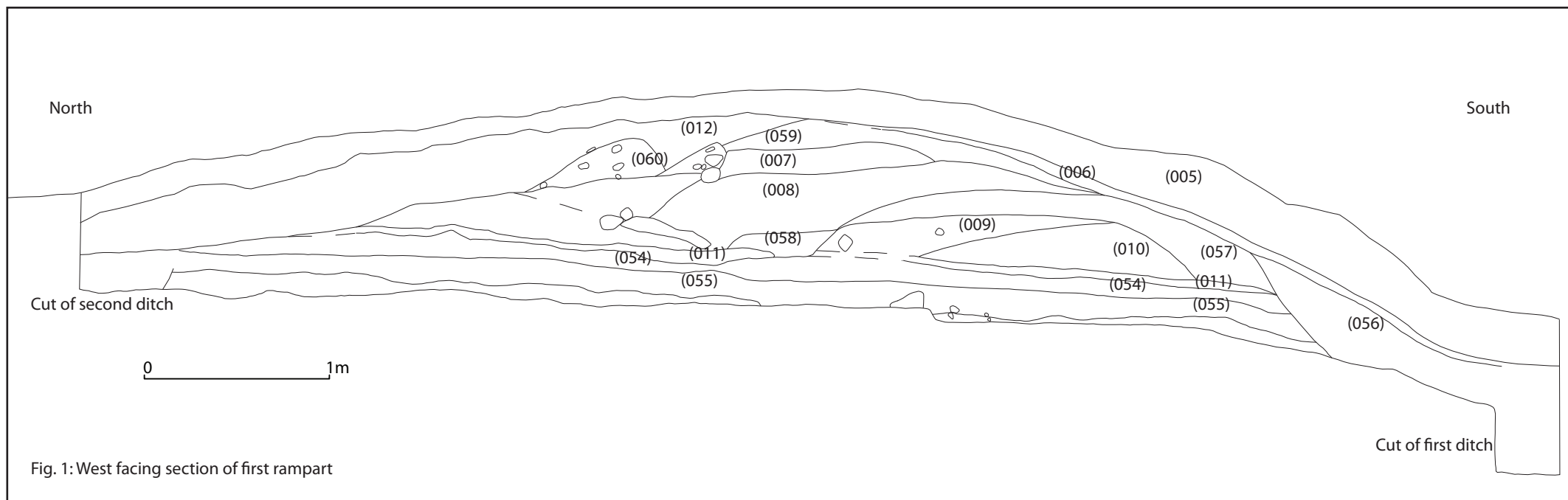
Alcock, L. 1960. Castell Odo: an embanked settlement on Mynydd Ystum, near Aberdaron, Caernarvonshire. *Archaeologia Cambrensis* 109, 78-135

Daniel, J. 1892. *Archaeologia Lleynensis: Sef Hynafiaethau Penaf Lleyn Fel Agoriad I Rai O Brif Hynafiaethau Cymru*, Nixon & Jarvis, Bangor.

Lynch, F. 1995. *A Guide to Ancient and Historic Wales: Gwynedd*, Cadw: Welsh Historic Monuments, Cardiff

Waddington, K.E. 2009. *Reassembling the Bronze Age: exploring the southern British midden sites*. Cardiff University: unpublished Ph. D. thesis.

Waddington K.E. 2010. *Excavations at Meillionydd 2010: Characterising the Double Ringwork Enclosures on the Llŷn Peninsula*. Bangor University unpublished report.



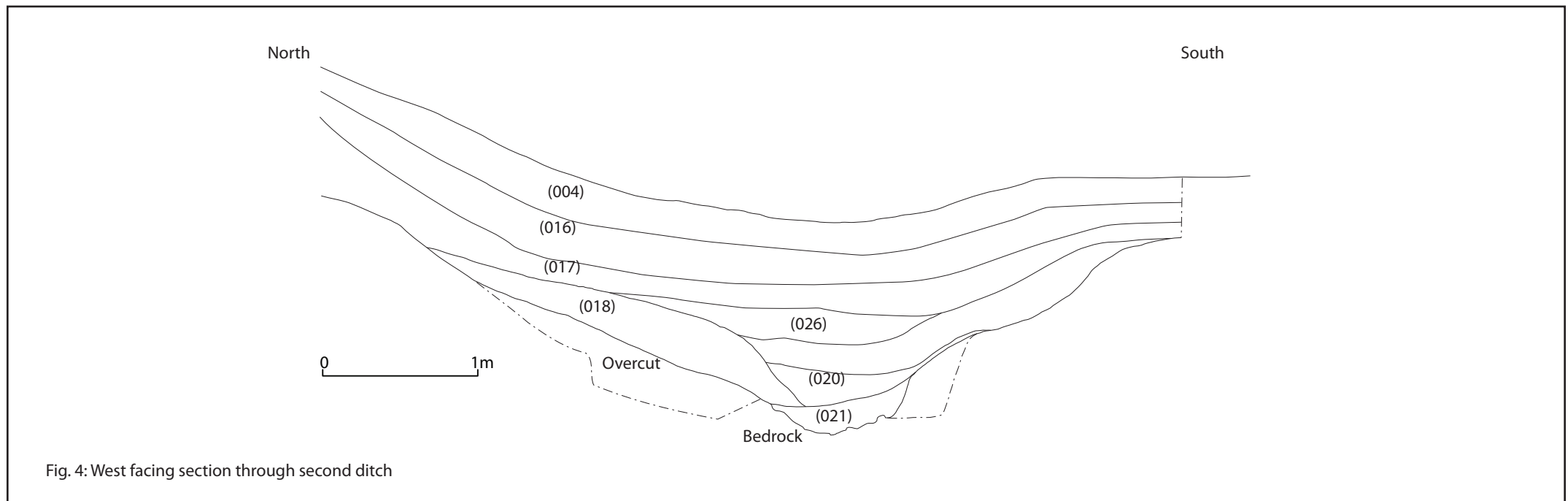
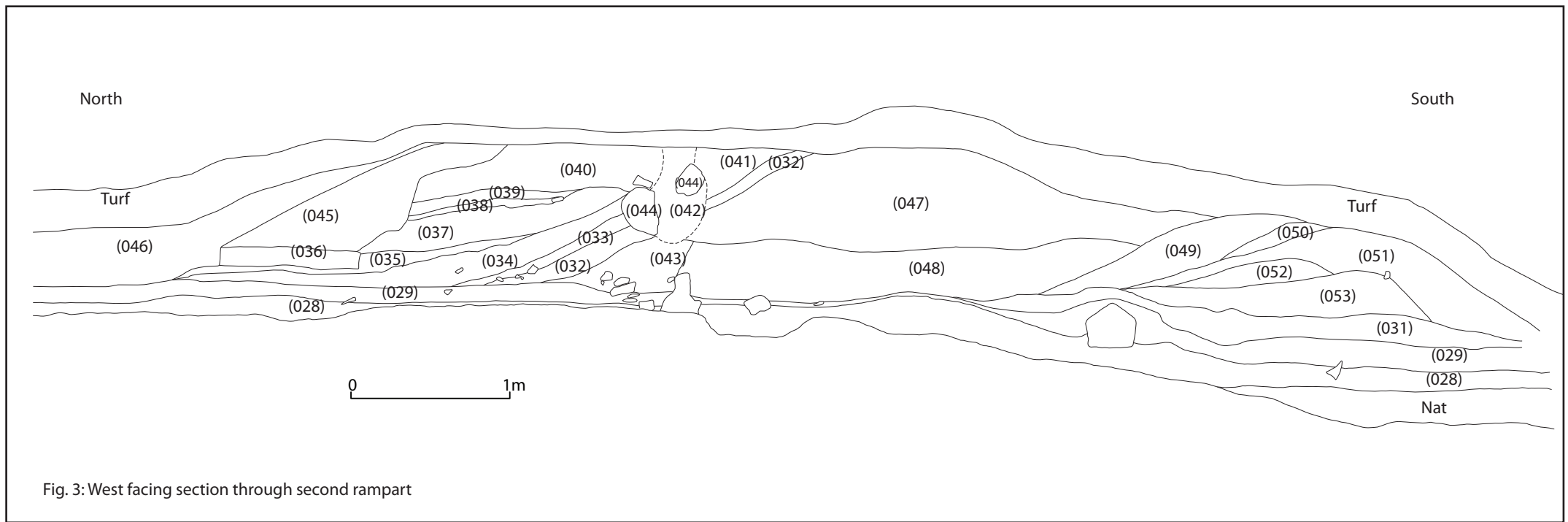




Plate 1: Trench 1, second ditch, post-excitation.



Plate 2: Trench 2, first ditch, post-excitation.



Plate 3: Trench 3, first rampart, post-excitation.



Plate 4: Trench 4, second rampart, post-excitation.

Appendix A

An assessment of the palaeoenvironmental potential of deposits from promatory fort at Porthdinallaen, test pits at Penychain, Abererch, and an orthostat at Morfa Abererch (Project Number: G2072 within project G2229)

Rosalind McKenna

4 Castle Cottages, Castle Lane, Carrbrook, Stalybridge, SK15 3QE

07540225003 OR 01457 837 186

roz_mckenna@hotmail.com

Introduction

A series of eighteen samples from deposits excavated at the promatory fort at Porthdinallaen, two samples from test pits at Penychain, Abererch, and a single sample from excavations at an orthostat at Morfa Abererch, were submitted for an evaluation of their environmental potential. The excavation was carried out by Gwynedd Archaeological Trust between 2004 and 2010. The samples from Porthdinallaen came from ditches and ramparts, the samples from Penychain, Abererch came from buried soil layers within test pits, and the single sample from Morfa Abererch came from a possible standing stone.

A programme of soil sampling from sealed contexts was implemented during the excavation. The aim of the sampling was to:

- assess the type of preservation and the potential of the biological remains
- provide C14 material for assistance in dating features
- identify if any human activities were undertaken on the site
- reconstruct the environment of the surrounding area

Methods

The material was submitted to the author in a processed state. It was processed by staff at Gwynedd Archaeological Trust using their standard water flotation methods. The flot (the sum of the material from each sample that floats) was sieved to 0.5mm and air dried. The heavy residue (the material which does not float) was not examined, and therefore the results presented here are based entirely on the material from the flot. The flot was examined under a low-power binocular microscope at magnifications between x12 and x40.

A four point semi quantitative scale was used, from '1' – one or a few specimens (less than an estimated six per kg of raw sediment) to '4' – abundant remains (many specimens per kg or a major component of the matrix). Data were recorded on paper and subsequently on a personal computer using a Microsoft Access database.

The flot was then sieved into convenient fractions (4, 2, 1 and 0.3mm) for sorting and identification of charcoal fragments. Identifiable material was only present within the 4 and 2mm fractions. A random selection of ideally 100 fragments of charcoal of

varying sizes was made, which were then identified. Where samples did not contain 100 identifiable fragments, all fragments were studied and recorded. This information is recorded with the results of the assessment in Table 3 below. Identification was made using the wood identification guides of Scweingruber (1978) and Hather (2000).

Taxa identified only to genus cannot be identified more closely due to a lack of defining characteristics in charcoal material.

Results

Table 1a – 1c below shows the components recorded from each of the samples.

Of the twenty seven samples submitted, charred plant macrofossils were present in a single sample – SN. 03 (007) (from the orthostat at Morfa Abererch) but were very poorly preserved, and were lacking in any identifying morphological characteristics. The results of this analysis can be seen in Table 2 below. The sample produced two fragments of indeterminate cereal grain, but both were very badly distorted, making identification impossible and too small in size to gain a general guess based on overall common size and features etc. of known grains.

Charcoal remains were present in all of the samples except one (SN. 18 from the promatory fort) and scored between a '1' or '3' on the abundance scale. There were identifiable remains in four of the samples. Two of the samples came from the promatory fort at Porthdinallaen: samples 09 (021) and 014 (029), one sample came from test pit 6 (TP06) at Pennychain, Abererch: sample 02 (065), and the final samples came from the orthostat at Morfa Abererch: sample 03 (007).

The preservation of the charcoal fragments was relatively variable even within the samples. The majority of the charcoal fragments within samples were too small for identification, as they did not provide enough identifying morphological characteristics on the size of fragments that were present. Where the fragments were large enough, some of the charcoal was firm and crisp and allowed for clean breaks to the material permitting clean surfaces where identifiable characteristics were visible. However, most of the fragments were very brittle, and the material tended to crumble or break in uneven patterns making the identifying characteristics harder to distinguish and interpret. Most of the samples were also affected by an orange substance, which filled the vessels and made the charcoal unidentifiable. This is caused by iron pan in the soil (a layer of iron oxide accumulation) which has been washed into the charcoal. Tables 3a – 3c below show the results of the charcoal assessment.

Sample 09 (021) from the promatory fort at Porthdinallaen, produced identifiable remains of oak and elm, together with a large amount of indeterminate charcoal fragments. Sample 014 (029) from the same site produced a few remains of identifiable hazel charcoal, together with a number of indeterminate fragments. Sample 02 (0605) from test pit 6 (TP06) at Pennychain, Abererch contained a few identifiable remains of willow/poplar charcoal and a smaller number of possible holly charcoal fragments. Sample 03 (007) from the orthostat at Morfa Abererch contained a small number of oak charcoal fragments together with a large amount of indeterminate charcoal fragments.

The total range of taxa comprises oak (*Quercus*), elm (*Ulmus*), hazel (*Corylus*), willow/poplar (*Salix/populus*) and possible holly (*Ilex*). These taxa belong to the groups of species represented in the native British flora. A local environment with a range of trees and shrub is indicated from the charcoal of the site. As seen in Table 3, oak is by far the most numerous of the identified charcoal fragments, and it is possible that this was the preferred fuel wood obtained from a local environment containing a broader choice of species. Oak is probably the first choice structural timber, and with a local abundance it may have been used instead of ash, thereby providing more by-product fire fuel.

Generally, there are various, largely unquantifiable, factors that effect the representation of species in charcoal samples including bias in contemporary collection, inclusive of social and economic factors, and various factors of taphonomy and conservation (Théry-Parisot 2002). On account of these considerations, the identified taxa are not considered to be proportionately representative of the availability of wood resources in the environment in a definitive sense, and are possibly reflective of particular choice of fire making fuel from these resources. Bark was also present on some of the charcoal fragments, and this indicates that the material is more likely to have been firewood, or the result of a natural fire.

Root / rootlet fragments were also present within all of the samples. This indicates disturbance of the archaeological features, and this may be due to the nature of some features being relatively close to the surface, as well as deep root action from vegetation that covered the site. The presence of insect fragments in five of the samples, earthworm egg capsules in two of the samples, and modern contaminants of plant macrofossils in nineteen of the samples further confirms this disturbance.

Material present within the samples did not contain appropriate sized or speciated fragments suitable for radiocarbon dating.

Conclusion

The samples produced little environmental material, with the exception of the charcoal from four samples and the plant macrofossils from a single sample. The deposits from which the samples derive, probably represent the dumping of domestic waste associated with fires.

These charcoal remains showed the exploitation of several species native to Britain, with the prevalence of oak, being selected and used as fire wood. Oak has good burning properties and would have made a fire suitable for most purposes (Edlin 1949). Oak is a particularly useful fire fuel as well as being a commonly used structural/artefactual wood that may have had subsequent use as a fire fuel (Rossen and Olsen 1985). Hazel is recorded as a good fuel wood and was widely available within oak woodlands, particularly on the fringes of cleared areas (Grogan *et al.* 2007, 30). Willow/Poplar are species that are ideal to use for kindling. They are anatomically less dense than for example, oak and ash and burn quickly at relatively high temperatures (Gale & Cutler 2000, 34, 236, Grogan *et al.* 2007, 29-31). This property makes them good to use as kindling, as the high temperatures produced would encourage the oak to ignite and start to burn. Elm is a hard, elastic, wood which is durable under water. It is useful as structural timber and responds well to

coppicing. Holly produces good firewood. The white, very fine grained timber is hard and heavy, and does not appear to have any specific uses other than for carving and turning (Orme & Coles 1985).

As asserted by Scholtz (1986) cited in Prins and Shackleton (1992:632), the “Principle of Least Effort” suggests that communities of the past collected firewood from the closest possible available wooded area, and in particular the collection of economically less important kindling fuel wood (which was most likely obtained from the area close to the site), the charcoal assemblage does suggest that the local vegetation would have consisted of an oak woodland close to the site.

Due to the poor preservation of the charcoal and the small number of identified charcoal remains, other than to state the presence of these species at the sites, and therefore likely to be reflective of the surrounding areas, no further interpretative value can be gained.

The archaeobotanical evidence found in the samples shows two fragments of indeterminate cereal grains, possibly indicating an exploitation of cereals. Due to this being the only evidence for archaeological macrofossils, there is limited interpretative information other than stating its presence at the site of the orthostat at Morfa Abererch.

It is thought to be problematic using charcoal and plant macrofossil records from archaeological sites, as they do not accurately reflect the surrounding environment. Wood was gathered before burning or was used for building which introduces an element of bias. Plant remains were also gathered foods, and were generally only burnt by accident. Despite this, plant and charcoal remains can provide good information about the landscapes surrounding the sites presuming that people did not travel too far to gather food and fuel

Recommendations

The samples have been assessed, and any interpretable data has been retrieved. No further work is required on any of the samples. Any material recovered by further excavations should be processed to 0.3mm in accordance with standardised processing methods such as Kenward *et al.* 1980, and the English Heritage guidelines for Environmental Archaeology.

Archive

All extracted fossils and flots are currently stored with the site archive in the stores at Gwynedd Archaeological Trust, along with a paper and electronic record pertaining to the work described here.

References

English Heritage 2002, *Environmental Archaeology: A guide to the theory and practise of methods, from sampling and recovery to post-excavation*. English Heritage Publications. Swindon.

Edlin, H L, 1949, *Woodland crafts in Britain: an account of the traditional uses of trees and timbers in the British countryside*, London, Batsford

Gale, R, & Cutler, D F, 2000, *Plants in Archaeology – Identification Manual of Artefacts of plant origin from Europe and the Mediterranean*, Westbury Scientific Publishing and Royal Botanic Gardens, Kew

Grogan, E, Johnston, P, O'Donnell, L, 2007, *The Bronze Age Landscapes of the Pipeline to the West: An Integrated Archaeological and Environmental Assessment*, Wordwell Ltd, Bray, Co Wicklow.

Hather, J G. 2000, *The identification of Northern European woods; a guide for archaeologists and conservators*, London. Archetype Press.

Kenward, H.K., Hall, A.R. and Jones A.K.G. 1980, *A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits*. *Science and Archaeology* 22, 315.

Orme, B J, & Coles, J M, 1985, Prehistoric woodworking from the Somerset Levels: 2. Species selection and prehistoric woodlands. *Somerset Levels Papers* 11, 7-24

Prins, F and Shackleton, CM 1992, Charcoal analysis and the “Principle of Least Effort” - A conceptual Model. *Journal of Archaeological Science*, 19, 631-637.

Rossen, J, and Olson, J, 1985, ‘The controlled carbonisation and archaeological analysis of SE US wood charcoals’, *Journal of Field Archaeology* 12, 445-456

Scholtz, A, 1986, *Palynological and Palaeobotanical Studies in the Southern Cape*, MA Thesis of Stellenbosch, Stellenbosch, South Africa

Schweingruber, F H, 1978, *Microscopic wood anatomy*. Birmensdorf. Swiss Federal Institute of Forestry Research

Stace, C. 1997, *New Flora of the British Isles* (2nd edition) Cambridge: Cambridge University Press

Théry-Parisot, I, 2002, ‘Gathering of firewood during the Palaeolithic’ in S Thiébaud (ed), *Charcoal Analysis, Methodological Approaches, Palaeoecological Results and Wood Uses*, BAR International Series 1063

Table 1a. Components of the subsamples from deposits recovered at a promatory fort at Porthdinallaen.

Semi quantitative score of the components of the samples is based on a four point scale, from '1' – one or a few remains (less than an estimated six per kg of raw sediment) to '4' – abundant remains (many per kg or a major component of the matrix).

Sample Number	01	02	03	04	05	06
Context Number	011	014	057	055	054	010
Feature Type	Buried turf layer under 1 st rampart	Fill of small feature under 1 st rampart	Bank material – 1 st rampart	Buried sub-soil under 1 st rampart	Buried top-soil under 1 st rampart	Bank material – 1 st rampart
Phase			1			1
Charcoal fgts.	1	1	1	1	1	2
Insect fgts.	1					
Plant macrofossils (m/c)	1	1	1	1	1	1
Root/rootlet fgts.	4	4	4	4	4	4
Sand	2	2	2	3	3	2

Sample Number	07	08	09	010	011	012
Context Number	060	027	021	026	017	036
Feature Type	Bank material – 1 st rampart	Primary silting of 1 st ditch	Primary silting of 2 nd ditch	Bank material – 1 st rampart	Ditch fill – 2 nd ditch	Bank material – 2 nd rampart
Phase	2			1		4
Charcoal fgts.	1	1	3	1	1	1
Insect fgts.		1				
Plant macrofossils (m/c)	1	1	1	1	2	1
Root/rootlet fgts.	4	3	2	3	3	4
Sand	2	4	4	4	4	3
Snails				2		

Sample Number	013	014	015	016	017	018
Context Number	037	029	028	053	042	031
Feature Type	Bank material – 2 nd rampart	Buried topsoil under 2 nd rampart	Buried sub-soil under 2 nd rampart	Bank material – 2 nd rampart	Fill of post-pipe – 2 nd rampart	Buried turf layer under 2 nd rampart
Phase	3			1	4	
Charcoal fgts.	1	1	1	1	1	
Earthworm egg capsules						1
Insect fgts.						2
Plant macrofossils (m/c)	1	1	1	1	1	
Root/rootlet fgts.	4	4	4	4	4	4
Sand	2	3	3	2	2	2

Table 1b. Components of the subsamples from deposits recovered from two test pits at Penychain, Abererch.

Semi quantitative score of the components of the samples is based on a four point scale, from ‘1’ – one or a few remains (less than an estimated six per kg of raw sediment) to ‘4’ – abundant remains (many per kg or a major component of the matrix).

Sample Number	01	02
Context Number	0403	0605
Feature Type	Buried soil	Buried soil
Test Pit Number	TP04	TP06
Charcoal fgts.	1	2
Earthworm egg capsules	2	
Insect fgts.	2	1
Plant macrofossils (m/c)	1	1
Root/rootlet fgts.	4	4
Sand	2	3

Table 1c. Components of the subsamples from deposits recovered at an orthostat at Morfa Abererch.

Semi quantitative score of the components of the samples is based on a four point scale, from '1' – one or a few remains (less than an estimated six per kg of raw sediment) to '4' – abundant remains (many per kg or a major component of the matrix).

Sample Number	03
Context Number	007
Feature Type	Test pit at orthostat
Charcoal fgts.	2
Plant macrofossils (ch.)	1
Root/rootlet fgts.	4
Sand	3

*Table 2: Complete list of taxa recovered from deposits recovered at
Taxonomy and Nomenclature follow Stace (1997).*

Sample Number	03	
Context Number	007	
Feature Type	Test pit at orthostat	
LATIN BINOMIAL		COMMON NAME
Indeterminate cereal	2 fragments	Indeterminate cereal

Table 3a. Complete list of taxa recovered from deposits at deposits recovered at a promatory fort at Porthdinallaen. Taxonomy and nomenclature follow Schweingruber (1978). Numbers are identified charcoal fragment for each sample.

Sample Number		09	014
Context Number		021	029
Feature Type		Primary silting of 2nd ditch	Buried top soil under 2nd rampart
No. of fragments		200+	26
Maximum size		14	11
Name	Vernacular		
<i>Corylus avellana</i>	Hazel		12
<i>Ulmus</i>	Elm	14	
<i>Quercus</i>	Oak	35	
	Indet.	51	14

Table 3b. Complete list of taxa recovered from deposits at deposits recovered from two test pits at Penychain, Abererch. Taxonomy and nomenclature follow Schweingruber (1978). Numbers are identified charcoal fragment for each sample.

Sample Number		02
Context Number		0605
Feature Type		Buried soil
Test Pit Number		TP06
No. of fragments		100+
Maximum size		9
Name	Vernacular	
<i>Salix / Populus</i>	Willow / Poplar	11
<i>Ilex</i>	Holly	5
	Indet.	84

Table 3c. Complete list of taxa recovered from deposits at deposits recovered from deposits at an orthostat at Morfa Abererch. Taxonomy and nomenclature follow Schweingruber (1978). Numbers are identified charcoal fragment for each sample.

Sample Number		03
Context Number		007
Feature Type		Test pit at orthostat
No. of fragments		59
Maximum size		5
Name	Vernacular	
<i>Quercus</i>	Oak	4
	Indet.	55

Appendix C

Penychain
Excavation Report

Appendix C

Penychain Excavation Report



GAT Project No. 2072

Penychain Excavation

Figures

Fig 1. Location map of Penychain

Fig 2. Survey plan showing location of identified features and test pits

Plates

Plate 1. Actively eroding area of Penychain from the west

Plate 2. Volunteer Russ Sherry excavating TP02

Plate 3. North facing section of TP01

Plate 4. West facing section of TP02

Plate 5. Possible buried ground surface (0403) in TP04

Plate 6. West facing section of TP04

Plate 7. Stony natural in TP03, view from the south

Plate 8. South facing section of TP06

INTRODUCTION	2
BACKGROUND	2
METHODOLOGY	2
RESULTS	3
TP01	3
TP02	3
TP03	3
TP04	4
TP05	4
TP06	4
FURTHER WORK	5
BIBLIOGRAPHY AND SOURCES	5

INTRODUCTION

The Penychain headland is located on the southern coast of the Llŷn Peninsula midway between the estuaries of the Erch and the Dwyfor (See Fig. 1). The area is best described by Gresham (1973) who states the following:

'The low rocky headland which gives its name to the township of Penychen projects boldly out into the sea from the southern coastline of Eifionydd, of which it is one of the principal features. It is formed of fine-grained, intrusive, igneous rock of a warm golden-brown colour. The coast of the promontory has been eroded into a series of small coves, above which the cliffs rise to a height of no more than fifty feet. Inland the ground is broken up by a number of small rocky hillocks, partially clothed with gorse and bracken – the highest just reaching a hundred feet above sea level. Amongst these hillocks some patches of ground have been roughly cleared into fields and enclosures, hedged about with brambles and wind-swept thorn bushes. The whole district forms a most lovely piece of coastline, of which the detail is all in miniature, while from every part of it is obtained a superb view, including both the mountains of Arddudwy rising from the sea across the bay, and those of Eifionydd above the green of the lowlands.'

To the west of the headland the sweeping sand and shingle beach stretches about 5km to the eastern limits of Pwllheli, and to the west there are a number of small pebble beaches and sections of actively eroding farmland stretching to the Dwyfor estuary and beyond to Criccieth.

Gresham also refers to the erosion that has already taken place in the area stating that:

'The west side of Penychen was once a shallow bay, which has been gradually silted up by materials carried along the coast by forces of wind and tide; on the east side was a gently undulating plain, a southward extension of the existing coast which the sea has rapidly washed away since the early medieval period.'

BACKGROUND

The Gwynedd HER showed 4 recorded sites in within a kilometre radius of the headland including a probable long hut (PRN 1332), flint findspot (PRN 6787) and the site of the Second World War naval training camp, HMS Glendower (PRN 7248). As part of the Arfordir Coastal Heritage project the headland was frequently visited and recorded by a very active volunteer who reported a total of 34 sites in the area.

METHODOLOGY

It was hoped that the fieldwork would identify any buried ground surfaces present in areas where lithics had been found falling out of eroding edges (PRN 6787; centred on SH43533531).

To do this it was decided to excavate a number of meter square test pits close to the eroding edges and on a flat plateau that is under threat from erosion.

Five test pits were located on the plateau where a 10m² grid was laid out (See Fig. 2). A test pit was located at each corner of the grid and an additional one placed in the centre.

A sixth test pit was located close to an edge which had produced a number of lithics during previous visits. Unexpectedly the test pit was the deepest of all excavated and produced flint and a definite buried soil under wind-blown sand.

The headland was surveyed using a Geodimeter Pro electronic distance measuring total station. The actively eroding edges were surveyed along with all of the identified features and test pit locations (*See Fig. 2*).

RESULTS

TP01

See Plate 3

Test pit 01 measured 1x1m and was excavated to a maximum depth of 0.67m. Below the turf there was 0.2m of clean wind blown sand (0102) which was overlying a slightly compacted red-brown sand (0103) containing occasional small stones which may have been an exposed ground surface at some point in the past, two flint fragments were found in the deposit which was generally 0.15m thick. Underlying (0103) was a layer of compacted dark brown sand (0104) 0.15m in thickness. The natural was very stony compacted clay (0105). The area had clearly been disturbed by deep animal burrows which were generally running east-west and branched off to the north.

TP02

See Plates 2&4

Test pit 02 measured 1x1m and was excavated to a maximum depth of 0.5m. Below the turf the first deposit encountered was a thin layer of mid brown-grey silty sand (0202) which was generally 0.04m thick, two flint flakes were recovered from the deposit. A thin mid brown-orange sandy, silt-clay layer (0203) which also contained a flint flake overlay 0.04m of dark black-brown slightly sandy peat (0204) which may have been a buried ground surface. Below this was a layer 0.08m thick (0205) which consisted of light brown-grey sand and contained a single flint fragment. (0206) was a mottled grey-orange sandy clay containing some stone, it measured 0.08m thick. The layers below this were all almost certainly natural, (0207) was a dark orange-brown stony clay and (0208) was a dark brown-orange stony clay. There was some evidence of burrowing in the trench. A surprising amount of water was present in the area of the test pit. Water was constantly flowing in during excavation, and after leaving the excavation open overnight it had completely filled. This may be explained as groundwater from recent wet weather however it may be possible that there is a spring in the vicinity.

TP03

See Plate 7

Test pit 03 measured 1x1m and was excavated to a maximum depth of 0.33m. Below the turf there was a 0.03m thick layer of mid brown clay-sand (0302) which overlay a compacted clay-sand layer (0303) which was 0.1m thick and contained 3 flint fragments. Below this was a compacted mid grey-brown clay-sand (0304) which was 0.1m thick. The natural was very stony clay.

TP04

See Plates 5&6

Test pit 04 measured 1x1m and was excavated to a maximum depth of 0.45m. Below the turf there was 0.1m of blown sand (0402). Below (0402) was a possible relict ground surface (0403) was a dark peaty soil measuring 0.03m in thickness, a sample was collected for environmental analysis and possible dating. (0404) was a light brown-grey sandy clay 0.04m thick, which overlay a mottled orange-grey clayey, silty-sand 0.15m in depth. The natural was stony, dark orange-brown silty-clay. Although a possible relict ground surface was identified no flint was recovered from the test pit.

TP05

Test pit 05 measured 1x1m and was excavated to a maximum depth of 0.35m. Below the turf there was a compacted mid brown-grey clay-sand layer (0502) which contained flint and measured 0.08m in depth. (0503) was a compacted dark brown clay-sand which was very similar to (0502). The natural was very stony clay. There was no obvious ground surface.

TP06

See Plate 8

Test pit 06 measured 1x1m and was excavated to a maximum depth of 0.9m. Below the turf a layer of mid brown-orange sand (0602) measuring 0.14m deep overlay a dark grey-brown sand layer (0609) which was 0.17m thick. (0603) was similar to (0609) but contained some stone and charcoal flecks, the layer was 0.1m thick. (0604) was a slightly clayey dark orange-brown sand layer which was 0.1m thick. A sample was collected from (0605) which was a 0.05m thick dark grey-brown silty-clay, the layer contained flint and charcoal which may provide suitable material for dating. (0606) was a layer of dark brown-orange clay 0.15m thick, this overlay (0607) a mottled mid grey-orange clay 0.05m thick which may have been the interface between the layer above and the mid yellow-grey clay natural. This test pit clearly showed distinct episodes in the encroachment of the sand. It is almost certain that (0605) was a relict ground surface which was subsequently buried by the encroaching sand.

The results show that there may be at least two phases of human activity at the site. TP06 showed a clear ground surface containing no sand which suggests activity at the site before any sand encroachment, whereas the flints in test pits 01, 02, 03 and 05 were found in deposits containing sand showing that a degree of encroachment had occurred prior to the deposition of the flints. It is possible that some of the flints had been displaced by animal burrowing but it is unlikely that all had been moved from their original context. It is also worth noting that all of the possible buried ground surfaces in test pits 01, 02, 03 and 04 contain sand suggesting that the sand was present when the ground surfaces formed. This seems to indicate that there are either two episodes of initial sand encroachment or two episodes of prehistoric activity at the site. This could potentially be resolved by processing the samples collected to try and extract material suitable for radiocarbon dating. Two samples were collected during the excavation, one of these samples was from a possible ground surface containing sand in TP04 and the other from a definite ground surface containing no sand in TP06.

FURTHER WORK

The test pitting did show evidence of human activity and identified at least one buried ground surface. Further test pitting over a wider area could potentially provide further evidence of the possible phases of activity, both sand encroachment and flint working, and could identify archaeological features. Continued monitoring of the area by volunteers will hopefully identify more eroding artefacts and any new features that become threatened.

It would be desirable to conduct a small scale excavation on a feature (PRN 31540; SH43503533) which is believed to be associated with HMS Glendower but may be prehistoric. The circular feature, which consists of a low bank 'wall', was first identified by a volunteer working as part of the Arfordir project who interpreted it as a possible roundhouse. Closer inspection seems to suggest that there is no 'entrance' into the circle and that it may well be contemporary with the other features of HMS Glendower although it is clearly not of a brick and concrete construction. This may raise the possibility that it is a sandbag structure, possibly some sort of machinegun nest. A small slot across the 'wall' is likely to provide the answers needed to date the feature, this would be among the main priorities if further excavation was to take place on the headland.

Other identified features that would be candidates for future excavation include a possible cist that may simply be a natural feature and a possible terrace that may be associated with a previously recorded bank and ditch.

The broad span of human history from Mesolithic to 20th century makes the site a prime candidate for a larger scale volunteer excavations and field survey.

BIBLIOGRAPHY AND SOURCES

Gresham, C. A. 1973. *Eifionydd: A Study of Landownership from the Medieval Period to the Modern Day*, University of Wales Press, Cardiff

Historic Environment Record, Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, Gwynedd, LL57 2RT



Fig. 1: Location map of Penychain
Taken from OS 1:2500 Sheets 33 & 43

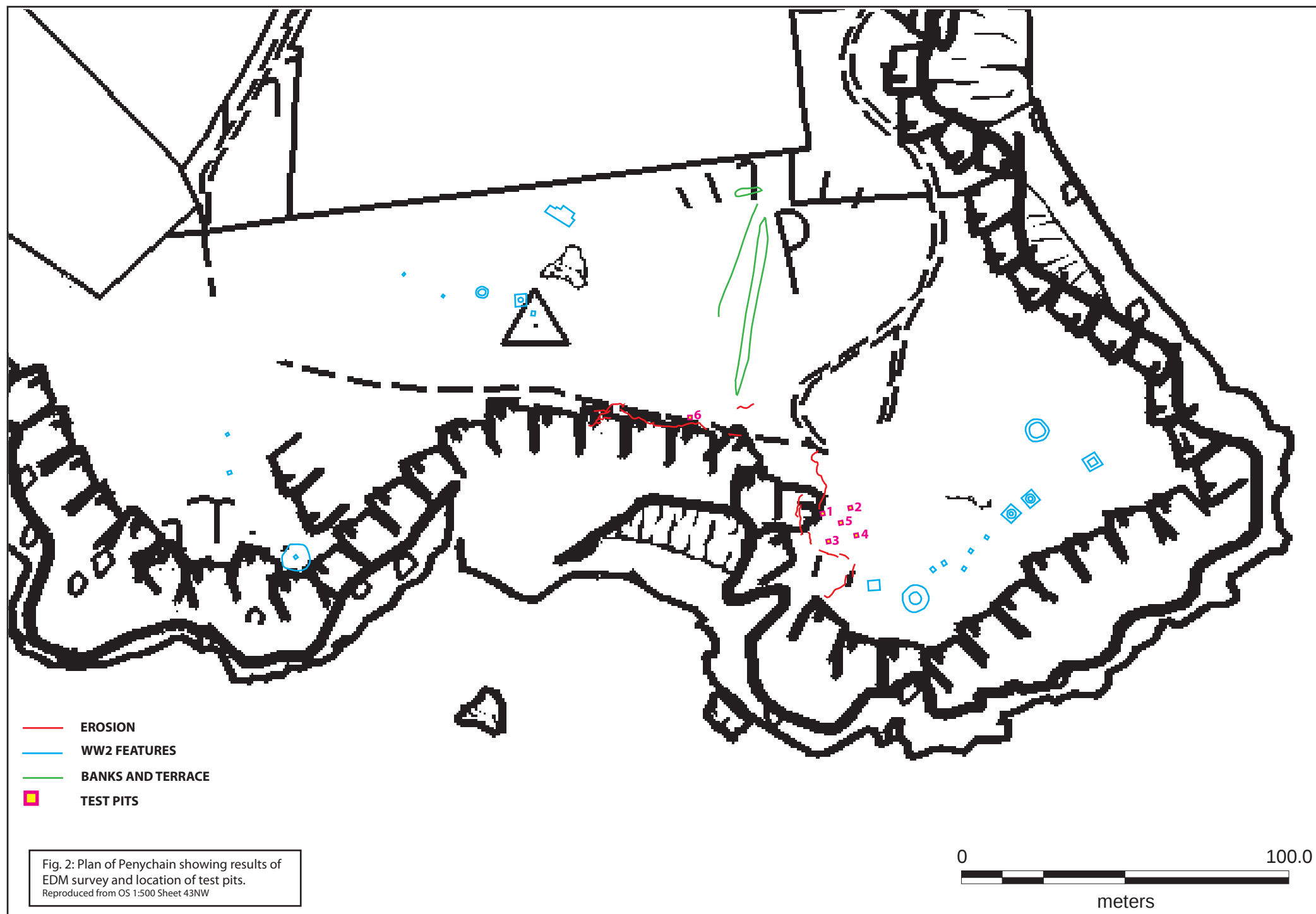




Plate 1: Actively eroding area of Penychain from the west



Plate 2: Volunteer Russ Sherry excavating TP02



Plate 3: North facing section of TP01



Plate 4: West facing section of TP02



Plate 5: Possible buried ground surface (0403) in TP04



Plate 6: West facing section of TP04



Plate 7: Stony natural in TP03, view from the south



Plate 8: South facing section of TP06

Appendix D

Abererch
Excavation Report

Appendix D

Abererch Excavation Report



GAT Project No. 2072

Abererch Excavation

Figures

Fig 1. Morfa Abererch standing stone and peat survey

Plates

Plate 1. Morfa Abererch standing stone June 2010

Plate 2. Morfa Abererch standing stone December 2010

Plate 3. Morfa Abererch standing stone February 2011

Plate 4. Morfa Abererch standing stone pre-ex

Plate 5. Grey clay layer at base of TP01

Plate 6. Morfa Abererch standing stone at limit of excavation

Plate 7. Exposed peat to the west of the standing stone site

Plate 8. Exposed peat and glacial clay to the east of the standing stone site

Plate 9. Burnt stone in exposed peat deposit

Plate 10. Oak post in glacial clay

INTRODUCTION	2
BACKGROUND	2
METHODOLOGY	2
RESULTS	2
TP01	2
Peat Deposits	3
FURTHER WORK	3
Standing Stone	3
Peat Deposits	4

INTRODUCTION

The standing stone at Abererch (PRN 18400; SH41263576) was first reported to Gwynedd Archaeological Trust in 2004. It is located on the beach at morfa Abererch and is eroding from dunes and is close to an actively eroding edge.

BACKGROUND

The standing stone was first reported to GAT in 2004 after a walker noticed the stone following a storm. The site was visited by George Smith of GAT shortly after who reported that the stone could be a Prehistoric monument or a Medieval boundary marker. No excavation took place as part of the assessment, and no work took place subsequently. The stone was visited and re-recorded by a volunteer working as part of the Arfordir Coastal Heritage project in 2010, subsequently a visit was made by GAT during which a possible buried soil, flint scraper and debitage were discovered in the area.

METHODOLOGY

It was decided that test pits would be used to try and determine the date of the standing stone and to try and identify the extent of the buried soil so as to gain better understanding of the ancient landscape of the area.

When the site was visited to start the excavation, following a stormy period, the area was found to have dramatically changed due to shifting sands (*Plates 1, 2&3*). Sand had retreated from the beach revealing areas of glacial clay and peat (*Fig.1 & Plates 7&8*). The location of the peat showed that the raised area on which the standing stone was located probably didn't extend a great deal further to the south than it does today, although a conservative estimate would suggest that the land has retreated by around 10m.

Because of the new information gained through the discovery of the peat and the general lack of working space it was decided that only a single test pit would be excavated, located immediately in front of the standing stone.

It was decided that it would be appropriate to record the extent of the newly revealed peat and glacial clay with a handheld GPS.

RESULTS

TP01

See Plates 4, 5&6

The test pit was located immediately in front of the standing stone and was excavated to a depth of 1.1m before being abandoned due to safety concerns.

A much greater depth of wind-blown sand than expected was found during the excavation. This was contrary to what could be seen in the eroding section where there was clearly less blown sand. In

total there was 0.95m of blown sand which had built up against the stone. It appeared that more of the stone may have been visible at when it initially found, or that someone had excavated next to the stone around the time of its discovery, as beer cans with best before dates of November 2004 were found at a depth of around 0.4m.

A grey clay deposit was found at a depth of 1m (*Plate 5*). This layer appeared to contain frequent charcoal specks. A sample was collected for possible dating and environmental analysis. A similar clay deposit has been encountered during other excavations in the area and has been dated to the Roman period (G. Smith pers comm.). Within the test pit a flint was recovered from the clay deposit and another from the sand above.

The base of the stone was not identified within the test pit and neither was the cut of the hole in which the stone was erected. The full height of the stone is still unknown but it can now be said to be a minimum of 2.05m tall. The stone appeared to be fairly stable but had clearly started to slump back to the north west.

Peat Deposits

The shifting sand did provide the opportunity to gain better understanding of the surrounding landscape without the need for excavation. It became clear that the standing stone had been erected on a piece of raised ground in a generally wet area. Evidence of human activity was found in and on the peat in the form of heat affected stone (PRN 31693; SH41443573) (*Plate 9*) and a possible stone axe roughout (PRN 31609; SH41453573). There were also a number of tree boles present within the peat along with branches, bark and hazelnuts, providing evidence that the area was once, at least partially, covered in mixed woodland.

As well as the peat two wooden posts, probably oak (PRN 31694; SH41323574), were found in the natural clay that underlay the peat deposits (*Plate 10*). It is likely that these were preserved, at least in part, by the peat which has now eroded.

FURTHER WORK

Further work would help our understanding of the site, however there is a need to strike a balance between maximising archaeological information gained and minimising the threat of further erosion.

Standing Stone

The greatest confusion is currently created by the stark difference between the deposits that can be seen in the eroding section and those encountered in the test pit. By looking at the deposits in the section it was thought that the cut of the stone hole would be located a few centimetres below the surface but excavation showed that there was up to a meter of sand built up against the stone. This depth of sand raised concern that the test pit was located entirely within the cut of stone hole, however this is highly unlikely as the sand is not believed to have been present in the locality when the stone was erected.

All of these concerns could be answered through further excavation. It would be desirable to extend the original test pit towards the eroding edge to try and identify the relationship between the deposits in the test pit and those in the eroding edge. If this was to be done the test pit could also be

widened to reveal the full width of the stone. This approach is ideal from an archaeological point of view but could potentially accelerate the rate of erosion.

The sample of clay collected from the base of the test pit will be processed to try and extract macroscopic artefacts and material suitable for radiocarbon dating.

Peat Deposits

Excavation could also take place in the areas of newly discovered peat. The area of heat affected stone would be an obvious initial target. There have been good results from excavation of a similar site at Porth Neigwl where a burnt mound with associated timber lined trough and water channel. Excavation at the site provided a wealth of environmental material including preserved cereal grains. It would also be possible to conduct excavations in the area of the two posts, although it may prove challenging due to their location in relation to the high tide.



Plate 1: Abererch standing stone June 2010



Plate 2: Abererch standing stone December 2010



Plate 3: Abererch standing stone February 2011



Plate 4: Morfa Abererch standing stone pre-ex



Plate 5: Grey clay layer encountered before the test pit was abandoned



Plate 6: Morfa Abererch standing stone at limit of excavation



Plate 7: Exposed peat to the west of the standing stone site



Plate 8: Exposed peat and glacial clay to the east of the standing stone site



Plate 9: Burnt stone in exposed peat deposits



Plate 10: Oak post in glacial clay

Appendix E

Geophysics Report

Achub Archaeoleg Llŷn

Geophysics Report



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Achub Archaeoleg Llŷn

Geophysics Report

Project No. 2248

Prepared for: GAT

February 2012

By: Dave Hopewell & Iwan Parry

Illustrations by: Dave Hopewell

Cyhoeddwyd gan Ymddiriedolaeth Archaeolegol
Gwynedd
Ymddiriedolaeth Archaeolegol Gwynedd
Craig Beuno, Ffordd y Garth,
Bangor, Gwynedd, LL57 2RT

Published by Gwynedd Archaeological Trust
Gwynedd Archaeological Trust
Craig Beuno, Garth Road,
Bangor, Gwynedd, LL57 2RT

Cadeiryddes/Chair - Yr Athro/Professor Nancy Edwards, B.A., Ph.D, F.S.A.
Prif Archaeolegydd/Chief Archaeologist - Andrew Davidson, B.A., M.I.F.A.

Mae Ymddiriedolaeth Archaeolegol Gwynedd yn Gwmni Cyfyngedig (Ref Cof. 1180515) ac yn Elusen (Rhif Cof. 508849)
Gwynedd Archaeological Trust is both a Limited Company (Reg No. 1180515) and a Charity (Reg No. 508849)

Figures

Figure 01: Glanllynau, grey scale

Figure 02: Glanllynau, Interpretation

Figure 03: Morfa Abererch, grey-scale

Figure 04: Morfa Abererch, interpretation

Figure 05: Porth Dinllaen south, grey-scale

Figure 06: Porth Dinllaen south, grey-scale with
high-pass filter

Figure 07: Porth Dinllaen south, interpretation diagram

Figure 08: Porth Dinllaen north, grey-scale

Figure 09: Porth Dinllaen north, grey-scale with
high-pass filter

Figure 10: Porth Dinllaen north, interpretation diagram

1. Introduction

As part of Achub Archaeoleg Llŷn, in conjunction with the Cadw funded Arfordir Coastal Heritage project, a series of geophysical surveys were conducted to assess the archaeological potential of sites under pressure from coastal erosion. Each of the sites surveyed was known to have eroding archaeology but the extent of surviving deposits was unknown. It was hoped that the results of the surveys would provide information that could be used to plan future fieldwork and assessment at the sites.

The surveys were undertaken by GAT staff with the assistance of local volunteers during February 2012.

2. Methodology

The surveys were carried out in a series of 20m grids, which were tied into the Ordnance Survey grid using a Trimble GPS system to an accuracy of 30mm. The surveys were conducted using a Bartington Grad 601-2 dual sensor fluxgate gradiometer. The surveys at Morfa Abererech and Porth Dinllaen south were carried out at high resolution (0.5m traverse interval x 0.25m sample interval) and all other areas at standard resolution (1.0 m traverse interval x 0.25m sample interval). High resolution survey is much slower than standard but is ideal for sites with difficult terrain due to the use of walking guidelines set out on the ground. Standard resolution is usually used for large-area archaeological prospection in easily traversable terrain.

2.1 Instrumentation

The Bartington Grad 601-2 dual Fluxgate Gradiometer uses a pair of Grad-01-100 sensors. These are high stability fluxgate gradient sensors with a 1.0m separation between the sensing elements, giving a strong response to deeper anomalies.

The instrument detects variations in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetised iron oxides which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil therefore contain greater amounts of iron and can therefore be detected with the gradiometer. This is a simplified description as there are other processes and materials which can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs which usually produce very high readings and can mask the relatively weak readings produced by variations in the soil. Strong readings are also produced by archaeological features such as hearths or kilns because fired clay acquires a permanent thermo-remnant magnetic field upon cooling. This material can also get spread into the soil leading to a more generalised magnetic enhancement around settlement sites.

Not all surveys can produce good results as anomalies can be masked by large

magnetic variations in the bedrock or soil or high levels of natural background “noise” (interference consisting of random signals produced by material within the soil). In some cases, there may be little variation between the topsoil and subsoil resulting in undetectable features.

The Bartington Grad 601 is a hand held instrument and readings can be taken automatically as the operator walks at a constant speed along a series of fixed length traverses. The sensor consists of two vertically aligned fluxgates set 1.0m apart. Their Mumetal cores are driven in and out of magnetic saturation by an alternating current passing through two opposing driver coils. As the cores come out of saturation, the external magnetic field can enter them producing an electrical pulse proportional to the field strength in a sensor coil. The high frequency of the detection cycle produces what is in effect a continuous output.

The gradiometer can detect anomalies down to a depth of a little over one metre. The magnetic variations are measured in nanoTeslas (nT). The earth’s magnetic field strength is about 48,000 nT; typical archaeological features produce readings of below 15nT although burnt features and iron objects can result in changes of several hundred nT. The instrument is capable of detecting changes as low as 0.1nT.

2.2 Data Collection

The gradiometer includes an on-board data-logger. Readings in the surveys are taken along parallel traverses of one axis of a 20m x 20m grid. The traverse interval is 1.0 or 0.5m. Readings are logged at intervals of 0.25m along each traverse.

2.3 Data presentation

The data is transferred from the data-logger to a computer where it is compiled and processed using ArchaeoSurveyor 2 software. The data is presented as a grey-scale plot where data values are represented by modulation of the intensity of a grey scale within a rectangular area corresponding to the data collection point within the grid. This produces a plan view of the survey and allows subtle changes in the data to be displayed. This is supplemented by an interpretation diagram showing the main features of the survey with reference numbers linking the anomalies to descriptions in the written report. It should be noted that the interpretation is based on the examination of the shape, scale and intensity of the anomaly and comparison to features found in previous surveys and excavations etc. In some cases the shape of an anomaly is sufficient to allow a definite interpretation e.g. a Roman fort. In other cases all that can be provided is the most likely interpretation. The survey will often detect several overlying phases of archaeological remains and it is not usually possible to distinguish between them. Weak and poorly defined anomalies are most susceptible to misinterpretation due to the propensity for the human brain to define shapes and patterns in random background ‘noise’. An assessment of the confidence of the interpretation is given in the text.

2.4 Data Processing

The data is presented with a minimum of processing although corrections are made to compensate for instrument drift and other data collection inconsistencies. High readings caused by stray pieces of iron, fences, etc are usually modified on the grey scale plot as they have a tendency to compress the rest of the data. The data is however carefully examined before this procedure is carried out as kilns and other burnt features can produce similar readings. The data on some noisy or very complex sites can benefit from 'smoothing'. Grey-scale plots are always somewhat pixellated due to the resolution of the survey. This at times makes it difficult to see less obvious anomalies. The readings in the plots can therefore be interpolated thus producing more but smaller pixels and a small amount of low pass filtering can be applied. This reduces the perceived effects of background noise thus making anomalies easier to see. Any further processing would be noted in relation to the individual plot.

3. Results

3.1 Glanllynau

Figs. 1&2

This area (centred on SH46403736) was in a relatively flat field with no obstacles, bounded by a fence and drop to the foreshore on the south. The survey was designed to investigate an area to the north of a Bronze-Age pit (PRN 31689) that was eroding from a low cliff of glacial drift behind the coastal defences. The erosion showed that the subsoil consists of variable glacial deposits varying from gravelly sands and silts to very stony deposits. A square area of just under 1 ha was surveyed at a resolution of 1.0m x 0.25m.

The survey revealed a series of diffuse linear anomalies (1 to 6) that are best interpreted as former field banks. A probable bank (1) defines the north-eastern extent of the former fields. Further similar anomalies, (2 to 5) appear to define parts of two rectangular fields. These appear to have been truncated at the south by coastal erosion. A further anomaly 6 may indicate an additional bank but could, alternatively, be interpreted as a variation in the subsoil. These features are all very diffuse suggesting that they are almost ploughed-out or are deeply buried.

There are four areas of increased magnetic enhancement (7-10) none of which appear to have a regular structure. These are best interpreted as areas of dumping or modern disturbance. Part of a sub-circular feature with an irregular anomaly to the south was detected at the north of the survey. There is a slight chance that this could be prehistoric enclosure, but its rather irregular outline and a spread of ferrous responses (small half black, half white magnetic dipoles on the grey-scale plot) strongly suggests that it is result of modern disturbance, perhaps associated with the construction of the nearby railway.

The survey did not detect any features that are associated with the Bronze Age pit. The field system could be early and appears to consist of ploughed out banks with no obvious ditches.

3.2 Morfa Abererch Standing Stone

Figs. 2&3

This survey investigated a raised area (centred on SH41273578) to the north of a standing stone (PRN 18400) that had been uncovered by coastal erosion within sandy deposits above the foreshore. The area consisted of an irregular, uneven, raised platform with fairly steep edges. It was heavily overgrown with gorse in places and some parts were not accessible for survey. An area of 0.5ha was surveyed at high resolution (0.5m x 0.25m), bounded to the south and east by wire fences and to the west by dense gorse.

The survey produced results with very little variation apart from a scatter of ferrous litter (1) and responses from the wire fences (2 and 3). This suggests that the raised platform is a consolidated sand dune containing little magnetic material. Faint linear variations (4, 5 and 6) are probably a result of the beginnings of topsoil formation in hollows in the dune. Two diffuse circular anomalies are typical of magnetic features, perhaps stones or ferrous objects buried under a layer of sand of a depth that is close to the maximum detection range of the gradiometer (about 1m).

The survey did not detect any features or a former ground surface associated with the standing stone. This may be because any such remains are too deeply buried in the sand and are beyond the range of the gradiometer. It is also possible that the area has consisted of mobile sand dunes for a long time and no consolidated surfaces or features have formed.

3.3 Porth Dinllaen: southern area

Figs. 5-7

Two areas were surveyed in the southern part of Porth Dinllaen promontory fort (PRN 421). The first comprising 0.8ha at high resolution (0.5m x 0.25m) investigated the defences (centred on SH27454170). The second, a small area of 0.1ha (centred on SH27594166) investigated a circular earthwork (PRN 31926) in order to test the hypothesis that it was a roundhouse. Both areas were very uneven and overgrown and presented considerable challenges to survey. Positional accuracy was variable on the steep ramparts but a combination of very slow traverse speed and the use of walking guide lines ensured an adequate quality of survey.

The responses from the larger area were dominated by magnetic bedrock. Fig. 5 shows the data with a minimum amount of filtering, the large amorphous areas of high readings are the effect of bedrock. This was lessened by the application of a high pass filter to the areas of bedrock anomalies (Fig. 6). This removes or lessens the effect of large scale anomalies but cannot totally remove very magnetic features.

The very strong magnetic features masked some archaeology and can be divided into two categories. The first is *in situ* magnetic bedrock (1-6) and the second features associated with the golf course (6 to 10). Anomalies 6 and 7 are the result of a road with signage and a pipe or cable. Anomaly 8 is a levelled green with a revetment probably constructed from very magnetic bedrock. Anomaly 9 is the edge of an area of modern disturbance and 10 a wire fence.

The interpretation of the remaining anomalies that are within the typical range of most archaeological features (c.+/-15nT) is less certain. Anomaly 11 is probably associated with a path on the golf course and 12 may be a result of landscaping. A group of short linear anomalies appear to be associated with a green. A double linear anomaly (14) is aligned with the rear slope of the rampart and could represent a feature in its construction. A faint positive anomaly, best seen on the unprocessed data (Fig 5) appears to correspond to the outermost defensive ditch.

A series of anomalies correspond to the innermost (northern) rampart. Feature 16 is a strong positive anomaly running along the top of the rampart and could be a slot with magnetic packing stones. Similar features have been seen in the other ramparts. Two negative linear anomalies (17 and 18) run to the west of the rampart. Feature 17 is roughly parallel with the rampart and could be a ditch, 18 is not aligned closely with the defences and could be interpreted as a trackway. A further positive anomaly 19 could be associated either with the rampart or later disturbance. It should be noted that even though the rampart is a well defined earthwork, the ground is very uneven and there appears to have been a lot of disturbance in this area. Any interpretation of the geophysical results in this area must be seen as provisional and would require verification by excavation.

Other less regular anomalies 20 and 21 could be geological or cut features from any period. A sub-rectangular area of noise appears to be the result of landscaping for the golf course.

The smaller area of survey detected a ferrous pipe or cable (23), the edge of a green (24), a modern path (25) and the edge of an area of disturbance (26). The uneven area containing the possible roundhouse was mostly masked by the pipe (23) but otherwise produced very low responses suggesting that it is an area of sandy soil and a recent feature.

3.4 Porth Dinllaen: northern area

Figs. 8-10

The interior of the fort appears to have been landscaped to serve the purposes of the golf course; due to this no distinctive features associated with the fort are visible. Writing in 1892 John Daniel states that a number of roundhouses were visible in the interior of the fort, unfortunately he does not give any details as to precise locations. This area of 1.15 ha (centred on SH27664184) examined a large flat area of the golf course fairway. It was surveyed at standard resolution in order to provide a relatively swift assessment of the area. Survey conditions were ideal with no obstructions. There

was again interference from magnetic bedrock (Fig. 8 and 1 and 2, Fig. 10). The data was interpolated and a low level of high-pass filter was applied in order to remove the bedrock anomalies (Fig 9).

The area was crossed by a series of linear anomalies corresponding to drains, pipes and cables associated with the golf course and the nearby coastguard station (3 to 15).

A series of amorphous mostly sub-circular anomalies, typically 10 to 12m, in diameter were also detected (16-23). There are several possible interpretations for these features. The most likely is that they are a result of landscaping by the golf course. The soil is quite sandy here and may have been quite uneven with blow-outs and low dunes that were subsequently levelled to produce the fairway. They could alternatively be interpreted as natural subsoil variations. There is however a possibility that these features represent the faint remains of settlement in the interior of the promontory fort. A weak curvilinear anomaly can also be seen (24 and 25) that could relate to early activity. The early records are sparse so nothing is known about the form of the roundhouses. Stone-walled features would probably have produced fairly strong anomalies unless buried under a deep layer of sand; clay-walled houses would have produced weaker anomalies. Either interpretation is possible in this case.

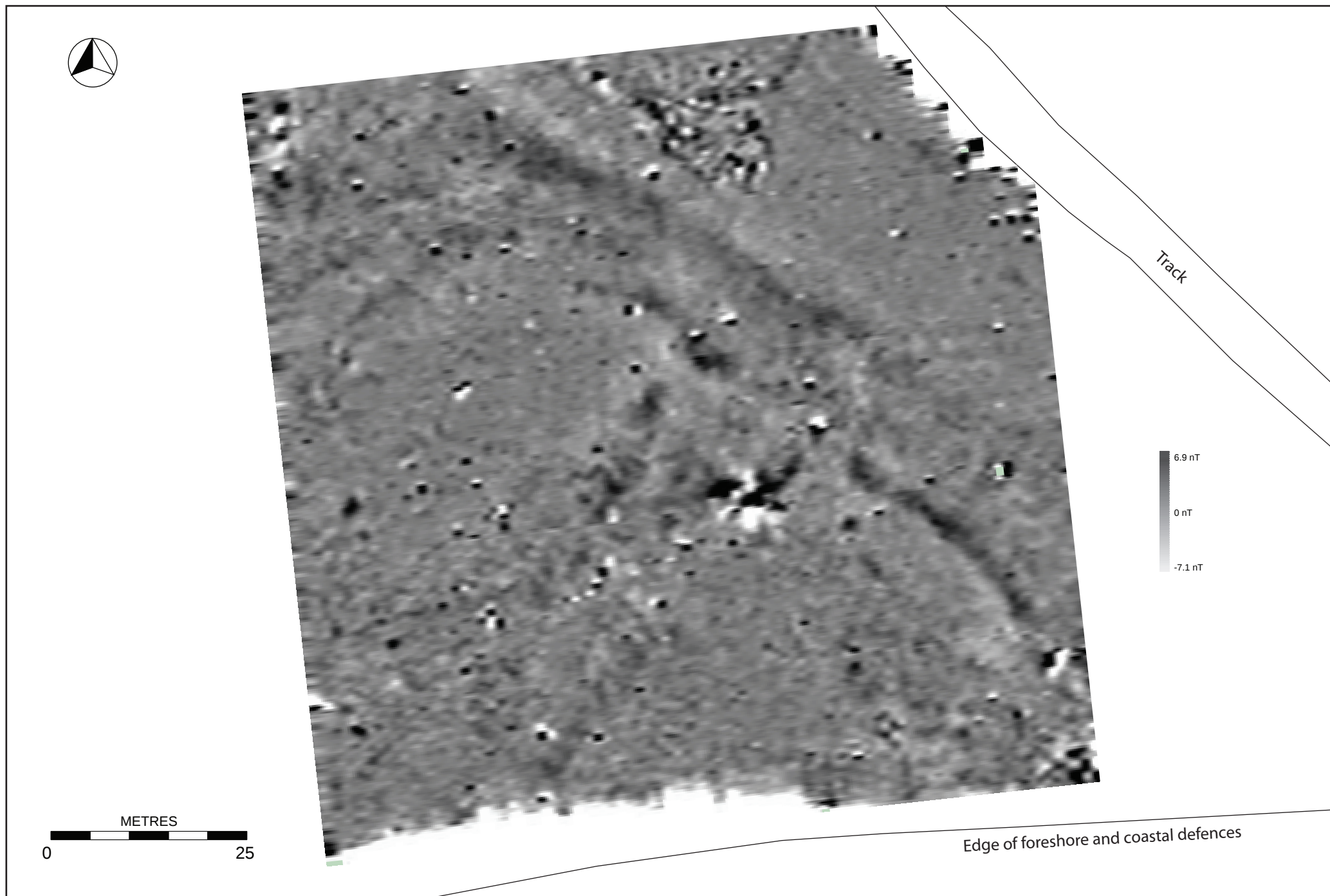


Fig. 1 Glanllynau, grey scale

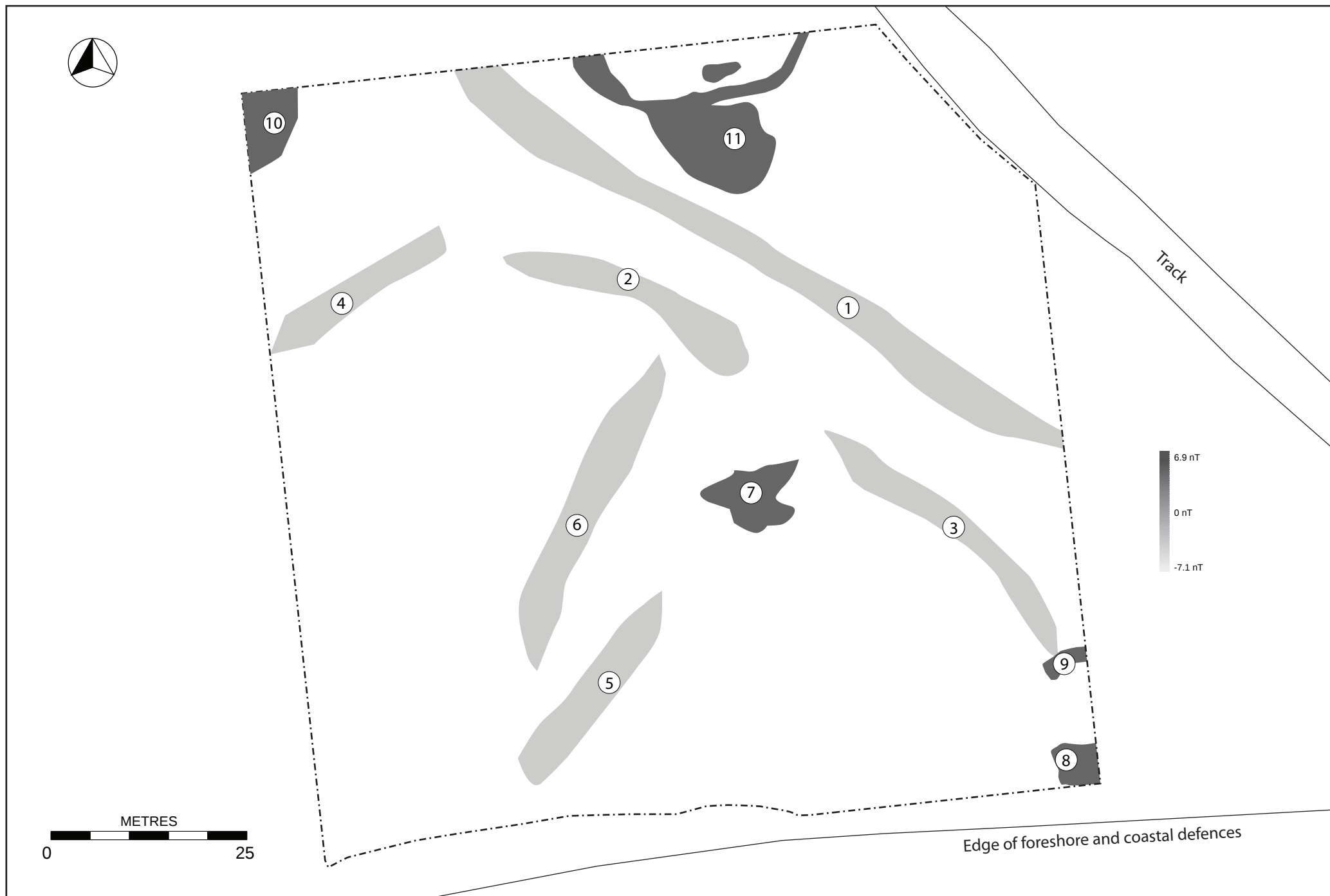


Fig. 2 Glanllynau, Interpretation



Fig. 3 Morfa Abererch, grey-scale



Fig. 4 Morfa Abererch, interpretation



Fig. 5 Porth Dinllaen south, grey-scale



Fig. 6 Porth Dinllaen south, grey-scale with high-pass filter

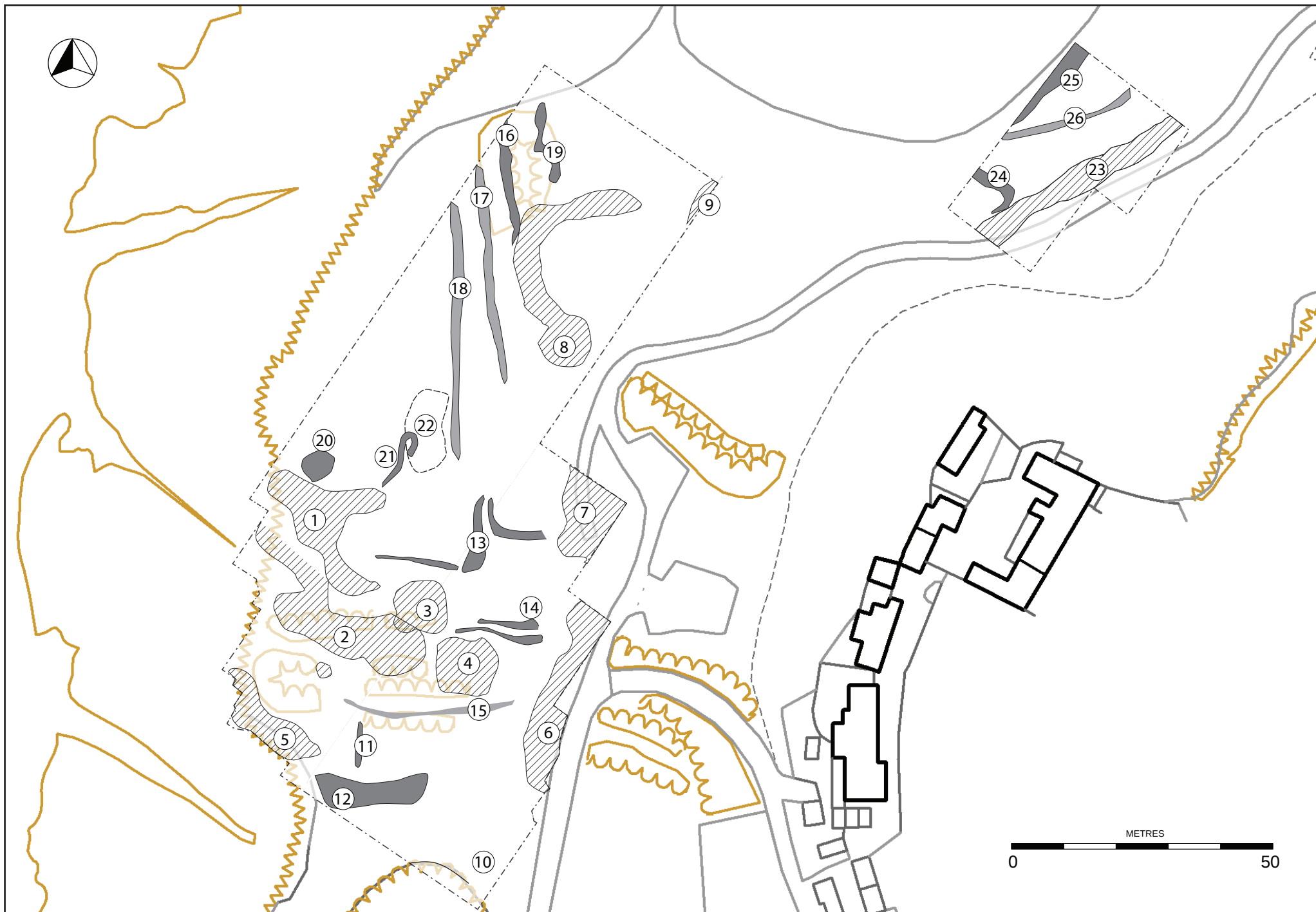


Fig. 7 Porth Dinllaen south, interpretation diagram

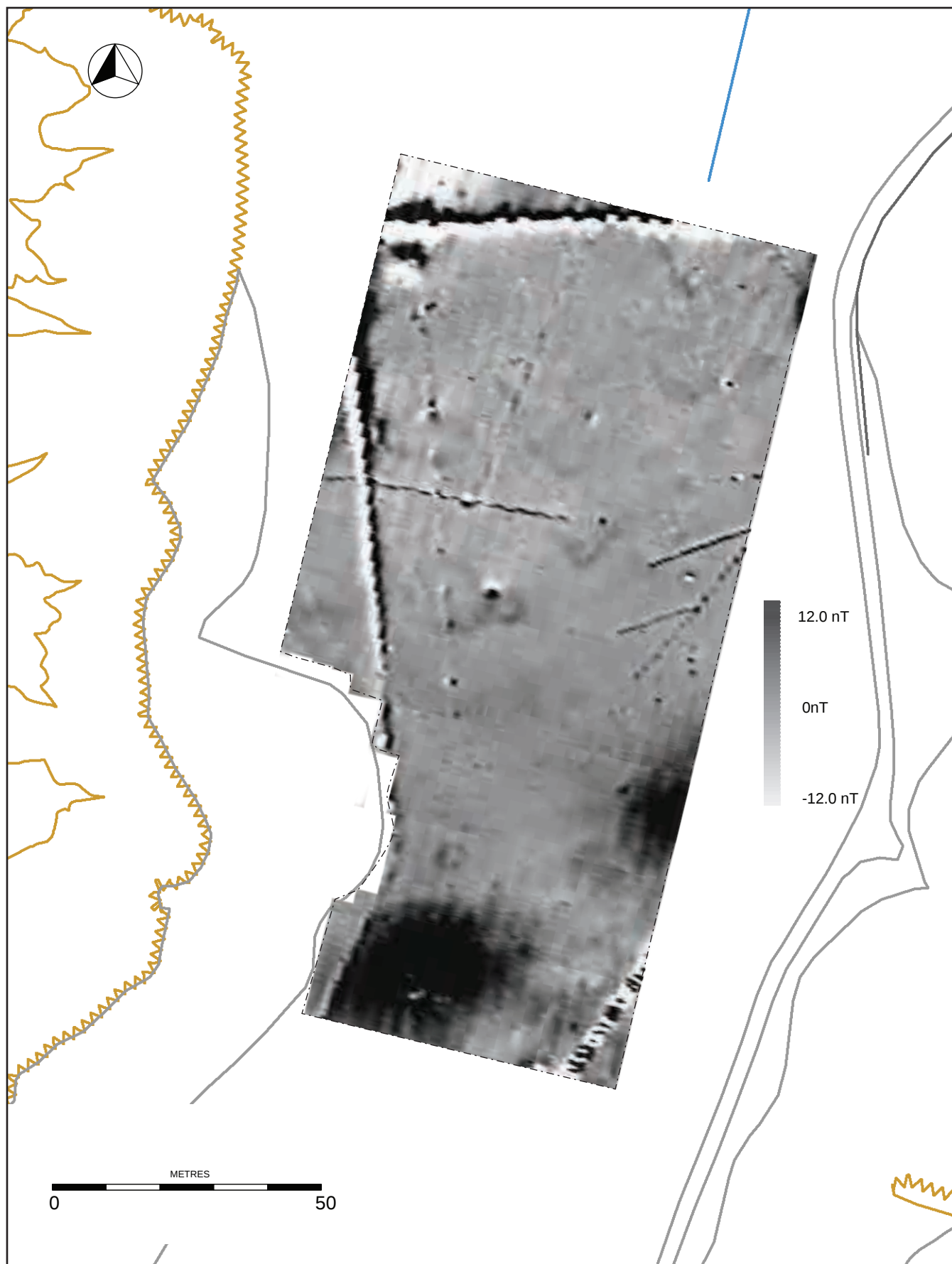


Fig. 8 Porth Dinllaen north, grey-scale

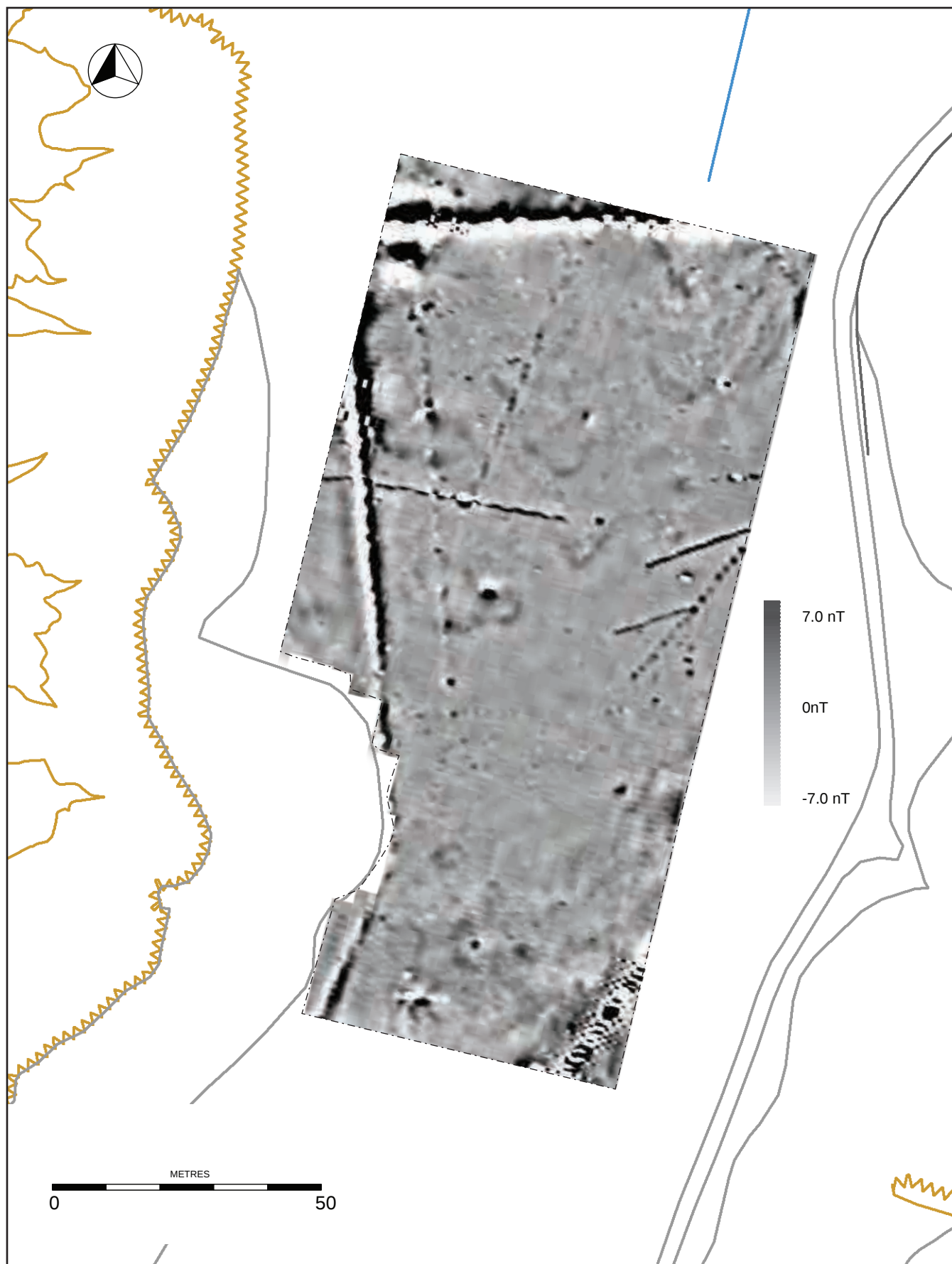


Fig. 9 Porth Dinllaen north, grey-scale with high-pass filter

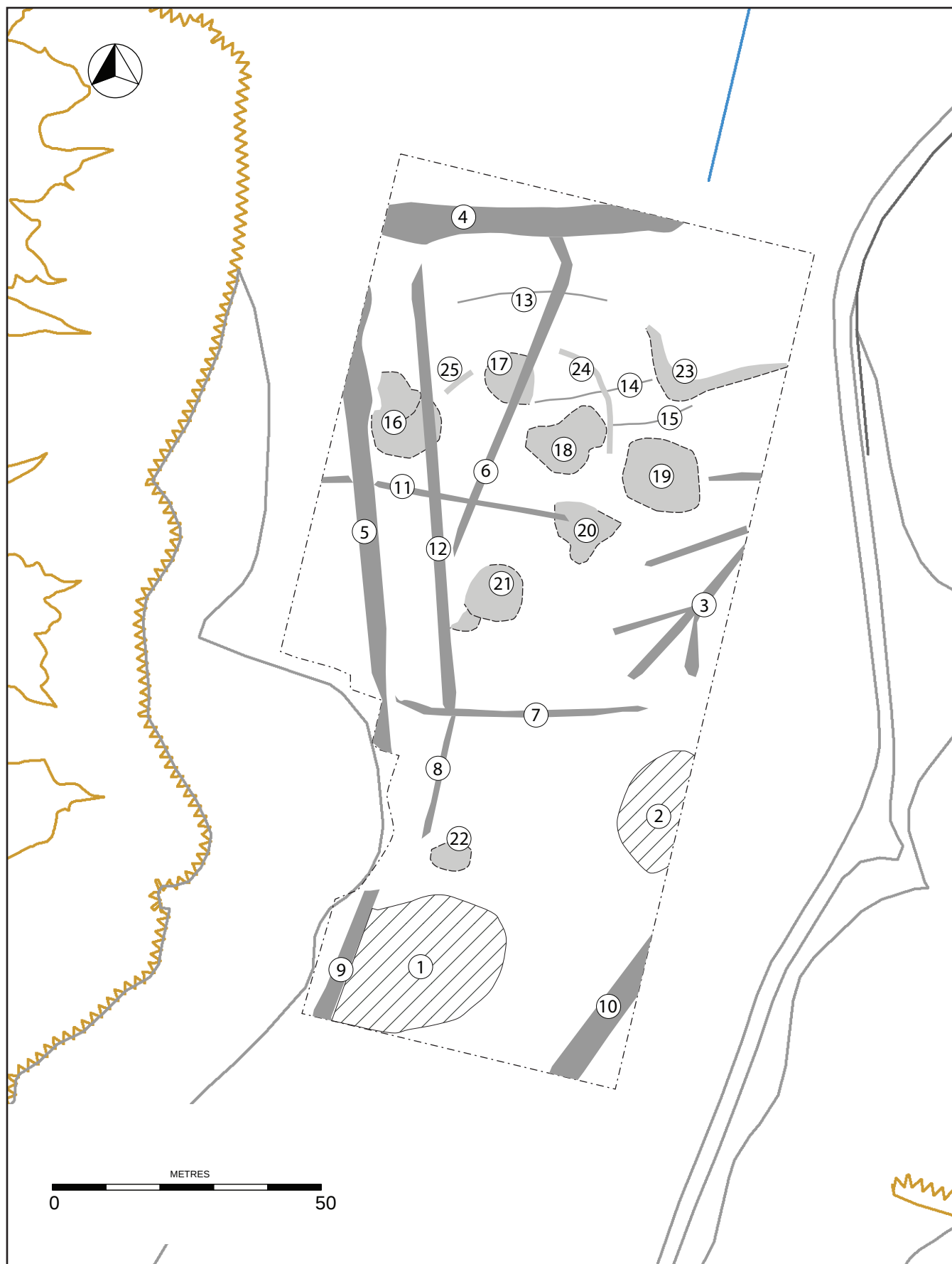


Fig. 10 Porth Dinllaen north, interpretation diagram

Appendix F

Arfordir Coastal Heritage
Gazetteer of Sites

PRN	SITENAME	
421	PROMONTORY FORT, TRWYN PORTH DINLLAEN	
NGR	SITETYPE	PERIOD
SH27454170	Promontory fort	Iron Age

OLD DESCRIPTION

DESCRIPTION

Promontory fort. Banks and ditches protect an area of about 14 acres. The western half of the southern defences are preserved for a length of c.40m, consisting of a flat bottomed ditch 12m wide with an inner side 1.8m high and a rounded counter scarp bank 5m wide and 1m high. 70m north of this bank lie the northern defences (only the east half remains) of a bank 40m long and 12m high from the outer side, 2m high from the inside. To the north lie two enclosures which are the result of turf cutting (antiquity doubtful). A golf green has been constructed over the eastern part of the inner rampart. A track to the beach has been cut between the ramparts (Report 861). In October 2011 GAT carried out excavations over the outer defences. 4 trenches were dug across the two banks and infilled ditches. The excavations identified two phases of construction in the first bank and four in the second; the full profile of both ditches was also identified. The defences seemed to show development over a fairly long period of time with the initial establishment of the earthworks appearing to serve a more symbolic function than a defensive one. The second bank showed the clear development of the earthwork into a formidable defensive structure. In its final phase the second bank would have been approximately 9m wide and at least 1m high, with a palisade running along its crest. The first bank would have also been a formidable obstacle when coupled with both ditches, the first being 6.5m wide and 2.5m deep, and the second 5m wide and 1.4m deep. The bank itself appears to have been slightly smaller than the second at approximately 4.5m wide and 0.75m high. A geophysical survey was also carried out, which revealed some details of the outer defenses. (Report 1044).

PRN	SITENAME	
1332	Long Hut, S of Penrhyn, Morfa Abererch	
NGR	SITETYPE	PERIOD
SH43313537	LONG HUT	MEDIEVAL

OLD DESCRIPTION

A long hut, orientated NW by N, 6m x 7m+, partly obliterated by a modern track. The walls survive as grassy banks.

DESCRIPTION

Earthwork re-recorded by a volunteer for the Arfordir project. The feature remains in the same condition as it was when first recorded. Newly identified field banks and terraces may be associated with the long hut.

PRN	SITENAME	
1477	Flint Finds, Trefor	
NGR	SITETYPE	PERIOD
SH37164748	FLINT SCATTER	Neolithic

OLD DESCRIPTION

DESCRIPTION

The site lies at 10-20m OD, on the end of a cliff edge promontory overlooking the mouth of a small valley. The site has produced the largest purely surface collected assemblage of any in north west Wales and several collections have been made by different visitors.

The lack of microlith material suggests that this may be a site of earlier Neolithic date and can be compared to coastal flint industries of south west Scotland. The high proportion of waste to retouched pieces suggests that main object of manufacture was just simple flakes. Probable factory site, producing flakes for use elsewhere.

PRN**1570****SITENAME**

Dinas Dinlle Hillfort, Llandwrog

NGR

SH43705635

SITETYPE

Hillfort

PERIOD

Iron Age

OLD DESCRIPTION**DESCRIPTION**

In January 2012 GAT carried out a topographic survey to record the erosion of the coastal side of the fort. The results show that the edge of drift cliff is certainly receding. The ongoing erosion appears to be worse in some areas than others, with the southern end of the fort appearing to be suffering the brunt of the erosion at present. There is slumping inland of the main cliff edge, which might result in landslides and considerable loss of parts of the site.

PRN**3037****SITENAME**

PROMONTARY FORT?, TRECASTELL

NGR

SH33237059

SITETYPE

FORT - PROMONTORY

PERIOD

PREHISTORIC?

OLD DESCRIPTION

A POSSIBLE PROMONTORY FORT, CONSISTING OF THE REMAINS OF AN ENCLOSING STONE BANK. A RECTANGULAR FEATURE IS ALSO PRESENT IN THE CENTRE OF THE AREA ALONG WITH THE REMAINS OF A MAST BASE. THE 1900 OS SIX INCH MAP RECORDS A 'TELEGRAPH CABLE HUT' IN THIS LOCATION.

DESCRIPTION

The site of the fort was inspected as part of the Arfordir project. The coastal path now runs through the area where defences would be expected and although there is a depression where the path is located it is not overly convincing as a defensive ditch. Within the interior, or on the headland, there are clearly a number of earthworks that may be buildings. It is unclear what date these may be, as buildings associated with the Atlantic Telegraph cable once stood at the site. Some modern rubbish was seen eroding out of a section on the western side of the promontory. Revetment could be seen either side of the 'path' leading into the promontory. Similar revetment can also be seen on the eastern edge of the promontory, this does not appear to be a recent modification although it could easily be post-medieval. All in all, the interpretation of the promontory as actually being a fort is a little dubious although earlier features may simply be obscured by more recent activity.

PRN**3038****SITENAME**

TUMULUS (REMS. OF) N OF BARCLODIAD Y GAWRES

NGR

SH32847086

SITETYPE

CAIRN

PERIOD

PREHISTORIC

OLD DESCRIPTION

AS DESCRIBED.

DESCRIPTION

Inspected as part of the Arfordir project. The cairn appeared to be stable and showed no sign of recent erosion or vandalism, the remains of a possible cist could be seen in the centre of the feature.

PRN**3185****SITENAME**

Lime Kiln, Nr Tyddyn Hen, Clynnog

NGR

SH40024901

SITETYPE

Lime kiln

PERIOD

Post Medieval

OLD DESCRIPTION

Lime Kiln, small bottle shaped. Collapsing, marked on map.

DESCRIPTION

Revisited on 02/02/12. Area was very well maintained and the grass looked to have been recently cut. It appears to be a fairly early kiln as it is marked as an 'Old Limekiln' on the first edition Ordnance Survey map.

PRN**5669****SITENAME**

Limekiln - Nr Borth, Clynnog

NGR

SH41565045

SITETYPE

LIME KILN

PERIOD

Post Medieval

OLD DESCRIPTION

Lime kiln marked on OS 6 inch map. <1>

DESCRIPTION

Considerable remains surviving up to 2m high with some stone structure visible.

PRN**6787****SITENAME**

Flints, Findspot, Penychain

NGR

SH43533531

SITETYPE

FINDSPOT

PERIOD

Mesolithic

OLD DESCRIPTION

Flints eroding out of peaty soil buried by c.0.6m of blown sand at east edge of small cove at west side of Pen-y-chain, immediately south of demolished aerial car lift terminal. A few small fresh flakes with nothing diagnostic of date. 2 other flakes also recovered from trackway at south side of Porth Fechan suggesting activity may have been widespread. <1>

A collection of worked flint found on the eroding headland of Penychain is likely to be the remains of nomadic hunters or fishers of the Mesolithic period, dating from the 6th to 5th millennia BC. Mean sea-level at that time was some 5 to 10m below the present and such headlands may have provided a prominent position with views over a coastal plain with rich food resources. (Roberts 2007)

DESCRIPTION

In January 2011 6 test pits were dug around the area from which flints have been found. Flint was recovered from 4 of the 6 test pits. Flint has been recovered from this area throughout the Arfordir project.

PRN	SITENAME	
7193	FISH TRAP, NEWLANDS	
NGR	SITETYPE	PERIOD
SH29058071C	FISH TRAP	UNDETER

OLD DESCRIPTION

THE REMAINS OF A LARGE FISH TRAP, 'L'-SHAPE IN PLAN, ITS LONGEST SIDE RUNNING PARALLEL TO THE COAST AND ATTACHED TO EXPOSED BEDROCK AT THE SOUTHERN END. THE POSSIBLE REMAINS OF WALLING WERE RECORDED FROM AERIAL PHOTOGRAPHS AT THE N END. THE SITE IS AT LEAST HALF A MILE LONG CONSISTING OF LINEAR STONE LENGTHS OF WALLING. DOCUMENTARY REFERENCES TO FISHING ACTIVITIES IN THE AREA IN THE FOURTEENTH/FIFTEENTH CENTURIES IS NOTED BY CARR. THE TRAP IS RECORDED ON THE 1925 12 INCH OS MAP, AS IS A SMALL STRUCTURE CALLED 'THE WEIR' AND THE ROAD WHICH LEADS DOWN TO THE BEACH IS CALLED 'GORED ROAD' TO THE PRESENT DAY.

DESCRIPTION

Revisited by Laura W. Parry and Iwan G. Parry on 26/01/12. There are large breaches within the line of boulders which indicate that it is being eroded.

PRN	SITENAME	
7248	HMS Glendower at Pen Ychain	
NGR	SITETYPE	PERIOD
SH43303620	NAVAL BASE/HOLIDAY CAMP	MODERN

OLD 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.

DESCRIPTION

HMS Glendower - During WW2 this was a naval training base called HMS Glendower. Much of the operational equipment (gun emplacements, target range etc.) is half a mile to the south at Pen Ychain promontory. The site is now home to Hafan y Mor holiday camp and has been much updated and replaced. Very little of the original training camp remains but features associated with it can still be found on the Penychain headland itself. The most obvious of these are two large concrete gun emplacements with iron fittings (PRN 31543), numerous other smaller gun emplacements and concrete plinths are scattered over the headland. The only surviving building associated with the gunnery training is a brick and concrete built munitions building (PRN 31527). Until recently another stood on the headland (PRN 31518); this was, however, demolished due to safety concerns. At the western end of the headland is a shooting butt (PRN 31519), this would have been used in conjunction with two firing points (PRN 31512 & PRN 31513) down on the pebble beach; a patch of vegetation similar in size to the visible concrete firing points may represent a third (PRN 31514).

PRN	SITENAME	
7249	Railway Junction at Afon Wen	
NGR	SITETYPE	PERIOD
SH44493716	RAILWAY JUNCTION	Post Medieval

OLD DESCRIPTION

DESCRIPTION

The site of Afon Wen Junction. The Cambrian platform survives but is grassed over and there are only traces of the LNWR platform. The stump of a starter signal survives. An Iron boundary marker was recovered from the beach by the owner of the old station masters house (PRN 31571).

PRN**7285****SITENAME**

Promenade, Tywyn

NGR

SH57860032

SITETYPE

PROMENADE

PERIOD

MODERN

OLD DESCRIPTION

SH 5792 0010 to SH 5775 0058. A mid-Victorian seaside development. <1>

The Tywyn sea-front between Pier Road and Neptune Road was gentrified by the construction of the Marine Parade and Promenade, inaugurated in 1889 (Fig. 5). It was to have been supplemented by the construction of a pier at the end of what is still Pier Road. The promenade has been more recently improved in 1977. A plaque recording the inauguration of the original promenade has been preserved in a wall (Fig. 6). (Smith 2004)

DESCRIPTION**PRN****7286****SITENAME**

Peat Bed, Tywyn

NGR

SN58189932

SITETYPE

PEAT-CUTTING

PERIOD

MODERN

OLD DESCRIPTION

An early nineteenth century foreshore turbarry. Beneath the beach shingle and dunes is a buried ancient peat-bed, discussed above and Feature 14, below. This is frequently hidden by sand and only visible after particular tide and wind conditions. However, it has been visited previously when exposed (Gwyn and Dutton 1995 and Smith 2002). The peat bed is at least 1m deep and in its surface are many neatly cut rectangular pits, the remains of peat cutting for fuel (Figs 16 & 17). These are so well preserved that spade marks are still visible in some faces. There have been no artefacts to date the pits and no specific historical records of their cutting. However, there are general mentions of exploitation of peat around Tywyn in the 18th century and like other parts of north Wales this probably continued into the mid-19th century at which time the construction of the railways meant that cheap coal became available (the Cambrian Coast railway through Tywyn was opened in 1863). Peat cutting in moorland usually manifests as long advancing faces, which are sometimes visible as slight terraces. The pits here seem to have been cut as neat separate features, probably in order to avoid water-logging so that each pit was separated by a peat wall from its neighbour which would have been filled with water between tides. Some of the pits are even provided with neat drainage channels.

The best-preserved area of pits extends from just south of the outfall of the Afon Dyffryn Gwyn for some 200m. However, the recent visit showed that the area of peat-cutting also extends some way north of the outfall (Figs 13 & 14) and are likely to extend further, where the peat bed is hidden beneath the sand. The peat beds can also be seen to extend eastwards under the shingle bank but it is uncertain if the peat-cutting pits do also although they approach quite closely to it. Clearly if they did then the shingle storm bank must have formed since the peat-beds were cut. (Smith 2004)

DESCRIPTION**PRN****14601****SITENAME**

Cored Gwyrfaï Fish Weir

NGR

SH45306070

SITETYPE

FISH WEIR

PERIOD

Medieval

OLD DESCRIPTION**DESCRIPTION**

The Cored Gwyrfaï fish weir was revisited for the Arfordir project. It is a massive fish trap and can be clearly seen on aerial photographs, although it was more difficult to see from the ground as it is so vast. It was visited during low water and is located on the end of a natural shingle bank that spurs out into the Straits where a long wall can be seen.

PRN
14614

SITENAME
Fish Trap, Possible, Carreg Oysters

NGR
SH27704160

SITETYPE
FISH WEIR

PERIOD
Medieval

OLD DESCRIPTION
DESCRIPTION

Carreg oysters is a large outcrop forming a small island off Porth Dinllaen. A bank of sand land joins this to the beach. This appears to be natural but could conceivably be artificial. There is however no reason to believe that it is a fish trap, although it has been interpreted as such.

PRN
16601

SITENAME
Peat Exposures at Tywyn

NGR
SN58559853

SITETYPE
NATURAL FEATURE

PERIOD
PREHISTORIC

OLD DESCRIPTION

The peat beds extend for about a kilometre along the shore. North of the outfall they are more eroded than south of the outfall. Previous visits only identified isolated patches north of the outfall. However, during the recent visit in November 2004 for the current study, the area north of the outfall happened to be better exposed than previously. The peat surface was seen to extend further north than previously seen and almost certainly still continues further north under the sand because in three places in situ pieces of ancient trees were seen protruding through the sand (Fig. 13). The creation of the promenade wall probably means that the foreshore in front of the promenade has probably been subjected to greater erosion than it might otherwise and it is possible that any peat beds have been eroded away. There are patches of eroded cemented shingle and occasional glacial erratic boulders close to the low water mark, but no evidence of any peat or ancient timbers. This is almost certain to be true around the slight rise in ground around Bryn-y-mor. However, there is still a possibility of peat surviving below the sand in the intertidal area north of Bryn-y-mor.

In the exposure as a whole there are, in places, large in situ tree stumps (Fig. 15) and in others large fallen trunks that have been exposed by the peat cutting. The peat is at least a metre deep and consists of more than one horizon, some of it woody and fibrous, other much finer. The peat beds can be seen to run back under the shingle bank and may continue under the Penllyn marshes to the east. The peat represents a buried and preserved ancient landscape in which well-preserved archaeological remains may occur. Sometimes objects are discovered by chance that show the presence of human activity but there are none reported from here. However, samples were taken as part of a previous survey of intertidal remains and these showed the presence of charcoal, which is taken to be a good indicator of human activity nearby (Smith 2004).

DESCRIPTION

PRN
16610

SITENAME
Possible Ship-building Features, Porth Dinllaen

NGR
SH27744122

SITETYPE
SHIPYARD

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

A straight, double linear feature over 100m long lying parallel to the shore at around the mean low water mark in the bay. There was a large fishing and boat-building industry here, and there are boat sheds on the nearby promontory and a former customs house. The parallel track nature of this feature suggests it might have been a slipway but on the other hand it does not run into deeper water and seems to be too far out to connect to the land. Possibly it could have been some kind of mooring device.

PRN
18395

SITENAME
Pill-Box, Tywyn

NGR
SN58549887

SITETYPE
PILL BOX

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

The pillbox forms the northern-most of a line of such pillboxes that start at the mouth of the Dyfi Estuary. These decline in condition from S to N. This pillbox has collapsed and now consists of just a group of horizontal slabs lying on the beach. (Smith 2004)

PRN
18400

SITENAME
Standing Stone, Morfa Abererch

NGR
SH41263576

SITETYPE
STANDING STONE

PERIOD
Bronze Age

OLD DESCRIPTION

DESCRIPTION

Upright stone standing on edge of sand dunes overlooking sandy/pebble beach. The strata beneath the stone can clearly be seen, and contains a large stone at beach level and a strata of pebbles lower down. A test pit was dug immediately in front of the stone in February 2011. The test pit was dug to 1.1m in depth but the base of the stone was not reached. The stone therefore seems to be at least 2.05m tall. A grey clay layer was identified that may be an ground surface.

Stone is currently 2.8m from eroding face and stands 1.3m from ground level, same height as the dunes. The stone appears to be sitting on, or cut into, the old ground surface which has been buried by blown sand. The surface is 0.1m thick and lies above a former clayey subsoil which is 0.2m thick. A geophysical survey was carried out over the field inland from the stone, but this did not reveal any features associated with the stone.

PRN
24001

SITENAME
Wall, Afon Dysynni Entrance

NGR
SH56140320

SITETYPE
SEA DEFENCES

PERIOD
Modern

OLD DESCRIPTION

A massive wall of laid slate slabs provides a protective wall on the south side of the entrance to the Dysynni channel. This doesn't look like modern work but doesn't appear on the 1888 or 1901 maps and seems to belong to the changed shape of the river entrance seen on more recent maps, where the entrance has been canalised and a flood bank built further upstream. (Smith 2004)

DESCRIPTION

PRN
24002

SITENAME
Sea Bank, Dysynni Marshes

NGR
SH56690260

SITETYPE
SEA DEFENCES

PERIOD
Modern

OLD DESCRIPTION

A large bank of massive rubble protects the coast edge north of the Dysynni Low Level outfall. This post-dates the railway construction and the drainage of the marshes since it does not appear on the Ordnance Survey maps of 1891 or 1901. Neither do other flood banks present now around the mouth of the river and immediately upstream of the railway bridge. (Smith 2004)

DESCRIPTION

PRN
24003

SITENAME
Low Level Tidal Gate and Culvert, Afon Dysynni

NGR
SH57180188

SITETYPE
CULVERT

PERIOD
Post Medieval

OLD DESCRIPTION

Part of the drainage scheme for the marshes carried out in 1862. The drainage channel runs into a culvert beneath the railway embankment. There may be elements of the original 19th century work remaining. (Smith 2004)

DESCRIPTION

PRN
24004

SITENAME
Low Level Outfall, Afon Dysynni

NGR
SH57060185

SITETYPE
DRAIN

PERIOD
Post Medieval

OLD DESCRIPTION

The construction of the Cambrian Coast Railway was preceded by drainage of the marshes north and south of Tywyn in 1862. This was achieved by construction of drainage channels, tidal gates, and outfalls. (Smith 2004)

DESCRIPTION

PRN
24005

SITENAME
Cambrian Coast Railway Embankment, Afon Dysynni

NGR
SH56670270

SITETYPE
RAILWAY EMBANKMENT

PERIOD
Post Medieval

OLD DESCRIPTION

The Cambrian Coast line was opened in 1864. It runs on its original embankment and bridge across the Dysynni. The railway line runs close to the coast edge for about 1.5km of the northern part of the study area. It seems to have made use of a pre-existing shingle storm bank along some of this route. At the south it is protected by a concrete sea-wall and at the north by a rubble bank. In the central part however, it has no protection, possibly because the rubble bank has been eroded by the sea and recent highest tides have come within a few centimetres height and a few metres distance of the railway line. (Smith 2004)

DESCRIPTION

PRN
24006

SITENAME
Outfall, Afon Dyffryn Gwyn

NGR
SN58259935

SITETYPE
DRAIN

PERIOD
Modern

OLD DESCRIPTION

On the beach at the north edge of the survey area is the piped outfall of the river. This stands on concrete supports exposed at a high level above the beach. This allows water to exit at all but highest tides. The marshes were drained in 1862 (Anon 1866) and this must have included the construction of the drainage channels and tidal gates and outfalls for the Afon Dyffryn Gwyn and Afon Dysynni marshes. The outfall originally exited onto the beach, as seen in the 1891 map. It appears to have become exposed because of coastal erosion, which has either reduced the width of the shingle bank or driven it back further east. However, it is possible that the original outfall exit was deliberately extended seaward in its present elevated position. (Smith 2004)

DESCRIPTION

PRN
24007

SITENAME
Tidal Gate and Culvert, Afon Dyffryn Gwyn

NGR
SN58359940

SITETYPE
CULVERT

PERIOD
Modern

OLD DESCRIPTION

The river has been canalised and runs into a cutting as it approaches the tidal gate and culvert. The whole area must have been dug out when these constructed. The area of the tidal gate has been much modified and repaired but there may be elements of the original 19th century work, including the culvert or pipe although all visible seem to be of recent date. (Smith 2004)

DESCRIPTION

PRN
25280

SITENAME
Seagull Trench, Dinas Dinlle

NGR
SH43675653

SITETYPE
SEAGULL TRENCH

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

The site was visited as part of the Arfordir project. It was noted that access had been gained to the interior by vandals by digging at the back of the structure. The trench now has rubbish, graffiti, and evidence of fires being set within it.

PRN
29834

SITENAME
Lifeboat House and Slipway, Porthdinllaen

NGR
SH27784192

SITETYPE
LIFEBOAT STATION

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A lifeboat house and slipway, built originally in 1864, however most of the surviving material dates from a substantial rebuild of the station in 1925 to 1926. It is a rectangular building with a cross gable, built of granite from Trefor quarry. It has undergone a number of phases of significant redevelopment and alterations, the most recent being in 1993.

PRN
29835

SITENAME
Breakwater, Porthdinllaen

NGR
SH27834194

SITETYPE
BREAKWATER

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A substantial breakwater, situated approximately 50m north of the lifeboat station, and built to protect it between 1918 and 1927. It is constructed of irregular coursed shale blocks, approximately 1m high, capped with concrete, adding an additional 1.2m to its height. It has a substantial batter on its northern side. At approximately 3.3m from the low water mark, it incorporates a fragment of walling that formed part of an early 19th century pier towards its seaward end.

PRN
29836

SITENAME
Watchtower, Porthdinllaen

NGR
SH27454138

SITETYPE
WATCH TOWER

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A watchtower, built on Porthdinllaen headland, to provide early warning to the lifeboat station of ships in trouble at sea. Its footprint survives on Nefyn Golf Course.

PRN
29837

SITENAME
Former Pier or Slipway, Porthdinllaen

NGR
SH27754164

SITETYPE
PIER

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A double line of stones extending eastwards into the bay. It is visible on the aerial photographs examined (106G/UK/469 frame 3009) dating back to 1945, and is located on the 2nd edition Ordnance Survey map of 1900 but not the first edition of 1889. A pier can be seen at this location on the tithe map of 1841, and the earlier Glynllifon estate map, where it is referred to as the old pier. There is a building located on the foreshore on the tithe and subsequent maps that was probably formerly a warehouse. It is likely that the origins of this pier date to the early 19th century and was constructed by the Porthdinllaen Harbour Company.

PRN
29933

SITENAME
Burnt Mound, Porth Neigwl

NGR
SH29022569

SITETYPE
BURNT MOUND

PERIOD
Bronze Age

OLD DESCRIPTION
DESCRIPTION

Rescue excavation carried out in November 2008 by GAT and National Museum, which revealed a rectangular timber slab-lined trough with an adjoining water channel made from a hollowed out log. Also the remains of an earlier trough, which had previously been noticed in the eroding cliff section. The timber slabs of the trough were lifted and taken to the National Museum for conservation and analysis.

PRN	SITENAME
31501	Concrete structure, part of RAF Hells Mouth Firing Range

NGR	SITETYPE	PERIOD
SH27572709	FIRING RANGE	Modern

OLD DESCRIPTION

REINFORCED RECTANGULAR CONCRETE MILITARY STRUCTURE. BLAST PROTECTION FOR THE FIRING RANGE TO THE NORTH. BLAST HOLES ARE SEEN IN THE NORTHERN ELEVATION. THE POLYGONAL BRICK PILLBOX DESCRIBED IN COASTAL SURVEY (GAT 1996) NO LONGER EXISTS EXCEPT FOR EVIDENCE OF LOOSE BRICKS ON THE BEACH. THE SAND DUNES ARE ERODING UP TO THIS STRUCTURE. THERE IS EVIDENCE OF VANDALISM.

DESCRIPTION

Revisited on by Laura W. Parry and Iwan G. Parry on the 26/01/12, where it was noted that the sand dunes in front of this feature had dramatically eroded away compared to the previous visit on 09/10/09. This structure formed part of an experimental firing range for the training or aeroplane tail gunners, forming a backstop for stray bullets. Blast holes are seen in the northern elevation.

PRN	SITENAME
31502	GUN SITE, GODREDDI BACH, LLANDDONA

NGR	SITETYPE	PERIOD
SH57488133	GUN EMPLACEMENT	Modern

OLD DESCRIPTION

DESCRIPTION

Rectangular reinforced concrete military structure with flat roof, originally had two false gable ends and chimneys with false roof. Gable end and chimney survives at SE end only. Location of the gun can still be seen at the NW end of the building, overlooking the bay. Some modifications made in 1977, currently used as store.
Further information held in G2072 project file.

PRN	SITENAME
31503	Sea Defence works, Tyddyn-Y-Cob

NGR	SITETYPE	PERIOD
SH28707815	BREAKWATER	Modern

OLD DESCRIPTION

A LINE OF ROCKS, POSSIBLY ACTING AS A SEA DEFENCE.

DESCRIPTION

PRN
31504

SITENAME
Cob, Graig Fawr

NGR
SH28627834

SITETYPE
DAM

PERIOD
Post Medieval

OLD DESCRIPTION

A 2M WIDE FIELD WALL FORMING A COB ACROSS THE INLET. THERE IS THE SLIGHT REMAINS ON THE INLAND SIDE AT ROUGHLY RIGHT ANGLES TO THE COB ITSELF.

DESCRIPTION

PRN
31505

SITENAME
Butlin's Holiday Camp, Penychain

NGR
SH43303620

SITETYPE
HOLIDAY CENTRE

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Butlin's holiday camp opened at the site of HMS Glendower in 1947 with a capacity of 5000. The camp was especially popular with holidaymakers from Liverpool and it was here that a young James Paul McCartney performed on stage for the first time, giving a rendition of "Long Tall Sally", whilst on a family holiday (Frame, 1999). Ringo Starr also had a residency at the camp for two seasons in 1960 and 1961 with Rory Storm and the Hurricanes; he went on to join a band called The Beatles, of which Paul McCartney was already a member, in 1962 (Starkey, 2000). In 1998 the site was upgraded to become Hafan y Mor, a family holiday camp with accommodation for several thousand people in chalets, caravans and log cabins. A number of features associated with the early days of the holiday camp were recorded during the Arfordir project, including the former location of a miniature railway (PRN 31542) and a cable car ride (PRN 31539) which terminated at the Penychain headland.

PRN
31506

SITENAME
Abererch Sands Caravan Park

NGR
SH40303594

SITETYPE
CARAVAN PARK

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Caravan park with access from the main (Pwllheli to Criccieth) road via Abererch rail station. Access to beach through steps and cutting through 10m high sand dunes. Mr Dunne, the owner reports constant battle with sand encroachment.

PRN
31507

SITENAME
Site of Orchard, east of Abererch Sands Caravan Park

NGR
SH40413592

SITETYPE
ORCHARD

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Orchard shown on 1917 Ordnance Survey map, now no longer exists. Mr Dunne, owner of the land has no knowledge of it.

PRN
31508

SITENAME
Site of Boathouse, east of Abererch Sands Caravan Park

NGR
SH40513590

SITETYPE
BOAT HOUSE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Site only of boathouse identified on 1917 Ordnance Survey map. Owner of the site, Mr Dunne, was not aware that a boat house had been there. The site is between the former site of Tyddyn-Cribau and Abererch Sands Caravan Park, and close to what was once an orchard.

PRN
31509

SITENAME
Site of Tyddyn-Cribau, Morfa Abererch

NGR
SH40703587

SITETYPE
DWELLING

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Site of Tyddyn-Cribau. Cottage to north and adjacent to sand dunes, about half a mile east of Abererch Sands Caravan Park. Construction material unknown, shown on 1917 Ordnance Survey map. No longer exists. No evidence on site in corner of field. Mr Dunne, owner of the land, has no knowledge of the cottage.

PRN
31510

SITENAME
Pump in field alongside railway fence, Morfa Abererch

NGR
SH40513612

SITETYPE
WATER PUMP

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Water pump, appears on the 1917 Ordnance Survey map. A concrete tank is present, it does not hold any water. A modern plastic water container has been placed on the concrete structure.

PRN
31511

SITENAME
Concrete blocks with remains of metal posts

NGR
SH43163543

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

There are four concrete blocks now loose on top of pebbles within a few meters of landside of beach. Each block has the remains of a metal post embedded in it centrally at the top surface. Possibly railings of some kind.

PRN
31512

SITENAME
Shooting point 1, Morfa Abererch

NGR
SH42983547

SITETYPE
SHOOTING STAND

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Shooting point 1, distance from target banks 200m (approx). Long sides at right angle to sea. Made up of what could be described as a concrete box. This area was part of HMS Glendower Training Facility.

Concrete wall is 0.25m wide. Interior is filled with local pebbles and covered in grass/turf. .303 cartridge recovered from the immediate area, mark on percussion cap shows that it was fired from a Bren Light Machine Gun. Site probably represents 300 yard shooting stand.

PRN
31513

SITENAME
Shooting point 2, Morfa Abererch

NGR
SH43073544

SITETYPE
SHOOTING STAND

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Distance from target banks 150m (approx). Long side at right angle to sea. Made up of what could be described as a concrete box. This area was part of HMS Glendower training facility.

Concrete wall is 0.25m wide. Interior is filled with local pebbles and covered in grass/turf. Concrete in generally good condition, some cracks and damage to edges. Site probably represents 200 yard shooting point.

PRN
31514

SITENAME
Shooting point 3, Morfa Abererch

NGR
SH43113543

SITETYPE
SHOOTING STAND

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Shooting point 3. Distance from target banks 50m. Long side at right angle to sea. This position seemingly consists of pebbles and soil only.

Possible shooting point, no concrete structure but of similar size to both shooting points nearby. Feature is approximately 140 yards from the target bank.

PRN
31515

SITENAME
Dry stone wall, Morfa Abererch

NGR
SH43153543

SITETYPE
BOUNDARY WALL

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Possibly a property boundary or a livestock boundary running roughly along the edge of the beach. In a delapidated condition seemingly due to lack of repair over many years. Quite hidden in places by gorse and thick growth. Constructed of large stones.

PRN
31516

SITENAME
Oblong feature above Morfa Abererch

NGR
SH43023557

SITETYPE
COMPONENT

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Oblong feature (walled sides?) on top of bank falling to beach, possibly on line of wall coming from north and turning eastwards along edge of beach.

PRN
31517

SITENAME
Concrete oblong block, east end of Morfa Abererch

NGR
SH43203540

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Concrete oblong block at right angle to sea and parallel to shooting points and target bank, but set off to right when facing targets from shooting points. Square holes in top of block 12cm x 12cm and 1m apart.

PRN
31518

SITENAME
Site of munitions building, Pen Ychain

NGR
SH43243541

SITETYPE
MUNITION HOUSE

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Site of munitions building. Building was similar to an example that still survives on the headland. Building was demolished around 2002, probably for hygiene and health & safety reasons. Structure was brick built with one door and a window. Close to firing range and probably functioned as a store for munitions and weapons.

PRN
31519

SITENAME
Target position, Pen Ychain

NGR
SH43253540

SITETYPE
TARGET

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Target position. Two 2.5m high sandy banks parallel to each other. Until 2000 contained remains of mechanism for raising and lowering targets, probably removed for health & safety reasons. Area is littered with .303 bullets.

PRN
31520

SITENAME
Concrete plinths, Pen Ychain

NGR
SH43343533

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Various concrete platforms or plinths with metal fittings. Possibly for guns, targeting, searchlights or masts. Mainly on flat ground close to 9m gun emplacement.

PRN
31521

SITENAME
Possible Cist, Pen Ychain

NGR
SH43353541

SITETYPE
CIST

PERIOD
Bronze Age

OLD DESCRIPTION
DESCRIPTION

Possible Cist or Trough for Burnt Mound. Distinct hollow surrounded on 2 sides and one end by rock. Box like shape. Could be natural but rather regular. 20m from kissing gate leading to promontary.

PRN
31522

SITENAME
Concrete post setting, Pen Ychain

NGR
SH43403539

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Post holes in small concrete bases, holes are 0.05m in diameter.

PRN
31523

SITENAME
Concrete post setting, Pen Ychain

NGR
SH43413538

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Post holes in small concrete bases, holes are 0.05m in diameter.

PRN
31524

SITENAME
Circular Stone Wall, Pen Ychain

NGR
SH43423538

SITETYPE
GUN EMPLACEMENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Circular Stone Wall. Well built wall of irregular but neat stone. The current height appears to be the original height. Sign of entrance on north side 1.2m wide.

PRN
31525

SITENAME
Concrete pad, Pen Ychain

NGR
SH43433538

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Flat square concrete pad set in ground 3m from Trig Point on rocky outcrop overlooking promontory. Metal plate (1.3m dia.) set into top with remains of fixing bolts.

PRN
31526

SITENAME
Trig Point BM S8824

NGR
SH43443537

SITETYPE
TRIANGULATION POINT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Triangulation Point on small rocky outcrop overlooking Pen Ychain. On concrete base 1.5m x 1.5m. Central metal boss missing from top.

PRN
31527

SITENAME
Munitions Building, Pen Ychain

NGR
SH43453541

SITETYPE
MUNITION HOUSE

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Munitions Building. Built of mortared brick. Concrete roof and floors. Several door and window apertures, all without doors or frames. Stands somewhat behind rocky hill on which Trig Point BM S8824 stands. Out of direct line with sea and concrete armament bases.

PRN**31528****SITENAME**

Track from Hafan y Mor to Pen Ychain

NGR

SH43553537

SITETYPE

TRACKWAY

PERIOD

Modern

OLD DESCRIPTION**DESCRIPTION**

Track cut out of hillside and laid with compressed rock and sand. It mainly follows the seashore and the contours of the land from Hafan y Mor activity park (once HMS Glendower training camp H.Q.) to a loop on the Pen Ychain promontary. On the seaward side stretches of the track have been supported by stone walling to maintain the level and stability of the track.

PRN**31529****SITENAME**

Concrete Pads, Pen Ychain

NGR

SH43543529

SITETYPE

COMPONENT

PERIOD

Modern

OLD DESCRIPTION**DESCRIPTION**

Square concrete pads possibly used to support a platform. Ground around the pads has now eroded. Within 6m of 8m Gun Emplacement. There are 6 pads in 2 clusters of 3.

PRN**31530****SITENAME**

Concrete Base, Pen Ychain

NGR

SH43543529

SITETYPE

COMPONENT

PERIOD

Modern

OLD DESCRIPTION**DESCRIPTION**

A square concrete base. On top is a 1.15m (dia) circular metal plate centrally placed. This base is 9m from the 8m Gun Emplacement.

PRN
31531

SITENAME
Concrete Pad, Pen Ychain

NGR
SH43563529

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

One of a series of four square, flat concrete pads with remains of metal bolts on top surface. All four pads are in a line, roughly parallel to the sea.

PRN
31532

SITENAME
Concrete Pad, Pen Ychain

NGR
SH43533529

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

One of a series of four square, flat concrete pads with remains of metal bolts in top surface. All four pads are in a line, roughly parallel to the sea.

PRN
31533

SITENAME
Concrete Pad, Pen Ychain

NGR
SH43573529

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

One of a series of four square, flat concrete pads with remains of metal bolts in top surface. All four pads are in a line, roughly parallel to the sea.

PRN
31534

SITENAME
Concrete Pad, Pen Ychain

NGR
SH43583530

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

One of a series of four square, flat concrete pads with remains of metal bolts in top surface. All four pads are in a line, roughly parallel to the sea.

PRN
31535

SITENAME
Gun Emplacement, Pen Ychain

NGR
SH43593530

SITETYPE
GUN EMPLACEMENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

One of two similar circular, low walled gun emplacements 3m apart. It is constructed from mortared bricks and has 3 tiers internally. Wall is 0.25m thick at the top and 0.5m at the base. There is a drainage hole in the brickwork on the seaward side. The brick structure sits on a 4.5m x 4.5m concrete base.

PRN
31535

SITENAME
Gun Emplacement, Pen Ychain

NGR
SH43583530

SITETYPE
GUN EMPLACEMENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

One of two similar circular, low walled gun emplacements 3m apart. Mortared red brick construction which has two tiers internally. Wall is 0.6m at base and 0.2m on top, there is a drainage hole on the seaward side. Sits on a flat concrete base. Some fire damage to concrete base.

PRN
31536

SITENAME
Concrete Pad, Pen Ychain

NGR
SH43613531

SITETYPE
COMPONENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Square concrete pad set flush with ground level. A square metal plate is set into top surface.

PRN
31537

SITENAME
Bank and Ditch, Pen Ychain

NGR
SH43503537

SITETYPE
BOUNDARY BANK AND DITCH

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Prominent bank and ditch.

PRN
31538

SITENAME
Bank and Ditch, Pen Ychain

NGR
SH43593538

SITETYPE
BOUNDARY BANK AND DITCH

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Prominent bank and ditch.

PRN
31539

SITENAME
Route of Cable Car, Hafan y Mor

NGR
SH43533536

SITETYPE
CABLE CAR

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

This cable car was dismantled about 10 years ago. Concrete base of extreme outward end of cable car is still present but has become overgrown with grass. Cable car ran from Butilins Holiday camp to Pen Ychain promontory directly across the fields until the late 1990s. All other evidence has been removed.

PRN
31540

SITENAME
Poss. Gun emplacement, Pen Ychain

NGR
SH43503533

SITETYPE
GUN EMPLACEMENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A circular bank 0.7m (approx) wide covered in grass. On gentle slope of hill towards sea. Reported to GAT in 2009. Originally recorded by a volunteer as a possible roundhouse. When the site was visited by Trust staff it was noted that there was no apparent entrance visible. The bank of the earthwork was probed using a road pin and this appeared to show that the bank consisted of sand or earth. Although not certain; it is believed that the earthwork may be associated with the gunnery training that took place on the headland, and is likely to be a sandbagged emplacement.

PRN
31541

SITENAME
Dry Stone Wall, Pen Ychain

NGR
SH43583555

SITETYPE
BOUNDARY WALL

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Linear dry stone wall and gateway running parallel to the sea. Gate no longer present. The southern side of the gateway is higher than the north. The gateway provides access to the beach from farmland. The southern section of the wall follows the top of a small cliff which falls to the sea. The wall turns to the west and is breached by the HMS Glendower military track. There is no evidence of vandalism although walkers accessing the beach have worn two pathways over the northern section of the wall, displacing some stones. There is no evidence of fixing points for a gate on either side of the gateway.

PRN
31542

SITENAME
Site of Butlins Minature Railway

NGR
SH43563591

SITETYPE
MINATURE RAILWAY

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

This railway no longer exists. The route has now been turned into a cycling/ walking path. The train ran from the Butlins holiday camp to a turning circle at the beach end of the line, which can be seen in the current route of the path.

PRN
31543

SITENAME
Gun Emplacement

NGR
SH43353529

SITETYPE
GUN EMPLACEMENT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Large emplacement with metal fittings, part of HMS Glendower.

PRN
31544

SITENAME
Ford, Possible, Pont Rhydybont

NGR
SH27917848

SITETYPE
FORD

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

A LINE OF STONES POSSIBLY MARKING A FORD.

PRN
31545

SITENAME
Flint Flake

NGR
SH32937153

SITETYPE
FINDSPOT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

A single struck flake of mid brown flint found eroding from a low section. The flint was in a slightly peaty deposit which had been sealed by a layer of blown sand, possibly a prehistoric ground surface.

PRN
31546

SITENAME
Carved Inscription

NGR
SH23837081

SITETYPE
CARVED STONE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

A stone which appears to have 3 characters carved on its surface. The characters are largely illegible although it is clear that they have been carved with an iron/steel blade due to the narrowness of the marks. Could potentially be relatively recent graffiti, WW2?

PRN
31547

SITENAME
Pair of Orthostats

NGR
SH33277058

SITETYPE
MARKER STONE

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

A pair of stones located on the coastal path close to the possible promontory fort of Trecastell, Cable Bay. It is unclear whether the stones are path marker or a feature associated with the fort. The gap between the stones does not appear to be wide enough for them to have been part of a gate/door way.

PRN
31548

SITENAME
Pump House

NGR
SH33217054

SITETYPE
PUMP HOUSE

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

A brick and concrete building marked on OS maps as a pump house. No machinery survives in the interior, a pipe exits through the SW facing (back) wall. There is a door on the NE facing (front) wall. The roof consists of a re-inforced concrete slab which is corrugated on the interior (ceiling).

PRN
31549

SITENAME
Submerged Forest, Morfa Conwy

NGR
SH76777973

SITETYPE
SUBMERGED FOREST

PERIOD
Prehistoric

OLD DESCRIPTION

DESCRIPTION

Remains of a submerged forest. As well as tree stumps a fair amount of organic material including fairly large pieces of timber can be seen in light blue/brown clay, presumably estuarine, when exposed. Possible Auroch and human footprints have also been reported in the clay.

PRN
31550

SITENAME
Footprints in clay

NGR
SH76737953

SITETYPE
FOOTPRINT

PERIOD
Prehistoric

OLD DESCRIPTION

DESCRIPTION

Possible Auroch and human footprints in exposed clay. Footprints were reported by a member of the public (Jeff Brice), it was not possible to confirm species from the photographs submitted so a visit was made to the site, unfortunately they had become re-covered by this time. Other areas of clay were exposed, these contained a fair amount of organic material including large pieces of timber. The only foot/hoof print seen could not be confirmed as being that of an auroch and appeared as if it may have been that of a large horse, possibly associated with the nearby mussel beds.

PRN
31551

SITENAME
Shooting Butts 1, Morfa Conwy

NGR
SH76677917

SITETYPE
BUTTS

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Part of a disused shooting butt, one of a pair of almost identical concrete structures (for other see PRN 31552). The structure is constructed of cast concrete and is typical of WW2 military features. In plan the feature is L shaped, open towards the sea (NW). It has a straight back wall and a stepped (again L shaped, but in elevation) wall to the NE. The footprint of the structure measured 6.03m x 3.43m with the back wall standing to a height of 2.2m. Map regression shows that there were targets located close to these features in the area now occupied by the golf course. These are likely to have been associated with a camp for volunteers, also shown on earlier maps, presumably local militia.

PRN
31552

SITENAME
Shooting Butts 2, Morfa Conwy

NGR
SH76587907

SITETYPE
BUTTS

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Part of a disused shooting butt, one of a pair of almost identical concrete structures (for other see PRN 31551). The structure is constructed of cast concrete and is typical of WW2 military features. In plan the feature is 'backwards L' shaped, open towards the sea (NW). It has a straight back wall and a stepped (again 'backwards L' shaped, but in elevation) wall to the SW. The footprint of the structure measured 5.76m x 2.32m with the back wall standing to a height of approximately 2.5m. Map regression shows that there were targets located close to these features in the area now occupied by the golf course. These are likely to have been associated with a camp for volunteers, also shown on earlier maps, presumably local militia.

PRN
31553

SITENAME
Stone Lined Pit

NGR
SH50793806

SITETYPE
PIT

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

What appears to be a stone lined pit eroding from the cliff face. Date is uncertain but it could potentially be prehistoric. It appears that this has only recently become exposed as at least one of the seaward side slabs appears to still be in situ. At least 6 slabs visible in the section; all appear to be lining the sides of a rounded cut which slightly protrudes into the natural.

PRN
31554

SITENAME
Stone Lined Feature 1, Criccieth

NGR
SH50793806

SITETYPE
FIELD DRAIN

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

What appears to be a stone lined feature eroding from the cliff face. May be a post medieval field drain, however because of the nature of construction the possibility that this is a cist should not be ruled out. 2 base slabs and one side slab visible.

PRN
31555

SITENAME
Flint Scatter, Criccieth

NGR
SH50693808

SITETYPE
FLINT SCATTER

PERIOD
Mesolithic

OLD DESCRIPTION
DESCRIPTION

4 flints recovered from the eroding cliff face. Two fragments clearly struck from blade cores, both showing use wear. All pieces seem to be beach flint. 3 pieces recovered close to the interface between upper soils and natural, around 0.9m from the current ground surface, possibly suggesting that they were in a cut - as no clear feature is visible they may be in a large shallow scoop.

PRN
31556

SITENAME
Stone Lined Feature 2, Criccieth

NGR
SH50673808

SITETYPE
CIST

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

What appears to be a stone lined feature eroding from the cliff face. Resembles a cist, however may be a post medieval field drain. 5 stones visible including a possible seaward facing slab, western side slab, 2 stones to the east and a possible cap stone.

PRN
31557

SITENAME
Stone Lined Feature 3, Criccieth

NGR
SH50663808

SITETYPE
FIELD DRAIN

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

What appears to be a stone lined feature eroding from the cliff face. 4 stones visible, similar to others in the area (PRN 31554, 31556) although it appears to be constructed from more rounded stones, possibly originating from the beach. A fair amount of post medieval pottery could be seen in the topsoil in this area, possibly suggesting that it is of similar date.

PRN
31558

SITENAME
Clawdd Boundary 1, Criccieth

NGR
SH48783756

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

An eroding clawdd boundary, not fully visible due to vegetation.

PRN
31559

SITENAME
Clawdd Boundary 2, Criccieth

NGR
SH48703755

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

An eroding clawdd boundary.

PRN
31560

SITENAME
Clawdd Boundary 3, Criccieth

NGR
SH48693755

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION
An eroding clawdd boundary.

PRN
31561

SITENAME
Clawdd Boundary 4, Criccieth

NGR
SH48683755

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION
A long section of eroding clawdd boundary, will soon be eroded away.

PRN
31562

SITENAME
Clawdd Boundary 5, Criccieth

NGR
SH48653755

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION
An eroding clawdd boundary.

PRN
31563

SITENAME
Clawdd Boundary 6, Criccieth

NGR
SH48643755

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION
An eroding clawdd boundary.

PRN
31564

SITENAME
Clawdd Boundary 7, Criccieth

NGR
SH48633755

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION
An eroding clawdd boundary, will soon be eroded away.

PRN
31565

SITENAME
Possible cut feature, Dinas Dinlle

NGR
SH43635616

SITETYPE
PIT

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION
A possible cut feature visible in section to the west of Dinas Dinlle Hillfort, has a dark orangey brown fill, no other distinctive features.

PRN
31566

SITENAME
Mound at Afon Wen

NGR
SH44133705

SITETYPE
MOUND

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

A mound of earth close where the river enters the sea and is 50m to the south of the railway culvert. Possibly cut by a field access track.

PRN
31567

SITENAME
Ford at Afon Wen

NGR
SH44123719

SITETYPE
FORD

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

A ford which straddles the Afon Wen below a private road bridge and the railway line bridge. The sett stones can be clearly seen when the water is low and calm. There appears to be two different styles of stones making up this ford.

PRN
31568

SITENAME
Old Sewage Plant

NGR
SH44133705

SITETYPE
SEWAGE WORKS

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A rectangular concrete building which has been demolished with a concrete modern structure attached to it. Sewage disposal plant.

PRN
31569

SITENAME
Underground chamber

NGR
Sh44393718

SITETYPE
UNDERGROUND STRUCTURE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Underground chamber situated on the edge of the railway track and structure that was originally Afon-wen Junction

PRN
31570

SITENAME
House at Afon Wen, the original Newborough Arms

NGR
SH44393716

SITETYPE
HOUSE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

House at Afon Wen railway junction. Originally own by Baron Newborough and then became the Newborough Arms and then since the railway come through it became the station masters house. The house has been extended and modernised.

PRN
31572

SITENAME
Groynes at Afon Wen

NGR
SH44513711

SITETYPE
GROYNE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

10 groynes in various conditions. Most are made up of railway sleepers with sections of rail lines used as uprights. Some are also made up of laid and upright slate slabs.

PRN
31573

SITENAME
Fishing Hut, Afonwen

NGR
SH44845722

SITETYPE
FISHING LODGE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Fishing hut on the western bank of lake of Glanllynau. It is a relatively new hut used for storing fishing gear. General size is that of a large garden shed.

PRN
31574

SITENAME
Peat, Afon Wen

NGR
SH44993723

SITETYPE
SUBMERGED FOREST

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

To the east of what was Afon Wen railway junction and directly south of Glanllynau is a stretch of peat. It stretches for approx. 40m along the landward (north) side of the railway line and underlies the hardcore on which the lines have been laid. The peat appears to have been exposed due to heavy rain and is falling away in 'cakes'.

PRN
31575

SITENAME
Stone Clearance, Afonwen

NGR
SH45053724

SITETYPE
STONE CLEARANCE SITE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Stone clearance at Afon We, south east of the largest lake at Glanllynau and to the north side of the railway line.

PRN	SITENAME	
31576	Inspection chamber, Afonwen	
NGR	SITETYPE	PERIOD
SH45073725	UNDERGROUND STRUCTURE	Modern

OLD DESCRIPTION
DESCRIPTION

Inspection chamber with 2 iron access plates ontop of a square concrete base. Purpose unknown.

PRN	SITENAME	
31577	Buried Soil, Dinas Dinlle	
NGR	SITETYPE	PERIOD
SH43565579	FLINT WORKING SITE	Prehistoric

OLD DESCRIPTION
DESCRIPTION

Flint flakes and burnt stone with some charcoal in a buried soil layer west of Dinas Dinlle Hillfort.

PRN	SITENAME	
31578	Stones of possible Clawdd, Dinas Dinlle	
NGR	SITETYPE	PERIOD
SH43475446	BOUNDARY WALL	Post Medieval

OLD DESCRIPTION
DESCRIPTION

Stones from possible clawdd which is still visible on the surface and still used as a boundary, however stones from the boundary are visible in section, west of Dinas Dinlle Hillfort

PRN
31579

SITENAME
Small area of peat, Dinas Dinlle

NGR
SH43455531

SITETYPE
SUBMERGED FOREST

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Small are of peat which contains wood and twig fragments as well as bark and reeds. West of Dinas Dinlle Hillfort.

PRN
31580

SITENAME
Bank of stones, Dinas Dinlle

NGR
SH43495559

SITETYPE
SEA DEFENCES

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Possible man made bank running along the edge of the beach. It maybe a possible sea defence seperating the beach from a more grassy and marshy area. West of Dinas Dinlle Hillfort

PRN
31581

SITENAME
Pillbox, Dinas Dinlle

NGR
SH43635656

SITETYPE
PILL BOX

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Stone built pillbox to the east of Dinas Dinlle Hillfort. It has small square windows in the wall faces and openings which appear to be drainage pipes at its corners, probably for providing visibility in potential blind spots and a wider range of fire. Not far from The Seagull trench. The pillbox now appears to be used as an outbuilding for a former hotel which now operates as a café during the tourist season.

PRN
31582

SITENAME
Concrete posts, Cemlyn Bay

NGR
SH33339319

SITETYPE
BOLLARD

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Concrete posts running along the curve of the Shingle beach at Cemlyn Bay.

PRN
31583

SITENAME
Wall, Cemlyn Bay

NGR
SH33659318

SITETYPE
WALL

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Intermittent sections of wall, which is on the seaward side of a low bank. It is approximately 1m wide with clear facing stones.

PRN
31584

SITENAME
Flint scatter, Cemlyn Bay

NGR
SH33699327

SITETYPE
FLINT SCATTER

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

A scatter of flint debris and one or two possible tools, possibly Mesolithic.

PRN	SITENAME	
31585	Dry stone wall/revetment, Cemlyn Bay	
NGR	SITETYPE	PERIOD
SH33709330	REVETMENT	Unknown
OLD DESCRIPTION		
DESCRIPTION		
Dry stone wall/revetment. On the edge of a small pebble beach.		

PRN	SITENAME	
31586	Small Shelter? Cemlyn Bay	
NGR	SITETYPE	PERIOD
SH33709331	ROCK SHELTER	Unknown
OLD DESCRIPTION		
DESCRIPTION		
A small shelter? A recess in a large natural rock with a 'floor' of very roughly paved rounded stones.		

PRN	SITENAME	
31587	Wall, Cemlyn Bay	
NGR	SITETYPE	PERIOD
SH33729332	WALL	Unknown
OLD DESCRIPTION		
DESCRIPTION		
A badly eroded/partially demolished field boundary wall. It survives to about 5 courses high in some places.		

PRN
31588

SITENAME
Low earthwork, Cemlyn Bay

NGR
SH33749342

SITETYPE
EARTHWORK

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

A low earthwork, which may possibly be the remains of a rectangular/oval building. There are some other lumps and bumps nearby.

PRN
31589

SITENAME
Spring, Trwyn Pencareg

NGR
SH33869352

SITETYPE
SPRING

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Natural spring with some structure which may have formed a pool, it is now a small area of bogland.

PRN
31590

SITENAME
Bank? Cemlyn Bay

NGR
SH34109366

SITETYPE
EARTHWORK

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Possible bank. Possibly part of a buried structure.

PRN
31591

SITENAME
Clearance cairn Cemlyn Bay

NGR
SH33699318

SITETYPE
CLEARANCE CAIRN

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Possible clearance cairn, covered in gorse and brambles, likely to be the landowner improving the land for pasture.

PRN
31592

SITENAME
Ironwork in rock, Cemlyn Bay

NGR
SH33019361

SITETYPE
MOORING RING

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Ironwork set into rock. Probably crude moorings.

PRN
31593

SITENAME
Small Quay. Cemlyn Bay

NGR
SH33029377

SITETYPE
QUAY

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Possible small quay. Concrete built with some slate at its base. There was ironwork within stones nearby.

PRN	SITENAME	
31594	Quay, Cemlyn Bay	
NGR	SITETYPE	PERIOD
SH33089374	QUAY	Unknown
OLD DESCRIPTION		
DESCRIPTION		
Stone built and partially mortared 'quay'.		

PRN	SITENAME	
31595	Iron ring, Cemlyn Bay	
NGR	SITETYPE	PERIOD
SH33069375	MOORING RING	Unknown
OLD DESCRIPTION		
DESCRIPTION		
Iron ring. Part of possible quay and moorings.		

PRN	SITENAME	
31596	Large Iron Chain, Cemlyn Bay	
NGR	SITETYPE	PERIOD
SH33079375	QUAY	Unknown
OLD DESCRIPTION		
DESCRIPTION		
Large iron chain, each link about 0.2x0.15m.		

PRN	SITENAME	
31597	Concrete fence posts, Cemlyn Bay	
NGR	SITETYPE	PERIOD
SH33129384	BOLLARD	Modern
OLD DESCRIPTION		
DESCRIPTION		
Concrete fence posts eroding from the edge.		

PRN	SITENAME	
31598	Metal wires, Porth Neigwl	
NGR	SITETYPE	PERIOD
SH28242650	MILITARY BASE	Modern
OLD DESCRIPTION		
DESCRIPTION		
Metal wires? Eroding from dunes. Probably associated with gunnary training systems or with RAF Hell Mouth generally.		

PRN	SITENAME	
31599	Possible pit. Porth Neigwl	
NGR	SITETYPE	PERIOD
SH28152654	PIT	Unknown
OLD DESCRIPTION		
DESCRIPTION		
Possible pit containing pebbles. If genuine, it is cut into the natural.		

PRN
31600

SITENAME
Possible pit. Porth Neigwl

NGR
SH28132657

SITETYPE
PIT

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Possible pit with a clear edge on one side however not on the other, may therefor be a natural feature. The fill was dark orange brown.

PRN
31601

SITENAME
Burnt stones, Porth Neigwl

NGR
SH28122658

SITETYPE
STONE SPREAD

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Deposit of burnt stones.

PRN
31602

SITENAME
Sheep burial, Porth Neigwl

NGR
SH28112659

SITETYPE
BURIAL

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Sheep burial with stones.

PRN
31603

SITENAME
Concrete plinth and brickwork, Porth Neigwl

NGR
SH28032663

SITETYPE
PLATFORM

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Concrete plinth with brickwork. The brick was red orange and bonded with cement mortar and the were fairly rounded due to erosion.

PRN
31604

SITENAME
Flint scatter, Porth Neigwl

NGR
SH27962673

SITETYPE
FLINT WORKING SITE

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Flints found eroded deposit.

PRN
31605

SITENAME
Concrete, Porth Neigwl

NGR
SH28002672

SITETYPE
MILITARY BASE

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Concrete, function unknown. Parts have been re-enforced with iron bars. Very likely associated with RAF Hells Mouth

PRN
31606

SITENAME
Metal pipe, Porth Neigwl

NGR
SH28232649

SITETYPE
MILITARY BASE

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Metal pipe, probably for carrying water, now not used. Likely to be associated with RAF Hells Mouth.

PRN
31608

SITENAME
'V' cut ditch? Valley

NGR
SH28988046

SITETYPE
DITCH

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Possible 'v' cut ditch with a probable re-cut. Contained a dark upper and a stoney lower layer. This feature could not be observed closely due to the high cliff.

PRN
31609

SITENAME
Possible stone axe roughout, Abererch

NGR
SH41453573

SITETYPE
FINDSPOT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Possible Stone Axe roughout

PRN
31610

SITENAME
Concrete groyne? Valley

NGR
SH29308066

SITETYPE
SEA DEFENCES

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Possible concrete groyne, however the function of this feature is not certain.

PRN
31611

SITENAME
Revetment, Henborth

NGR
SH32429353

SITETYPE
SEA DEFENCES

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Revetment/Sea wall. Made up of rounded beach pebbles.

PRN
31612

SITENAME
Eroding Clawdd, Henborth

NGR
SH32089305

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Clawdd eroding out from cliff. Was located at the top of the cliff at approximately 12m high.

PRN
31613

SITENAME
Trackway, Henborth

NGR
SH32459352

SITETYPE
TRACKWAY

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Trackway running from the beach to the farmhouse.

PRN
31614

SITENAME
Large stones, Criccieth

NGR
SH50623809

SITETYPE
STONE

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

4 large stones coming out of the eroding section, set in a light grey clay with flecks of charcoal. The stones measured 0.4m wide and 0.3m deep (average).

PRN
31615

SITENAME
Large stones, Criccieth

NGR
SH50643809

SITETYPE
STONE

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

3 large stones coming out of the eroding section, set in a light grey clay with flecks of charcoal and flint debris.

PRN
31616

SITENAME
Trackway/Earthwork, Criccieth

NGR
SH52123746

SITETYPE
TRACKWAY

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Trackway/long curving mound. Boundary between the bedrock cliff face and the pebble beach. Possibly a modern track leading up to a modern concrete surrounded drain. There was stones running along the top of the mound, intermittently.

PRN
31617

SITENAME
Possible pit? Criccieth

NGR
SH50673808

SITETYPE
PIT

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Possible cut feature/pit with dark orange brown fill and looks to have a concave base in section. It is approx. 4m high up the cliff.

PRN
31618

SITENAME
Possible pit? Aberdesach

NGR
SH42625230

SITETYPE
PIT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

A possible cut feature/pit with dark orange brown fill with charcoal inclusions and a medium/large burnt stone within fill (hammerstone s.f.24 also found in fill which had broken off the section)

PRN
31619

SITENAME
Possible pits? Aberdesach

NGR
SH42635231

SITETYPE
PIT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Two or more possible pits with light orange grey fill. One with a large stone in it.

PRN
31620

SITENAME
Possible pit? Aberdesach

NGR
SH42635231

SITETYPE
PIT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Area of charcoal rich deposit/pit with burnt stones.

PRN
31621

SITENAME
Buried soil, Aberdesach

NGR
SH42635230

SITETYPE
SITE

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Possible site. Possible buried soil (quite dark deposit with some charcoal flecks) in which flints and possible cut features have been identified.

PRN	SITENAME	
31622	Field boundary, Aberdesach	
NGR	SITETYPE	PERIOD
SH42815245	FIELD BOUNDARY	Post Medieval
OLD DESCRIPTION		
DESCRIPTION		
Stone built boundary eroding from the top of the cliff edge.		

PRN	SITENAME	
31623	Fish weir? Aberdesach	
NGR	SITETYPE	PERIOD
SH43035255	FISH WEIR	Unknown
OLD DESCRIPTION		
DESCRIPTION		
Possible fish weir. At least three sets of banks of stones heading out to sea. Could also be early groynes.		

PRN	SITENAME	
31624	Field boundary, Aberdesach	
NGR	SITETYPE	PERIOD
SH42385123	FIELD BOUNDARY	Post Medieval
OLD DESCRIPTION		
DESCRIPTION		
Stone built field boundary eroding out of the section, however grass still grows over it, therefore slowing down the erosion.		

PRN
31625

SITENAME
Flint find, Abedesach

NGR
SH41795079

SITETYPE
FINDSPOT

PERIOD
Prehistoric

OLD DESCRIPTION

DESCRIPTION

Flint found in stoney layer.

PRN
31626

SITENAME
Field boundary, Aberdesach

NGR
SH41665065

SITETYPE
FIELD BOUNDARY

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Stone built field boundary eroding out of the section, however grass still grows over it, therefore slowing down the erosion.

PRN
31627

SITENAME
Terrace of fishermen's cottages, Borth

NGR
SH41725075

SITETYPE
TERRACE

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Map regression (from the 1889 25 inch map onwards) shows that a terrace of fishermen's cottages once stood on the coastal edge at Borth, to the east of Aberdesach. No evidence of these can be seen today although it is said that they were still standing in the 1970s but were demolished once they became unstable due to coastal erosion.

PRN
31629

SITENAME
Mounds, Aberdwyfor

NGR
SH47713733

SITETYPE
MOUND

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Mounds on the south bank of Afon Dwyfor oppsite the quay. This feature is well concealed by gorse. Building shown at this location on 3rd edition 25 inch map.

PRN
31630

SITENAME
Quay at Aberdwyfor

NGR
SH47773741

SITETYPE
QUAY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Quay or wharf is made of large stones. Boats still use this wharf.

PRN
31631

SITENAME
Dryll house, Criccieth

NGR
SH49033760

SITETYPE
COTTAGE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Cottage stands close to the cliff edge.

PRN
31632

SITENAME
Cefn Castell cottage

NGR
SH48933759

SITETYPE
COTTAGE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

This cottage is a substantial ruin due mostly to there being a fire there over 2 years ago. There is a notice saying that the house is due to be rebuilt in 2012

PRN
31633

SITENAME
groynes at Criccieth

NGR
SH49253763

SITETYPE
GROYNE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

8 groynes. Some of the groynes show evidence of them being replacements/improvements of older groynes.

PRN
31634

SITENAME
Sewage pipe, Criccieth

NGR
SH49443761

SITETYPE
PIPELINE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Sewage pipe. Was replaced in the 1980's. There is a dog-leg in the current pipe that represent the direction of the old pipe.

PRN
31635

SITENAME
Ty'n y Morfa, Afon Dwyfor

NGR
SH46693736

SITETYPE
HOUSE

PERIOD
MODERN

OLD DESCRIPTION
DESCRIPTION

Nineteenth century building, in occupation, extended and modernised. Shown on 1889 25 inch map. Well built and maintained cottage within 30m of high water. Sea defences have been made to protect the cottage from high water using large rocks and boulders.

PRN
31636

SITENAME
Dyke, Afon Dwyfor

NGR
SH46093709

SITETYPE
DYKE (DEFENCE)

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Rounded banks following the direction of Afon Dwyfor for several hundred metres

PRN
31637

SITENAME
Ironwork in stones, Afon Dwyfor

NGR
SH47483735

SITETYPE
MOORING RING

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

This stone stands along side the high water mark and was probably a mooring for a boat. It is one of several stones on the northern stretch of the Afon Dwyfor, the others have bore holes about 0.025m in diameter.

PRN
31638

SITENAME
Earthwork, Afon Dwyfor

NGR
SH47343727

SITETYPE
EARTHWORK

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Grass circular ridge visible as an earthwork. There is a small area within the circle that is higher than the circle. Good views of the sea.

PRN
31639

SITENAME
Dykes, Afon Dwyfor

NGR
SH47573739

SITETYPE
DYKE (DEFENCE)

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Dykes. Sections of banks.

PRN
31640

SITENAME
Slipway, Brynsiencyn

NGR
SH47996537

SITETYPE
SLIPWAY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Concrete slipway with large boulders (sea defences) either side of it.

PRN
31641

SITENAME
Slipway, Brynsiencyn

NGR
SH48026542

SITETYPE
SLIPWAY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Concrete slipway with broken curbing.

PRN
31642

SITENAME
Dry stone wall, Brynsiencyn

NGR
SH48036545

SITETYPE
REVETMENT

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Dry stone wall/revetment. It curves round a tree and is close to an area of dumping (roofing slate/stone etc.).

PRN
31643

SITENAME
Slipway, Brynsiencyn

NGR
SH48046546

SITETYPE
SLIPWAY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Concrete and stone slipway with stone revetment built up next to it.

PRN
31644

SITENAME
Wall, Brynsiencyn

NGR
SH48106555

SITETYPE
WALL

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Multiphase wall with some collapse.

PRN
31645

SITENAME
Wall, Brynsiencyn

NGR
SH48526567

SITETYPE
WALL

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Very long stone and mortar wall, part of sea defences. There are regular breaches along the wall (farmer?). Consists of inner and outer facing stones with a rubble core.

PRN
31646

SITENAME
Wooden posts, Brynsiencyn

NGR
SH48666573

SITETYPE
JETTY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Three wooden posts, the middle one was up to 1m high. Possibly part of a old fish trap or jetty. The middle posts looks to have been shaped at its base.

PRN
31647

SITENAME
Quarry pit, Brynsiencyn

NGR
SH49236642

SITETYPE
QUARRY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Quarry. Quarry pit flooded with sea water. Difficult to gauge how deep the water was as it was a murky grey colour and smelt of fish and chemicals (possible dumping). On 1st edition 25 inch map as "Old Quarry". Possibly produced stone for construction of Llanidan Hall.

PRN
31648

SITENAME
Wall/groyne? Brynsiencyn

NGR
SH49156625

SITETYPE
WALL

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Stone built linear hedding out to sea. Could be part of a possible fish trap as it could be associated with another linear heading out to sea close by, or could be a groyne?

PRN
31649

SITENAME
Wall, Brynseincyn

NGR
SH48736586

SITETYPE
WALL

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Destroyed or collapsed wall, no visible tumble. Consists of large stone facings with rubble core. Only 1 course of stones was visible.

PRN
31650

SITENAME
Slipway, Brynseincyn

NGR
SH47666481

SITETYPE
SLIPWAY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Concrete slipway. Close to jetty and has steps in its centre at the top of its slope.

PRN
31651

SITENAME
Moorings? Brynsiencyn

NGR
SH47396447

SITETYPE
WOODEN STRUCTURE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Wooden plank posts, heading out to sea in rows at an angle. Some of the posts look to have been purposely cut down. There are 8 rows of posts visible with some having up to 8 posts visible.

PRN
31652

SITENAME
Marker stone, Brynsiencyn

NGR
SH47276438

SITETYPE
MARKER STONE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Marker stone. A very large boulder probably purposely placed. It has a large white stripe painted vertically down it. Marker for boats and ships to sea.

PRN
31653

SITENAME
Fish trap? Brynsiencyn

NGR
SH46996417

SITETYPE
FISH TRAP

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

4 wooden posts and a line of stones heading out to sea at an angle. The post are very decayed.

PRN
31654

SITENAME
Building, Brynsiencyn

NGR
SH46976418

SITETYPE
BUILDING

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Stone building with no roof. Very overgrown and made of stone and mortar. A slightly ornate entrances has been added to the entrance at some point.

PRN
31655

SITENAME
Revetment/wall with cove poss. gate post(or standing stone), Brynsie
ncyn

NGR
SH46746401

SITETYPE
REVETMENT

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Stone and mortar revetment/wall with a possible gatepost/standing stone and cove in it.

PRN
31656

SITENAME
Revetment wall, Brynsiencyn

NGR
SH46596392

SITETYPE
REVETMENT

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Stone and mortar built revetment, 1.5m high and 1 stone wide.

PRN
31657

SITENAME
Boathouse, Brynsiencyn

NGR
SH45976358

SITETYPE
BOAT HOUSE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Abandoned boathouse with slate roof and one half the doors still attached. Built into wall.

PRN
31658

SITENAME
Castellated Tower, Brynsiencyn

NGR
SH45966358

SITETYPE
TOWER

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Rounded tower with turrets and a wooden door/gate to a 'secret garden'. Built into the same wall as a boat house. The tower looks to have had the original entrance sealed up

PRN
31659

SITENAME
Lime Kiln, Trefarthen

NGR
SH48646574

SITETYPE
LIME KILN

PERIOD
Post Medieval

OLD DESCRIPTION

A LIME KILN PARTLY CONSTRUCTED ON A NATURAL OUTCROP. THERE IS NO OBVIOUS ACCESS TO CHARGE THE CHAMBER APART FROM THE WEST SIDE. Given PRN number 07/03/12 by Laura W. Parry

DESCRIPTION

Revisited on the 21/02/12 and given a PRN number on 07/03/12 by Laura W. Parry

PRN
31660

SITENAME
Ferry Jetty, Foel

NGR
SH47736474

SITETYPE
JETTY

PERIOD
Post Medieval

OLD DESCRIPTION

A DISUSED JETTY, STILL IN GOOD ORDER.

DESCRIPTION

Revisited on the 21/02/12 and given a PRN number on 07/03/12 by Laura W. Parry. Derelict nineteenth- and early twentieth-century timber ferry pier.

PRN
31661

SITENAME
Exposed peat, Glanllynau

NGR
SH46533727

SITETYPE
SUBMERGED FOREST

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Submerged peat very close to standing stone PRN18400 and only revealed after the stones and sand had be eroded away by the sea. At other times of year the tide covers the peat with sand and stones.

PRN
31662

SITENAME
Leat/drainage ditch, Cemlyn Bay

NGR
SH33749347

SITETYPE
DITCH

PERIOD
Unknown

OLD DESCRIPTION

A SHORT LEAT/DRAINAGE DITCH WITH LOW STONY BANKS EITHER SIDE. THE DITCH IS 3M WIDE AND 12M LONG. A LOW WIDE 10.3M LONG AND 2M WIDE BANK JOINS AT 90 DEGREES HALF WAY ALONG THE DITCH.

DESCRIPTION

Revisited on the 21/02/12 and given a PRN number on 07/03/12 by Laura W. Parry. Some flints were found in the eroding section of the leat facing the sea.

PRN
31663

SITENAME
Wall/revetment/sea defence, Cemlyn Bay

NGR
SH32569352

SITETYPE
WALL

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Wall/revetment sea defence, made up of dry stone walling approx 1.5m high

PRN
31664

SITENAME
Shipwreck, Stanley Embankment

NGR
SH28437999

SITETYPE
WRECK

PERIOD
Post Medieval

OLD DESCRIPTION

THE WRECKED REMAINS OF A WOODEN BOAT, CONSISTING OF ITS KEEL AND SOME RIBS.

DESCRIPTION

PRN
31665

SITENAME
Pillbox 1, Morfa Dyffryn

NGR
SH56282365

SITETYPE
PILLBOX

PERIOD
Modern

OLD DESCRIPTION

A concrete second world war pillbox, painted white on the seaward side.

DESCRIPTION

PRN
31666

SITENAME
Pillbox 2, Morfa Dyffryn (possible observation post)

NGR
SH57182241

SITETYPE
PILLBOX

PERIOD
Modern

OLD DESCRIPTION

A concrete second world war pillbox.

DESCRIPTION

Originally recorded as a pillbox but probably an observation point from which the training could be watched safely. The windows in the feature allow a person inside to see along the beach but the range of fire would be very narrow and ineffective.

PRN
31667

SITENAME
Surviving pier masonry? Nant Gwrtheyrn

NGR
SH33744390

SITETYPE
PIER

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Pier, mortared masonry, chain and iron work are visible

PRN**31668****SITENAME**

Dry stone revetment, Nant Gwrtheyrn

NGR

SH33774387

SITETYPE

REVETMENT

PERIOD

Post Medieval

OLD DESCRIPTION**DESCRIPTION**

Dry stone revetment. Part of quarry complex. Well constructed from local granite.

PRN**31669****SITENAME**

Small quay? Nant Gwrtheyrn

NGR

SH33824387

SITETYPE

QUAY

PERIOD

Post Medieval

OLD DESCRIPTION**DESCRIPTION**

Small quay? Constructed of mortared stone, wooden piles and iron (function unclear). The whole area is strewn with building material and iron parts.

PRN**31670****SITENAME**

Quarry machinery. Nant Gwrtheyrn

NGR

SH34324413

SITETYPE

QUARRY

PERIOD

Post Medieval

OLD DESCRIPTION**DESCRIPTION**

Two engines with shafts and cogs etc. There was a fair amount of other iron pieces seen along the stretch of this area of beach. Could be part of an incline carriage or tram, or even a boat.

PRN**31671****SITENAME**

Masonry, part of pier. Nant Gwrtheyrn

NGR

SH34514451

SITETYPE

PIER

PERIOD

Post Medieval

OLD DESCRIPTION**DESCRIPTION**

A well constrected part of the pier at Nant Gwrtheyrn. A well constructed lower half mortared granite and upper part concrete slabs. Seaward side is eroding quite badly - this side is mostly concrete which is clearly eroding. Recesses for the timbers are quite badly affected. Some timbers within the core of the structure are showing.

PRN**31672****SITENAME**

Eastern quarry site. Nant Gwrtheyrn

NGR

SH34764504

SITETYPE

QUARRY

PERIOD

Post Medieval

OLD DESCRIPTION**DESCRIPTION**

A large piece of masonry with wooden pile on the beach at the location of the pier. Two piles also visible at the lands edge of the beach. There are also large pieces of metalwork scattered on the beach in this area.

PRN**31673****SITENAME**

Bridge staging. Caernarfon

NGR

SH47626264

SITETYPE

BRIDGE

PERIOD

Post Medieval

OLD DESCRIPTION**DESCRIPTION**

Wooden bridge staging, just over from Caernarfon castle. Wooden support for the old bridge. The old bridge has been replaced by a modern bridge.

PRN
31674

SITENAME
Mooring ring in boulder. Caernarfon

NGR
SH47466269

SITETYPE
MOORING RING

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION
Iron mooring ring in a boulder.

PRN
31675

SITENAME
Concrete slipway. Caernarfon

NGR
SH47406269

SITETYPE
SLIPWAY

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION
Concrete slipway with diamond pattern, close to seating area.

PRN
31676

SITENAME
Concrete steps. Caernarfon

NGR
SH47336269

SITETYPE
STEPS

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION
Concrete steps (x7 steps)

PRN
31677

SITENAME
Concrete sea defences. Caernarfon

NGR
SH47356269

SITETYPE
SEA DEFENCES

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Concrete sea defences. Wooden supports with the concrete were visible. There was concrete debris on the foreshore with iron grid reinforcements showing.

PRN
31678

SITENAME
Concrete steps. Caernarfon

NGR
SH47056255

SITETYPE
STEPS

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Concrete steps (x9 steps)

PRN
31679

SITENAME
Concrete steps. Caernarfon

NGR
SH46906246

SITETYPE
STEPS

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Concrete steps (x5 steps). Steps lead from a layby to the foreshore. It looks like the bottom step (6th step) has eroded away.

PRN
31680

SITENAME
Pipe access. Caernarfon

NGR
SH46906247

SITETYPE
PIPELINE

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Iron pipe access. Probably part of sewage pipe.

PRN
31681

SITENAME
Concrete steps. Caernarfon

NGR
SH46836241

SITETYPE
STEPS

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Concrete steps to foreshore from the road (x6 steps). The concrete base on which it has been built on is eroding away. On the 5th step down there are x2 drain pipes.

PRN
31682

SITENAME
Wooden water flow guide, out of use. Caernarfon

NGR
SH46666235

SITETYPE
WATER CHANNEL

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Wooden water flow guide, out of use.

PRN	SITENAME
31683	Dock. Caernarfon

NGR	SITETYPE	PERIOD
SH46436218	DOCK	Modern

OLD DESCRIPTION

DESCRIPTION

Dock. Wooden dock with large boulder revetment.

PRN	SITENAME
31684	Iron mooring ring. Caernarfon

NGR	SITETYPE	PERIOD
SH46266203	MOORING RING	Post Medieval

OLD DESCRIPTION

DESCRIPTION

Iron mooring set into boulder which is set into concrete as part of the sea defence to build up the road.

PRN	SITENAME
31685	Cylinders of concrete. Caernarfon

NGR	SITETYPE	PERIOD
SH46196191	SEA DEFENCES	Modern

OLD DESCRIPTION

DESCRIPTION

Cylinders of concrete as part of sea defences, possibly WWII tank defences. There are cross marks on some and evidence that the had a hole running through the centre which has been fill with concrete.They also have metal ring reinforcements.

PRN
31686

SITENAME
Concrete slipway, Caernarfon

NGR
SH45516148

SITETYPE
SLIPWAY

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION
Very modern private slipway.

PRN
31688

SITENAME
Midden, Traeth Lafan

NGR
SH61257229

SITETYPE
MIDDEN

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION
Shell Midden

PRN
31689

SITENAME
Bronze Age pit, Glanllynau

NGR
SH46423732

SITETYPE
PIT

PERIOD
Bronze Age

OLD DESCRIPTION
DESCRIPTION
Bronze age pit exposed in eroding cliff section. Contained Bronze Age pottery, likely to be a section of collar from a collared urn and flint flakes and bladelet. A geophysical survey was carried out over the area which revealed linear anomalies, possibly former field boundaries.

PRN
31690

SITENAME
Fish Trap, Glanllynau

NGR
SH46593729

SITETYPE
FISH TRAP

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Row of wooden posts within peat, possibly the remains of a fish weir. Consisted of at least 43 rough wooden posts or stakes embedded in peat, forming a line 31m in length.

PRN
31691

SITENAME
Peat, Abererch

NGR
SH41433572

SITETYPE
SUBMERGED FOREST

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Area of peat found near Bronze Age standing stone. Clear signs of human activity were present and directly associated with the peat; including burnt stones (PRN 31693), an oak post within a posthole (PRN 31694), and a possible stone axe roughout (PRN 31609). These deposits were surveyed with a handheld GPS but have not been seen since.

PRN
31692

SITENAME
Flint, Abererch

NGR
SH41363573

SITETYPE
FLINT SCATTER

PERIOD
Prehistoric

OLD DESCRIPTION

DESCRIPTION

Flints found near standing stone. A denticulated flint scraper and a flint waste flake were recovered from a relict ground surface which had become exposed due to the erosion of dunes on top of the cliff.

PRN	SITENAME	
31693	Burnt Stone, Abererch	
NGR	SITETYPE	PERIOD
SH41443573	BURNT MOUND	Prehistoric
OLD DESCRIPTION		
DESCRIPTION		
Burnt and fire cracked stone found within peat PRN 31691.		

PRN	SITENAME	
31694	Posts in Peat, Abererch	
NGR	SITETYPE	PERIOD
SH41323574	POST BUILT STRUCTURE	Prehistoric
OLD DESCRIPTION		
DESCRIPTION		
Wooden posts found in peat at Abererch.		

PRN	SITENAME	
31695	Bombing Range Arrow, Abererch	
NGR	SITETYPE	PERIOD
SH42573557	MILITARY SITE	Modern
OLD DESCRIPTION		
DESCRIPTION		
WWII landscape arrow for aircraft guidance. Seen in Aerial Photograph.		

PRN
31696

SITENAME
Field enclosures, Nant Gwrtheyrn

NGR
SH34694468

SITETYPE
ENCLOSED SETTLEMENT

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

Field enclosures of unknown period. Seen in Aerial Photographs.

PRN
31697

SITENAME
Boathouse/lifeboat station, Porth yr Ogof

NGR
SH35579418

SITETYPE
BUILDING

PERIOD
Post Medieval

OLD DESCRIPTION

A STONE BUILDING (RENDERED) WITH A CONCRETE SLIPWAY ONTO BEACH. THE PRESENT BUILDING APPEARS TO HAVE BEEN BUILT ON TOP OF EARLIER FOUNDATIONS, PROBABLY THAT OF THE LIFEBOAT STATION RECORDED ON THE 1900 25 INCH OS MAP.

DESCRIPTION

A lifeboat station was first opened here in 1872, initially to replace the Cemlyn lifeboat, and the to supplement when Cemlyn re-opened. The lifeboat was housed in this building until 1907, when a new station was built a very short distance to the north. The building still stands with a slate roof and supported on king-post trusses and rendered walls, though is not in use at present.

PRN
31698

SITENAME
Bombing Range Arrow, Porth Neigwl

NGR
SH27882679

SITETYPE
MILITARY SITE

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Reddish concrete slabs laid out in the shape of and arrow pointing towards the sea. Arrow has partially collapsed off the side of the cliff. Part of WWII landscape arrow for aircraft guidance.

PRN
31699

SITENAME
Quarry, Porth Namarch

NGR
SH24938380

SITETYPE
QUARRY

PERIOD
Unknown

OLD DESCRIPTION

DESCRIPTION

Quarry site, Probably quarrying for granite, ruined machinery was scattered on the beach. Probably operational in the 20th century. Not on 1918 25 inch map or earlier maps.

PRN
31700

SITENAME
Former lifeboat station and slipway, Porth yr Ogof

NGR
SH35669422

SITETYPE
SLIPWAY

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

The second of two Cemaes lifeboat houses, this was built in 1907 to house the 'Charles Henry Ashley', a 38ft non-self-righting Watson class lifeboat. The Charles Henry Ashley was in use until 1932. The boat has survived, and has been recently restored. The station was closed in 1932 and was subsequently demolished, only the toe of the slipway and some concrete supports remain.

PRN
31702

SITENAME
Wooden groynes, Traeth Lafan

NGR
SH61327236

SITETYPE
GROYNE

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Wooden groynes, mostly gone out of use and gone to ruin

PRN
31703

SITENAME
Sea defence wall, Traeth Lafan

NGR
SH61717244

SITETYPE
SEA DEFENCES

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

50m of low wall, for sea defence, partially collapsed running parallel to the beach.

PRN
31704

SITENAME
Sea defence stones and posts, Traeth Lafan

NGR
SH61777248

SITETYPE
SEA DEFENCES

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Eroded wooden posts (approx. 15) and curved line of large stones.

PRN
31705

SITENAME
Posts and slates, Traeth Lafan

NGR
SH61067252

SITETYPE
FENCE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

Stumps of wooden posts and set purple slates on end possibly part of the a fence.

PRN
31706

SITENAME
Wooden posts, Traeth Lafan

NGR
SH62127268

SITETYPE
GROYNE

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Approx. 30 wooden posts, possible collapsed groyne.

PRN
31707

SITENAME
Lime kiln, Llanfihangel Y Traethau

NGR
SH59603580

SITETYPE
LIME KILN

PERIOD
Modern

OLD 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.

DESCRIPTION

Appears to have undergone some recent structural work with the insertion of RSJ to prevent collapse. Given a PRN number in March 2012 by Laura W. Parry

PRN
31708

SITENAME
Bombing Range Arrow, Porth Neigwl, east

NGR
SH29172552

SITETYPE
MILITARY SITE

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

A bombing range arrow seen as a crop mark on Aps

PRN	SITENAME	
31709	Possible lime kiln, Llanfihangel y Traethau	
NGR	SITETYPE	PERIOD
SH59883578	LIME KILN	Post Medieval

OLD DESCRIPTION

DESCRIPTION

Unusual feature that may be an adapted lime kiln, now built into a wall. Large pieces of slag seen in the wall.

PRN	SITENAME	
31710	Ironwork/Moorings in rock, Llanfihangel y Traethau	
NGR	SITETYPE	PERIOD
SH59633582	MOORING RING	Post Medieval

OLD DESCRIPTION

DESCRIPTION

Ironwork in rock, probably a mooring point that may be associated with lime kiln PRN 31707

PRN	SITENAME	
31711	Small Dock, Mor Edrin, Llanfihangel y Traethau	
NGR	SITETYPE	PERIOD
SH59063562	DOCK	Post Medieval

OLD DESCRIPTION

DESCRIPTION

What appears to be a small private dock for Mor Edrin.

PRN
31712

SITENAME
Outhouse, Clogwyn Melyn, Llanfihangel y Traethau

NGR
SH58963566

SITETYPE
TOILET

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

What looks like an outhouse that would have been associated with the ferry inn of Clogwyn Melyn, has an outlet directly onto foreshore. Now used as a shed.

PRN
31713

SITENAME
Stone filled pit, Porth Neigwl

NGR
SH29132556

SITETYPE
PIT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

A cut feature, most likely a pit, with a fill of stones. Seen eroding close to the location of a burnt mound at the eastern end of Porth Neigwl

PRN
31715

SITENAME
Concrete blocks, Porth Neigwl

NGR
SH27892679

SITETYPE
ANTI TANK BLOCK

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A number of concrete blocks located just above the beach at Porth Neigwl. Possibly too small to be anti tank blocks, certainly associated with wartime activity

PRN	SITENAME	
31716	Possible stone surface, Porth Neigwl	
NGR	SITETYPE	PERIOD
SH27842681	STONE SPREAD	Unknown

OLD DESCRIPTION
DESCRIPTION
A possible stone surface seen in a high eroding cliff at Porth Neigwl. Date and function uncertain.

PRN	SITENAME	
31717	Pillbox, Porth Neigwl	
NGR	SITETYPE	PERIOD
SH27752702	PILL BOX	Modern

OLD DESCRIPTION
DESCRIPTION
A hexagonal WWII Pillbox. As seen from a distance and on APs.

PRN	SITENAME	
31718	Concrete on beach, Porth Neigwl	
NGR	SITETYPE	PERIOD
SH27872676	ANTI TANK BLOCK	Modern

OLD DESCRIPTION
DESCRIPTION
Concrete blocks of uncertain function, very likely to be associated with RAF Hellmouth and military base.

PRN
31719

SITENAME
Flint findspot, Porth Neigwl

NGR
SH28272643

SITETYPE
FINDSPOT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Flint findspot found on eroding cliff section at Porth Neigwl.

PRN
31720

SITENAME
Flint scatter, Porth Neigwl

NGR
SH28152654

SITETYPE
FLINT SCATTER

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Main flint scatter at Porth Neigwl eroding from cliff section , possibly with a buried ground surface.

PRN
31721

SITENAME
Modern watchtower, Porthdinllaen

NGR
SH27614197

SITETYPE
WATCH TOWER

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Modern watchtower at Porthdinllaen. It replaced an earlier watchtower PRN 31722. Its function is to get early warning if there is trouble at sea.

PRN
31722

SITENAME
Watchtower, Porthdinllaen

NGR
SH27724180

SITETYPE
WATCH TOWER

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Watchtower which used to provided early warning to the lifeboat station of ships in trouble at sea. Only its footprint survives on the Nefyn Golf Course.

PRN
31723

SITENAME
Midden, Traeth Lafan

NGR
SH62047260

SITETYPE
SHELL MIDDEN

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

Shell midden, post medieval was identified close to the location of a cottage marked on the 1st Edition OS map. It contains a lot of cockle shells and is probably directly related to the cottage.

PRN
31724

SITENAME
Stone wall and trackway, Trefor

NGR
SH37164748

SITETYPE
TRACKWAY

PERIOD
Post Medieval

OLD DESCRIPTION

DESCRIPTION

To the north side of the ridge where the flints were found were the remains of a narrow stone wall alongside the cliff edge, and parallel to it, to the south, an earthen bank. The area between was slightly terraced and was probably a trackway leading to other mining levels further west along the ridge.

PRN
31725

SITENAME
Anti Tank Columns, Morfa Conwy

NGR
SH76697921

SITETYPE
ANTI TANK BLOCK

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

Possible anti tank columns were seen at the base of the sand dunes at SH7668879215. These measured 0.57m in diameter and were at least 0.97m high. The top of the columns had a central circular hole and a cross had been incorporated into the design of the cast. These columns now appear to form part of the coastal defences, presumably to slow down the erosion of the dunes. Although these appear to be of the right dimensions to have functioned as anti tank defences it can not be ruled out that they may simply be columns created for the erosion defences.

PRN
31726

SITENAME
Flint Scatter, Porth Neigwl

NGR
SH27922676

SITETYPE
FLINT SCATTER

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

A relict ground surface which has been exposed by eroding sand dunes and is eroding into the sea. A number of flints, including a bladelet struck from a core collected, also a retouched stone flake.

PRN
31727

SITENAME
Flints, Porth Neigwl

NGR
SH28122658

SITETYPE
FINDSPOT

PERIOD
Prehistoric

OLD DESCRIPTION
DESCRIPTION

Two struck flints found close to a deposit of burnt stones (PRN 31601), flints had eroded out of the low cliff and were found in collapsed material on the beach.

PRN
31728

SITENAME
Barrel lined pit, Nefyn

NGR
SH30794072

SITETYPE
PIT

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

A barrel lined pit visible in an excavation for a private development in Nefyn. Reported to the Trust by a member of the public. The feature contained post medieval material and is likely to have been associated with drainage.

PRN
31729

SITENAME
Possible enclosure, Foryd Gwyrfa

NGR
SH45715910

SITETYPE
ENCLOSURE

PERIOD
Unknown

OLD DESCRIPTION
DESCRIPTION

A possible oval enclosure seen on aerial photographs and Lidar, measuring roughly 140m x 200m. A low earthwork is visible on the ground and on the Lidar. Landowner had no knowledge of the feature and has not found any artefacts.

PRN
31730

SITENAME
BOATHOUSE, TREFARTHEN

NGR
SH48636577

SITETYPE
BOATHOUSE

PERIOD
POST-MEDIEVAL

OLD DESCRIPTION

A STONE BUILT BOATHOUSE WITH HIPPED SLATE ROOF, C. 12M BY 4M. IT HAS A SLATE SLAB FLOOR AND THREE NARROW SLITS IN THE LONGITUDANAL WALLS. ACCESS TO THE SEA IS NOW HINDERED BY A LARGE SHINGLE BANK IN FRONT OF THE BOATHOUSE.

DESCRIPTION

Largely unchanged from original survey. NGR improved.

PRN
31731

SITENAME
Limestone quarry

NGR
SH68646573

SITETYPE
QUARRY

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

An area where limestone bedrock has been quarried to supply an adjacent limekiln (PRN 31659).

PRN
31732

SITENAME
JETTY, LLANIDAN

NGR
SH49646658

SITETYPE
JETTY

PERIOD
POST-MEDIEVAL

OLD DESCRIPTION
DESCRIPTION

A SMALL STONE JETTY, 2.5M WIDE AND 0.25M HIGH.

May not be a jetty as it appears to be too narrow and no laid upper surface is present.

PRN
31733

SITENAME
BOATHOUSE, LLANIDAN

NGR
SH49896679

SITETYPE
BOATHOUSE

PERIOD
POST-MEDIEVAL

OLD DESCRIPTION
DESCRIPTION

A STONE BUILT BOATHOUSE, NOW CONVERTED INTO A HOUSE WITH A GOOD STONE SLIPWAY.

No change from original survey

PRN
31915

SITENAME
Log Boat in Nefyn Museum

NGR
SH30874065

SITETYPE
BOAT

PERIOD
Modern

OLD DESCRIPTION
DESCRIPTION

A log boat was acquired by Nefyn Maritime Museum in the 1970s. Prior to this it had been stored in garages, first in Caernarfon and then in Nefyn. It is believed that the boat was discovered on a sandbank in the Menai Straits, however this has not been confirmed and the date of the discovery is unknown. Jamie Davies has researched the boat and has had samples of the wood analysed. The wood appears to be an exotic hardwood and the boat may have come from West Africa and is probably 19th century in date.

PRN
31916

SITENAME
Glan y Mor, Cemlyn

NGR
SH33009360

SITETYPE
WEIGH HOUSE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

A weigh-house and office on the north side of a walled yard (probably a coal yard) and a cottage attached to the south side of the yard. On 1st edition 25 inch map. Related to Y Storws (PRN 31917) and used for weighing, recording and storing goods before loading or after unloading from ships in the harbour at Cemlyn.

PRN
31917

SITENAME
Y Storws, Cemlyn

NGR
SH32999358

SITETYPE
STOREHOUSE

PERIOD
Post Medieval

OLD DESCRIPTION
DESCRIPTION

A single principle long range of single pile plan orientated on a northeast/southwest axis. The range comprises three parts; two large storehouses and a derelict dwelling at the southern end. There is a privy attached to the S end of the dwelling. The dwelling appears to be the earliest structure in the range and the two storehouses added subsequently, possibly in two separate phases. The storehouse was used for storing goods before loading or after unloading from ships in the harbour at Cemlyn. On 1st edition 25 inch map.

PRN
31918

SITENAME
Groynes, Tanyfoel

NGR
SH47356443

SITETYPE
GROYNE

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

Rows of posts running about 20m down the foreshore at about 45 degrees from the mean high water level. These are probably the remains of groynes or other coastal defences.

PRN
31919

SITENAME
Circular cropmark, Foryd Gwyrfai, Llanwnda

NGR
SH45885895

SITETYPE
NON ANTIQUITY

PERIOD
Modern

OLD DESCRIPTION

DESCRIPTION

A circular cropmark feature with apparent gaps or entrances to the south-west and south-east was seen on Google Earth images dating from 2010. The feature measured approximately 20m in diameter. The landowner was visited and explained that the feature was a recent unfinished garden feature where a small circular bank had been raised, upon which saplings had been planted.

PRN
35030

SITENAME
Pit, Porth Neigwl

NGR
SH29032571

SITETYPE
PIT

PERIOD
Prehistoric

OLD DESCRIPTION

DESCRIPTION

A cut feature, possibly a shallow pit, seen eroding from the edge of a stream, close to the location of a burnt mound at the eastern end of Porth Neigwl

PRN
38057

SITENAME
Standing Stone, Aberdesach

NGR
SH41855080

SITETYPE
Standing Stone

PERIOD
Prehistoric

OLD DESCRIPTION

Possible former meinhir, reused as gate post and now on beach due to erosion of drift cliffs. 'Upper' part of stone tapered, appears to be deliberately dressed to shape. 'Lower' part irregular, sub rounded.

DESCRIPTION

The stone has clearly been reused as gate post and now lies on the beach due to the erosion of the drift cliffs. The upper portion of the stone is tapered and appears to have been dressed to shape, whereas the lower portion is rough and sub-rounded. Revisited on 02/02/12 and given a PRN number (31628) on 13/02/12 by Laura W. Parry, but numbered in the meantime by HER. Correct PRN = 38057.

PRN
38065

SITENAME
Quay, Y Foryd

NGR
SH45236100

SITETYPE
QUAY

PERIOD
Post Medieval

OLD DESCRIPTION

Eroded remains of old jetty on shore. Ferry for Anglesey?

DESCRIPTION

Revisited on 23/03/12 by Laura W. Parry. The area was photographed, and there were x3 brick, concrete and iron bar settings, two had 2 square wooden posts associated with them. The jetty in on a natural shingle spur which also forms part of a fish trap called Cored Gwyrfaï.

PRN
38086

SITENAME
Ruined Cottage, Traeth Lafan

NGR
SH62037259

SITETYPE
HOUSE

PERIOD
Post Medieval

OLD DESCRIPTION

Ruinous cottage set in a terraced platform in cliff edge not far above highest tide level. 19th C? The reason for settlement her is not clear, perhaps for fishing or shell-fishing, shells in terrace fronting the cottage. The name pencoed is interesting as there is no woodland here now.

DESCRIPTION

Revisited by volunteer John G. No apparent change in condition.

PRN**38250****SITENAME**

Stone anchors, millstones and copper ingots from Menai Straits

NGR

SH52216944

SITETYPE

FINDSPOT

PERIOD

Roman?

OLD DESCRIPTION**DESCRIPTION**

Copper ingot and copper ingot fragment, with 2 stone anchors. All recovered from bottom of Menai Straits during 2008. In collection of Oriel Ynys Mon, Llangefni: accessioned 01/10/2010, accession number 25/2010 1-4. Also four circular stones with holes in them, possibly millstones, in private hands from the same approximate location. These were found by divers when diving in the Menai Strait. The approximate NGR is SH52216944, which locates them a short distance from the shore close to Plas Newydd, and between Plas Newydd and the Vaynol boathouse. The copper ingots are Roman but the millstones and the anchors are not necessarily of the same date or associated with the ingots.



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Craig Beuno, Ffordd y Garth, Bangor, Gwynedd. LL57 2RT
Ffon: 01248 352535. Ffacs: 01248 370925. email: gat@heneb.co.uk

