# Arfordir/Coastal Heritage: Gwynedd



#### **Progress Report**

GAT Project No. 2072 Report No. 861 April, 2010 Revised June 2010

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Report No. 861

Prepared for CADW

April 2010 Revised June 2010

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#### INTRODUCTION

The aim of the Arfordir/Coastal heritage project is to examine the potential impact of climate change and rising sea levels on coastal archaeology, and to incorporate the enthusiasm of local interest groups to help assess and mitigate the impact. The project will build upon the results of the earlier coastal assessments undertaken between 1993 and 1998 and subsequent coastal projects.

Fieldwork forms a major component of the project methodology. Community groups are encouraged and trained to undertake field surveys. As part of the survey process sites are identified and recorded, and the information is returned to the Trust for processing and dissemination. The field record will include factors such as significance, 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 will be identified, and mitigation strategies proposed.

In Scotland SCAPE, through their project Shorewatch, has successfully integrated enthusiastic community interest with the need to assess, monitor and record archaeological remains within the eroding coastline. A similar process is being undertaken as part of the Arfordir project, and meetings have been held to introduce the project and provide initial training.

All work has been undertaken in conjunction with the Dyfed Archaeological Trust, who are undertaking a similar project in association with the Pembroke National Park, and close liaison will be maintained with the Dyfed Trust during the course of the project.

The project was initially to be limited to the Cardigan Bay coast, however a number of organizations and individuals from Anglesey contacted the Trust with expressions of interest, and attention was also drawn to erosion on the north coast of Llŷn at Trefor. The project has therefore been expanded into those areas, so that enthusiasm for the project was not lost.











#### PREPARATORY WORK

During 2009-10 the project has advanced on two fronts - the survey and recording of the coastline by archaeologists from the Trust and the setting up of community groups to help survey and record. Examples of both aspects are given in this progress report.

The first stage of the project involved the design of recording forms and accompanying instructions which could be issued to volunteers. This was undertaken in conjunction with Dyfed Archaeological Trust, and with the Heritage Environment Record Archaeologists. This ensures the data collected can be inorporated smoothly and efficiently into the regional HER's. An initial 'Arfordir' database has been created to allow the information to be entered and checked before integration with the main HER.

During this initial period, key areas and sites known to be under threat were visited in order to assess the level of threat and the need for any immediate survey. This update also allowed volunteers to be directed to areas of greatest concern.

An example of the first page of the recording form is shown opposite. Further details of the recording form and the associated instructions are given in Appendix I of this report.











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#### COMMUNITY PARTICIPATION

One of the principal aims of the Arfordir project was to bring together volunteers to identify and record coastal heritage sites, and to monitor any change. This was to be undertaken with help from professional archaeologists. The use of volunteers to the project was considered important due to the fact that the people who know the coast best are the ones who are there most often, local residents and regular visitors will be better able to spot changes than someone who may visit only once every year or two. The intention is for volunteers to work alongside professional archaeologists who act as 'mentors', providing training, advice and assistance.

Introductory talks and initial training in fieldwalking and recording have been given in initial meetings in Aberffraw and Llanaelhaearn, whilst talks have also been given to Friends of Gwynedd Archaeological Trust, Anglesey Antiquarian Society and Talwrn Archaeology Group. Other meetings have been arranged with groups in 2010-2011, and further training sessions will be arranged.

Other events where the project has been highlighted include the Eisteddfod, and an AONB open day at Holyhead, Anglesey. The latter is to be followed up with a joint AONB/GAT coastal heritage day.











### ABERFFRAW INTRODUCTION MEETING













#### FIELD SURVEY

Areas of known active erosion were visited and assessed within the early stages of the project. 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 timetabled for later in the year. It would also enable volunteers to be directed towards those areas of greatest concern.

In addition to specific targteted field survey a wider programme of assessment has been undertken in order to identify current erosion levels. In addition advantage was taken of visits undertaken during volunteer training, including AONB organised walks, to assess additional lengths of coast.

A map of the principal areas assessed during this process is shown opposite. Sites undergoing active erosion were identified at Porth Neigwl and at Trefor, on the south and north Lleyn coasts. New sites were identified on the Anglesey coast (some of these are shown alongside), and the function of several sites was reinterpreted. Further details are given on the following pages.



Richard (Dic) Evans Memorial at Moelfre. Sculpture by Sam Holland, 2004.



Winch on coast close to Aberffraw, erected following a shipwreck early 20th century.



Wreck at Traeth Dulas, Anglesey

#### **COASTAL HERITAGE**

Peilot prosiect yw 'Arfordir', neu 'Coastline' a sefydlwyd er mwyn cofnodi, deall a monitro newidiadau yn ein treftadaeth arfordirol. Bydd y prosiect yn dod â gwirfoddolwyr at ei gilydd i adnabod a chofnodi safleoedd treftadaeth arfordirol a'r newidiadau sy'n digwydd iddynt, gyda chymorth archaeolegwyr proffesiynol.

`Arfordir', or `Coastline', is a pilot project setup to record, understand and monitor changes in our coastal heritage. The project will bring volunteers together to identify and record coastal heritage sites, and the changes that are happening to them, with help from professional archaeologists.

#### GALW GWIRFODDOLWYR

Y bobl sy'n adnabod yr arfordir orau yw'r rheiny sydd yno amlaf, bydd trigolion lleol ac ymwelwyr rheolaidd yn gallu sylwi ar y newidiadau yn well na rhywun sy'n ymweld ond unwaith bob rhyw flwyddyn neu ddwy. Bydd gwirfoddolwyr yn gweithio ochr yn ochr ag archaeolegwyr proffesiynol a fydd yn ymddwyn fel `mentoriaid', gan gynnig hyfforddiant, cyngor a chymorth.

Bydd yr holl wybodaeth newydd hyn yn ein helpu i adeiladu'r darlun mawr – beth yw ein treftadaeth arfordirol, a sut mae'n newid?

#### **VOLUNTEERS WANTED**

The people who know the coast best are the ones who are there most often, local residents and regular visitors will be better able to spot changes than someone who may visit only once every year or two. Volunteers will work alongside professional archaeologists who will act as `mentors', providing training, advice and assistance.

All this new information will help us to build up the big picture – what is our coastal heritage, and how is it changing?

#### YMUNO A BOD YN RHAN

**GETTING INVOLVED** 

Os ydych am ymuno, neu os ydych yn aelod o grwp neu gymdeithas sydd am fod yn rhan o'r prosiect, yna cysylltwch â ni. If you want to get involved, or you belong to a group or society that wants to be part of the project, then contact us.

Ymddiriedolaeth Archaeolegol Gwynedd. Gwynedd Archaeological Trust Tanya Berks robert.evans@heneb.co.uk. 01248 352535. Craig Beuno, Garth Road, Bangor, LL57 2RT



### LLANAELHAEARN INTRODUCTION MEETING



#### AREAS OF CONCENTRATED SURVEY



#### PORTH NEIGWL, ABERDARON

#### Introduction

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 (see below) had been excavated recently here becuase 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, has visited the beach at Porth Neigwl (Hell's Mouth) and has found a number of pieces of worked flint and stone, including a scraper, retouching tool and re-worked stone axe. These objects are eroding out of the clay and sand cliffs, at the upper part of which is a buried old land surface. It is hoped that regular monitoring will ensure sites are identified and recorded before being lost to erosion.



Feature 2



Feature 1



Feature 1



Feature 3



Feature 3



Feature 1 Burnt Mound SH 29002570 Period: Prehistoric

Bronze Age Burnt Mound with associated trough. This area was investigated in March 2008 By George Smith of GAT by cleaning and recording the cliff exposure, and found to be a Bronze Age burnt mound with a well-preserved timber-lined pit or trough. Oak heart wood from the trough was radiocarbon dated to about 1650 BC and assessment of a sample of soil from the burnt mound produced a good assemblage of carbonised and preserved (waterlogged) palaeo-botanical material. This showed the presence of alder woodland (used for the burning), of local wetland and evidence of cultivation including. The remains of the trough were found at the very edge of the cliff and so were at immediate risk from erosion, possibly in the following winter storms. Cadw provided funding for a rescue excavation with support from the National Museum, Cardiff and work was carried out in November 2008 with staff from GAT and the National Museum. The central area of the burnt mound was excavated, uncovering a rectangular, timber slab-built trough with an adjoining water channel made from a hollowed-out log. Two phases of burnt mound were identified, the earlier associated with another timber-built trough, of which most had already been lost to cliff erosion.

Feature 2 Possible Pit SH 29032571 Period: Possibly Prehistoric

A possible pit noted in the section of the eastern bank of the stream immediately west of the prehistoric burnt mound (Feature 1). It is possibly associated with wider prehistoric activity close to the burnt mound, and may indicate the presence of a more substantial prehistoric site.

Feature 3 RAF Hells Mouth SH 2778 4192 Period: Modern

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 considerable evidence of vandalism at the site.

#### Bibliography

Gwyn, D and Dutton 1996 Coastal Erosion Survey (Unpublished GAT Report 198)

Smith, G. 2008 Nant Farm Prehistoric Activity Area, Porth Neigwl, Llyn:

Preliminary Report On Archaeological Rescue Recording (Unpublished GAT Report)

#### PORTHDINLLAEN, NEFYN

#### Introduction

Coastal survey was carried out at Porthdinllaen, near Nefyn, Gwynedd on 8th January 2010. Porthdinllaen is located close to the town of Nefyn (centred on NGR SH 277 419), 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 lea of each, though neither developed any major infra-structure.

A number of features were recorded and photographed, and their locations noted with the use of a GPS recorder. These are listed below, with associated research information. Three of the features had been previously noted on the Gwynedd HER, and therefore their PRN numbers are given. Subsequent research has been carried out to provide further information about the features.



Feature 1



Feature 1



Feature 8



Feature 2



Feature 2



Feature 1 Lifeboat House and Sliway SH 2778 4192 Period: Modern

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.

Feature 2 Breakwater SH 2783 4194 Period: Modern

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.

Feature 3 Porthdinllaen Promontory Fort PRN 421 SH 2750 4160 Period: Late Prehistoric Category: B Impact: Slight

Promontory fort. Banks and ditches project an area of about 14 acres. The western half of the southern defences are preserved for a length Of 130', 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 lay 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. 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. Ramparts of this fort have been badly mutilated by the golf-course. Dinllaen is the ancient name of the fort, form which is derived from that of the commote in which it stands. Fragments of flint "struck off by human agency " from water-worn pebbles from the shore have been found at Porthdinllaen, on the cliffs from inside and outside the camp. Carreg Oysters Fish Trap Feature 5

PRN 14614 SH 2770 4160 Period: Possibly Medieval, or 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.

Feature 6 Possible Shipbuilding features PRN 16,610 SH 2774 4122 Period: Early Modern

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.

Feature 7 Watchtower SH 2745 4138 Period: Modern

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.

Feature 8 Former pier or slipway SH 2775 4164 Period: Modern

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 (Fig. 9), and is located on the 2nd edition Ordnance Survey map of 1900 (Fig. 6) but not the first edition of 1889 (Fig. 5). A pier can be seen at this location on the tithe map of 1841 (Fig. 4), and the earlier Glynllifon estate map (Fig. 3), 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.

#### TYWYN, MERIONYDD

#### Introduction

Coastal Survey has been carried out in the area adjacent to the town of Tywyn (centred on SH NGR 58000010). The older, central part of Tywyn town lies upon a low promontory that is raised above the coastal plain but 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 over 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, dated to 1889, has indicated 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 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.

The location of the sites was recorded using a hand held GPS recorder, they were photographed and a descriptive record made. Four of the sites were already recorded on the Gwynedd HER and their PRN numbers are given, and subsequent research has been carried out to provide further information about the features. Detailed information about the peat beds has been taken from Smith (2004).



Feature 6



Feature 6



Feature 7



Feature 4

Feature 1 Afon Dysynni Entrance Wall SH 5614 0320 Period: 20th century

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 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.

Feature 2 Dysynni Marshes Sea Bank SH 5724 0160 to SH 5670 0260 (Approx.) Period: 19th – 20th century

Alarge bank of massive rubble protects the coast edge north of the Dysynni Low Level outfall (Fig. 9). 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.

Feature 3 Afon Dysynni Low Level Tidal Gate and Culvert SH 5718 0188 Period: 19th century

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.

Feature 4 The Afon Dysynni Low Level Outfall SH 5706 0185 Period: 19th century

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.

Feature 5 Cambrian Coast railway embankment SH 5734 0154 to 5670 0270 Period: 19th century

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 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 height and a few metres distance of the railway line.

Feature 6 Promenade, Tywyn sea-front (GAT PRN 7285) SH 5792 0010 to 5775 0058 Period: 19th century

The Tywyn sea-front between Pier Road and Neptune Road was gentrified by the construction of the Marine Parade and Promenade, 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 (see plate). The current parapet to the promenade is of late 20th century construction.

Feature 7 Ancient peat-beds (GAT PRN 16601) SN 5810 9960 (Centre) Period: Prehistoric Description taken from Smith (2004)

The peat beds have been discussed as part of the background, above. They extend for about a kilometre along the shore here. 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 that 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 place 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 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 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.

Feature 8 Turbary (GAT PRN 7286) SN 5818 9932 (Centre) Period: 18th-19th century

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 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.

Feature 9 Afon Dyffryn Gwyn Outfall SN 5825 9935 Period: 19th-20th century

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 1886) and this must have included construction of drainage channels and tidal gates and outfalls for the Afon Dyffryn Gwyn and Afon Dysynni marshes. 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.

Feature 10 Afon Dyffryn Gwyn Tidal Gate and Culvert SN 5835 9940 Period: 19th-20th century

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 were 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.

Feature 11 Second World War coastal defences, Tywyn - Pill-box (GAT PRN 1839) SN 5853 9886 Period: 20th century

This pill-box lies about 150m to the south of the study area. However, it forms the northernmost 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.

#### Bibliography

Smith, G. 2004 Tywyn Coastal Protection Scheme. Archaeological Assessment (unpublished GAT Report 555)

## EARLY NEOLITHIC FLINT SPREAD AT TREFOR, LLANAELHAEARN

The site lies at 10-20m OD, on the end of a cliff edge promontory overlooking the mouth of a small valley. This site was only 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 Erosion Survey, G39, in 1993 when the site was identified as of high potential and further evaluation was recommended. 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 microlithic 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. These could have been utilised without further working but 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, unsuitable for actual settlement and can be compared to several other coastal lithic sites in North West Wales, particularly those around the cliffs of southern Llyn. 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 guarrying 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 guarry before being loaded on ships at the 'new'



Worked flint exposure



Worked flint exposure



Community recording



Analysing worked flint expo-



Adit/industrial area with flint spread behind

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 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.

At the north side of the ridge 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.



#### Summary of work in 2009-10

Inorder to achieve the aims of the project, work has focused on two principal themes: the re-assessment of areas of the coast known to be suffering from erosion and the establishment of community groups to undertake regular assessment and feed information back into the Arfordir database.

Work within both areas has proceeded well. Advances in knowledge have, as on Anglesey, allowed sites to be re-assessed or reinterpreted. The identification of 18th century kilns potentially associated with kelp and bracken burning has implications for other parts of the coast, such as south Lleyn, where it is known the industries flourished, and it is hoped to identify further associated remains.

The project has been widely advertised throughout the area, and many expressions of interest received from potential volunteers. Project information and recording forms have been given out to numerous groups and individuals, though the reciept of information back has been very slow.

In the forthcoming year it is intended to continue with the same two principal themes, though minor changes may be necessary to ensure the best outcome. The level of support and encouragement in order to ensure a valid volunteer contribution needs to be high. Though it is relatively easy to raise initial enthusiasm, it is more difficult to obtain positive results and actually get information back. It will be necessary to examine ways in which this can be done to ensure feedback from volunteers is greater than the professional time invested.

Use of the Web may be crucial to the success of the community side of the project. A dedicated web site would allow a two-way flow of information, as well as a 'chat' forum where volunteers could get answers and encouragement. These aspects of the project will be examined in greater detail in 2010-11.

Further community training sessions will be held throughout north-west Wales, and existing volunteers will be kept in touch with developments.

Further areas of the coast will be assessed, and where required detailed surveys will be undertaken on sites where erosion is a major threat.



Breakwater Park, Holyhead, where AONB wardens and GAT staff have collaberated to encourage local awareness of coastal archaeology

#### 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 Arfodir 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 200 metres north of Penrhyn Bay). 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	Record the dimensions of the site. If only approximate, write approx. All
Dimensions	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 12.20m).		
Width	Record the width of the site, and state which orientation the measurement relate to (for example $6.45m$ ).		
Orientation			
Height/Depth	Record the height of the site if above ground (for example, the height of standir walls or of a mound), or the depth if below ground (for example, a pit seen in a eroding section). It is usual to note the maximum height or depth. State what he been measured and whether the measurement given is 'height' or 'depth' (for example, max. height of walls 0.45m; max. depth of pit 1.20m).		
* 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;</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; 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, previous archaeological work at site; local knowledge; site built of concrete and bricks).		

## 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.
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Condition of site	<ul> <li>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.</li> <li>Good (walls in stable condition, site showing no signs of being damaged).</li> <li>Fair (parts of walls collapsing, site showing some signs of damage but presently in a fairly stable condition).</li> <li>Poor (site in danger of collapse or of being destroyed in the near future).</li> <li>Destroyed (site known about from previous visits or through the records of others, but no longer existing). Only use the term destroyed 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.</li> </ul>		
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.

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	ind photo The photo number added to the photo record on the reverse of this page sho umber added here.	

#### 6. FINDS ASSOCIATED WITH THE SITE

#### 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 came please renumber the photo's so that they relate to the number on the form. using a film camera please write the correct number on the back of the photo 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 too 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 initials 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 a shows when the site was in a certain state and allows the rate of change to 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.

# ARFORDIR DATABASE

PRN		CONDITION:	COMPLETE	
SITENAME	RAF HELLS MOUTH	LENGTH:	17.20M	
NOR	SU27572700	WIDTH:	0.25M	
NGR	SH2/5/2/09	HEIGHT:	3M APROX	
CS NO.	44	DISTANCE FROM HW:	38M APROX	
OSMAP	SH28NE	ORIENTATION:	W-E	
AUTHORITY	Gwynedd	SOIL TYPE:	SAND	
COMMCOUNC	Aberffraw	THREAT 1 TYPE:	COASTAL EROSION	
EAST1:	32757	THREAT 1 CLASS:	HIGH	
NORTH1:	22709	THREAT 1 TIME:	MEDIUM	
ALTITUDE:	1			
STATUS TYPE	Site Status	THREAT 2 TYPE:	ENCROUCHMENT OF SAND	
STATUS		THREAT 2 CLASS:	MEDIUM	
STATUS REF		THREAT 2 TIME:	MEDIUM	
STATUS GRADE		THREAT 3 TYPE:	VANDALISM	
CATEGORY	C	THREAT 3 CLASS	MEDIUM	
CLASS	Defence	THREAT 3 TIME:	MEDIUM	
SITETYPE	FIRING RANGE	MANAOENENT		
PERIOD	Modern	RECOMMENDATIONS		
PERIOD SPECIFIC	wwii			
FORM	Other structure			
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 VANDILISM.				
FIELD RECORD CO	MPILER: T. BERKS & R. EVANS	COMPILER T.BERKS		
COMPILED FIELD D	ATE: 09/10/09	COMPILED DATE 10/10/09		
PROJECT NO	G2072	PHOTO NOS: 02-023		

YMDDIRIEDOLAETH ARCHAEOLEGOL GWYNEDD



GWYNEDD ARCHAEOLOGICAL TRUST

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