

RECORDING HISTORIC STONE QUARRIES:

Recording Project Pilot Study



Map showing records created of stone quarries in the lower Teifi Valley

Prepared by
Dyfed Archaeological Trust
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RECORDING HISTORIC STONE QUARRIES

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SUMMARY

It has been recognised that there is no database of historically worked stone quarries, which is an issue for building restoration and conservation, as well as for heritage management. This pilot project addresses this issue and suggests a methodology for the rapid creation of baseline Historic Environment Records for historically worked stone quarries. A 10km x 10km sample area was selected and records created for the 242 quarries identified within in shown on historic Ordnance Survey maps. Extrapolation from this sample indicates that there are c.13,000 historically worked stone quarries in Dyfed marked on Ordnance Survey maps. Creating records for these will take an estimated 185-216 working days.

CRYNODEB

Mae wedi cael ei gydnabod nad oes cronfa ddata o chwareli cerrig a weithiwyd yn hanesyddol yw gael, sy'n fater ar gyfer adfer a cadwraeth adeiladau, yn ogystal â rheolaeth treftadaeth. Mae'r prosiect peilot hwn yn mynd i ymdrin â'r mater hwn ac yn awgrymu methodoleg ar gyfer creu Cofnod yr Amgylchedd Hanesyddol sylfaenol ar gyfer chwareli cerrig a weithiwyd yn hanesyddol. Dewiswyd ardal sampl 10km x 10km a chreu cofnodion ar gyfer y 242 o chwareli a nodwyd yn y mapiau Arolwg Ordnans hanesyddol. Mae allosodiadau o'r sampl hon yn nodi bod tua 13,000 o chwareli cerrig hanesyddol yn Nyfed wedi'u marcio ar fapiau'r Arolwg Ordnans. Bydd creu cofnodion ar gyfer hyn yn cymryd tua 185-216 diwrnod gwaith.

INTRODUCTION

This pilot project is in response to the issue raised by the Welsh Stone Forum concerning building restoration and conservation that there is a paucity of published information on historic stone working in Wales and there is no database of historically worked quarries.

The Dyfed Historic Environment Record (HER) contains records of historic stone quarries and related sites, but there has been no systematic collection of data. The number of historic quarries in the region is unknown, and therefore it is also unknown if the HER contains a representative sample of such sites or not. The following is a list of numbers of site types recorded on the HER:

Quarries	1889
Stone quarries	3
Slate quarries	43
Limestone quarries	125
Gravel pits	177
Sand pits	77
Sandstone quarries	2
Spoil heaps	369 (these probably relate to coal mines and metal mines)

This pilot project is designed to:

- assess the potential number of records of historic stone quarries that could be included on the HER from easily accessible sources.
- Make HER records of the historic stone quarries identified

For the purposes of this project stone quarries include slate quarries, limestone quarries, sandstone quarries, gravel pit, clay pits and sand pits

METHODOLOGY

A rapid search was made of published and other easily accessible sources of information. Ian Thomas (n.d) has produced an overview of quarrying in Wales, which though very useful for background information, is generalistic and provides no site specific information. At the other end of the spectrum are the short reports published in the Welsh Stone Forum's newsletter which mainly deal with stone used in individual buildings, sometimes on just one stone type, and often focusing on imported stone rather than local stone. In between these two extremes are occasional site specific studies, such as those published for Porthgain, Pembrokeshire (Roberts 1979). By far the most useful publication is Richards's book on the slate quarries of Pembrokeshire, which contains a gazetteer with descriptions of all known slate quarries not just in Pembrokeshire but also in the neighbouring counties Carmarthenshire and Ceredigion (the whole of Dyfed). A manuscript by G Tucker and M Tucker contains almost identical information to that in Richards's book. There is no comparable publication for stone quarries.

The most useful sources of information for the creation of baseline HER data are the Ordnance Survey 1:2500 1st and 2nd Edition maps of c.1888 and 1907. These capture the stone quarrying industry at the point of decline; working quarries shown on the 1st Edition maps are often labelled disused on the 1907 maps. No other Ordnance Survey

maps were examined, but a rapid examination was made of tithe maps; these do not depict quarries.

A visit was made to the British Geological Survey's (BGS) offices in Keyworth, Nottingham to assess the potential of their records in informing this project. Items examined included published memoirs and field slips (essentially field observations on the back of geological maps). These sources are of limited use for the project. However, BGS maintain a geo-referenced database (BritPits) of all known quarries, working and disused, in Britain. This has been compiled from a range of sources including harvesting data from the Ordnance Survey 1st and 2nd Edition 1:2500 maps. Following the visit discussions centred on a possible date exchange/data sharing of information on BritPits and the HER. However, BGS consider that their data is of considerable commercial value and therefore these discussions have not resulted in a data sharing exercise.

For this pilot a 10km by 10km Ordnance Survey Grid square (SN14) was selected as representative sample area. The selected area is known to contain numerous small quarries as well as a series of larger slate quarries on the banks of the River Teifi (Figure 1). Geologically the area is almost exclusively Ordovician mudstone, siltstone and sandstone, a type of rock characteristic of much of south-west Wales, with pockets of glacial sands and gravels, and alluvium in the Teifi valley.

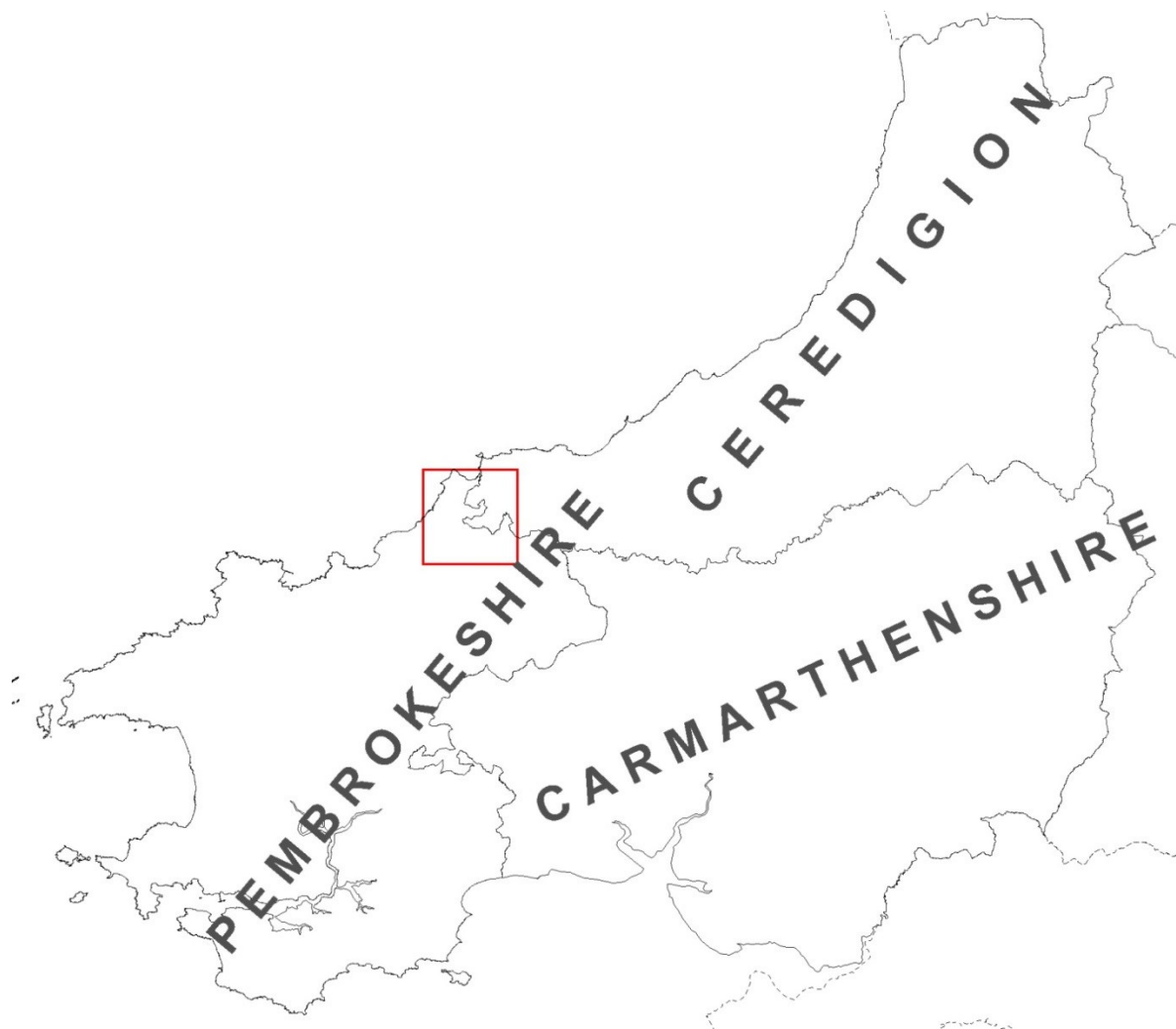


Figure 1. The 10km by 10km pilot project area.

A MapInfo table was created onto which were drawn polygons of all quarries recorded in the pilot area on the Ordnance Survey 1st and 2nd Edition 1:2500 maps. Records of all identified quarries were created and records of existing ones enhanced, if necessary. HER summary descriptions were brief, such as: 'Quarry marked on the 1889 OS map, recorded as Old Quarry on the 1907 map.' Enhanced descriptions were made for slate quarries recorded in Richards's book. The geology of each quarry was recorded in the HER.

RESULTS

Prior to the project 35 quarries were recorded in the 10km x 10km SN14 grid square. 207 additional records were created during the project, making the total of 242 quarry records (Figure 2).

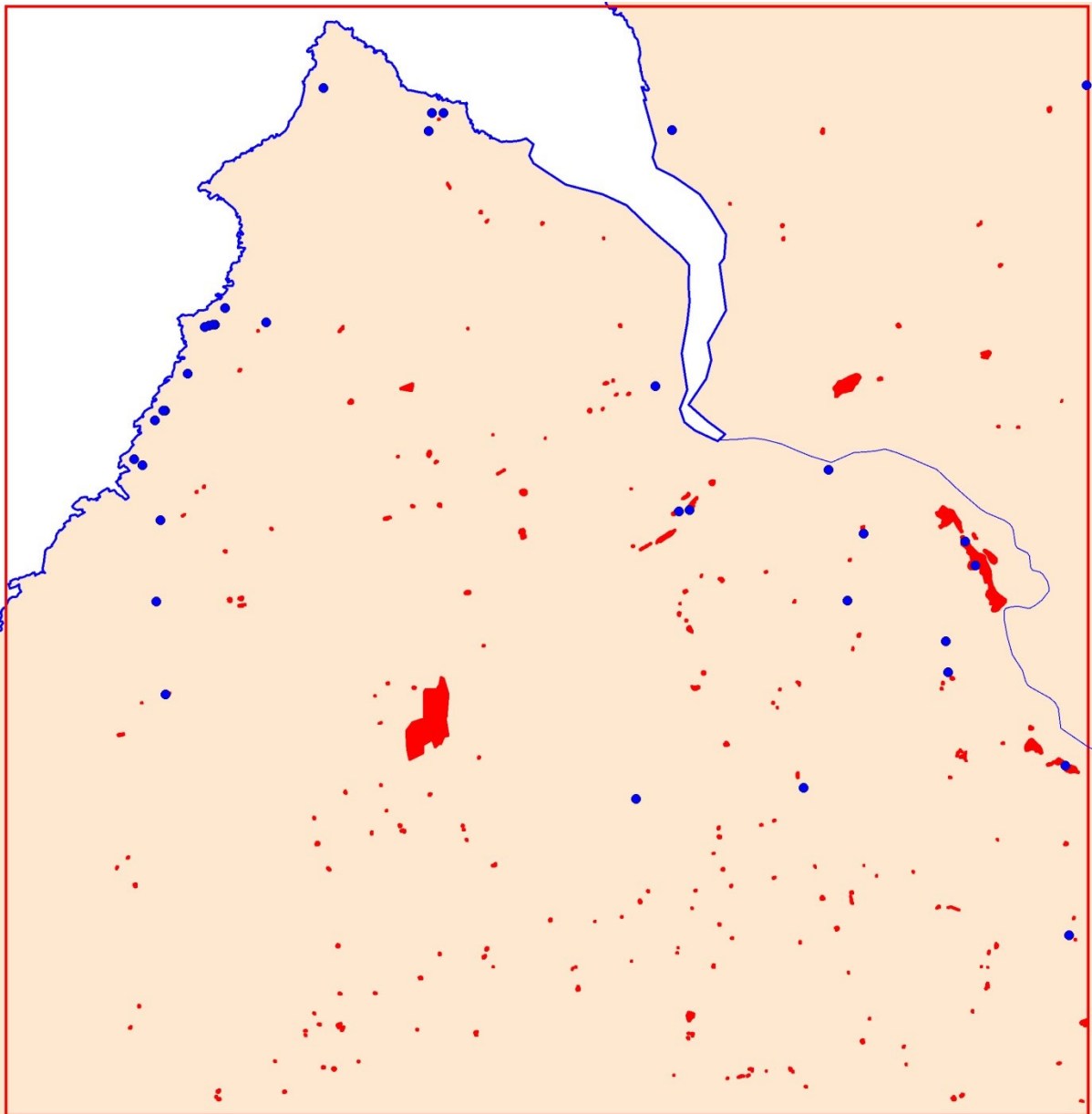


Figure 2. The 10km x 10km pilot area showing pre-existing HER site as blue dots and site records created during the project as red polygons.

Sites were recorded as 'Quarry' unless other information was available, such as from Richards's book on slate quarries or from Ordnance Survey maps. The latter occasionally label a site as 'Sand Pit' or 'Gravel Pit'. Other than slate working in the Teifi Valley, it is assumed that most quarries in the area provided stone for local use, but occasional larger workings, such as those in Cwm Degwell near St Dogmaels possibly indicate production for more than local use. A number of small sand and gravel pits were recorded on the eastern side of the pilot study area; their size indicates production for local use only, but there is a large active sand and gravel quarry at Trefigyn.

Unless there is evidence to the contrary quarries were assigned a post-medieval date.

Not all historic quarries are recorded on the Ordnance Survey 1st and 2nd Edition 1:2500 maps. The HER contains records of small quarries that are not shown on these maps, but whether they pre-date the 1st Edition maps of c.1888 or post-date the 2nd Edition maps of 1907 is unknown. These were recorded during fieldwork, and further fieldwork would undoubtedly reveal many more similar sites.

This project has highlighted just how close to their point of use building materials were sourced until the late 19th/early 20th century. Most communities and farms did not have to travel more than a few hundred metres to obtain their building stone, and for many the distance was much shorter.

As part of this pilot the opportunity has been taken to create HER records of the slate quarries recorded in Richards's book.

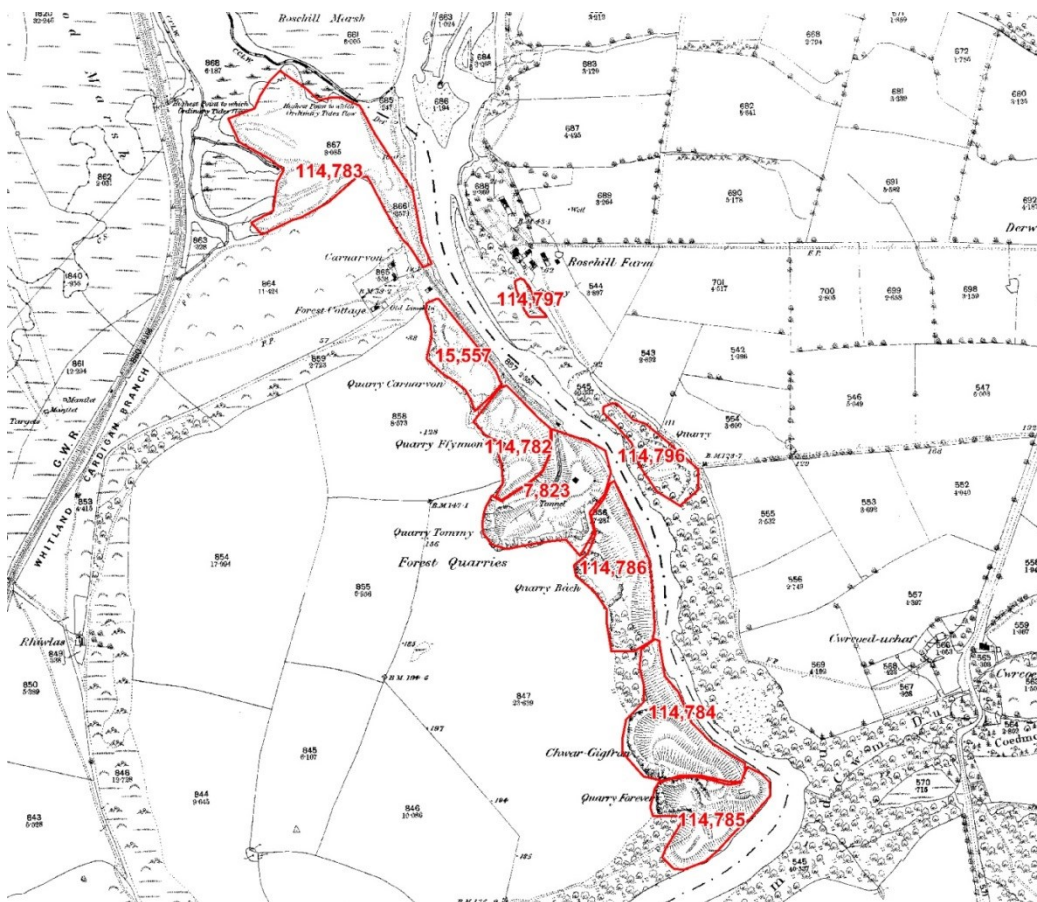


Figure 3. Map showing records enhanced or created of slate quarries in the lower Teifi Valley against the Ordnance Survey 1st Edition 1:2500 map.

PROBLEMS ENCOUNTERED AND RECOMMENDATIONS FOR FUTURE WORK

This was a straightforward HER creation project. No particular issues were encountered. 242 stone quarries were identified during the pilot in the 10km x 10km grid square, of which it was necessary to create 207 new records based on Ordnance Survey mapping (35 quarries had existing records which needed enhancing). This is 2.72 sites per square kilometre.

The total area of Dyfed is 5800 sq kms, of which 3870 sq km lies below 200m and another 1176 sq km lies between 200m and 300m. If it is assumed that stone quarries are largely a lowland feature and there is a fairly even distribution of quarries below 200m, ie at 2.72 per sq km, then it is estimated that there are c.10,500 quarries in this zone. Added to which are probably an additional 2500 quarries above this. This would give a total of c.13,000 in Dyfed. During the historic farmsteads project new records were created at a rate of 60-70 a day. Quarry records are of a similar level of complexity as historic farmstead records and so at a similar rate of creation it is estimated that it will take between 185 and 216 working days to create records for all quarries recorded on 1st and 2nd Edition 1:2500 maps.

In addition to providing valuable information for heritage management and for building restoration and conservation, having both HER historic farmstead records and quarry records will provide us with data to perform sophisticated analyses. For instance it will be possible to identify areas where historically stone was not a traditional building material or areas where there was no suitable stone for building, where communities and individuals sourced their building stone, and how far communities or individuals had to travel to obtain their stone. Future more detailed work, including fieldwork to investigate quarries and local buildings will provide enhanced information on these questions, but this is beyond the scope of this project.

ACKNOWLEDGMENTS

We would like to thank the staff of the British Geological Survey, in particular Stephen Parry and Donald Cameron, for their help and advice. Also to the staff of Pembrokeshire Record Office.

SOURCES

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Welsh Stone Forum Newsletters

**RECORDING HISTORIC FARMSTEADS
Pilot Study (Carmarthenshire)**

DYFED ARCHAEOLOGICAL TRUST

**REPORT NO.2019/04
EVENT RECORD NO. 116350**

January 2019

This report has been prepared by:

K Murphy

Position: Trust Director

Signature .  Date: 31 January 2019

This report has been checked and approved by

on behalf of Dyfed Archaeological Trust Ltd.

Position:

Signature Date:

As part of our desire to provide a quality service we would welcome any comments you may have on the content or presentation of this report

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