

Landmarks – Profiling Europe’s Historic Landscapes

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Christoph Bartels/ María Ruiz del Árbol, Heleen van Londen, Almudena Orejas

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COST and the Action A27 LANDMARKS

COST – the acronym for European COoperation in the field of Scientific and Technical Research – is the oldest and widest European intergovernmental network for cooperation in research. Established by the Ministerial Conference in November 1971, COST is presently used by the scientific communities of 35 European countries to cooperate in common research projects supported by national funds.

The funds provided by COST – less than 1% of the total value of the projects – support the COST cooperation networks (COST Actions) through which, with only around €20 million per year, more than 30.000 European scientists are involved in research having a total value which exceeds €2 billion per year. This is the financial worth of the European added value which COST achieves.

A “bottom up approach” (the initiative of launching a COST Action comes from the European scientists themselves), “à la carte participation” (only countries interested in the Action participate), “equality of access” (participation is open also to the scientific communities of countries not belonging to the European Union) and “flexible structure” (easy implementation and light management of the research initiatives) are the main characteristics of COST.

As precursor of advanced multidisciplinary research COST has a very important role for the realisation of the European Research Area (ERA) anticipating and complementing the activities of the Framework Programmes, constituting a “bridge” towards the scientific communities of emerging countries, increasing the mobility of researchers across Europe and fostering the establishment of “Networks of Excellence” in many key scientific domains such as: Biomedicine and Molecular Biosciences; Food and Agriculture; Forests, their Products and Services; Materials, Physics and Nanosciences; Chemistry and Molecular Sciences and Technologies; Earth System Science and Environmental Management; Information and Communication Technologies; Transport and Urban Development; Individuals, Societies, Cultures and Health. It covers basic and more applied research and also addresses issues of pre-normative nature or of societal importance.

Action COST A27 (2004-2008), Understanding Pre-industrial Structures in Rural and Mining Landscapes (LANDMARKS) belongs to the domain of Individuals, Societies, Cultures and Health. The number of signatory countries to the Action is 21: Austria, Belgium, Cyprus, Denmark, Estonia, France, Germany, Greece, Iceland, Ireland, Italy, Malta, Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Spain, Switzerland, United Kingdom.

The point of departure of LANDMARKS is European rural and mining landscape. Pre-industrial structures mark many of those landscapes; most of them are now threatened by the abandonment of traditional practices, in particular less wealthy regions. This process implies the quick destruction of landscape differences resulting from traditional activities and ways of life. LANDMARKS aims to stimulate the European research on this topic, to produce specific databases and to structure a consistent dissemination plan by:

- Morphological analysis of relevant elements and models of integration in present landscapes;
- Research on historical techniques and technologies related to the historical use of landscapes;
- Diachronic study of specific legal and administrative practices;
- Analysis of historical landscape perception during history by the communities that inhabited and exploited them;
- Providing mechanisms for the public presentation of landscapes and optimising Cultural Heritage.

Identification and scientific evaluation are the common basis for the protection, the cultural valorisation and the social and economic vindication of these sensitive landscapes. Diversification of cultural resources and enlargement of the protected cultural heritage are keys for the improvement of the internal potential in many European regions.

The objectives of LANDMARKS are described in the Memorandum of Understanding of the Action and the main outcomes are mentioned in the Progress Reports of the Action (all documents can be consulted in COST and LAND-

MARKS web pages). The activities are centred in four working groups: mining landscapes (WG1), rural landscapes (WG 2), virtual landscapes (WG3) and transversal activities (WG4).

More information

COST: <http://www.cost.esf.org/>

Action COST A27 LANDMARKS:

<http://www.soc.staffs.ac.uk/jdw1/costa27home.html>

Action COST A27 "Cultural Parks,

Cultural Projects and Activities:

<http://www.unipg.it/COSTactionA27/parks-activities/>

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Coal, Ore and Metals: Coastal Mining Landscapes of South-West Britain (United Kingdom)

Peter Claughton

Today the Bristol Channel and its western approaches, between South Wales and the north coast of Cornwall, Devon and Somerset, are seen as a barrier to trade and travel. For example, a journey from the north coast of Devon near Combe Martin to Swansea in South Wales entails many hours by road, over the Severn Bridge, to end up within sight of your starting point. Even by today's standards the journey by boat in the 17th century would have been relatively quick, with a boat of 20 tons burthen being capable of making the journey and returning laden with coal within 36 hours. The Bristol Channel was a premier transport route for the pre-industrial economy and ease of transport ensured that the mineral resources of the south-western coastline were among the first to be exploited on a large scale in the prelude to rapid industrialisation post 1750.

There is direct evidence, both documentary and archaeological, for a coastal trade in coal, iron and lead/silver by the 13th century and circumstantial evidence for the movement of iron at a much earlier date. The exploitation of these coastal resources at an early date, many of them shallow deposits remote from later 19th century transport routes, has resulted in cases of their survival as unique relict landscapes of pre-industrial mining. Research into those landscapes is to some extent in its infancy but has revealed the potential for wider interpretation and presentation to the public.

The value of coastal mineral deposits and the ease with which they might be transported to markets would exercise the minds of philosophers such as John Dee in the 16th century¹ but it had already been an economic reality in south-west Britain for over three centuries. By the late 13th century there is evidence to suggest that there was already

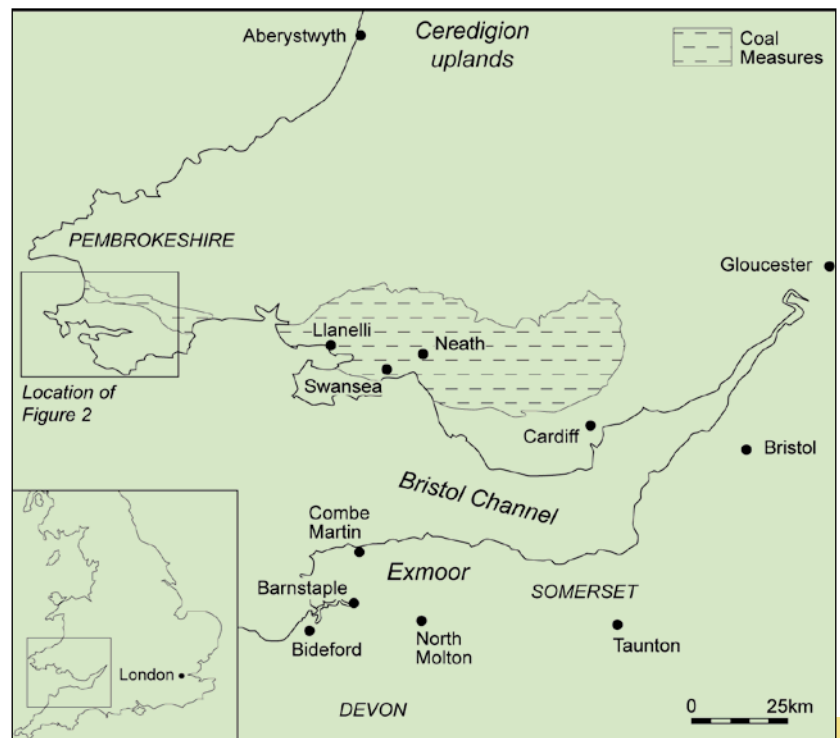


Fig. 1: Bristol Channel and the western approaches

an established coal trade which the English Crown could use to supply its castle building programme².

We have, on the south-west coasts, a diverse range of rocks and minerals. North of the Bristol Channel, the southern edge of Wales is dominated by Carboniferous rocks – the Coal Measures and limestones – with older rocks to the north hosting lead deposits close to the Irish Sea coast in the Ceredigion Uplands of mid Wales. To the south of the Channel are Devonian rocks forming the uplands of Exmoor along the north Devon / west Somerset coast hosting lead, iron and copper mineralisation. Further west the Carboniferous rocks of north Cornwall are largely barren of significant mineral deposits but further to the south-west

¹ Baldwin 2006

² Connop-Price 2004, p. 26

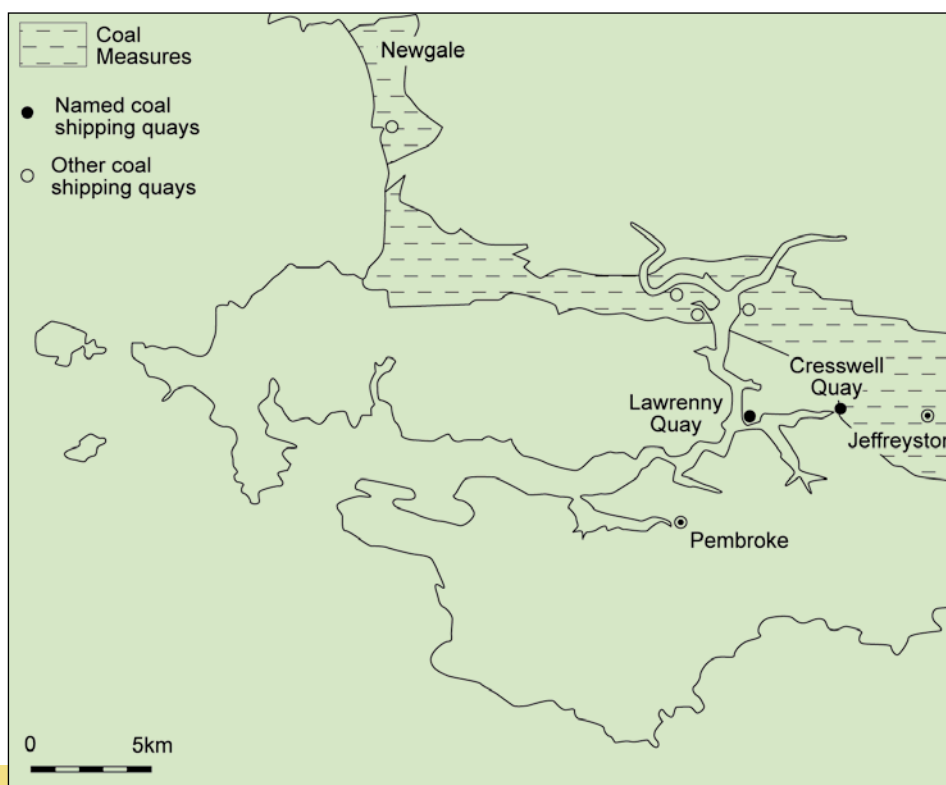


Fig. 2: Pembrokeshire and the tidal inlets of the Daugleddau, inland from Milford Haven, showing early coal shipping quays.

the Devonian rocks affected by the granite emplacement are a rich source of copper and tin.

This study will focus, although not exclusively, on two areas bordering the Bristol Channel and its west approaches, the heavily indented coast of the south Pembrokeshire coalfield and the Exmoor uplands of north Devon and west Somerset, both of which were important areas of production in the pre-industrial period. They are landscapes defined by their coastal links. Quite different in their form but with a common connection which had a significant influence in determining their development. With one part being in Wales and the other in England they are also subject to differing levels of recognition which impact on decisions as to protection and interpretation.

Research

Research into coastal mining and its landscapes has approached the subject from a variety of directions. Historians have, over many years, examined the mechanisms of coastal trade and highlighted its importance to the pre-industrial economy. It is now generally accepted that one of

the factors stimulating the industrial revolution of the late 18th / early 19th century in Britain was the shift to mineral sources of fuel, and the use of that fuel to generate power; releasing human and agricultural resources to industrial purposes³. The real expansion of coal mining dates from after 1500 when the scarcity of wood for fuel in the growing urban areas made the burning of coal an attractive proposition despite the problems of transport and noxious emissions. However, the move away from organic fuel for domestic purposes was well underway in Britain by the end of the medieval period.

The rich documentary evidence for coastal trade, a vehicle for much of that change, has received particular attention. Nef (1932) and earlier historians had identified the

importance of the coastal trade in coal but it was Willan's pioneering work (1938) that brought together much of the evidence for all manner of minerals to be found in the Customs record, particularly the Exchequer port books. The evidence has been examined further by the University of Wolverhampton's Portbooks Programme⁴ and additional work by David Hussey⁵. Using the primary material⁶ has allowed mining historians to confirm the real value of production from the coastal mining fields and the changes in the way that the product was processed, largely influenced by the increased use of coal.

Research into the early coal industry, from Nef (1932) onwards to the more recent work by Hatcher (1993), has defined its role as an engine of change in the pre-industrial period. Those coalfields with access to navigable water were in a position to develop a coastal or river-borne export trade. Thus it was coals from areas like south-west Wales, Newcastle and the Midland coalfields adjoining the River Trent that were the first to be worked on a commercial scale and it was being shipped coastwise by the 13th century, largely for industrial purposes. Lime burning, for the preparation of mortar and plaster widely used in the castle building programme in Wales and elsewhere, called for significant amounts of fuel and this was a process well suited

³ Wrigley 1988

⁴ Hussey et al. 1995

⁵ Hussey 2000

⁶ The National Archives: Public Record Office, E190 (= TNA: PRO E190)



Fig. 3: The tidal river landscape looking south-east from Lawrenny Quay where coal from Cresswell would sometimes be transferred to larger boats.

to the hard anthracitic coals of south-west Wales. Beyond the end of the medieval period, as the benefit of improved agricultural productivity brought about by adding lime to the land was realised, there was a considerable increase in demand from that sector. Coal, largely for domestic purposes, was being shipped from north-east England to ports on the east and south-east coasts, including London, and by the late 14th century that trade probably exceeded 20,000 tonnes per annum. In addition to this there are numerous examples of its use close to the Midland coalfields.

The western part of the South Wales coalfield has probably the earliest documented evidence for coal production and export in Wales, dating from the late 13th century. By the 17th century there was a well established coastal trade with ports in the south-west of England; small ports like Combe Martin, supporting a small fleet, ships of 15 to 20 tons, engaged in a regular trade in coal from Pembrokeshire and Swansea for both lime-burning and domestic use⁷. Coal also went further a field to Ireland and France, as far south as La Rochelle, with return cargoes of salt. There is also evidence to support the use of semi-anthracite coal from

Carmarthenshire in the smelting of lead-silver ores in North Devon, perhaps as early as the late 16th century⁸.

Pembrokeshire, in particular, benefited from the proximity of the coalfield to navigable waterways giving ready access to the coastal trade. Coal shipping quays can be found on many tidal branches of the Daugleddau, inland from Milford Haven. Unlike the exposed beaches, and the harbour at Tenby, on the eastern part of the coalfield in Pembrokeshire, the river quays provided for the loading of small coastal vessels in sheltered conditions. One such, Cresswell Quay, is identified as a shipping place for the first documented movement of coal coastwise from Pembrokeshire, to Aberystwyth, in 1282⁹.

It is evident from the large quantity of coal to be shipped in 1282 that mining in the hinterland to Cresswell Quay was well developed by that date, and there was a marketing organisation in place which was capable of supplying the demands of lime burning for the castle building programme. Over the next three centuries there are an increasing number of references to mining across the coalfield in

⁷ TNA: PRO E190/953/4 et seq.

⁸ Cloughton et al. 2005

⁹ Walker 1997, 419 – referring to TNA: PRO C47/2/2/7

Pembrokeshire and by the middle of the 16th century it is evident that the parish of Jeffreyston, to the east of Cresswell Quay, was a significant producer of some antiquity with established measures used in the coal trade¹⁰. In about 1603 the presence of the coal and the methods of working were described by George Owen of Henllys¹¹.

Geological movements which affected the entire coalfield have distorted the seams at Jeffreyston such that they have been folded, then eroded, to outcrop in a broad band running from just east of the village westwards to the river at Cresswell. Coal thus exposed was accessible in large quantities by means of quite shallow workings; easily transported along the higher ground and down to the quays at Cresswell. None of the seams attained any depth. Geological movement also meant that much of the coal was crushed to small proportions, referred to as culm (defined in 1816 as anthracite which would pass through 3/8 inch mesh), which, although suitable for processes such as lime burning, attracted a lower price. Although mining continued into the early 20th century, any deep mining there was confined to the area east of the village. The mining landscape between Jeffreyston village and Cresswell Quay is a relict of the pre-industrial period.

To the south of the Bristol Channel, interest in mining for metalliferous ores on the Exmoor uplands has largely focussed on iron in the industrial period when, in the aftermath of initial failures in the Bessemer bulk steel making process, the demand for ores with low phosphorus and high manganese contents stimulated extensive prospecting and exploitation¹². However, that research has identified significant pre-industrial working of iron, copper and lead/silver which is, in most cases, of relatively greater importance¹³.

Although historians of the medieval and earlier iron industry have focussed attention on certain localities in England with substantial and sustained production, for example the Sussex Weald, south-west Yorkshire and the Forest of Dean it is evident that iron was probably the most common mineral and sufficient could be mined to supply a small bloomery in most areas of the country. Settlements in the western parts of Somerset are recorded in Domesday as paying, or having paid, dues in iron blooms. It is also becoming evident from archaeological work that there were far more centres of specialisation than had previously been supposed. Recent work carried out by the Department of

Archaeology at the University of Exeter has strengthened the view that Exmoor and its borders hosted a thriving iron industry from the Roman occupation period through the medieval period, and industry, in Roman period at least, was of more than local importance¹⁴. Although much of that is as yet unpublished it is evident that early production was such as to require shipment out of the region and when coastal shipping records are first available, in the 16th century, iron is amongst the cargoes listed.

The working of silver bearing lead ores on the borders of Exmoor is of medieval origin. At Combe Martin, on the coast at the western end of the uplands, rich deposits were opened up in the late 13th century and worked intermittently throughout the late medieval period. In the second half of the 16th century and into the latter part of the 17th century large quantities of lead were mined and smelted at Combe Martin along with some ores shipped in from Co. Wexford in Ireland. Lead was shipped out, some for refining in south Devon and some, which had already been de-silvered on site, would be destined for the market. Coal from South Wales was shipped into the site as fuel for at least part of the smelting process¹⁵.

Copper mining on a large scale came late to the Exmoor uplands. A mine at or near North Molton on the southern borders of Exmoor is documented in the 14th century and again in the early 16th century but with no record of production. From 1690 onwards there is documentary evidence for sustained copper mining on the southern borders at the Bampfylde (North Molton) site and further to the west at East Buckland¹⁶. There is, however, also now firm archaeological evidence for the smelting of copper ores at the former site in the late 15th century with the discovery of residues containing entrapped, datable charcoal¹⁷. Until the site is investigated further we have no idea as to the scale of on-site smelting but with the expansion of production from 1690, when the mines in the area were significant early contributors to a rising copper industry linked to the development of the reverberatory furnace, ore was shipped coastwise for smelting. The fuelling requirement for the new technology meant that ores were better smelted at points on or close to the coalfields – Bristol, Chepstow and Neath, on the Bristol Channel coasts, with some ore being shipped as far north as Chester in north-east England. A rapid expansion in mining can be gauged from the port-books with upwards of 400 tons of copper ore per annum being shipped coastwise from Barnstaple and Bideford¹⁸.

¹⁰ TNA: PRO E178/3493

¹¹ Owen 1994

¹² Claughton 2005; Atkinson and Baber 1987

¹³ Atkinson 1997

¹⁴ Juleff 1997; 2000

¹⁵ Claughton 2004; Claughton et al. 2005

¹⁶ Claughton 1989; Dixon, in Atkinson 1997, pp. 41-72

¹⁷ Scottish Universities Environmental Research Centre, East Kilbride (=SUERC)-7666: 415BP ±35 – publication pending

¹⁸ Atkinson 1997, p. 45

Past landscape, present landscape

Carrying out the basic historical research does not necessarily mean that we can relate the evidence to the features surviving in the landscape. Inevitable where the work is largely archaeological, as in the case of iron working on Exmoor, a direct relationship between the evidence and the landscape is inherent in the research although other features prominent in that landscape, and linked by association, require positive identification and dating. Such is the case with the large Roman period iron smelting at Sherracombe Ford, in the parish of High Bray, on the upper southern slopes of Exmoor and its relationship to large open-work known as the 'Roman Lode' at Burcombe on the moorland to the north. The smelting site has been full excavated and dated, although full publication is pending, but the small amount of work done on the mining site is inconclusive¹⁹. We have to rely on 19th/20th century mining reports for our interpretation of the iron mining features across this part of Exmoor²⁰. Further work is required to identify and date the extensive mining features which are prominent in the upland landscape, not just on the higher uplands from Burcombe eastwards through Exford to Ison Hill and the Brendon Hills, but also along the southern borders from Charles and North Molton through to Molland where there is some evidence to suggest that pre-industrial iron ore mining continued into the 17th century²¹. Early iron working features in the historic environment research framework for Exmoor²² and these, along with other mining features, are covered by the historic landscape characterisation accessible through the Exmoor National Park Authority web-site²³.

The field evidence for lead/silver and copper mining linked where possible to the documentary evidence, along with what was known for early iron working at the time, have been published²⁴. What have not yet been fully researched and interpreted are the pre-industrial shipping points themselves on the Exmoor / Bristol Channel coast, and the tidal estuaries at Barnstaple and Biddeford, and the pack horse tracks which linked them to the mines. Whilst many of the tramways and

harbours of the 19th century can still be identified clearly in the landscape, for example the West Somerset Mineral Railway²⁵, much of the earlier evidence may have been lost.

Early shipping points on the inlets forming the upper reaches of Milford Haven on the Pembrokeshire coast have fared



Fig. 4: Surviving structure on the coal folds at Cresswell Quay.



Fig. 5: Cresswell Quay, vertical air photograph, part of RAF 106GUK1425 4352 dated 1946. The quays are centre right with one large surviving quay to the south-west of the acute bend in the river and another two, in ruins, immediately west of the bend, one north of the river and another to the south. The coal folds are the rectilinear features to the north of the river west of the bend and the structure in Figure 5 is in the south-eastern corner of the eastern most fold. The road winding down to the river from the east is the route used to bring coal from Jeffreyeston.

¹⁹ Bray 2007

²⁰ Burton 1989.

²¹ Bodleian MS Top Devon 62, return for North Molton

²² Exmoor National Park Authority (=ENPA) 2004-9

²³ <http://www.exmoor-nationalpark.gov.uk/>

²⁴ Atkinson 1997; Riley & Wilson-North 2001

²⁵ Riley & Wilson-North 2001, pp. 143-147

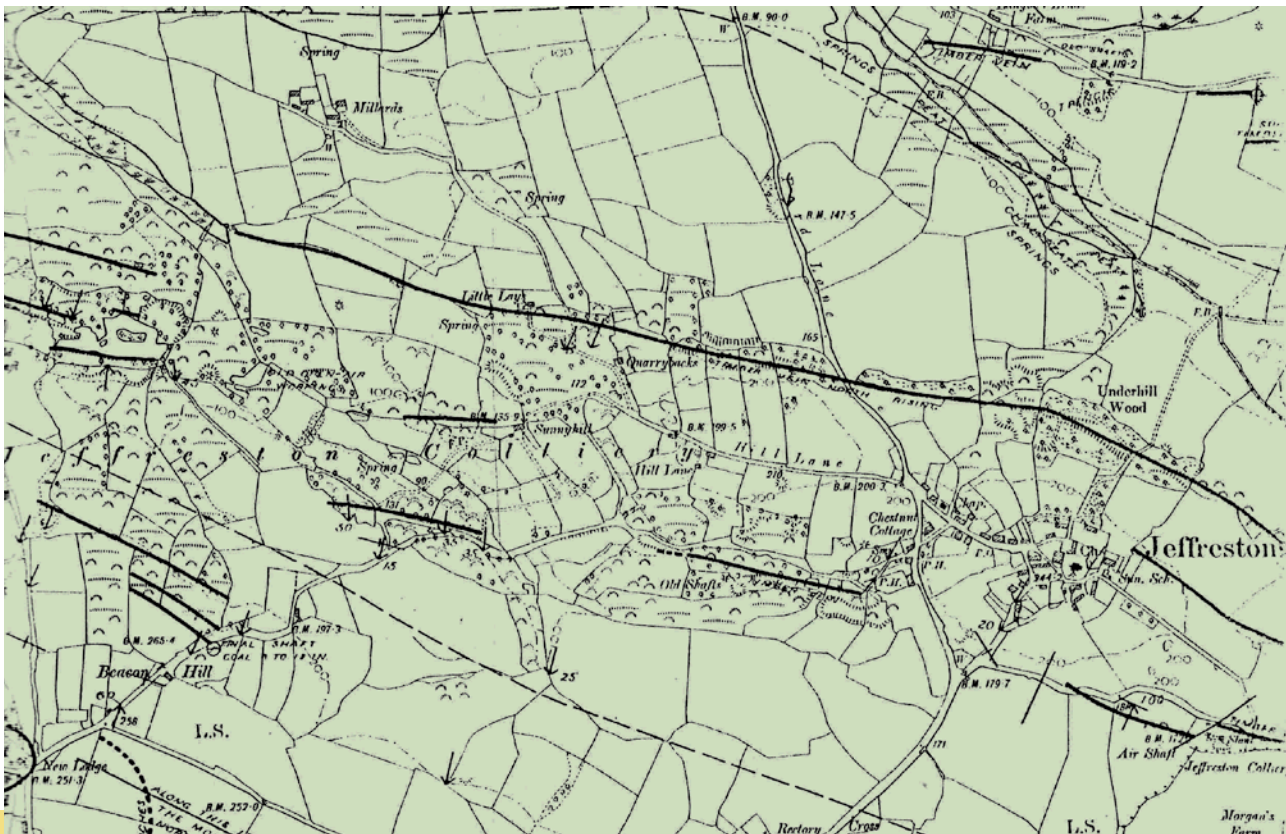


Fig. 6a: Extract from the Geological Survey map (Pemb. XXXV: SW dated 1921) showing the coal outcrops, as bold black lines, west of Jeffreyton. The ancient enclosure pattern can be seen fanning out from the centre of the village as far as the north rising of the Timber Vein.

Fig. 6b: The area west of Jeffreyston, vertical air photograph, part of RAF 106GUK1425 4340 dated 1946.



rather better both from the point of research and of survival. The quays and 'coal folds', used to stock pile coal for separate mineral owners, at Cresswell Quay have been researched by Connop-Price (1996) and are still in evidence today. Other coal quays on the inlets are also still identifiable in the landscape and their purpose recorded²⁶. Although the historic landscape characterisation for south-west Wales has addressed the coastal landscape as a whole²⁷ the mining elements within it remain relatively understudied. The hinterland to Cresswell Quay, particularly the early mining features around Jeffreyston referred to below, has immense potential for further research.

Jeffreyston village, centred on a church of early Christian origin, is located on a low ridge four kilometres to the east of Cresswell Quay with coal outcropping to the north and south. The coal to the north, the north rising of the Timber Vein, striking a little north of west, has been worked at outcrop in Underhill Wood, immediately north of the village, and westwards for over a kilometre. Working was by means of wide trenches, known locally as 'reens', now heavily overgrown and hidden in mature woodland. The ancient (medieval and earlier?) enclosure pattern here is worthy of note. To the north it forms a 'fan' shape with each of its segments having access at its northern end to a section of the coal outcrop, whilst a section of early enclosure to the west appear to give access to the south rising of the vein at its south-western extremity. South of the village, where there is no surface evidence for coal outcrop, no similar arrangement is in evidence²⁸.

The coal outcrops north and south of Jeffreyston are the eroded remains of a syncline. It has been folded in such a way that two limbs or 'risings' of the same vein appear, at surface, to dip south but identification of the rocks on either side of the coal, and later deep working east of the village, show that the southern rising is inverted²⁹. West of the village the folding and subsequent erosion is such that there is little or no continuity to the outcrops. Over a distance of some two kilometres they have been worked by trenches, leaving linear features of disturbed ground which are now heavily wooded. Some of these are extensive where the veins have been folded such that the coal was close to surface over a wide area. North of Sunnyhill, one kilometre west of the village, is an area of open working 300 by 200 metres, with another (now flooded) 600 metres further west, from which vast amounts of coal must have been extracted before the 19th century. By about 1603, Owen³⁰ refers only to underground working in his description of the coal workings around Jeffreyston. The area of open working north of Sunnyhill is shown on early 19th century mapping as being a flooded pit.

A pattern of lanes and tracks, some sunken, can be identified leading on to the higher ground south of the workings, converging to join a road running west and descending to Cresswell Quay. Closer to the quay are numerous shallow shafts working undefined coal seams and south-east of the higher ground are further shafts and smaller areas of surface trenching. Coal from all these workings would have been carried to Cresswell Quay where it was stored preparatory to being shipped in small coastal vessels. By 1755 each of the local mineral owners had their own quay at Cresswell and adjoining folds. Not all the coal came from Jeffreyston, of course, some came from as far inland as Reynalton parish and the occupation of quays reflected that diversity. But, as Connop-Price (1996) notes, the trade was by that time in decline. There is much more work to be done on identifying and quantifying the trade through Cresswell in the 18th century and earlier, with significant archival resources available in the Pembrokeshire Record Office and the National Library of Wales, Aberystwyth.

Legal and institutional framework

Whilst the two do not necessarily go together in practice there is the opportunity to address both the protection and valorisation of the landscape through the authorities responsible for the practical implementation of both aspects of the landscapes covered by this study. The highest form of protection for ancient monuments in England and Wales, scheduling under the Archaeological Areas Act 1979, can be applied to discrete areas within a historic landscape but is not used to protect landscapes as a whole. Where historic landscape characterisation (HLC) has been used to identify landscapes of particular importance it is left to the local authorities to effect protection using existing planning law, informed by the information lodged in the Historic Environment Record (HER) maintained at county level in England and at regional level in Wales. Those local authorities are also responsible for monitoring, if not initiating, valorisation and the tools used are, again, linked to the application of planning law. There are, however, some aspects of both protection and valorisation which fall outside the control available using planning law. Consequently there is nothing approaching full protection for historic landscapes in England and Wales.

The approach to landscape characterisation differs between England and Wales. Both have used HLC to identify the nature of the landscape but only in Wales has it been used to define landscapes as being 'of outstanding historic inter-

²⁶ Connop-Price 2004, pp. 145-161

²⁷ <http://www.acadat.com/HLC/milford/milfordhavenmap.htm>

²⁸ OS 1907, Pembs. XXXV: 9 and 15; GS 1921, Pembs. XXXV:SW

²⁹ Strahan 1914, pp. 158-159

³⁰ Owen 1994, pp. 90-94

est'. Entry of a historic landscape in the Register of Landscapes of Outstanding Historic Interest³¹ imposes no statutory control but local authorities are expected to take it into account for planning purposes.

Substantial parts of both the focal landscapes in this study lie within areas designated as National Parks – the Pembrokeshire Coast National Park and the Exmoor National Park. This affords a limited degree of additional overall protection on the presumption is that the designation was based on the area's landscape value. They have also greater access to specialist services orientated towards landscape protection. Areas which lie immediately outside the National Parks have no greater protection than any other part of England and Wales.

Valorisation model

The Cresswell Quay – Jeffreyston area of Pembrokeshire is a good example of split responsibility where the shipping quays on the river are within the National Park but a large part of the mining area in the hinterland lies outside. Any plans for valorisation will require the support of all the communities involved but must also be placed before two separate planning authorities. A situation not helped by the fact that the latter part of the area also lies outside that defined in the Register of Landscapes of Outstanding Historic Interest. Any integrated schemes for that area will inevitably rely disproportionately on the support of the National Park.

Valorisation is in most cases confined to enabling public access and information. Exmoor is helped in the former task by the inclusion of much of the land over 600 feet (200 metres) above sea level as open access land under the Countryside and Rights of Way (CROW) Act 2000. All parts of the study area are in general served by a good network of established rights of way. One exception is the early coal mining area to the west of Jeffreyston in Pembrokeshire where negotiation would be required to establish public access. Unfortunately that area lies outside the National Park and has not benefited from the programme of footpath provision and maintenance funded by park authorities. For England at least, policies are in place to promote access for all abilities³².

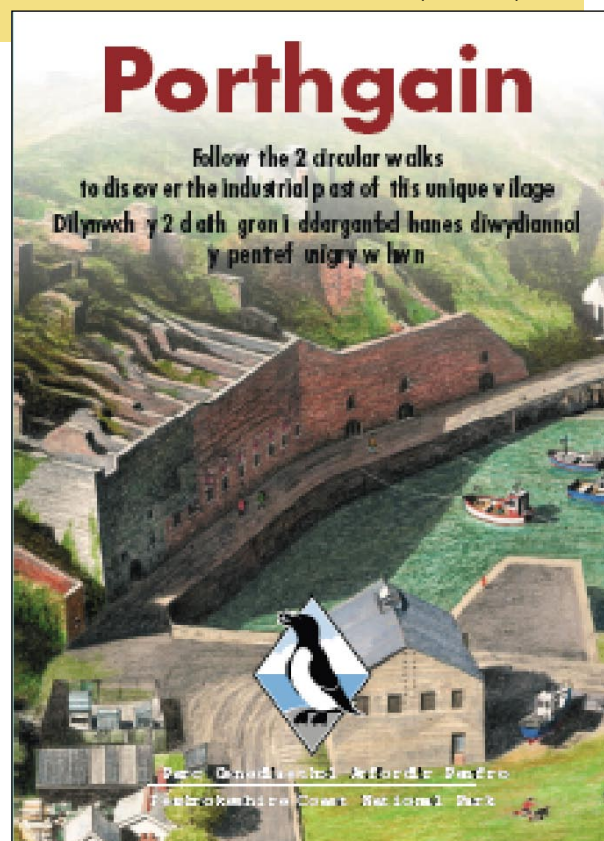
Scheduling has been used widely on mining and metal working sites within the Exmoor area, reflecting the greater amount of archaeological investigation compared with the coal working areas of Pembrokeshire. Protection in this way does not ensure public access, nor does it necessarily enable funding for consolidation and/or valorisation. It does, however, establish the value of a site and provides support for any funding bid. Many sites, like Bampfylde at North Molton which is used for pheasant rearing, will continue to be inaccessible to all but specialist mining history inter-

ests for the foreseeable future. Others, like the multitude of sites in and around the village of Combe Martin, just outside the Exmoor National Park, can be appreciated by an informed public using established rights of way. But the best opportunity for valorisation and full public access is on the open upland areas of central Exmoor which favours the landscape of early iron mining.

Local population and visitors

The concept of a pre-industrial mining landscape linked by its coastal transport network is something which was visualised by economic historians from the early 20th century onwards but is only now being presented as a physical entity which might be appreciated by the general public. Up until very recently interpretation and presentation of the mining landscape was dominated by industrial period activity and its transport links to the late 19th century railway network. One has only to look to the general interest in industrial archaeology in Britain in the post-war period and publications such as the Industrial Archaeology Review

Fig. 7: The Pembrokeshire Coast National Park leaflet for the industrial harbour at Porthgain, freely available from local outlets and as a PDF download from the Web, is an attractive alternative to the traditional interpretation panel.



³¹ Cadw 1998

³² (<http://www.english-heritage.org.uk/upload/pdf/EAHL.pdf> - accessed 27 September 2007)



Fig. 8: The Cresselly Arms, a public house on the river at Cresswell Quay immediately to the east of the surviving quay, which is in the middle ground with one of the ruined quays in the left foreground. This is a popular venue for tourists and the local population, and could feature prominently in the valorisation and presentation of the coal mining landscape.

for examples. Within the study areas it is the surviving features of that period which have been consolidated for public presentation – those associated with the West Somerset Mineral Railway in the Exmoor National Park and, perhaps exceptional in that it is linked to later seaborne transport, the features associated with the stone quarrying port of Porthgain on the north-west coast of Pembrokeshire.

The promotion of the industrial heritage at Porthgain can, nevertheless, provide us with an excellent example for the promotion of a mining landscape. By consolidating and making safe the structures around the port and providing publicly accessible information, primarily in the form of a good quality leaflet, the large numbers of visitors to the area are made aware of the value of the landscape. The quality of the leaflet³³ and the fact that it is freely available to visitors through local outlets, including restaurants and the village pub, makes it attractive and promotes the local economy. Visitors are inclined to take the leaflet with them when they leave the area providing a continuing source of information which might result in them returning to that or similar areas in the future.

Interpretation boards of the type commonly used on such sites are, on the other hand, immobile, sometimes visually

intrusive, and subject to vandalism. The advent of digital cameras has made it easier to capture the information presented on such boards but their immobility and the limit as to how much legible information can be provided remains a problem. If sufficient funding is available, an alternative to interpretation boards, and the type of leaflet described above, is a free booklet promoting the landscape value of the area. Using European Union Objective 1 funding, provided through the Ysbryd y Mwynwyr / Spirit of the Miners Project to promote mining heritage tourism in the Ceredigion Uplands of mid Wales, such a booklet has been recently published to highlight the history and protection of the landscape³⁴.

Presentation of more remote sites relies on informing potential visitors well in advance. Leaflets, and booklets of the type provided for the Ceredigion Uplands, can be used for this purpose but visitors are increasingly looking to the Internet and the quality information capable of being provided on the Web for advance information. The Exmoor National Park is already providing some information in that way for the pre-industrial mining landscape³⁵ and that provided by the Pembrokeshire National Park³⁶ for the industrial landscape might be extended to the earlier periods.

³³ http://www.pcnpa.org.uk/PCNP/live/sitefiles/related_items/porthgain_leaflet2.pdf

³⁴ Cambria Archaeology 2007

³⁵ <http://www.exmoor-nationalpark.gov.uk/>

³⁶ <http://www.pcnpa.org.uk/>

Present result and perspectives

There are, in Britain, some well established mining landscapes which are well researched and have enjoyed a high degree of protection, valorisation and public presentation – the lead mines of the Peak District in Derbyshire and the tin/copper mining landscape in Cornwall are but two examples. Most of those landscapes incorporate some elements of pre-industrial mining activity but do tend to promote the later periods.

The study area presented here, the coastal mining landscape of the Bristol Channel and its western approaches, provides a good example of a predominantly pre-industrial landscape linked by a transport network which provided one of the vehicles for changes leading to the Industrial Revolution. The availability of coal resources close to the coast in South Wales and of shallow rich metalliferous ore deposits on the English side provided for a combination which could advance with technological change. Increased use of coal from the medieval period onwards ensured that the coastal coalfield in Pembrokeshire was at the forefront of developments. Exploitation of iron and, later, silver/lead deposits on and around Exmoor relied initially on fuels derived from local woodland but, once technological change in smelting allowed the latter to utilise coal, it was readily available through coastal transport links. When, with further technological change, a wider use of coal in smelting was feasible those same coastal links allowed the ores to be shipped to the coalfield for processing.

Having identified the pre-industrial coastal mining landscape as a valuable component in our heritage it is necessary to effect maximum protection, to valorise, promote and present that landscape as a public asset. The organisational infrastructure of National Parks in Pembrokeshire and on Exmoor can be utilised as the principal channel for that work. With increased awareness of the fragility of some elements within the landscape, greater management might be required and co-operation promoted with areas immediately outside the National Parks.

Presentation of the landscape to the public might vary, with sites like Cresswell Quay, in Pembrokeshire, or Combe Martin, on the western coastal border of Exmoor, benefiting from good access and relatively large visitor number along with an existing supporting infrastructure, being treated differently to the remoter parts of upland Exmoor. Increasing the awareness of the public, and the local authorities responsible for protection through the planning process, is essential. The use of high quality portable leaflets and/or booklets provides a viable alternative to the more traditional interpretation board, and can ensure a link with the local economic infrastructure used as distribution points. By those methods, and also using the Web to provide advance and durable sources of information, awareness of the pre-industrial landscape asset will become wider with time and aid future protection.

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