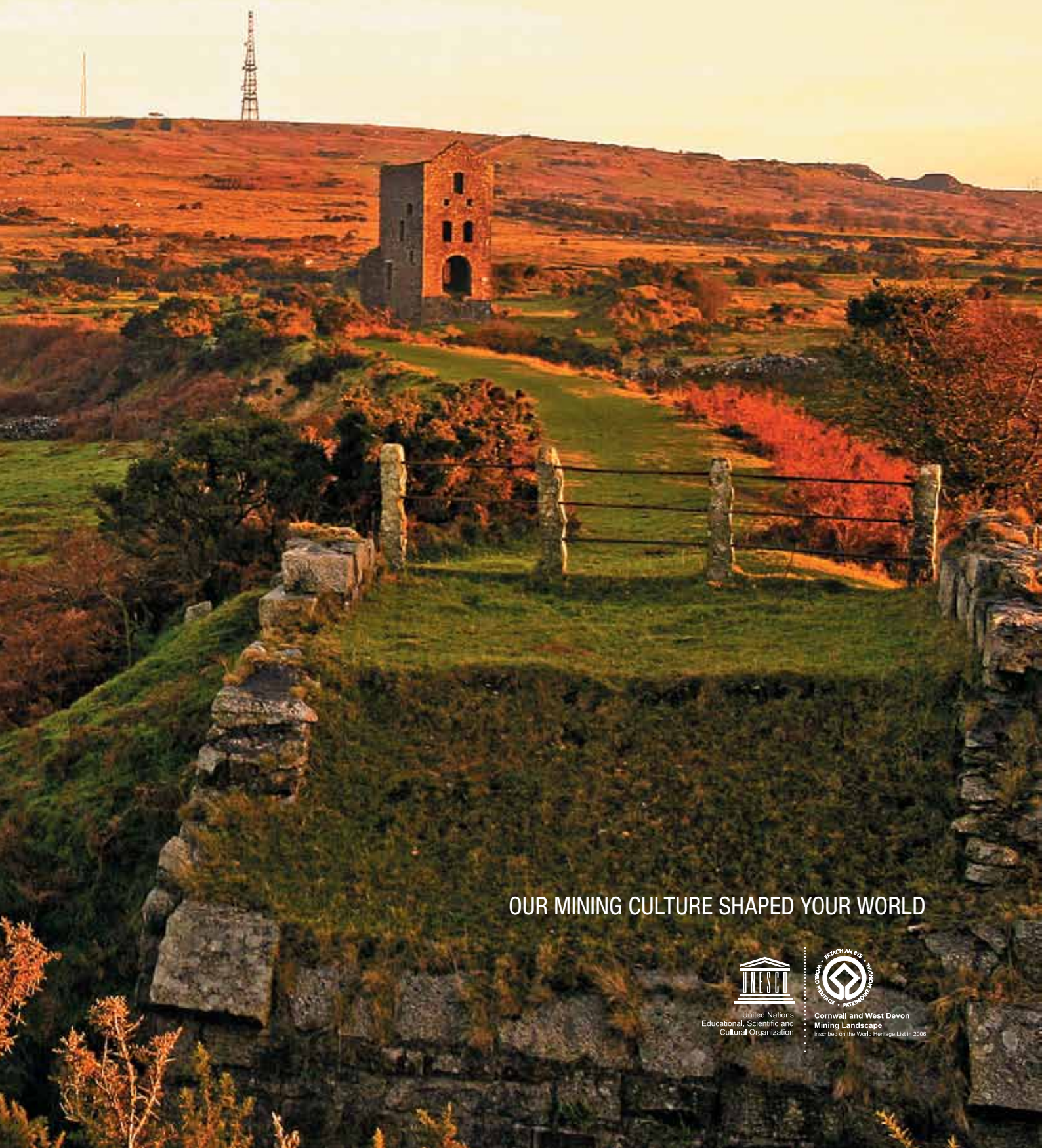


# Cornwall and West Devon Mining Landscape World Heritage Site

Tyller Ertach an Bys Balweyth Kernow ha Dewnens West

## Management Plan 2013 - 2018

Towl Dyghtya 2013 - 2018



OUR MINING CULTURE SHAPED YOUR WORLD



Cornwall and West Devon  
Mining Landscape  
Inscribed on the World Heritage List in 2006





The conserved pumping engine house at Towanroath Shaft, Wheal Coates, St Agnes; possibly the most photographed Cornish engine house in the world









The cliff-side Crowns engine houses at Botallack Mine, West Penwith



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The tunnel portal of the Tavistock Canal



# 1 Foreword

## Foreword from Ed Vaizey MP, Minister for Culture, Communications and Creative Industries

Since its inscription on the World Heritage List in 2006, the Cornwall and West Devon Mining Landscape World Heritage Property has brought together an impressive range of partners to increase understanding and celebrate the cultural importance of its global industrial heritage.

Stretching from St Just in the west to Tavistock in the east, the Site defines a cultural landscape of extraordinary significance. The mineral treasures deep underground were the motivation for pioneering technology that transformed not only the British mining industry, but which helped to create industrialised economies and landscapes across the globe; With 175 known sites around the world to which the Cornish exported their engineering skill and expert labour, it is a truly international inheritance.

This plan summarises how the obligations arising from the World Heritage Convention will be met in the coming 5 years, building on the Government's own national policies for protection of World Heritage Properties through the planning system, but also encompassing innovative work to present and market this Site to a world audience. As a result, this Plan sets out an exciting agenda to harness the Outstanding Universal Value of the Cornish mining landscape as a driver for social and economic regeneration, sustainable tourism and learning.



We are particularly grateful to all those bodies and individuals who have worked so hard to produce this Plan, in particular Cornwall, Devon County and West Devon Borough councils, and all other members of the World Heritage Site Partnership. They have ensured that it has been developed in consultation with the organisations responsible for the day-to-day care of the site and with local communities.

I am confident that this Management Plan will provide an invaluable tool for all those involved in the continuing protection, conservation and presentation of this very special cultural landscape over the next 5 years.

**Ed Vaizey**



# Preface

Preface from Julian German, Chair of the World Heritage Site Partnership Board

The granting of World Heritage status to the Cornwall and West Devon Mining Landscape in 2006 recognised the international importance of our mining culture, and the impact that the transfer of that culture had on the development of the modern, global, mining economy, and through it the world we live in today.

This recognition brings with it the responsibility to ensure that the Site is cared for in a way that is consistent with the World Heritage Convention\*. This Management Plan, and the implementation of the policies and strategic actions within it, is the means to deliver against these commitments.

This is the first revision of the Management Plan originally submitted with the bid for World Heritage status. It follows evaluation of the findings from implementing the first Plan, and discussion with the key agencies, communities and other groups with an interest in the future of our mining landscape.

The principles for the long term protection, interpretation and presentation of the Site and its values were established in that document,

and have proved to be appropriate: consultation confirmed that all of the original policies remain valid. The formal endorsement of the Plan by all the Cornish Mining WHS Partnership organisations demonstrates the united commitment to continuing to pursue these.

What this revised document does, then, is take the strategic actions on to a new phase. Five years on from inscription, there have been significant achievements. Millions of pounds of investment from the former South West Regional Development Agency, the Department for Food, Environment and Rural Affairs and Lottery Funds, amongst other sources, has enabled a transformation in the conservation, interpretation and promotion of the Site. Eleven WHS interpretation centres have been established, both strengthening existing mining attractions and creating new multi purpose community facilities at Heartlands in Pool. An impressive web site has been created, attracting 70,000 visitors per year from countries across the world. Hundreds of tourism businesses have engaged with the WHS, carrying our web content to their customers. Audiences of over twenty five thousand have enjoyed performances from our innovative cultural programme.



These are just a few of the many benefits - social, cultural and economic - that resulted from implementation of the first Plan. During the next five years we will build on the conservation achievements and seek even greater public awareness and appreciation. These aspirations will only be achieved by continuing to develop numerous working relationships and partnerships. The commitments and proposals contained within the Plan reflect the views and priorities of many organisations and of the wider community, which has also been involved in its development. The scale of the challenge involved in delivering such a wide ranging programme of activity via hundreds of stakeholder groups and a constituency of over 85,000 residents should not be underestimated. Investing sufficient resources into managing this complexity is the only way to ensure that our World Heritage Site will be well looked after for many years to come.

I would particularly like to thank the Cornish Mining World Heritage Site Partnership Board, the Technical Panel and Consultative Forum for their valuable input into the development of the Plan. I should also like to thank the Cornish Mining World Heritage Site Team for their time, effort and enthusiasm in directing the creation and implementation of many of the policies and actions in both this and the previous Plan.

I am proud to commend this document to you.

*\*The Convention for the Protection of World Cultural and Natural Heritage, UNESCO, 1972*



The aspirations set out in this revised Plan will only be achieved by continuing to develop numerous working relationships and partnerships.



# Raglavar

Raglavar dhyworth Kaderyer Kesva Keskowethyasek Tyller Ertach an Bys

Grontya savla Ertach an Bys dhe Dirwel Balweyth Kernow ha Dewnens West yn 2006 a aswonnis an vri geswlasek a'gan gonisogeth valweyth, ha delanwes a'n jevo treusporth a'n gonisogeth na yn displegyans an erbysieth balweyth arnowyth hag ollvysel, ha dredho an bys mayth on ni trigys hedhyw.

An aswonnvos ma a dhri ganso an dever a surhe bos an Tyller gwithys yn fordh usi yn akord gans Ambos Ertach an Bys\*. An Towl Dyghtya ma, ha gweythresans a'n policis ha gwriansow stratejek usi ynno, yw an mayn a dhelivra herwydh an ambosow ma.

Hemm yw an kynsa daswel a'n Towl Dyghtya, a brofyas y'n dalleth gans an kynnik rag savla Ertach an Bys. Ev a hol arbrisyans a'n gorfennow wosa gweythresans a'n kynsa Towl, ha dadhel gans an maynoriethow a vri, kemeniethow ha bagasow erel a's teves les y'n termyn a dheu a'gan tirwel balweyth.

An pennrewlys rag an difresyans, styryans ha semlant hirdermyn a'n Tyller ha'y savonow a veu fastys y'n skriften na, hag i re omdhiskwedhas dhe vos gwiw: kussulyans a afydhyas bos oll an

policis gwreydhek hwath ewn. Keynskrifedh formel a'n Towl gans kowethyansow Keskowethyans TEB Balweyth Kernow oll a dhiskwedh an omrians unys a besya pursewya an re ma.

An pyth a wra an skriften dhaswelys ma, ytho, yw dhe avonsya an gwriansow stratejek dhe japtra nowyth. Pymyp bledhen wosa sinans, re bia kowlwriansow a vri. Milvilyow a beunsow dhyworth an kyns Maynorieth Dhisplegyans Negysek Ranndirysel Soth West, an Asrann rag Boos, Kerhynnedh ha Maters Powek hag Arhasow Gwari Dall, yn mysk fentynyow erel, re alosegis treusfurvyans yn gwithans, styryans hag avonsyans an Tyller. Unnek kresen styryans TEB re beu fondys, ow krevhe tennvosow balweyth a-lemmyn hag ow kwruthyl komodytys kemeniethek liesporpos nowyth dhe Heartlands yn Poll. Gwiasva marthys da re beu gwrys, hag a denn 70,000 godriger pub bledhen dhyworth powyow dres oll an bys. Kansow a negysyow tornyasek re beu kevrennek gans an TEB, ow ton agan dalgh gwias dh'aga kliensow. Moy es pymyp mil warn ugens a woslowysi re omlowenhas orth gwrythyansow dhyworth agan towlen wonisogethel nowyth.



Nyns yw an re ma saw nebes a'n lesow pals – socyal, gonisogethel hag erbysiethek – re sewyas gweythresans a'n kynsa Towl. Dres an pypm bledhen a dheu, y hwren ni drehevel war an kowlwriansow yn gwithans ha hwilas warneth ha gwerthveurheans poblek efanna hwath. Ny vydh kowlwrys an amkanow ma marnas dre besya displegya lies keskolm oberi ha keskowethyans. An omriansow ha profyansow synsys y'n Towl a dhastewyn an gwelvaow ha'n ragwiryow a lies kowethyans hag a'n gemeneth ledanna, re beu omvyskys ynwedh yn y dhisplegyans. Ny dhegodh isvreusi myns a'n chalenj omvyskys yn delivra towlen a wrians maga ledan hy efander dre gansow a vagasow kevrennek ha pastel vro a 85,000 triger. Kevarehewi asnodhow lowr rag dyghtya an gompolegeth ma yw an unn fordh a surhe bos agan Tyller Ertach an Bys gwithys yn ta dres lies bledhen a dheu.

Gonn meur ras yn arbennik dhe'n Bagas Lewya Tyller Ertach an Bys Balweyth Kernow, an Pannel Teknogel ha'n Dhalva Gussulya a'ga ynworran yn displegya an Towl. My a garsa grassa ynwedh Para Tyller Ertach an Bys Balweyth Kernow a'ga thermyn, nerth ha tan y'n golon yn kevarwodha an gwrians ha'n gweythresans a lies a'n policis ha gwriansow y'n Towl ma hag y'n Towl kyns.

Gothus ov dhe gomendya dhywgh an skriften ma.

*\*An Ambos rag Difresyans Ertach Gonisogethel ha Naturel an Bys, UNESCO, 1972*



Ny wra an uhelhwansow displegys y'n Towl daswelys ma seweni saw dre besya displegya kesoberyansow negysel ha keskowethyansow pals.







**Above:** Exploring the mining landscape: walkers on the coast path at St Agnes

## 2 Introduction





Left: The Crowns engine houses, Botallack

This Management Plan is the first revision of the document accepted by UNESCO in 2006 on inscription of the Cornwall and West Devon Mining Landscape ('Cornish Mining') as a World Heritage Site (WHS).

Both UNESCO and the UK Government require World Heritage Sites to produce and periodically update a Management Plan, to identify the Site's principal management needs and strategies to address them. This revision was informed by an ongoing process of monitoring, review and analysis, taking into account significant changes in UNESCO guidance, UK planning legislation and the restructuring of key partner organisations, but most importantly, learning from experience of managing the Site over the first five years. This has enabled the setting of shared policy aims and strategic management objectives, tested via consultation with the communities living within and around the Site.

The purpose of this Management Plan is to:

- explain the reasons for designation
- describe the extent of the Site and its key landscape features
- define how it is protected
- outline the key management issues, and resulting policies and strategic actions for meeting the obligations of the World Heritage Convention

At 19,710 hectares over ten Areas, crossing from Cornwall into Devon, the Cornwall and West Devon Mining Landscape World Heritage Site - or 'Cornish Mining World Heritage Site' as the popular title - is the largest WHS in the UK, with multiple owners and management interests. The Plan is designed as a framework within which the various interests should work to ensure that the internationally significant designated mining heritage assets are **protected, conserved, presented and transmitted to future**

**generations**, in line with the obligations set out in the UNESCO Convention for the Protection of World Cultural and Natural Heritage (1972).

This will require the co-ordinated efforts from many bodies, groups and individuals. The process of developing this Plan has been led by the Cornish Mining World Heritage Site Partnership Board, but it also includes objectives to be pursued by individual constituent local authorities and partner organisations. Member bodies on the Partnership Board therefore have a dual role – acting collaboratively as a Board to pursue shared strategic objectives, and individually to fulfil their responsibilities to pursue the policies in the Plan, either as planning authorities, or owners and managers of the mining landscape. It has been produced in consultation with key stakeholders to ensure it can be effectively supported and implemented by the wide range of organisations and communities that have a responsibility for, and interest in, the Site.

The Plan encompasses both the substantial physical assets and landscapes that make up the Site, together with the cultural traditions that created them, as elements of its **Outstanding Universal Value (OUV)**. Significant improvements in the conservation, interpretation, access to and public information about the Site's OUV were delivered during the last Plan, with

- 11 new or enhanced visitor interpretation facilities
- 60km of new multi-use trails
- cultural events programme delivered over 100 performances to 25,000+ audiences
- £60m invested in mining heritage conservation

- £13.4m expended in townscape enhancement and related heritage-led regeneration
- Over 70,000 visitors to the refreshed Cornish Mining website

The first plan focussed on establishing the WHS as a coherent entity managed to a consistent standard –a significant task when dealing with multiple stakeholders crossing a county boundary. A survey of 991 principal assets demonstrating OUV, undertaken in 2010, identified that 82 per cent of these were in favourable condition. Developing a strategy to address the remedial conservation needs of the remaining 18 per cent is a goal of this Plan, but equally important will be securing sufficient ongoing maintenance resources to sustain the condition of all assets.

The potential economic gains offered by recently developed integrated WHS visitor infrastructure, products and services now need to be consolidated through incorporation into the wider tourism industry and the core Cornwall and Devon destination offer. The planning policies designed to deliver protection of the WHS assets have been assessed as fit for purpose, but not consistently applied across all planning authorities. The keywords for this Plan are, therefore, consolidation and communication – building on these substantial achievements and ensuring that the opportunities created are understood and fully utilised.

The Partnership Board has considered the Site's management priorities for this Plan in the context of the responsibilities set out in the Convention, and reaffirmed the core Vision, Mission and Aims agreed when the Site was first inscribed. These are set out in Section 4. In Section 5, progress made and lessons learned during the first Plan period are analysed, alongside the key management challenges and opportunities anticipated for the next six year period. The resulting policy frameworks to guide management of the Site, with a prioritised list of agreed strategic actions for the next six years and lead partners who will take responsibility for each action, are identified in Section 6. Section 7 describes the monitoring and evaluation system whereby the progress in delivering this Plan will be measured.

Additional to this document are a range of appendices including a more detailed description of the physical attributes of the Site (Appendix 8.1), description of the various ownerships and management interests (Appendices 8.2 – 8.5), *The Cornwall and West Devon Mining Landscape World Heritage Site Monitoring Report (2012)* (Appendix 8.6), and publications and research commissioned or co-funded by the World Heritage Site, 2005 – 2012 (Appendix 8.7).

All Appendices are available to view online at: [www.cornishmining.org.uk/about\\_us](http://www.cornishmining.org.uk/about_us)

**At 19,710 hectares over ten Areas, crossing from Cornwall into Devon, the Cornwall and West Devon Mining Landscape World Heritage Site... is the largest in the UK, with multiple owners and management interests.**









**Above:** Rough day at the Crowns, Botallack

## 3 Brief description of the Site

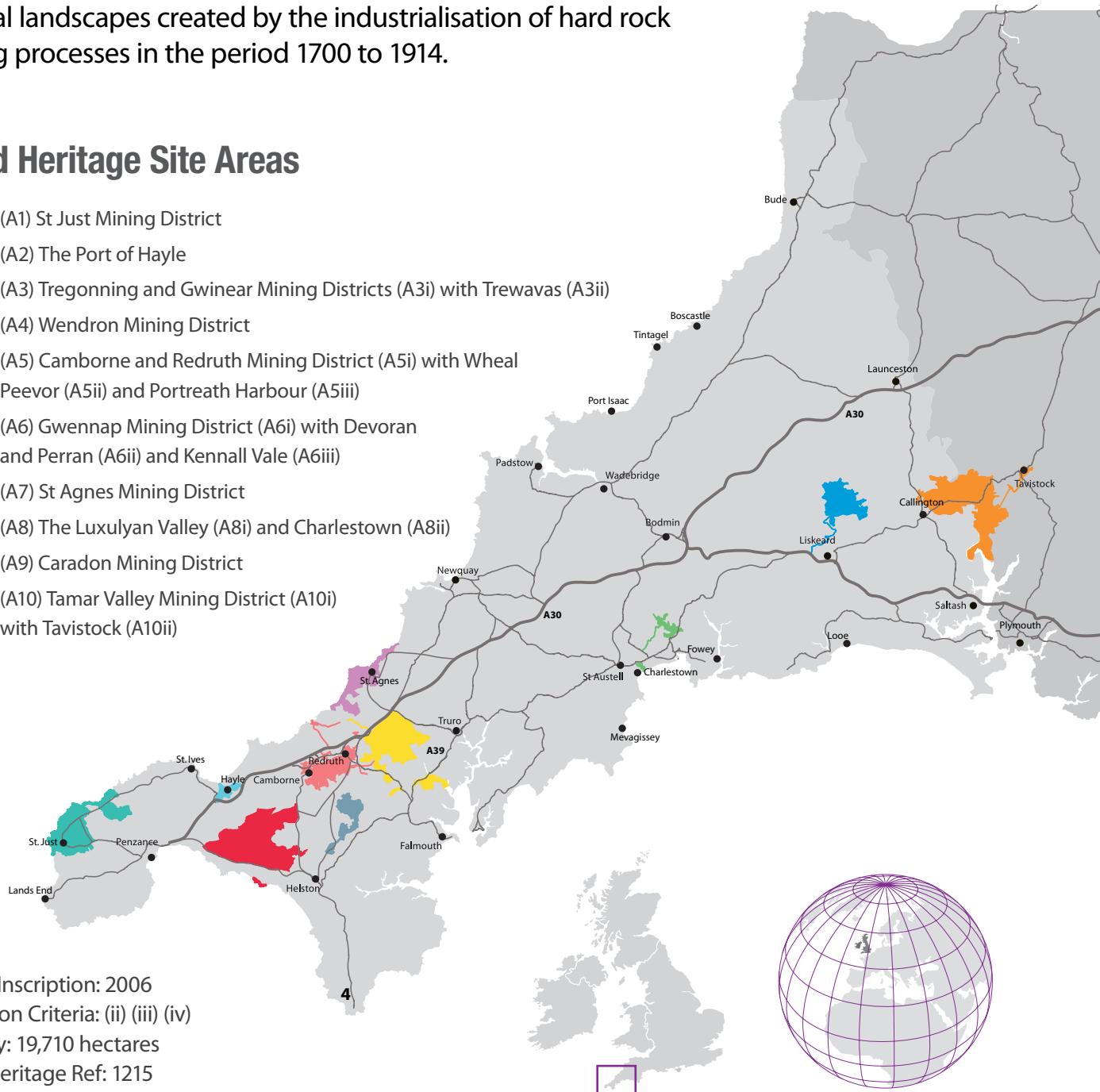


## 3.1 Summary

The Cornish Mining World Heritage Site is a series of 10 Areas comprising the distinctive patterns of buildings, monuments and sites which together form the coherent series of distinctive cultural landscapes created by the industrialisation of hard rock mining processes in the period 1700 to 1914.

### World Heritage Site Areas

- (A1) St Just Mining District
- (A2) The Port of Hayle
- (A3) Tregonning and Gwinear Mining Districts (A3i) with Trewavas (A3ii)
- (A4) Wendron Mining District
- (A5) Camborne and Redruth Mining District (A5i) with Wheal Peevor (A5ii) and Portreath Harbour (A5iii)
- (A6) Gwennap Mining District (A6i) with Devoran and Perran (A6ii) and Kennall Vale (A6iii)
- (A7) St Agnes Mining District
- (A8) The Luxulyan Valley (A8i) and Charlestown (A8ii)
- (A9) Caradon Mining District
- (A10) Tamar Valley Mining District (A10i) with Tavistock (A10ii)



Date of Inscription: 2006

Inscription Criteria: (ii) (iii) (iv)

Property: 19,710 hectares

World Heritage Ref: 1215

Location: N50 8 10 W5 23 1

<http://whc.unesco.org/en/list/1215>

## 3.2 Statement of OUV and significance

As approved by the World Heritage Committee, July 2010

### Annex A

#### a) Cornwall and West Devon Mining Landscape Statement of Outstanding Universal Value (SOUV)

Date of Inscription: 2006

Criteria: ii, iii, iv

Date of SOUV: 2010

The landscapes of Cornwall and west Devon were radically reshaped during the eighteenth and nineteenth centuries by deep mining for predominantly copper and tin. The remains of mines, engine houses, smallholdings, ports, harbours, canals, railways, tramroads, and

industries allied to mining, along with new towns and villages reflect an extended period of industrial expansion and prolific innovation. Together these are testimony, in an inter-linked and highly legible way, to the sophistication and success of early, large-scale, industrialised non-ferrous hard-rock mining. The technology and infrastructure developed at Cornish and west Devon mines enabled these to dominate copper, tin and later arsenic production worldwide, and to greatly influence nineteenth century mining practice internationally.

The extensive Site comprises the most authentic and historically important components of the Cornwall and west Devon mining landscape dating principally from 1700 to 1914, the period during which the most significant industrial and social impacts occurred. The ten areas of the Site together form a unified, coherent cultural landscape and share a common identity as part of the overall exploitation of metalliferous minerals



**Above:** Minions village





**Above:** Craddock Moor and the Phoenix mines

here from the eighteenth to twentieth centuries. Copper and tin particularly were required in increasing quantities through the growing needs of British industry and commerce. Copper was used to protect the hulls of ocean-going timber ships, for domestic ware, and as a major constituent of important alloys such as brass, and with tin, bronze. The usage of tin was increasing greatly through the requirements of the tin plate industry, for use in the canning of foods and in communications.

The substantial remains within the Site are a prominent reminder of the contribution Cornwall and west Devon made to the Industrial Revolution in Britain and to the fundamental influence the area asserted on the development of mining globally. Innovative Cornish technology embodied in high-pressure steam engines and other mining equipment was exported around the world, concurrent with the movement of mineworkers migrating to live and work in mining communities based in many instances on Cornish traditions. The transfer of mining technology and related

culture led to a replication of readily discernable landscapes overseas, and numerous migrant-descended communities prosper around the globe as confirmation of the scale of this influence.

## **b) Criteria**

As agreed by the World Heritage Committee (2006)

*Criterion (ii): Exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design.*

The development of industrialised mining in Cornwall and west Devon between 1700 and 1914, and particularly the innovative use of the high-pressure steam beam engine, led to the evolution of an industrialised society manifest in the transformation of the landscape through the creation of smallholdings, railways, canals, docks, and ports, and the creation or remodelling of towns and villages. Together these had a profound

impact on the growth of industrialisation in the United Kingdom, and consequently on industrialised mining around the world.

*Criterion (iii): Bear a unique or at least an exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.*

The extent and scope of the remains of copper and tin mining, and the associated transformation of the urban and rural landscapes presents a vivid and legible testimony to the success of Cornish and west Devon industrialised mining when the area dominated the world's output of copper, tin and arsenic.

*Criterion (iv): Be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.*

The mining landscape of Cornwall and west Devon, and particularly its characteristic engine houses and beam engines as a technological ensemble in a landscape, reflect the substantial contribution the area made to the Industrial Revolution and formative changes in mining practices around the world.

### **c) Integrity (2010)**

The areas enclosed within the property satisfactorily reflect the way prosperity derived from mining transformed the landscape both in urban and rural areas, and encapsulates the extent of those changes.

Some of the mining landscapes and towns within the property are within development zones and may be vulnerable to the possibility of incompatible development.

### **d) Authenticity (2010)**

The property as a whole has high authenticity in terms of form, design and materials and, in general, the location and setting of the surviving features. The mines, engine houses, associated buildings and other features have either been consolidated or await work. In the villages and towns there has been some loss of architectural detail, particularly in the terraced housing, but it is considered that this is reversible.

The ability of features within the property to continue to express its Outstanding Universal Value may be reduced, however, if developments were to be permitted without sufficient regard to their historic character as constituent parts of the Site. The spatial arrangements of areas such as Hayle Harbour and the settings of Redruth and Camborne are of particular concern and these may be vulnerable unless planning policies and guidance are rigorously and consistently applied.

### **e) Management and Protection Requirements necessary to sustain Outstanding Universal Value (2010)**

The UK Government protects World Heritage Sites within its territory in two ways. Firstly individual buildings, monuments, gardens and landscapes are designated under the Planning (Listed Buildings and Conservation Areas) Act 1990 and the 1979 Ancient Monuments and Archaeological Areas Act, and secondly through the UK Spatial Planning system under the provisions of the Town and Country Planning Act 1990.

National guidance on protecting the historic environment, contained in section 12 of the National Planning Policy Framework circular on the protection of World Heritage Sites (circular 07/09), and the accompanying explanatory guidance 'Planning for the historic environment', has been published by government. Policies to protect, promote, conserve, and enhance World





**Above:** Wheal Peevor and landscape near Redruth

Heritage Sites, their settings and buffer zones can be found in regional plans and local authority plans and frameworks.

The World Heritage Committee accepted that the Site is adequately protected through the general provisions of the UK planning system.

A detailed and comprehensive Management Plan has been created which stresses the need for an integrated and holistic management of this large, multi-area and diverse Site. The main strength of the plan is the effective network of local authority and other stakeholders that underpins it. The co-ordination of management of the property lies with the Site office for the property. Service-level agreements with other departments within Cornwall Council's Historic Environment department ensure the effective delivery of planning advice, and Sites and Monuments record keeping.

The Strategic Actions for 2005-2010 in the Management Plan have been in part completed, and the development of risk assessments and a monitoring system are underway utilising data capture systems being introduced by Cornwall Council. The production of detailed definitions of OUV for specific landscapes within the Site will also be pursued to aid the delivery of planning advice\*.

\*NB this action has now been addressed and more detailed descriptions of features exhibiting OUV for each of the ten Areas now appears as appendix 8.1, available on the Cornish Mining website.

([www.cornishmining.org.uk/about\\_us](http://www.cornishmining.org.uk/about_us))





**Above:** the historic nineteenth century copper port at Morwellham, near Gulworthy in west Devon, contains multiple 'attributes' expressing the World Heritage Site's 'OUV', including a mine site, mine transportation, and workers' housing'

## Cornish Mining WHS Attributes

The UNESCO World Heritage Convention Operational Guidelines refer to the '**attributes**' of a Site as expressing the OUV, and the means of meeting the conditions of **authenticity** and **integrity**.

*'When the conditions of authenticity are considered in preparing a nomination for a property, the State Party should first identify all of the applicable significant attributes of authenticity. The statement of authenticity should*

*assess the degree to which authenticity is present in, or expressed by, each of these significant attributes.'* (World Heritage Convention Operational Guidance para 85, July 2012)

The list below identifies the criterion for which the Cornish Mining Landscape was inscribed on the World Heritage List and the physical attributes representing these. The protection of these attributes should be a key consideration in the management of the Site, particularly in spatial planning and development management decisions.

A fuller description of the attributes of OUV for each Area can be found in Appendix 8.1 available online at: [www.cornishmining.org.uk/about\\_us](http://www.cornishmining.org.uk/about_us)



Criterion for inscription	Attributes
<p><i>Criterion (ii): Exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design.</i></p> <p>The development of industrialised mining in Cornwall and west Devon between 1700 and 1914, and particularly the innovative use of the high-pressure steam beam engine, led to the evolution of an industrialised society manifest in the transformation of the landscape through the creation of smallholdings, railways, canals, docks, and ports, and the creation or remodelling of towns and villages. Together these had a profound impact on the growth of industrialisation in the United Kingdom, and consequently on industrialised mining around the world.</p>	<p><b>Mine sites, including ore dressing sites</b> Engine houses, in situ beam engines, other mine buildings, chimneys, dressing floors, mine dumps and infrastructure, tin salvage works, shafts, adits and means of underground access and drainage</p> <p><b>Mine transport infrastructure</b> Ports, harbours, wharfs and quays, mineral tramways and industrial railways, mine roadways, tracks and paths, mining-related canals</p> <p><b>Ancillary industries</b> Foundries and engineering works, smelting works, fuse and explosive works, arsenic and chemical works</p> <p><b>Mining settlements and social infrastructure</b> Mining towns, villages and hamlets, public buildings, Methodist chapels, preaching pits and new C of E churches, villas and embellished town houses</p> <p><b>Mineworkers' smallholdings</b> Mineworkers' farms and their buildings</p> <p><b>Great houses, estates and gardens</b> Great houses and other substantial residences, lodge houses and other related buildings, estates, parkland and gardens</p> <p>These inter-linked attributes are testimony to the sophistication and success of early, large-scale, industrialised non-ferrous hard-rock mining in Cornwall and west Devon</p> <p>The survival of similar landscape features in numerous locations around the world – including South Africa, Australia, Mexico and Spain – are the testament to the international transfer of pioneering mining technology and associated cultural traditions</p> <p><b>Mineralogical and other related sites of particular scientific importance</b> Internationally and nationally important type sites for minerals, important mining-related ecological sites</p> <p>These “<i>exhibit an important interchange of human values</i>” in their contribution to the development of the sciences of geology and mineralogy</p>

Criterion for inscription	Attributes
<p><i>Criterion (iii): Bear a unique or at least an exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.</i></p> <p>The extent and scope of the remains of copper and tin mining, and the associated transformation of the urban and rural landscapes presents a vivid and legible testimony to the success of Cornish and west Devon industrialised mining when the area dominated the world's output of copper, tin and arsenic.</p>	<p><b>Mine sites, including ore dressing sites</b> Engine houses, in situ beam engines, other mine buildings, chimneys, dressing floors, mine dumps and infrastructure, tin salvage works, shafts, adits and means of underground access and drainage</p> <p><b>Mine transport infrastructure</b> Ports, harbours, wharfs and quays, mineral tramways and industrial railways, mine roadways, tracks and paths, mining-related canals</p> <p><b>Ancillary industries</b> Foundries and engineering works, smelting works, fuse and explosive works, arsenic and chemical works</p> <p><b>Mining settlements and social infrastructure</b> Mining towns, villages and hamlets, public buildings, Methodist chapels, preaching pits and new C of E churches, villas and embellished town houses</p> <p><b>Mineworkers' smallholdings</b> Mineworkers' farms and their buildings</p> <p><b>Great houses, estates and gardens</b> Great houses and other substantial residences, lodge houses and other related buildings, estates, parkland and gardens</p>
<p><i>Criterion (iv): Be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.</i></p> <p>The mining landscape of Cornwall and west Devon, and particularly its characteristic engine houses and beam engines as a technological ensemble in a landscape, reflect the substantial contribution the area made to the Industrial Revolution and formative changes in mining practices around the world.</p>	<p><b>Mine sites, including ore dressing sites</b> Engine houses, in situ beam engines, other mine buildings, chimneys, dressing floors, mine dumps and infrastructure, tin salvage works, shafts, adits and means of underground access and drainage</p> <p><b>Mine transport</b> Ports, harbours, wharfs and quays, mine tramways and industrial railways, mine roadways, tracks and paths, mining-related canals</p> <p><b>Ancillary industries</b> Foundries and engineering works, smelting works, fuse and explosive works, arsenic and chemical works</p>





Levant Mine, West Penwith





### 3.3 Area descriptions, with maps of key OUV features



Above: Wheal Edward

## Area 1: St Just Mining District

### Outline

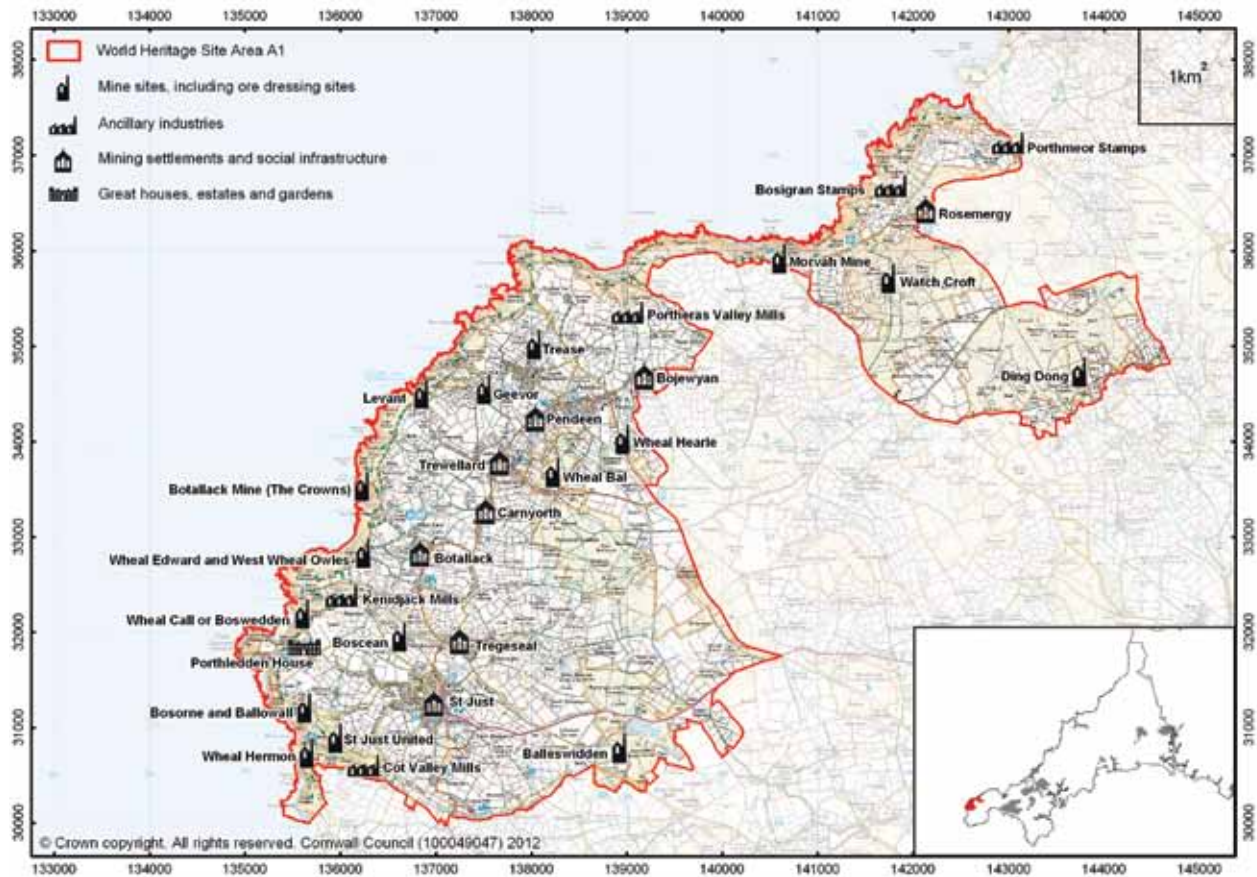
This **coastal mining district** includes eighteenth and nineteenth century **submarine tin and copper mines**, the **town of St Just** and **dispersed mining villages with associated mineworkers' smallholdings**. The boundary is drawn to include the most significant mines on the coastal plateau (together with their tin and arsenic processing sites) and extends inland beyond areas of smallholdings to granite upland in the east. The western boundary is coastline.

### Key Characteristics

The town of St. Just, in the south of the Area, gives the district its name. It is the only large settlement. It is a small, substantially-planned, industrial town built to serve the local mines such as St Just United, Balleswidden, Boscean, Wheal Owles, Botallack and Levant. To its north, there are a number of dispersed mining hamlets



## St Just Mining District - Principal Sites



(late eighteenth and early nineteenth century) and clusters of mineworkers' smallholdings, often created on former moorland.

The district is unique in that the majority of its lodes strike at right angles to the coastline. This lode trend is also at right angles to the direction of most tin and copper lodes in the rest of the Site and is a phenomenon related to the area's geological history. Cliffs recede in deep, steep-sided, narrow incised clefts, locally called 'zawns'. These indicate perpendicular weaknesses in the lode (and fault) structures which are perhaps more highly concentrated in their coastal exposure here than anywhere else in the world. It is likely that this was one of the first areas within the Cornubian Orefield where underground mining for tin was tried. Extensive evidence survives of open-works



Above: St Just



**Above:** the mine headframe at Victory Shaft, Geevor Mine, West Penwith

(included within the term 'gunnises'). These are amongst the earliest and rarest surviving group of surface hard-rock mining features in the region.

There are no rivers, and few streams, but water was captured, transported along leats and used to power pumps and dressing equipment on numerous mines, both large and small. Perhaps the most distinctive feature of the Area however, one intimately tied to its structural geology and the orientation of its lodes, was the development of a group of world-famous pioneer submarine mines. In the case of Levant Mine, operations extended horizontally up to 1.6km west from the shore, with the final depth of the workings being 350 fathoms (640m) below the sea-bed.

The mineral processing sites in the Area illustrate the full range of technological development in this branch of mining. Numerous small scale tin-dressing floors demonstrate the evolution of technology introduced during the post-Medieval period. At the Botallack and Levant mines, large-scale tin-dressing floors show how steam power was used in ore-processing and the scale on which it was applied. There are extensive remains of a tin mill preserved at Geevor Mine which show how twentieth-century technology was incorporated into the industry.

The surviving arsenic works within the Area indicate the technological developments that occurred within this important branch of the mining industry. The Area is very important in terms of mineralogical significance. Twenty-five per cent of the first British species occurrences - both historically, and in recent decades - came from Cornwall. Surviving mine dumps and in situ exposures are internationally important for future research.

## Geevor Tin Mine

Geevor is one of the largest preserved mine sites in the UK and is also one of a number of mines which define the coastal fringe of the St Just Mining District. Geevor is also a designated 'Key Centre' for World Heritage Site interpretation, and its mining museum 'Hard Rock' enables visitors to explore copper and tin, and their extraction and uses.

## Levant Mine

The mine retains the oldest Cornish beam engine still operating under steam at its original mine location. This was faithfully restored in the early 1990s as part of a National Trust/Trevithick Society project by a group of dedicated volunteers known as the 'Greasy Gang'. Set within a wider mining landscape which includes the remains of engine houses and an extensive arsenic works, the Levant winding engine provides the rare opportunity to experience the sights, sounds and smells of an historic Cornish engine working under steam.

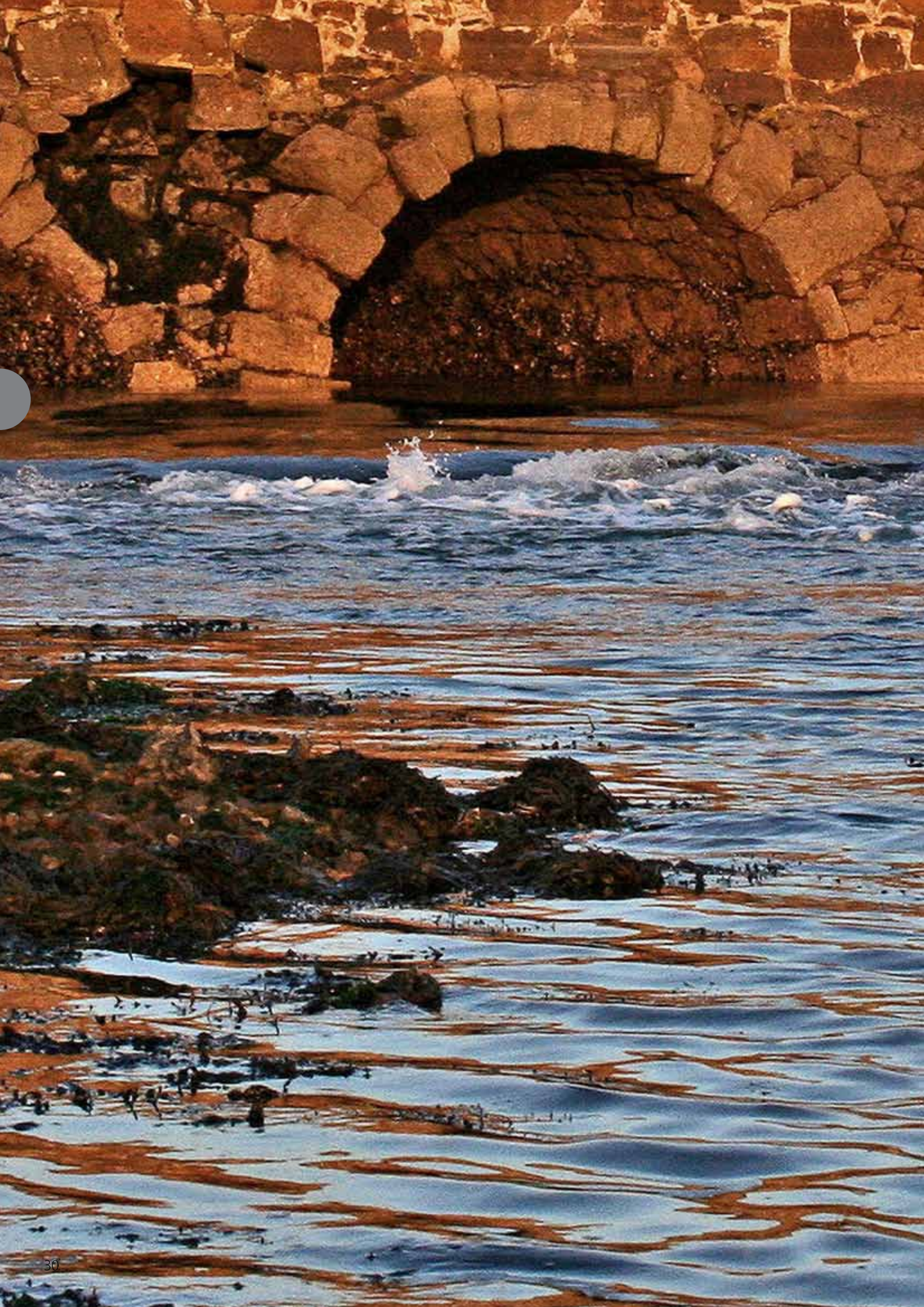
## Botallack Mine

The dramatically located engine houses within the Crowns section of Botallack illustrate the extents to which the mine's management would go to exploit valuable submarine mineral lodes. The lower pumping engine house and the Pearce's Whim (winding) engine house survive within a wider mining landscape of great importance, which includes the mine count house, dressing floors, an extensive arsenic works, and a later twentieth century mine shaft headframe.

## St Just

St Just experienced considerable expansion during the nineteenth century as a result of the economic stimulus provided by local mining, with some of this being on a planned basis. Dominated by its church and particularly the large Wesleyan Methodist Chapel, St Just illustrates well the high degree of influence post-Medieval mining had on many towns and villages across Cornwall and west Devon.







**Left:** Carnsew Pool, Hayle, Cornwall

## Area 2: The Port of Hayle

### Outline

This **mining port** and **industrial ‘new town’** was also the region’s greatest **steam engine manufacturing centre**. The boundary has been drawn to capture the entire estuarine port setting (which contains an important maritime industrial infrastructure) and the historic core of Hayle town (including the remains of an internationally significant iron foundry) as guided by the existing Conservation Area designation.

### Key Characteristics

The Port of Hayle was a product of the Industrial Revolution during the late eighteenth and the nineteenth centuries. It played a distinguished role in Cornish economic and social history. The Area includes the principal surviving historic fabric of the largest fully integrated mining port and steam engine manufacturing centre anywhere in Britain.

There are no mines inside the Area boundary but it is within 15km of the richest copper and tin mining hinterland of the Old World (A5, A6, & A3). Both the land and sea transport infrastructure needed in order to develop such a major industrial



**Above:** Copperhouse, Hayle



**Above:** Hayle and Harvey's Foundry

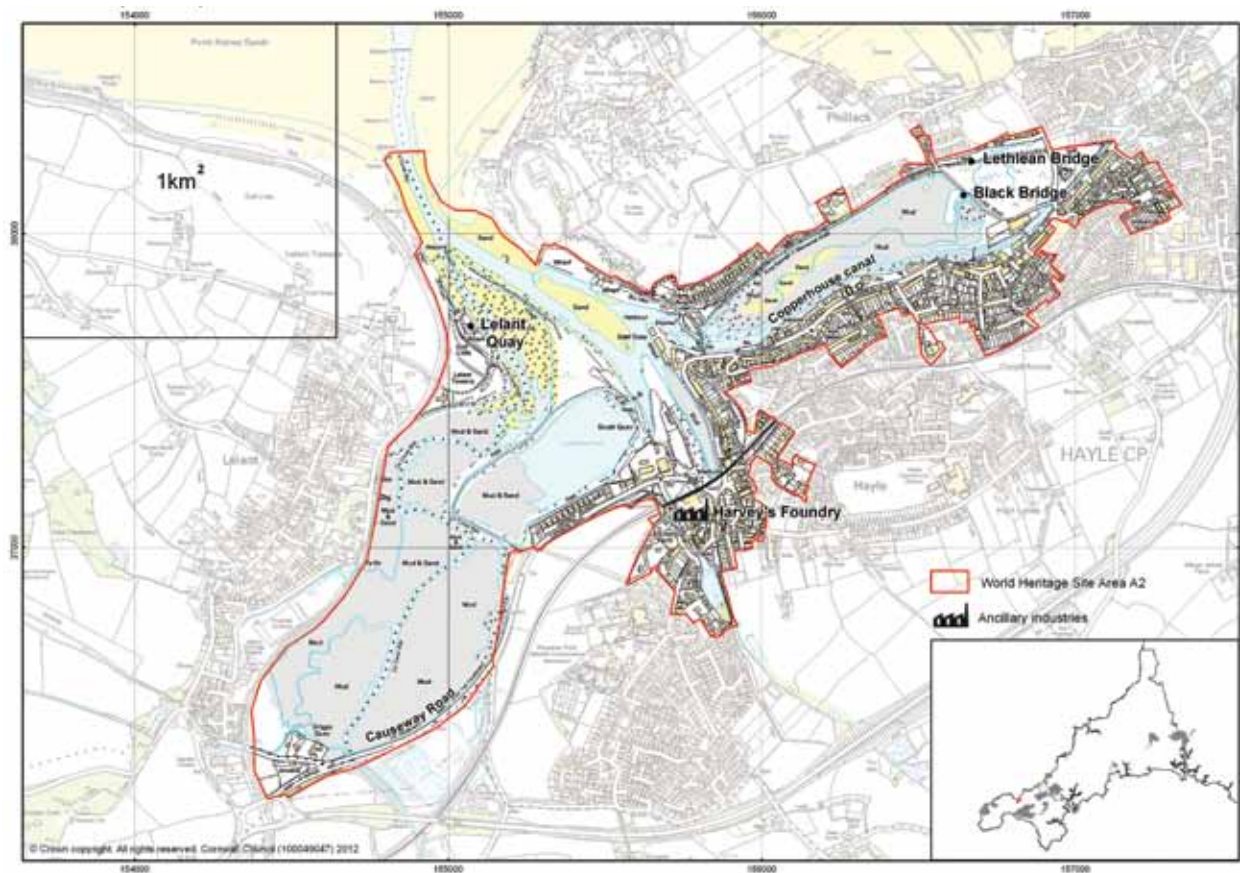
complex survives in a coherent form. Prodigious amounts of coal, timber and other materials for the mines were imported through Hayle. Hundreds of thousands of tonnes of bulky copper ore were exported for smelting. The mule trains that originally carried the ore were replaced by dedicated local railways. These were never intended to be part of the regional or national networks. Notable remains of the Hayle Railway (1834) still survive. The scale of the landforms constructed during the development of the port is impressive. They range from the great harbour spit of Middle Weir (1819), the Copperhouse Canal (1769/87) and the sluicing pools (1789) to the Causeway road (1824-5), one of Cornwall's earliest road engineering monuments.



**Above:** the Granary Barn complex at Harvey's Foundry



## Port of Hayle - Principal Sites



## Harvey's and Copperhouse

A complex set of social and industrial relationships was established in Hayle through the rivalry between two of the largest iron foundries in south-west Britain: Harvey & Company, and the Cornwall Copper Company. From 1758 until 1819 the latter firm operated the largest, most successful and long-lived copper smelter of its time outside South Wales. From the 1820s until 1867 the copper smelter site was used by the company as an iron foundry known as the Copperhouse Foundry (trading as Sandys, Carne and Vivian). These two industrial giants directly steered development within the port of Hayle towards two geographically distinct urban areas; Harvey & Co at Foundry beside the railway line and its rival beside the estuary at Copperhouse. Key industrial and public buildings survive in Hayle, together with good examples of housing



Above: Copperhouse Canal



**Above:** Lelant Quay & Harbour

that reflect the social divide of industrial labour. High-density terraced housing of the work-force contrasts with the villas and mansions of the managerial class.

### Harvey's Foundry Town

Extensive quays and wharves survive at Penpol together with the tidal catchment pool at Carnsew, built to keep the sea-channel clear of sand. Around 25 historic structures connected with Harvey's Foundry survive in a relatively coherent group. This is where the largest steam engines in the world were produced and the greatest number of mine steam engines exported throughout the world. The surrounding urban fabric, principally deriving from industrial growth instigated by this single family-owned business, is of considerable historical significance.

### Copperhouse and its Dock & Canal

Scoria (copper smelting slag) building blocks, once offered free to workers, distinguish the architecture of 'Copperhouse vernacular' though their use in domestic housing is commonly concealed by distinctive period render.

Copperhouse Pool is part of the maritime industrial infrastructure which kept the Copperhouse Canal (1769/87) free of sand and so navigable. Black Road and Black Bridge were constructed to provide a road crossing from Copperhouse to Phillack Churchtown and later to the northern copper quays. Other notable features in the vicinity include the oldest surviving railway bridge (standard gauge) in Cornwall at Lethlean (Scheduled Monument, 1837) and a railway swing bridge, with machinery still intact, crossing the Copperhouse Canal.









## Area 3: Tregonning and Gwinear Mining Districts with Trewavas

### Outline

These **rural mining districts** include tin and copper mines (some of which were sites of important **eighteenth century technological developments**), together with **extensive mineworkers' smallholdings, mining settlements** and **large estates** related to the mining industry. The boundary has been drawn to contain the best surviving mining landscape in the south and west, important settlements in the north and the principal parkland of the country house estates in the east. A detached enclave in the south contains the sites of two undersea copper mines.

### Key Characteristics

The granite cone of Godolphin Hill and the long ridge of Tregonning Hill with the engine house and chimney stack of Great Work mine prominently visible in the saddle between them, dominate the southern part of this ancient mining district. Some of the richest and, at times, the deepest tin and copper mines in the region occur within this Area.

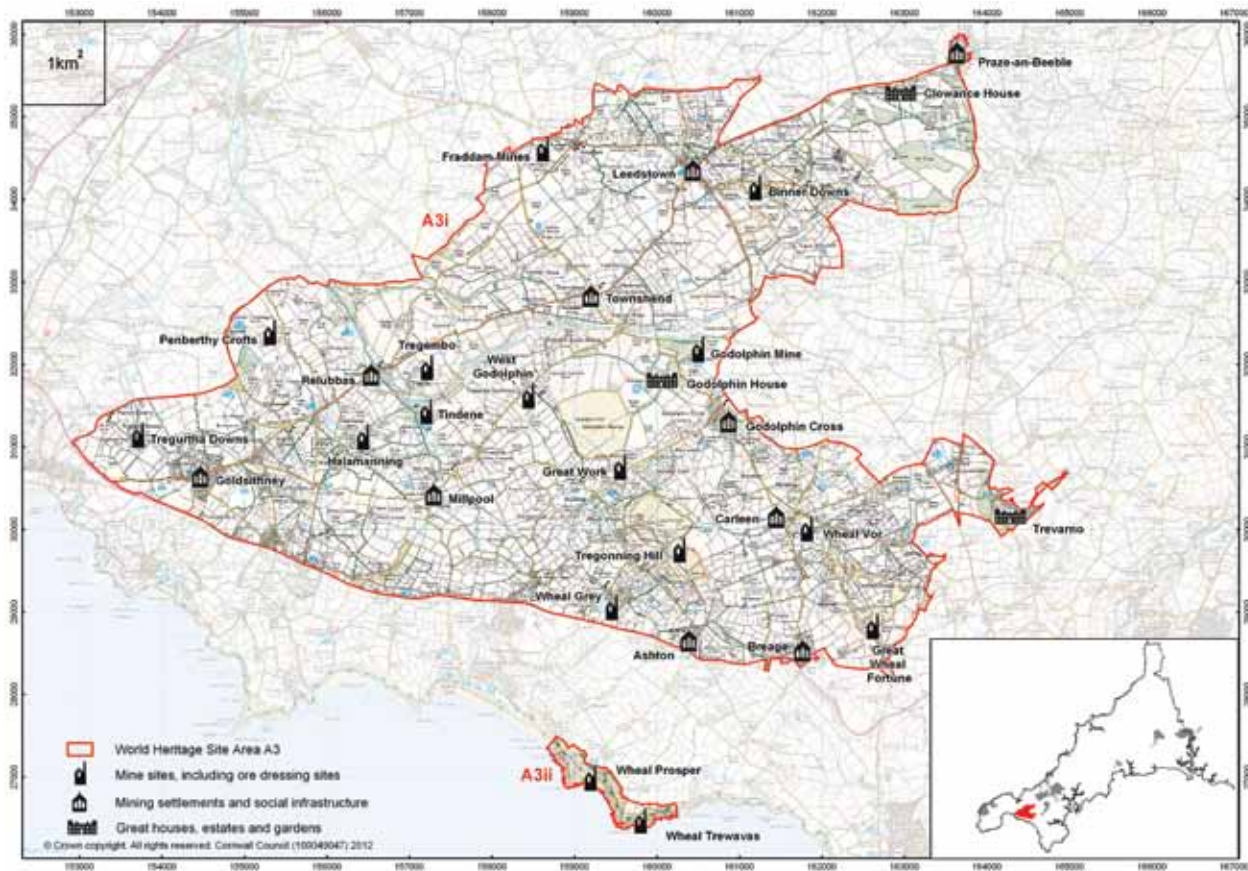
To the north the landscape is a mixture of gently rising downland on which a patchwork of smallholdings and new farms has been created, interspersed with long established farms and parkland associated with the great mining estates of Godolphin and Clowance. Most mineworkers' cottages are dispersed in a landscape of small fields

Some of the richest and, at times, the deepest tin and copper mines in the region occur within this Area.

**Left:** Wheal Trewavas, near Porthleven



## Tregonning and Gwinear Mining Districts with Trewavas - Principal Sites



or set in small groups, though larger settlements of highway villages with fine industrial terraced cottages exist, notably at Praze-an-Beeble and Leedstown. Small groups of mineworkers' cottages set within substantial blocks of early nineteenth century mineworkers' smallholdings flank the A394 road through the southern part of the mining district.

A number of engine houses form landmarks in the Area and the sheer density of mine shafts in the landscape is particularly impressive. Some mark the site of some of the earliest steam engines on metal mines in the world.

### Godolphin

The ancient tin and copper mines around Godolphin Hill lie within the former bounds of the Godolphin family estate. Godolphin House itself (seventeenth century, Listed Grade I) is one of Cornwall's most architecturally important houses. Sir Francis Godolphin (Lord of Godolphin from 1575 to 1608) was a mines adventurer.

He earned a national reputation for pioneering new methods of tin mining and processing in his mines, a tradition which endured there until the middle of the eighteenth century. From 1786 the estate was owned by the Duke of Leeds and his successors.



**Above:** Godolphin House near Helston

## Great Wheal Fortune

The most extensive example of open-cast tin mining within the Site survives at Great Wheal Fortune. Developed on a network of tin-bearing veinlets (or 'stockwork') known as the Conqueror Branches, its two 'quarries' retain considerable geological and mineralogical significance. They are also valuable conservation sites.

## Mining cliffscape of Trewavas and Wheal Prosper mines

The detached coastal enclave in the south of the Area contains some important remains that mark the sites of old undersea copper mines.



**Above:** Wheal Trewavas near Porthleven



**Above:** West Godolphin Mine, Breage







## Area 4: Wendron Mining District

### Outline

This **rural mining district** was significant in terms of its **near surface alluvial tin production** which later led to comparatively **shallow shaft mining**. It contains areas of former **tin-streamworks** together with **extensive upland mineworkers' smallholdings**. The boundary has been drawn to include the large area of smallholdings in the north, the mining settlement of Porkellis and the principal central areas of alluvial valley basins (with their associated shaft mine sites), and the shaft mines in the south around the village of Wendron.

### Key Characteristics

The sparsely populated upland area of Carnmenellis (265m OD) contains the most extensive and best-preserved evidence for mineworkers' smallholdings in Cornwall. The relationship between mining and the development of these small farms which emerged in the late eighteenth century is clearer here than anywhere else in the Site. They occupy a significant proportion of the Area.

Engine houses are located at Basset & Grylls Mine (1858), Wheal Enys (1852), Medlyn Moor Mine and Trumpet Consols. There are also the remains of tin dressing floors at several sites.



**Top:** The Greensplat pumping engine at Poldark Mine near Wendron

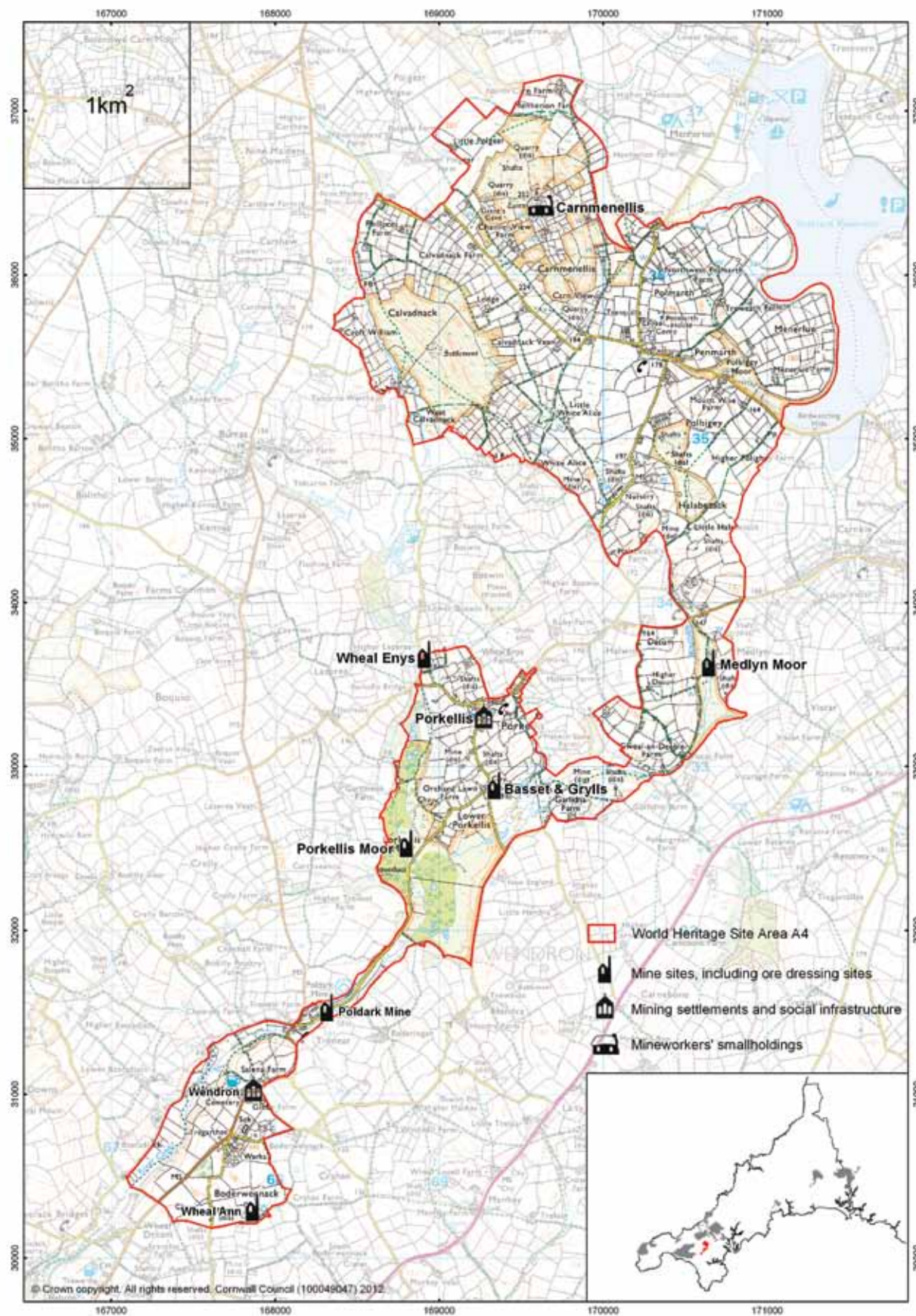
**Bottom:** Porkellis Moor pool

The upland area of Carnmenellis (265m OD) contains the most extensive and best-preserved evidence for mineworkers' smallholdings in Cornwall.

**Left:** Medlyn Moor Mine near Porkellis



## Wendron Mining District - Principal Sites





## Wheal Ann

Wheal Ann is one of the two landmark engine houses of Trumpet Consols. Together they establish the mining landscape when entering the district from Helston to the south-west. The engine house at Wheal Ann, constructed during the early nineteenth century, may have contained a modified Watt engine. It is unusual too because of the light construction of the bob wall which confirms the use of a wooden beam or 'bob'. Cast iron bobs were ubiquitous during the remainder of the nineteenth century, so this would have been amongst the last in Cornwall of its kind.

## 'Poldark Mine'

Former eighteenth century underground workings have been made accessible to the public at a tin mine formally known as Wheal Roots. The site, named after the popular novels and television series, also contains the Greensplat beam engine - understood to have worked in the Caradon area before being re-sited at Poldark from the china clay district - which was the last Cornish engine to see use in industry in Cornwall.

**Below:** Mineworkers' smallholdings at Carnmenellis









## Area 5: Camborne and Redruth Mining District with Wheal Peevor and Portreath Harbour

### Outline

This was the most **heavily industrialised** tin and copper mining district in the Site, and also contains its most **significant urban centres** of mining population. It includes the remains of mines (including **three in situ beam engines**), their **transport infrastructure, ancillary industries** and **important mining settlements**, including Redruth and the mining engineering “new town” of Camborne. The boundary has been drawn to contain the principal settlements in the north, the north-southwest trend of mines (aligned with the upland ridge of Carn Brea), two early railway links and the coastal mining port of Portreath. A satellite site to the northeast comprises the important mine site of Wheal Peevor.

### Key Characteristics

The steep granite ridge of Carn Brea (250m OD) dominates the area. Its associated mineral resources brought fabulous wealth to the district, the mineral lodes being exploited by some of the

richest, and deepest, eighteenth-century copper mines and nineteenth-century tin mines in the world.

The mining towns of Camborne and Redruth are now connected by an almost continuous ribbon development of mining settlements and modern light industry occupying the sites of former mines. ‘Islands’ of historic mining structures survive.

### Beam engines

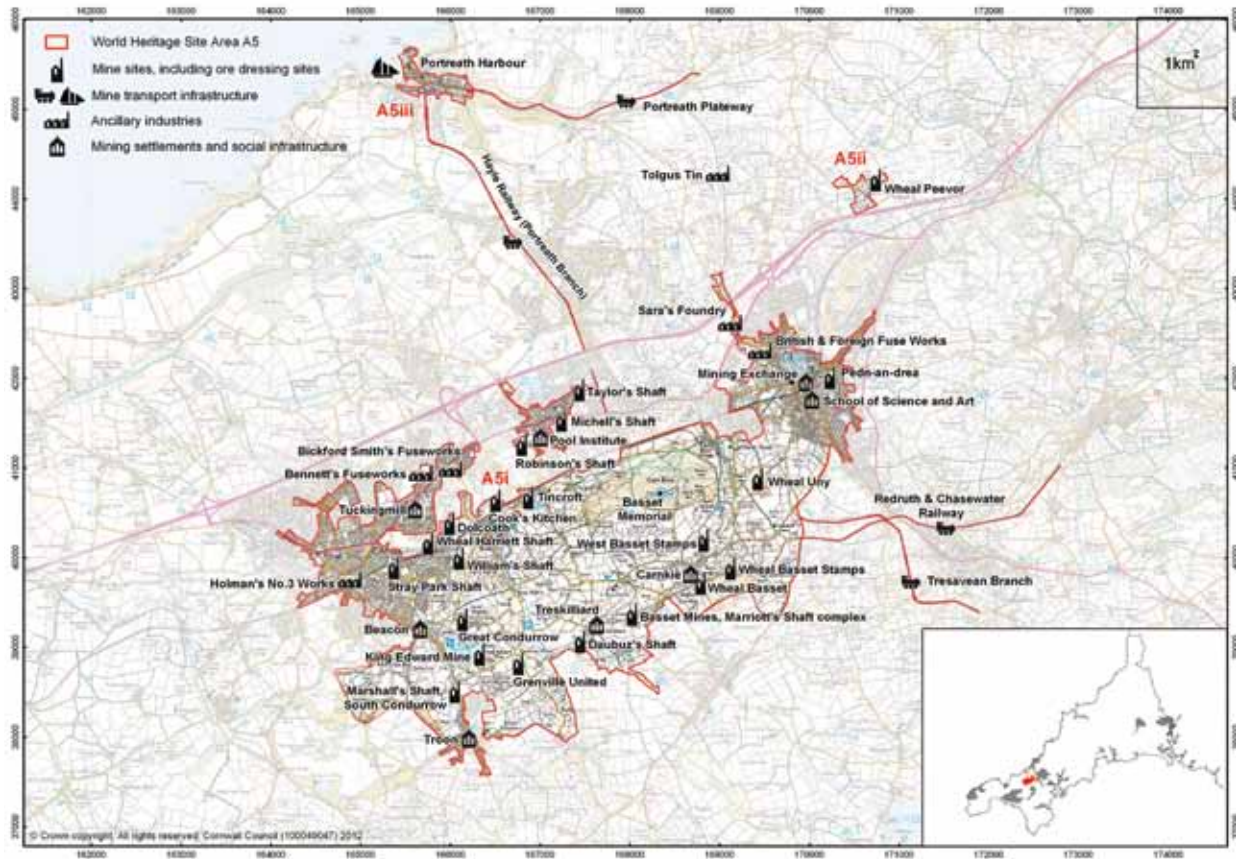
An unparalleled feature of this Area is the three Cornish beam engines that survive in their authentic metal mine context. One whim (winding engine) has been restored to working motion - the Michell’s or North Whim at East Pool Mine - while the other two pumping engines have the capability of working under steam, at East Pool and South Crofty mines respectively. The engine house at the latter site, at Robinson’s Shaft, has recently been restored, and the engine itself is to be brought back into motion in the future.



Above: The Taylor's Shaft pumping engine at East Pool Mine, Pool



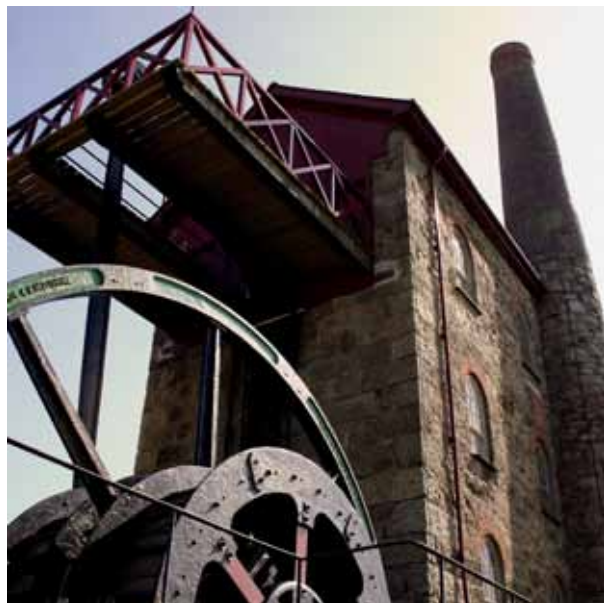
## Camborne and Redruth Mining District - Principal Sites



### East Pool and Agar Mine

A 30-inch cylinder beam winding engine (1887, Holman's Foundry, Camborne) survives at Michell's Shaft, East Pool Mine, and is open to the public. It was saved from being scrapped in 1941, taken over by the National Trust in 1967 and set back in motion again in 1975.

Taylor's Shaft pumping engine survives as part of a 1920s single-phase complex which includes a winder house, compressor house, two boiler houses (one includes foundations for Cornish boilers), flues, capstan house, the miners' dry, an office and the primary crushing- and ore-loading stations. It is currently an interpretation centre for the region's industrial past.



**Above:** Michell's Whim at East Pool Mine, Pool





## South Crofty Mine (Robinson's Section)

Nearby at Robinson's Shaft of South Crofty Mine is an 80-inch cylinder pumping engine (1854, Copperhouse Foundry, Hayle), the last to work on a Cornish metal mine, only stopping in 1955. Following the regeneration of the site to create Heartlands, a mining heritage interpretation centre now occupies the restored mine buildings and new community facilities have been developed on site.



## Redruth townscape

Throughout the eighteenth and nineteenth centuries Redruth was west Cornwall's principal market town and the acknowledged capital of the Cornish mining industry. Redruth possesses some fine Victorian urban architecture. There were also a number of houses built for the professional classes, many of whom were engaged in the mining industry, or its ancillaries. Clinton Road is lined with impressive late Victorian and Edwardian villas built on former mining ground at a time when Redruth miners were prospering in South Africa.

**Top:** The Robinson's Shaft Engine, South Crofty Mine, Pool

**Above:** Victorian and Edwardian villas along Clinton Road, Redruth



**Above:** St Euny Church, Redruth



## Camborne townscape

Camborne contains the best example in the Area of large-scale urbanisation associated with the Industrial Revolution in metal mining and engineering.

It is a town forged by industry and characterised by relict zones of key enterprises, such as the world-famous Holman's Foundry & Rock Drill Works, and classic industrial building types of cottage rows, pubs and chapels.

Fine public buildings characterise the townscape, such as the Market House and Town Hall (1867), the Literary Institute (1842) and the J Passmore Edwards Library (1895). There is also a Masonic Hall (1899) in Cross Street. The impressive Wesleyan Centenary Chapel (1839), in Centenary Street, was built to commemorate the centenary of Charles Wesley's conversion in 1738.

## Bickford's Fuseworks and Tuckingmill Factory Row

The miners' 'Safety Fuze' (1831) was an innovation with global significance.

Fuse manufacture was concentrated at the Tuckingmill factory in the triangle formed by Pendarves Street and Chapel Road. Much of this complex survives including the imposing granite façade and the model terraced workers' housing.

## Dolcoath

This name is synonymous with hard rock mining in Cornwall, and Dolcoath dominated the Central Mining District through its copper and tin production for much of the eighteenth and nineteenth centuries. The important but dispersed remains include the distinctive compressor house, and the engine houses at New East, Wheal Harriett and Stray Park shafts, in addition to the unique traversing horizontal winder house of William's Shaft on the slopes of Carn Entral.

## The Great Flat Lode

Along the strike of the Great Flat Lode – is to be found the finest surviving assemblage of engine houses along a single mineralised structure anywhere in the world.



**Above:** The Marriott's Shaft complex, South Wheal Frances, near Four Lanes



For 4 km the landscape between and beyond the high hills of Carn Brea and Carnkie Hill is characterised by 24 engine houses (demonstrating a range of pumping, winding and stamping functions), tin dressing floors, extensive tramway beds, mining settlements and the site of the largest tin smelter in Cornwall.

### **Basset Mines, Marriott's Shaft complex (circa 1900, Scheduled Monument)**

This unusual group represents an outstanding survival. It includes the pumping engine house which contained an inverted vertical cylinder beam engine with compound 40-inch and 80-inch cylinders, the houses for winding, compressor and crusher engines, and the miners' dry or changing house.

### **West Basset**

A stamps engine house (which had a rear secondary beam for pumping water for dressing) stands above one of the finest surviving nineteenth century tin dressing floors in the world.

### **Wheal Basset**

The stamps engine house (1868) of Wheal Basset was unusual in that it contained two separate beam engines, side by side. It stands above a prominent Frue vanner house (1908) and Brunton calciner (1897). The count house survives nearby as a private dwelling.

### **King Edward Mine (Listed Grade II\*)**

This site is a complete training mine developed from 1897 on an existing mine (South Conduirrow) for the world-famous Camborne School of Mines.

King Edward Mine contains, as a working museum, a remarkable collection of late nineteenth and early twentieth century tin processing equipment and all the facilities - including underground workings (not accessible to the public) - which students and their lecturers would require.



**Above:** Compressed air receiver at King Edward Mine

### **Wheal Peevor**

The rare survival at Wheal Peevor of a triple arrangement (from west to east) of stamps, pumping and winding engine houses, together with their associated dressing floors is clearly visible from the nearby A30 trunk road.

### **Portreath Harbour**

This mining port dates from 1760. The massive granite-built basins were added later, the outer basin in 1800 and the inner basin in 1846. The Portreath Tramroad (1809) and the Portreath branch of the Hayle Railway (1838) linked the mines in A5 and A6 with the port. The Hayle railway is marked by a major piece of railway engineering, the Portreath Incline.



**Above:** the conserved pumping engine house at Wheal Peevor near Redruth







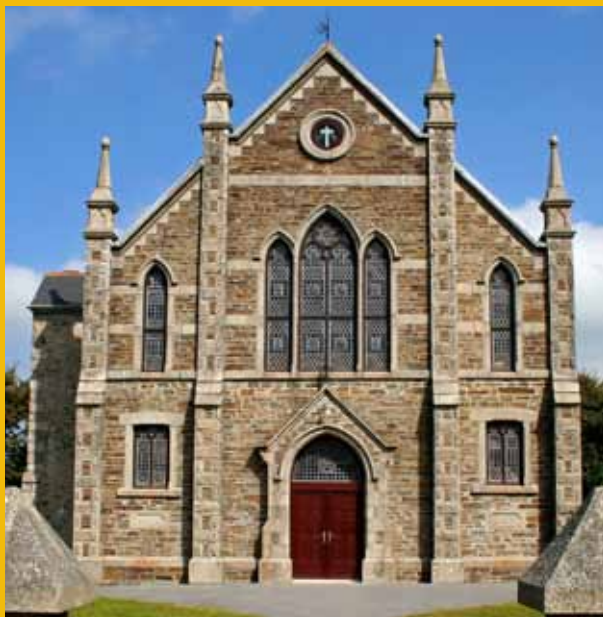
Left: Gwennap Pit, Busveal

## Area 6: Gwennap Mining District with Devoran and Perran and Kennall Vale

### Outline

This **rural mining district** produced a major proportion of the world's supply of copper during the eighteenth and first half of the nineteenth century. **Mining villages**, important **Methodist sites** and the **houses and estates** of industrial entrepreneurs are included, together with major **ancillary industrial sites**, important **early railway networks** and the remains of an early nineteenth century **mining port**.

The boundary has been drawn to include all of the principal mines, large areas of mineworkers' smallholdings in the north and east, and country houses and estates in the south and west. Two detached areas in the south include portions of the Kennall Valley (gunpowder works and a major foundry), the Carclew estate, the port of Devoran and a stretch of Restronguet Creek where sub-estuarine mining in tin gravels was carried out.



Above: Scorrier Chapel



Above: Killifreth Mine – Hawke's Shaft Engine House

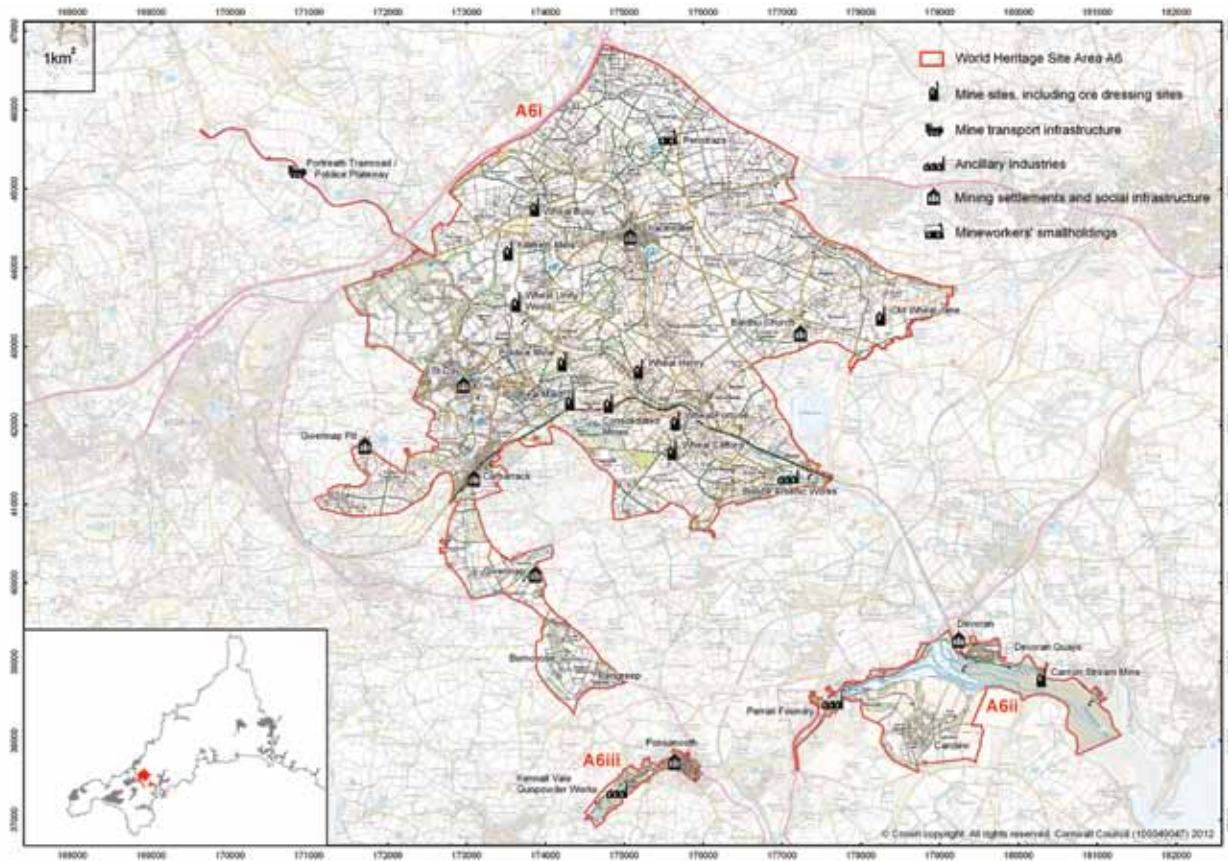
### Key Characteristics

Gwennap was once described as the "richest square mile in the Old World". The widespread and devastating landscape impact of copper mining may be seen together with remains of the network of railways that linked the mines to the ports.

The desolate, largely heathland landscape, considerably modified by mining, is carpeted with waste rock (deads), dotted with islands of consolidated building remains, and with shafts surrounded by distinctive Cornish mine hedges. The central and northern sections of this Area are notable for their well-preserved landscape of smallholdings, interspersed with small mining settlements together with the mines which they served. St Day, Carharrack and Chacewater are particularly fine examples of mining villages. Scorrier House, Tregullog and Burncoose are examples of the grand houses and estates built by mining industrialists.



## Gwennap Mining District with Devoran Perran and Kennall Vale - Principal Sites



### Wheal Busy

Wheal Busy is close to the mining hamlet of Chacewater. It is remarkable for its range of structures, its technological association with Newcomen engines and the first Cornish Watt engine, and the character of its surviving mining landscape. The impressive engine house (1858), with its rare intact adjoining boiler house (for three Lancashire boilers), dominates the site.



**Above:** Cast iron door lintel at Wheal Busy near Chacewater

### Devoran

At the lower end of the important and once heavily industrialised Carnon Valley are the southern terminus of the Redruth & Chacewater Railway (1824) and the important copper mining port of Devoran which dates from the late 1820s and 1830s. It was built by John Taylor. Though its wooden wharf has largely disappeared, there are the remains of ore-storage bins, granite mooring-bollards and various former port buildings, now in private use.

### Gwennap Pit

A depression caused by mining subsidence was subsequently used as an open air preaching pit. It dates from the mid-eighteenth century. It is located in what was the greatest copper mining district of the eighteenth and early nineteenth centuries, one of the most densely populated areas at the time.



## The Kennall Valley

The Kennall Valley, which is situated to the south of the Area, has historical links with the port of Devoran. It is steep-sided and wooded and contains two concentrations of exceptional mining-related industrial monuments. It also contains the remains of Carclew (Listed Grade II) one of Cornwall's former great houses, once the home of mining magnate Sir Charles Lemon, Bart. (1784-1868). Kennall Vale Gunpowder Works is one of the best-preserved gunpowder works in southwest Britain.

## Perran Foundry (Listed Grade II\*)

The Perran Foundry and Wharf stand on the level valley floor at the navigable limit of an inlet leading to the River Fal. The foundry was one of the three largest in Cornwall and is considered one of the most important surviving industrial monuments of its period in southern Britain.



**Top:** Kennall Vale Mills, Ponsanooth

**Middle:** Millstone at Kennall Vale

**Above:** Perran Foundry, Perranarworthal





**Above:** The Miners & Mechanics Institute





## Area 7: St Agnes Mining District

### Outline

This ancient **coastal mining district** includes a number of important **tin and copper mines**, the mining settlement of St Agnes and extensive areas of **mineworkers' smallholdings**. The northern boundary is coastline and extends inland to include all of the important coastal mines (together with mine sites in valleys that run perpendicular to the coast), St Agnes itself and a lobe to the south and east of the village that contains the best preserved and highest density of smallholdings.

### Key Characteristics

St. Agnes, like St. Just, exemplifies a coastal mining tradition which is of enormous antiquity in Cornwall. It probably includes some sites worked in prehistoric times.

### St Agnes village

Much of St Agnes was developed during the eighteenth and nineteenth centuries as a result of tin and copper mining in and around the village. Along the main street are good examples of nineteenth century terraced houses and the Miners' and Mechanics' Institute. The 100m-high cliffs to the north are cut by late seventeenth- and early eighteenth-century examples of cross-cutting adit systems that drained the exceptionally rich Polberro group of mines. Most of the mining activity was confined to the coast but huge areas of downland formerly stretching almost all the way to Truro and Redruth were taken under the plough to feed the rapidly-expanding and increasingly urban population of the Cornish mid-west.



**Above:** Wheal Coates, Towanroath Shaft Engine House

### Wheal Coates

The site is notable for its trio of engine houses for winding, pumping and stamping which were constructed in the 1870s. All three stand in a cliff-side setting. Wheal Coates is in the care of the National Trust which has consolidated all the built structures here. In addition there is a wide range of mining archaeology surviving amongst the heathland, including an early and well-preserved open-working on a tin lode and an unusual double-bayed reverberatory calciner.

In the vicinity of nearby Beacon Cottage there are the remains of pits where candle clay was worked. This was supplied to the mining industry to fix candles onto the miners' felt hats.

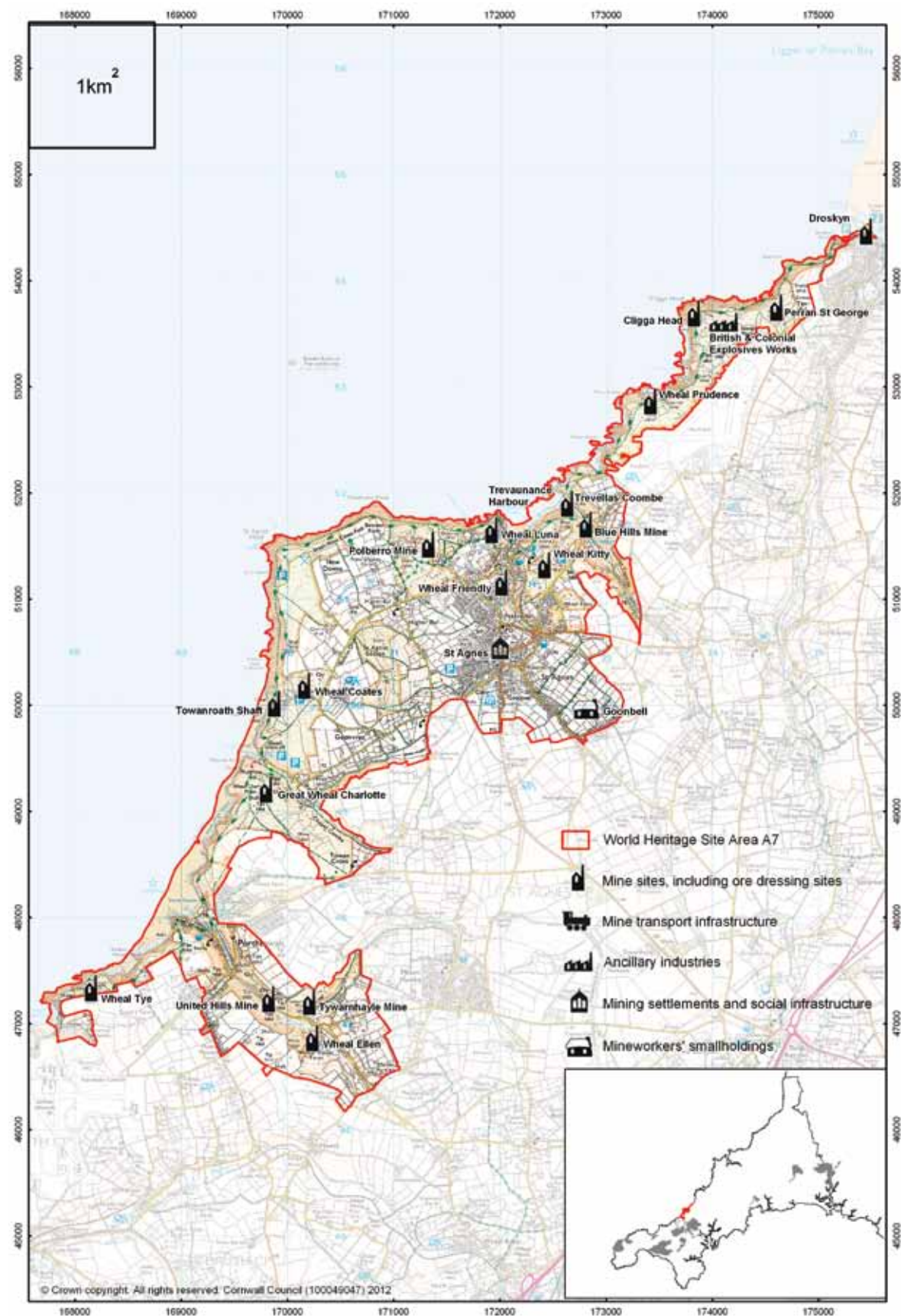
### Tywarnhayle Valley

This steep-sided valley takes its rust-coloured appearance from the thousands of tonnes of waste rock from copper mining which was tipped down its sides. An engine house with a castellated chimney stack at Wheal Ellen (1866) survives on the valley floor. Further seawards at Tywarnhayle Mine, the engine house is one of the very few to survive which was built for a wooden beam; it was at this shaft that electrically-driven centrifugal pumps were first used in Cornwall in 1906. This was also the first site of experimental froth flotation in the early twentieth century. This major innovation had a world-wide impact on mineral processing.

From 1908 until recently the underground levels in the hillside were used as a training mine for the Royal School of Mines, Imperial College, London.



## St Agnes Mining District - Principal Sites







**Above:** United Hills Mine, Tywarnhayle



**Above:** Chapel Porth Beach and Wheal Coates

## Trevaunance Coombe to Trevellas Porth

Immediately to the north of St Agnes are some fine engine houses overlooking Trevaunance Coombe, a valley whose steep sides carpeted with waste rock dumps make up a distinctive landform. At the head of the valley is the engine house of Gooninnis Mine (1899) with its castellated chimney, whilst to the west are those of Wheal Friendly (pre 1879) and Polberro Mine (by 1864) and to the east Wheal Kitty (1910 and part Scheduled Monument).

Tin-dressing floors at Wheal Kitty demonstrate ore-processing technology from both the nineteenth and twentieth centuries. Trevaunance Cove contains the remains of several harbours. They represent attempts to establish ports on the north Cornish coast, closer to South Wales. Each one was destroyed by the sea. The cliffs are riddled with ancient mine workings. Above them stand former harbour buildings and an ancient open-work on a tin lode at Wheal Luna.

Blue Hills Mine in Trevellas Coombe is marked by an engine house and chimney surrounded by shafts and waste rock tips in a steep-sided valley

leading down to the sea at Trevellas Porth. Nearby is Blue Hills Tin Streams, a site which shows how tin streaming continued alongside hard rock mining. Visitors may see the waterwheel driven Cornish stamps together with tin-dressing.

## Cliffscapes at Cligga

The high and frequently sheer cliffs between St Agnes and Perranporth have been extensively worked by small, and in many cases, ancient mines. The finest example of cliff-side tin-tungsten sheeted-vein workings to be seen anywhere is at Cligga Head. Its in situ mineralogy is of international significance.



**Above:** Cligga Head Old Men's Workings







The exceptional port of Charlestown was an important centre for copper export.

## Area 8: The Luxulyan Valley and Charlestown

### Outline

This Area comprises an important concentration of **industrial transport infrastructure** and **water supply network**. It contains the industrial transport network of the Luxulyan Valley together with the principal surviving remains of a **major copper mine** in the east that was one of the reasons for the establishment of major elements of the infrastructure; it also provided the wealth for its construction. The **exceptional port of Charlestown** was an important centre for copper export. The boundary is drawn tightly to contain the best elements of each sub area, with that of Charlestown guided by the Conservation Area boundary. The area contains the most significant manifestations of industrialisation within two single ownerships – Charles Rashleigh (Charlestown) and Joseph Thomas Treffry (Fowey Consols).

### Key characteristics

Luxulyan Valley contains an extraordinary concentration of early nineteenth-century industrial remains. They are unique in south-west Britain, in that they represent the physical manifestation of one man's enterprise – that of Joseph Treffry. Treffry was one of the greatest single mines adventurers in Cornwall at the time. He used the profits from Fowey Consols (Cornwall's fourth largest copper mine), together with financial backing from a fellow investor, to realise his industrial empire

Charlestown, designed by the foremost civil engineer of the day - John Smeaton FRS (1724-92) - is one of the finest examples of late eighteenth- and early nineteenth-century industrial harbour works in Britain. It is also the best preserved china-clay and copper ore port of its period anywhere in the world.

**Left:** Austen's Engine House, Fowey Consols Mine, and the Luxulyan Valley

### The Luxulyan Valley

Steep boulder-strewn slopes surround the fast-flowing River Par. The thickly wooded terrain was once an important resource for making the charcoal that was needed in large quantities for smelting tin from rich alluvial deposits on the moors to the north-west. Charcoal-burning platforms are to be found at nearby Prideaux.

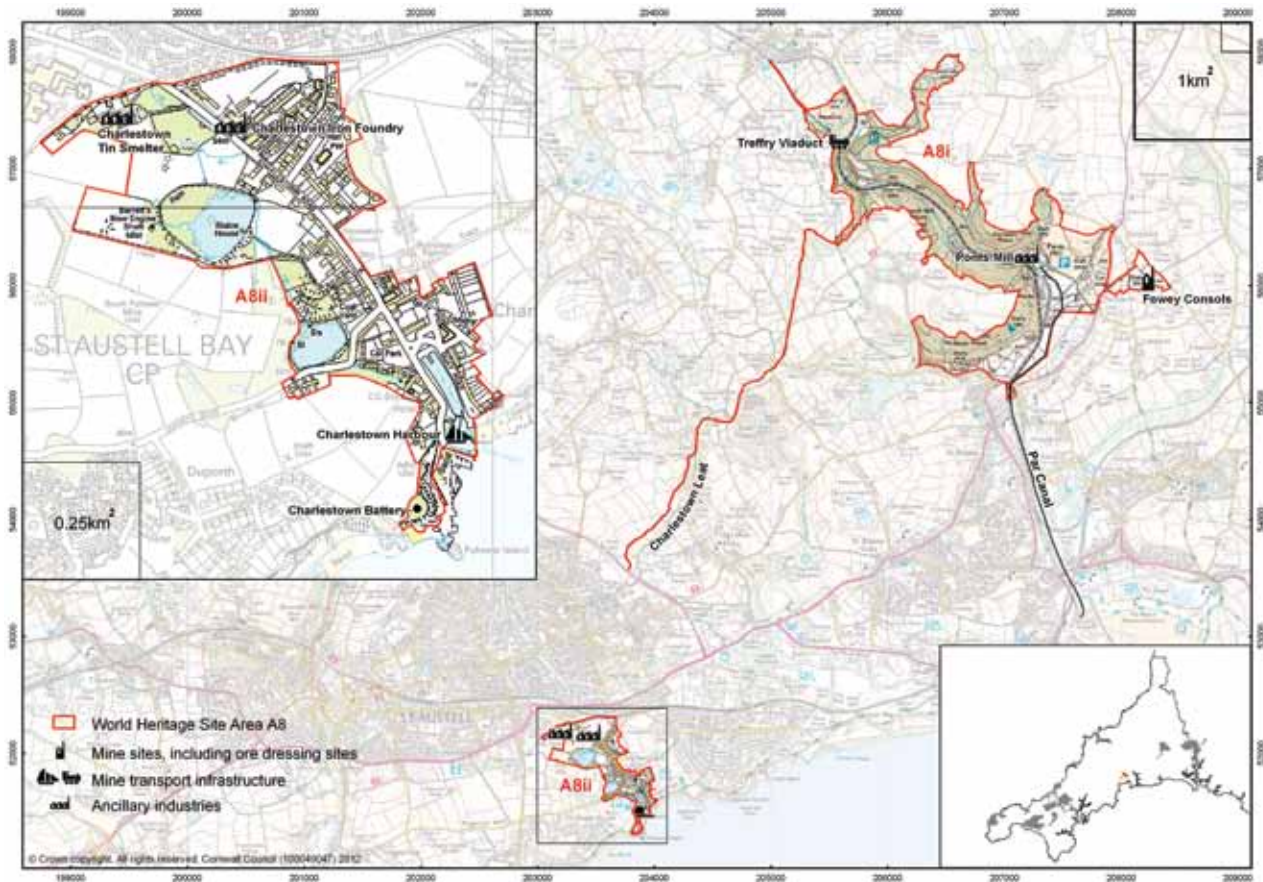


**Top:** Luxulyan Valley woodland

**Bottom:** the Fowey Consols Leat in the Luxulyan Valley



## Luxulyan Valley and Charlestown - Principal Sites



### The Par Canal (c1835)

At the lower end of the valley, the canal was created by Treffry to take copper ore from the base of the Fowey Consols inclined plane railway to the new industrial port he built at Par. The River Par was moved to facilitate its construction and operation.

### Charlestown

Built for Charles Rashleigh (1747- 1825), one of three local industrialists who each created a mineral harbour along this stretch of coastline in St Austell Bay. It also represents a rare example of a mineral port with its own defences since its approaches are overlooked by the Charlestown Battery (late eighteenth century); a crenellated walled enclosure survives. The evidence for several phases of expansion and building is particularly well preserved.



**Above:** The Treffry Viaduct within the Luxulyan Valley





**Above and right:** Ships in dock at Charlestown



The settlement is in the form of a ribbon that follows Charlestown Road (late eighteenth century) down to the sea. Charlestown Iron Foundry (1825) and the site of Charlestown House tin smelter (1834) lie higher up the hill to the east and west of Charlestown Road.

**Below:** Charlestown Harbour and village









**Left:** The Prince of Wales Shaft Engine House, Phoenix United Mine, Minions



**Above:** Wheal Jenkin, Bellingham's Shaft Engine House

## Area 9: Caradon Mining District

### Outline

This **rural upland mining district** represents a 1840s-90s **copper mining** landscape. It also includes the remains of a **mineral railway** (constructed primarily to transport copper ore southwards to the port of Looe), some important **tin mines** and dispersed **mining settlements**. The boundary has been drawn to contain all of the significant mines, and mining villages in the north east and south (including an extension in the south east, around Pensilva, to include well preserved **mineworkers' smallholdings**). The western boundary runs north south across open moorland and includes sufficient margin that takes in all westerly extensions of mine workings both on the surface and underground.



**Top:** The Gonamena Incline of the Liskeard & Caradon Railway at Pontins Piece

**Bottom:** Phoenix United Mine, the Prince of Wales Shaft Engine House

### Key Characteristics

Located in the south-eastern corner of Bodmin Moor, the setting for this Area is characterised entirely by open, exposed, granite moorland, mostly above 300m OD. Nowhere else within the Site are such extensive mining remains found that date from such a limited period of operation (1840-90). They reflect a good example of a 'boom to bust' Cornish copper mining landscape.

The elevated moorland to the north of Caradon Hill - Craddock Moor and Rillaton Moor - is also rich in mining archaeology. There are no major river valleys in the Area though several important water-courses, such as the Seaton, have their source on this high ground. New settlements of terraced cottages, chapels and schools grew up around the mines. Minions village is an example of a mining settlement on moorland, unconstrained in its development.

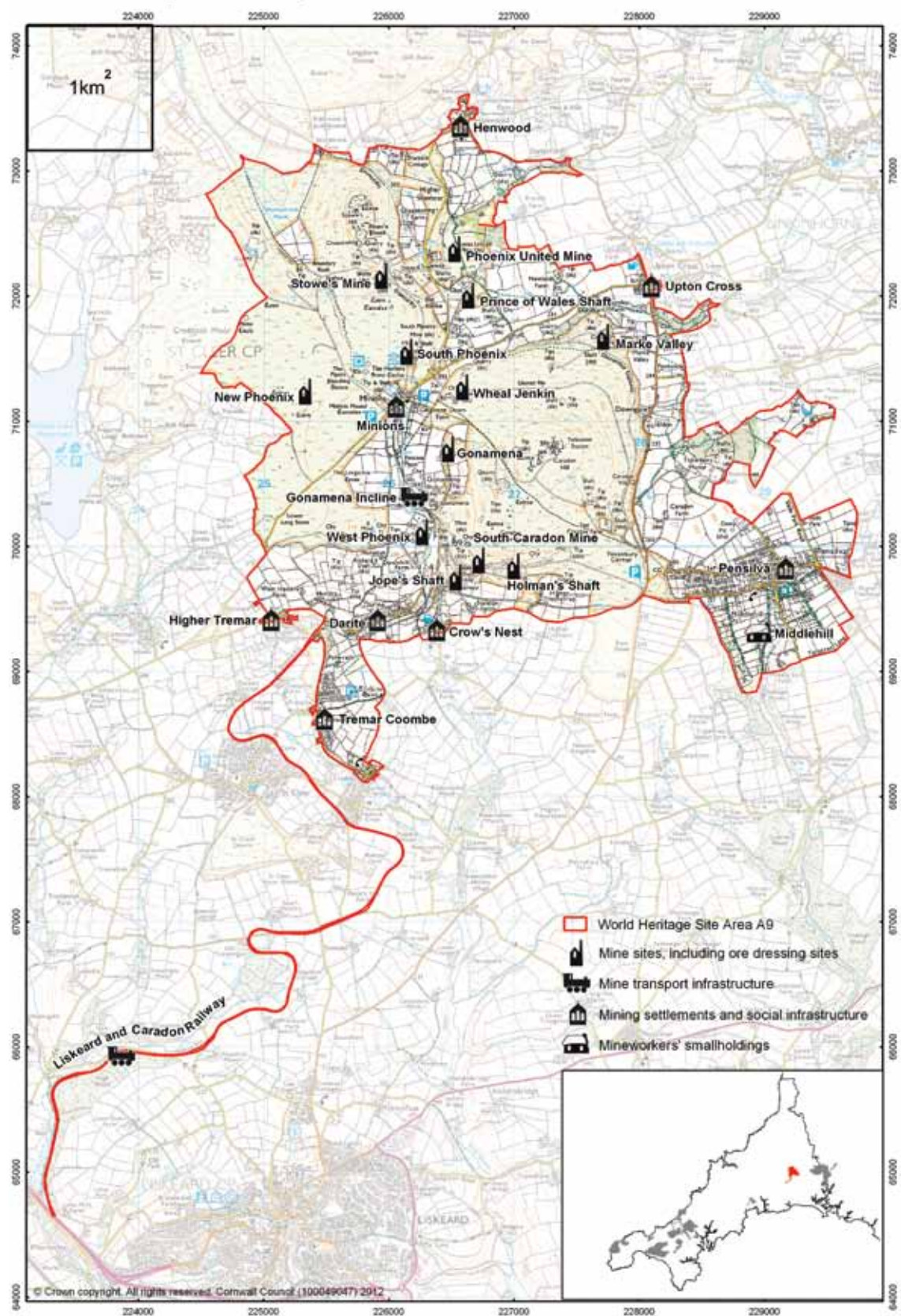
The granite dome of Caradon Hill (404m OD) dominates the Area. Engine houses, chimney stacks and thousands of tonnes of waste rock tips encircle the hill. So does the bed of the Liskeard & Caradon Railway, built to link the mines with the copper-ore port of Looe.

Other mining settlements may be seen at Darite, Tremar Coombe, Upton Cross, Higher Tremar, Pensilva and Crow's Nest. There are also good examples of villages that expanded due to the mining boom, such as St. Cleer and Henwood. Numerous blocks of smallholdings created from open moorland can also be seen.

As the nineteenth century mines were single phase and, on closure, the sites reverted to rough grazing land, all aspects of mining activity are well represented within this Area.



## Caradon Mining District - Principal Sites





## Gonamena Valley and the southern flanks of Caradon Hill

Although there is exceptional evidence for tin-streaming at Gonamena, it was the extraordinary copper riches found at South Caradon Mine that were responsible for the rapid development of the Caradon Mining District. Over a period of fifty years its copper output ranked sixth in Cornwall. Engine houses, such as the one at Jope's Shaft (1862; subsequently the site of the last man-engine to be built in Cornwall in 1872) and at Holman's Shaft (1875), form distinctive landmarks. The massive waste tips on both sides of the Seaton valley (West and South Caradon Mine) and on the southern flanks of Caradon Hill are a striking testament to the scale of operations beneath the moorland landscape. The mine's well-preserved cobbled dressing floor can still be seen in the valley floor.



**Top:** South Caradon Mine - Holmans and Rules shafts

**Bottom:** Henwood street scene with Phoenix United Mine on the skyline



**Above:** The Minions Heritage Centre at Houseman's Shaft engine house, South Phoenix Mine

## Wheal Jenkin - Marke Valley

Shallow mining for tin on the northern slopes of Caradon Hill probably predated the Cornwall Great United Mining Association working which commenced in 1824, and the Wheal Jenkin site is thought to have been worked by more than one company before it was eventually acquired by the Marke Valley Consols Mines Ltd. in 1881.

The prominent pumping engine house at Bellingham's Shaft is one of the key industrial features of this part of Bodmin Moor and originally housed a 70 inch engine that was re-erected from Holman's Shaft of South Caradon Mine, to the south, in 1886. The extensive remains of the former stamps engine house and dressing floors are located a short way to the north east.

## Phoenix United Mine

Both copper and tin were mined here, but it was tin that extended the life of this mine for some 15 years beyond that of South Caradon and tin that explains its later, and most impressive, archaeology.







## Area 10: Tamar Valley Mining District with Tavistock

### Outline

The **mining district** comprises both **valley and upland** setting for tin, copper, silver-lead and arsenic mining, ore processing and smelting. It includes the river Tamar and its associated **industrial river quays**, and the **major town of Tavistock** that was remodelled during the nineteenth century with profits derived principally from copper mining royalties. The boundary has been drawn to contain all of the principal mines in the upland area from west to east, and in the valley setting from north to the south (including the Bere silver mines in the south). The principal mining quays, villages and mineral railway network are within the boundary, and the linear route of the early nineteenth century Tavistock Canal links the two sub areas.

### Key Characteristics

The rounded granite summit of Kit Hill (333m OD) dominates the western part of the Area whilst high ground creates a distinctive landform running eastwards along the upland ridge of Hingston Down. At Gunnislake, on the western bank of the River Tamar, the granite ridge descends steeply to the river.

Tavistock is a medieval stannary town, re-modelled during the nineteenth century using the profits of copper mining, notably from Devon Great Consols (A10i) and Wheal Friendship (Mary Tavy). It includes a number of impressive contemporary public buildings and model housing for workers as well as the inland terminus of an important mineral canal.

The Tamar Valley forms the principal central landform of the district. Whilst the river flows from north to south, its great loops and bends follow a highly sinuous and changing course, and its sides are often steep and frequently wooded. To the east

the landscape is rolling cultivated countryside that descends to the ancient market town of Tavistock, which nestles beneath the high granite uplands of Dartmoor.

The mines of this district exploited an important concentration of tin, copper and arsenic lodes most of which run parallel with the east-west axis of the granite and which were worked almost continuously from Callington to Tavistock.

The mines of this district exploited an important concentration of tin, copper and arsenic lodes.

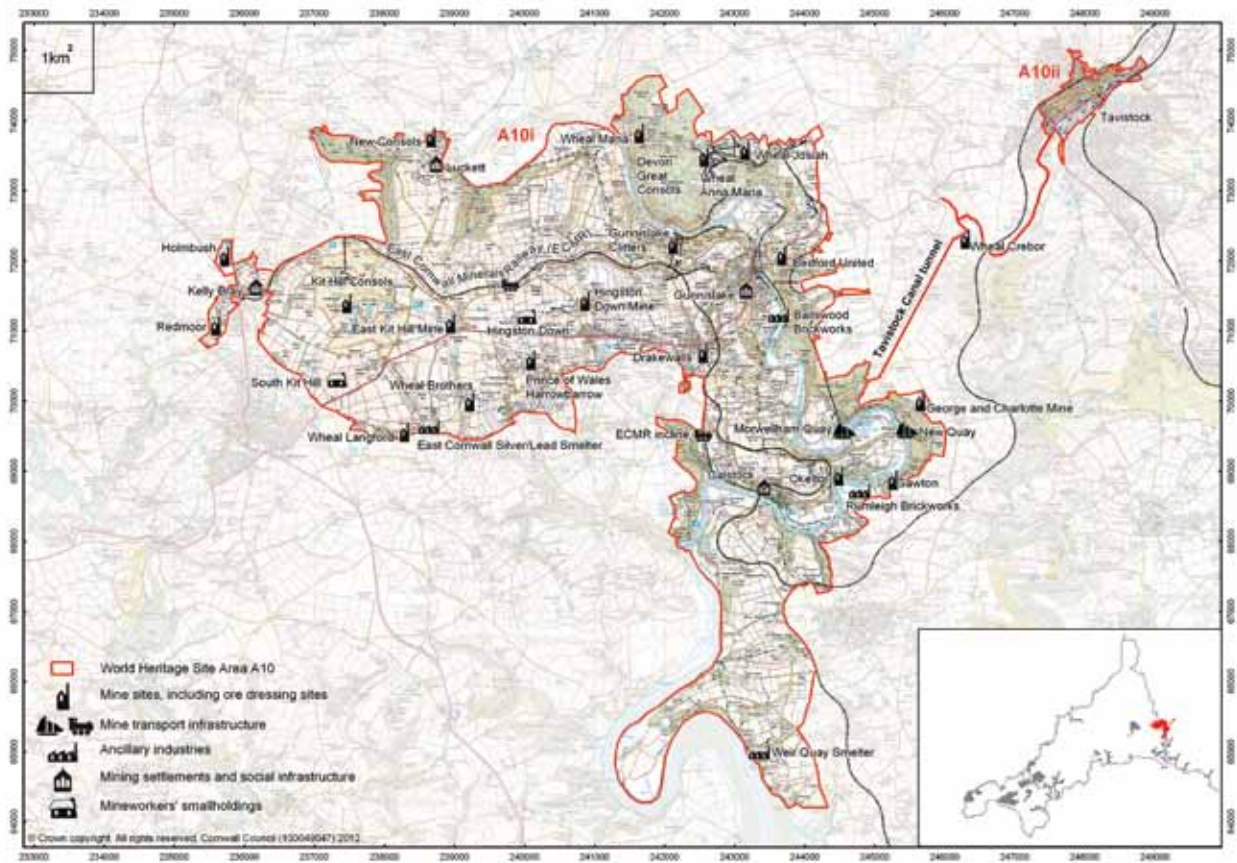


**Above:** Arsenic chimney at Devon Great Consols Mine

**Left:** Bronze statue of the 7<sup>th</sup> Duke of Bedford, Tavistock, Devon



## Tamar Valley Mining District with Tavistock - Principal Sites



Important silver-lead deposits have been mined in the Bere Alston peninsula. These are amongst the earliest documented mines (late thirteenth century) in southwest Britain and extensive surface and shallow-extraction mining features remain. There are notable survivals of several engine houses and a silver-lead smelter (1836, Tamar Smelting Company) at Weir Quay. They date from renewed mining activity during the nineteenth century.

The natural highway for most of the traffic within the Area was the Tamar. The quays that lined its banks proved inadequate to deal with the volume of industrial traffic created during the nineteenth century, and both Calstock (Cornwall) and Morwellham (Devon) were developed as industrial ports with rail links to their mining hinterlands.

The East Cornwall Mineral Railway (commenced 1863), linked Calstock with Callington and connected a number of mines, an arsenic refinery, granite quarries, and brick, tile and fireclay works via an incline-plane railway to nearly 0.5km of quays at Calstock. Here the mining village and port developed as a huddle of terraced roads and houses whose layout was constrained by the steep topography. From Gunnislake to Kelly Bray, near Callington, much of the railway track bed is still discernible. So are the remains of the industries the East Cornwall Mineral Railway once served. For many mines the Tamar was also their principal power source, and it was ingeniously harnessed. The Area is consequently richly endowed with waterwheel pits. Those examples at Wheal Brothers and Wheal Benny are amongst its most spectacular.





**Top left:** Historic shop front at Morwellham

**Top right:** Arsenic grinder at Devon Great Consols Mine

**Bottom:** The water wheel for the former manganese mill at Morwellham

## Morwellham – a Tamar mining port (Scheduled Monument)

Morwellham is strategically sited at the centre of the Tamar Valley Mining District. It is some 3km below the tidal limit near Gunnislake and 32km from Plymouth.

The port occupies the floodplain of a wide meander and is backed by sharply rising and thickly wooded valley sides which rise to over 180m. It was connected to Tavistock (6.5km away) via the Tavistock Canal completed in 1817. Morwellham was also connected to Devon Great Consols by a standard gauge mineral railway (and inclined plane) in 1859 and is also a Scheduled Monument.

Much of this transport infrastructure is represented by substantial archaeological remains. Between the slate-fronted former harbour master's house and the Ship Inn are the iron rails (1817) on slate sleepers that linked the canal incline with the old copper ore quays. Copper ore chutes survive in the rear retaining wall.

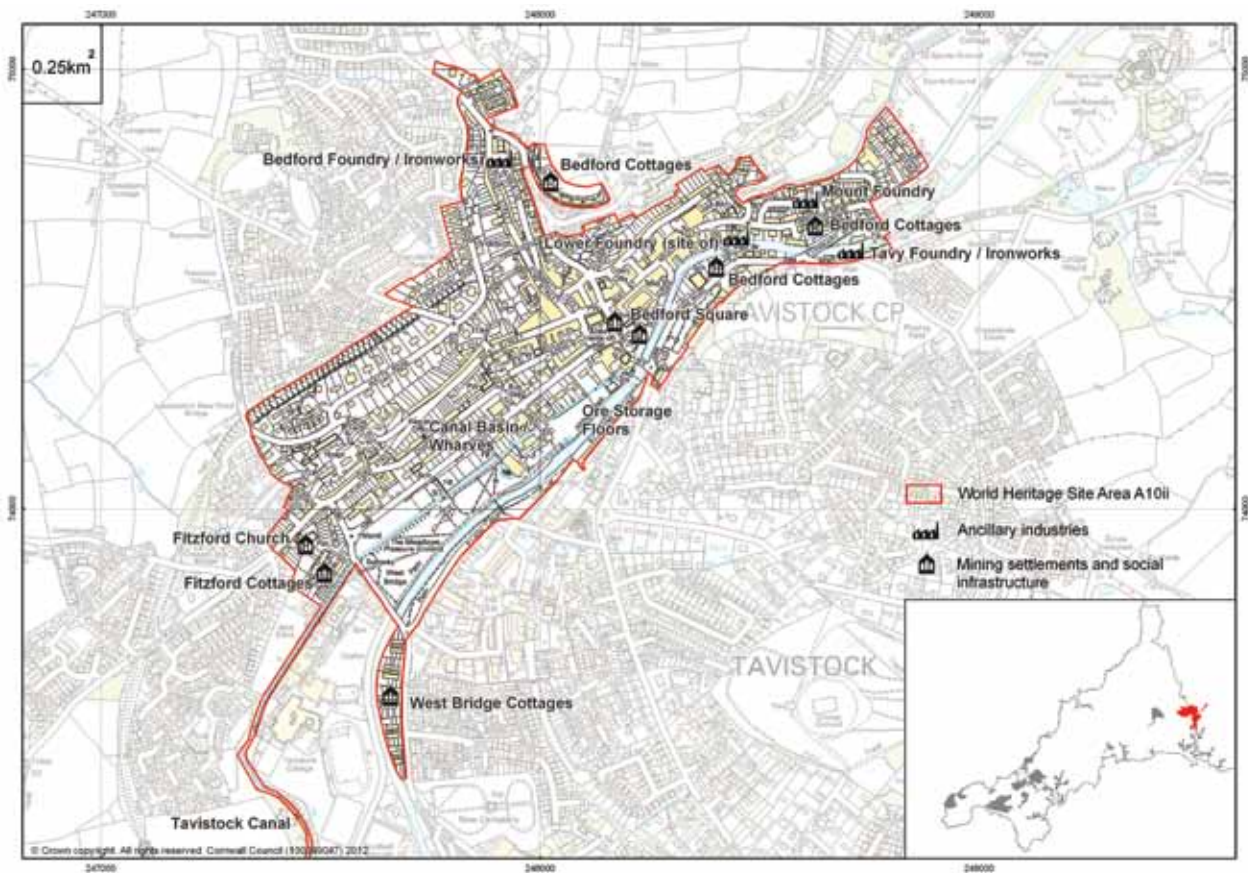
Beyond the mine is New Quay (Listed Grade II, and extended to supplement the Devon Great Consols copper ore quay at Morwellham during the 1840s).

## Devon Great Consols

The largest copper mine in the Site is Devon Great Consols. It covers 67 hectares and is now mostly occupied by a conifer plantation.



## Tavistock - Principal Sites



### Tavistock

The rolling cultivated countryside to the east of the Tamar Valley contains comparatively large farms. There are almost no settlements. There are no former land plots for the owner-occupied mineworkers' cottages and smallholdings, so common in many of the mining districts in Cornwall.

The historic core of Tavistock is on the level plain north of the river Tavy. Nineteenth century expansion took the form of terraced developments on the hill behind. Tavistock's buildings, many built using the distinctive greenish-grey Hurdwick Stone, include early financial institutions such as the Tavistock Bank (1791) in Market Street and the Tavistock Savings Bank (1816).

Both in architecture and plan Tavistock exudes confidence. Landmarks include: the Bedford Hotel (remodelled 1822-29); Plymouth Road (1822) lined on the north by elegant villas; the Corn Market building (1835) in West Street; the Guildhall (1848); the Pannier Market (1860); the Town Hall (1860) which faces Bedford Square; and the enormous Fitzford Church (1867).

### Bedford Cottages

High-quality industrial housing – built to a number of differing designs – which forms a distinctive industrial aspect to Tavistock and some of the surrounding hamlets. Most were two-up two-down, and had outbuildings for wood and ashes and a pigsty.





**Above:** Cotehele Quay



**Above:** Bedford Square

## Iron foundries

Substantial remains of three nineteenth century iron foundries are located within the urban core of Tavistock. Mount Foundry (1805, later Tavistock Iron Works) is extensive and includes foundry buildings and associated workers' housing. Largely intact buildings of the Tavy Iron Foundry (1850) survive on both banks of the river Tavy near Stannary Bridge. Bedford Iron Works (Nicholls, Williams & Mathews' 1842) still stands in Bannawell Street.

## Tavistock Canal (built 1803-17)

The link between Tavistock, its mining hinterland and the Tamar port of Morwellham is via the Tavistock Canal, one of the finest surviving examples of a canal constructed primarily for mineral traffic. Old warehouses, cottages and an ore storage floor (now a car park) mark the site of Tavistock Old Wharf whilst nearby the sluice intake from the river Tavy still functions. The canal, 7.2km long and just over 5m wide by 1m deep, remains in good order and still carries water along almost its entire course. It crosses the river Lumburn near Crowndale on a stone aqueduct, and then narrows to 2m wide as it passes through a 2.4km tunnel. The Canal emerges from the tunnel at an elevation of 72 metres above Morwellham. The terminal basin (now dry), together with an associated canal keeper's cottage, survives next to the head of the former waterwheel powered inclined plane railway which allowed ore to be transported to the quay below. The bed of the inclined plane and a number of associated features remain.





**Above:** The mining landscape around King Edward Mine near Troon

## 3.4 The setting of the World Heritage Site

### 3.4.1 What is setting?

A World Heritage Site must have its setting protected from adverse impacts. For a Site inscribed for its industrial landscape significance, not its landscape beauty, assessment of what constitutes an adverse impact needs to focus on the effect on the OUV and the criteria under which it was inscribed on the World Heritage List.

Identification of the setting can include the area within which developments would have a visual influence upon the OUV, and existing physical assets that are linked to it, historically or spatially. The setting of this Site therefore includes those sites, monuments, buildings and landscape components which provide additional historical or visual context.

Statutory strategic planning documents, such as the Cornwall Local Plan Strategic Policies - 2010-2030, include reference to protecting the setting of the Site. The Management Plan policies on protection of the setting are material considerations, which require planning authorities to assess impact on the OUV of the Site as a factor when making planning decisions.

*P3 Planning authorities should ensure that new development protects, conserves and enhances the Site and its setting.*

*P8 Developments outside the Site that will adversely affect its Outstanding Universal Value will be resisted.*

For a serial Site such as this, with ten Areas, many of which are intervisible, it is not desirable or practicable to attempt to define a specific area for the setting within which development could adversely affect the OUV. This approach accords with the current English Heritage definition of setting as:

‘The surroundings in which a heritage asset is experienced; its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.’ (The Setting of Heritage Assets, English Heritage, October 2011)

Different types of development will have different impacts within different spatial parameters. For this reason a risk management approach to protection of the setting was taken.





West Bridge Cottages, Tavistock









Above: Crowds celebrate the Portreath Tramroad Bicentenary Event in 2009

## 4 Governance





United Nations  
Educational, Scientific and  
Cultural Organization



**Cornwall and West Devon  
Mining Landscape**  
inscribed on the World Heritage List in 2006

## 4.1 The responsibilities deriving from the World Heritage Convention

The Convention on the Protection of World Cultural and Natural Heritage (UNESCO 1972) ('the WH Convention') sets out a number of obligations that the State Party signatories to the Convention commit to.

*'Each State Party to this Convention recognises that the duty of ensuring the identification, **protection, conservation, presentation and transmission** to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation, in particular, financial, artistic, scientific and technical, which it may be able to obtain.'* (WH Convention, Article 4)

The WH Convention Operational Guidance sets out the procedure for management of World Heritage Sites to deliver against the four main operational obligations deriving from the Convention, highlighted above.

The implications of being on the World Heritage List are that properties have **Outstanding Universal Value**;

*'...cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the*

*permanent protection of this heritage is of the highest importance to the international community as a whole.'*

*(Operational Guidelines for the World Heritage Convention 2011 para 49)*

The State Party therefore has a duty to ensure that World Heritage Sites within its jurisdiction are protected for present and future generations, through both statutory powers and responsible, inclusive, sustainable management. Appropriate management frameworks and management plans such as this are a means to deliver against these obligations.

Her Majesty's Government are the State Party for the United Kingdom, with the overall responsibility for meeting the obligations part of the Department for Culture, Media and Sport (DCMS) remit. However, numerous Government departments and agencies have a role to play, including Communities and Local Government (DCLG), Environment Food and Rural Affairs (DEFRA), Transport (DfT) and Education (DfE).

Many of the responsibilities of the State Party are in practice delivered by other organisations, most notably local authorities, both as Local Planning Authorities and also providers of, or participants in, strategies and services relating to regeneration, education and tourism. There is no specific statutory instrument devolving responsibility for meeting the WH Convention obligations from the State Party to local authorities. However, local authorities do have statutory powers to control issues such as highways and town and country planning, which have an impact on the protection and management of World Heritage Sites.

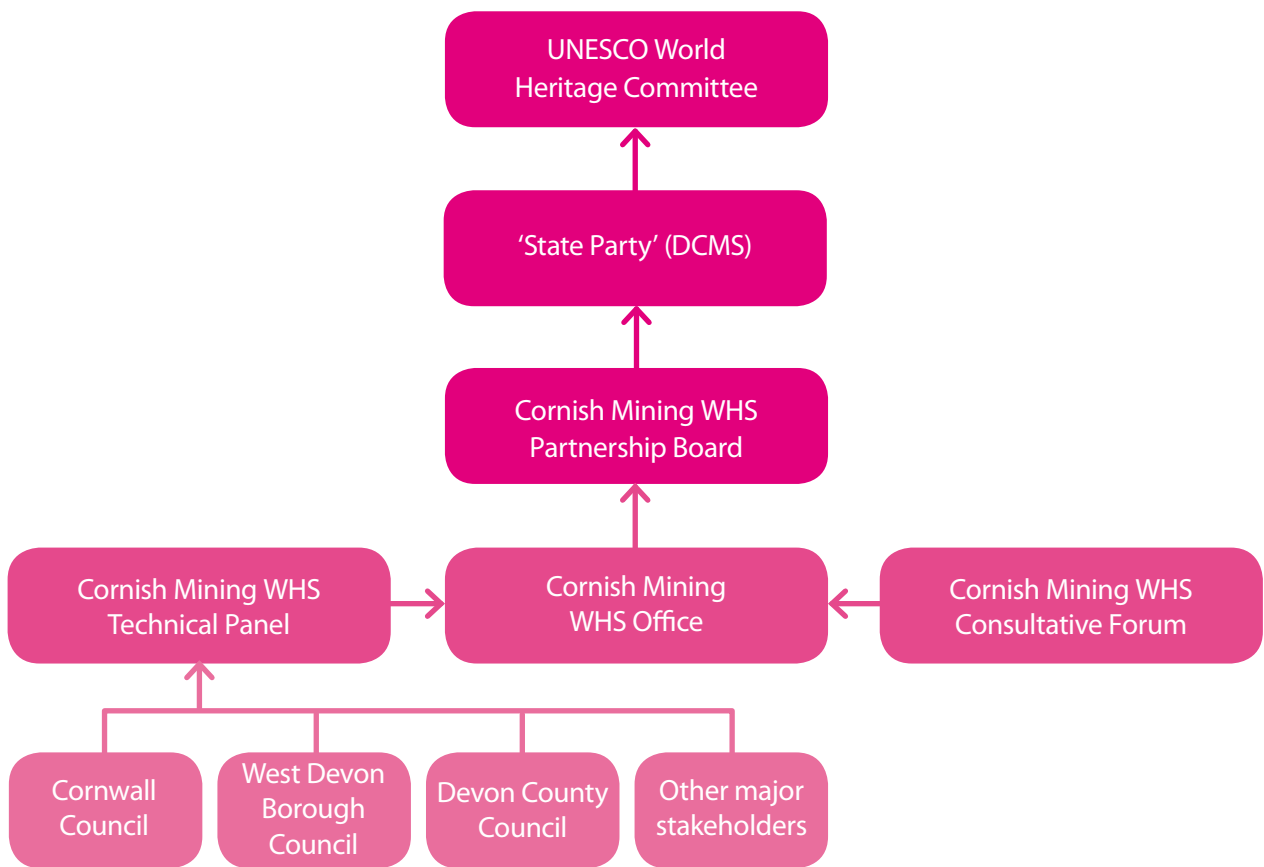


Day to day responsibility for the care and management of many Sites sits with the owners or operators of the physical assets that represent OUV. For a complex, serial Site such as Cornish Mining, with over 19,700 hectares across ten Areas, in multiple ownerships, this means that responsibility for meeting the terms of the Convention sits with a wide range of bodies, including public, charitable and private organisations, and individuals.

To provide a structure for this complexity within the Cornish Mining WHS, governance

arrangements were put in place to bring together the principal management bodies as a WHS Partnership Board. The Board is responsible, on behalf of the UK Government, for overseeing the production and implementation of the Management Plan and providing information for periodic reporting to UNESCO. The principal management organisations act collectively to achieve this, but are also individually answerable, via the Board, for the management of the Site, in their ownership or control, in line with Management Plan policies.

## Cornish Mining WHS Governance and consultation framework





The Board is advised by a Technical Panel, made up of professional staff from the partner organisations with Management Plan related specialisms. A Consultative Forum was also formed to bring together organisations drawn from the wider span of interests in the Site and to receive and comment on reports from the Partnership Board. The Board is currently set up as a **Joint Local Authority Committee**. However, the original Governance Review also identified other legal forms that would be suitable vehicles for delivering the WHS' management priorities. These options should be re-examined during the lifespan of the next plan.

## 4.2 Vision Mission and Aims

The partners have considered the Site's management priorities for this Plan in the context of the responsibilities set out in the Convention, and reaffirmed the core Vision, Mission and Aims agreed when the Site was first inscribed.

The original Aims were set for a 30 year timeframe, reflecting the longevity of the WH Convention itself, and recognising that for such an extensive Site, with myriad physical features of OUV, the Vision will be achieved over the long term.

### Our Vision for the World Heritage Site

We believe that by protecting, conserving and enhancing the OUV of the Cornwall and West Devon Mining Landscape World Heritage Site it will reinforce cultural distinctiveness, and become a significant driver for economic regeneration and social inclusion.

**Below:** The historic Robinson's Shaft Engine at the centre of the Heartlands regeneration development







**Above:** The World Heritage Site Technical Panel meet regularly to discuss a wide range of Site management issues

The management of the Cornish Mining World Heritage Site requires a long term view steered by the following **aims**:

- **conserving** the OUV
- recognising that this is a distinctive **living landscape** which continues to evolve
- promoting a **sustainable** approach that integrates conservation with regeneration, and the needs of communities with visitors
- promoting **equality** of opportunity to access and enjoyment
- building and maintaining strong **partnerships** between the community, local, regional, national and international organisations



**Above:** The refurbished interior of the Miners & Mechanics Institute, St Agnes

### **Our Aims for the next 25 years and beyond:**

The management of the Cornish Mining World Heritage Site requires a long term view steered by the following **aims**:

- To protect, conserve and enhance the historical authenticity, integrity and historic character of the Site for current and future generations
- To promote opportunities within the Site for heritage-led regeneration
- To communicate the distinctiveness of Cornish mining culture and identity
- To promote public access to sites, collections and information
- To undertake and facilitate research to increase knowledge and understanding
- To interpret and present the history and significance of Cornish mining to the highest quality
- To promote educational use of the Site.
- To optimise the contribution of the Site to the local economy

The discussion of key management issues that follows, and the resulting strategic actions, have been developed in the context of contribution to achieving the above Aims.









**Above:** Extensive harbour quays built to serve the foundry of Harvey & Co., Hayle, and what was once the world's greatest manufactory of the Cornish steam beam engine

# 5 Threats, Issues and Opportunities





**Above:** Cooks Kitchen Mine, Pool

## 5.1 Introduction

The review undertaken in 2011, of progress during the five years since inscription in July 2006, identified a series of challenges that will need to be addressed in delivering the Vision for the Site. This section summarises only those key, strategic issues that are fundamental to meeting the obligations deriving from the World Heritage Convention over the next five years, grouped under its headings of Protection, Conservation, Presentation and Transmission. Other issues related to the management of this Site are discussed in the Monitoring Report (2012) at Appendix 8.6 (available online at: [www.cornishmining.org.uk/about\\_us](http://www.cornishmining.org.uk/about_us))

## 5.2 Protection

### 5.2.1 Planning Framework

Contained within the ten WHS Areas are distinctive landscapes and sites which are afforded statutory and other designations due to these possessing a range of significances. Some of these relate to the OUV of the World Heritage Site through their geological or ecological importance, such as County Geology (or RIGS) sites, and Sites of Special Scientific Interest (SSSI).

Where these designated sites and features coincide with the WHS Areas, these are managed sympathetically to enhance the setting of the Site which, in doing so, achieves multiple objectives for the benefit of all stakeholders.

Details of these sites and features are set out in the Monitoring Report (2012), within Appendix 8.6 (available online, see above).

In addition to the existing statutory protection conveyed by Scheduled Monument, Listed Building, Conservation Area, Registered Historic Park & Garden, Area of Outstanding Natural Beauty (AONB) or Site of



Special Scientific Interest (SSSI) status, a series of improvements to the protection of World Heritage Sites as a designation in the UK planning context have been made since 2006.

- In October 2008 the **Article 1(5)** directive relating to the General Permitted Development Order (GPDO), as expressed in the Town and Country Planning (General Permitted Development) Order 1995, was extended to World Heritage Sites which, in doing so, removed some existing development rights and substituted the requirement to seek planning permission for certain activities. This change brought World Heritage Sites into alignment with National Parks, AONBs and Conservation Areas in this regard. While this amendment is welcomed, the application of the directive in practice requires further definition in relation to the Cornish Mining World Heritage Site, and how this may be applied for the material protection of the World Heritage Site
- **Planning Policy Circular 07/09** set out policy guidance on World Heritage Sites and emphasised that the planning policies in a WHS Management Plan are key material considerations when determining applications in a WHS
- **English Heritage Guidance on Setting**, published in September 2009, sought to define setting and clarify some of the related issues. This document may be reviewed in the near future
- **National Planning Policy Framework (NPPF)**, published in March 2012, replaced the previous suite of planning instruments with a single unified, planning context. In section 12 'on serving and enhancing the historic environment' it restates much of the policy thrust of the previous planning policy statement PPS5 and includes direct references to World Heritage Sites. The NPPF requires local planning authorities to '*recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance.*'

**Below:** The historic façade of Charlestown Foundry





The framework states that the ‘*Substantial harm to or loss of designated heritage assets of the highest significance, notably... World Heritage Sites should be wholly exceptional.*’

- Its central theme is the ‘presumption in favour of sustainable development’, set out in twelve core land-use planning principles which underpin both plan-making and decision-taking.

Although matters relevant to the historic environment are scattered throughout these principles, particularly design, urban and countryside policies, it is the section on Conserving and Enhancing the Historic Environment which supersedes PPS 5, whilst following that document’s significance-led approach to decision-taking.

English Heritage has produced two comparison documents for ease of reference: Comparison PPS 5 Policies to NPPF Parts 1 & 2; one compares the NPPF historic environment policies to those in PPS 5, and the other gives information on additional policies in the NPPF not mentioned in PPS 5. These can be found on the English Heritage website ([www.english-heritage.org.uk](http://www.english-heritage.org.uk)) under the web page tab headings: Professional → Advice → Government Planning Policy → New Planning Policy

Each of the partner planning authorities has also revised their statutory planning documents since inscription in 2006. The key changes are;

**Below:** Conserved engine houses at Wheal Peevor near Redruth





- **Cornwall Local Plan Strategic Policies - 2010-2030**

The emerging draft of the Local Plan for submission to the Secretary of State seeks to address all aspects of land use planning including policies on minerals and waste developments. The draft contains a policy on the protection of the historic environment that applies to all development proposals:

Development proposals will need to sustain Cornwall's local distinctiveness and character and protect and enhance Cornwall's historic environment and assets according to their international, national and local significance through the following measures:

- a. Protect, conserve and enhance the historic environment of designated and undesignated heritage assets and their settings, including historic landscapes, settlements, Conservation Areas, marine environments, archaeological sites, parks and gardens and historic buildings
- b. Enhance and promote the Outstanding Universal Value of the World Heritage Site and its setting; supporting the adopted management plan

## Mitigation

The National Planning Policy Framework (NPPF, 2012) states that loss of Outstanding Universal Value in a World Heritage Site is to be '...wholly exceptional...'; however where development will result in loss, the council will seek appropriate and proportionate mitigation and/or compensation based on appropriate archaeological assessment.

The Cornwall Local Plan Strategic Policies - 2010-2030 also states that: '...New mineral development, of a scale sensitive to any landscape designations, will be supported in the following areas: '...b. ii Metals and industrial minerals', and that: 'All mineral development should enable effective reclamation at the earliest opportunity for appropriate uses that: 'ii. Conserve and enhance heritage assets and protect and enhance valued landscapes, geological conservation interests and soils.'

It is the intention of Cornwall Council to produce, in due course, a Minerals Plan containing detailed policies for specific minerals and their development.

- **West Devon Borough Council Core Strategy**

- was adopted on the 19th April 2011, and now forms part of the development plan for West Devon alongside the Adopted Local Plan. It contains a number of relevant policies, the most notable being Policy 18b

*'Development proposals within the World Heritage Site will conserve and where possible enhance the Outstanding Universal Value of the site. In particular, regard should be given to the following:*

- The historical and social importance of key buildings and their contextual setting
- The need to retain locally distinctive features in the design of buildings and the sub-division of the landscape
- The integrity of industrial infrastructure
- The importance of and evidence for ancillary industries'





**Above:** Bedford Square, Tavistock

‘Development proposals will need to sustain Cornwall’s local distinctiveness and character [to]... enhance and promote the Outstanding Universal Value of the World Heritage Site and its setting...’

Cornwall Council

**Devon County Council Structure Plan** was adopted in 2004 and was due to be in force until 2016. It referenced the then candidate Site, and included policy CO8 to protect ‘*internationally, nationally and regionally important archaeological sites and their settings*’. However, changes in planning legislation mean that in due course its policies will be replaced through Local Plans. The policies remain in force until revoked by a Parliamentary Order which is expected to have happened by late 2012.

The Options Consultation Paper (2011) for the Devon Minerals Core Strategy (subsequently renamed as the Devon Minerals Plan) includes reference in its Vision to the ability of quarries to ‘facilitate interpretation of Devon’s geodiversity and historic assets’, while its Objective 6 seeks to ensure that mineral development ‘enhances [Devon’s] world class environment’. It is anticipated that the pre-submission draft of the Plan due to be published in summer 2013 will include specific reference to mineral development within the WHS.



Similarly, the emerging **Devon Waste Plan Consultation** document (2012) includes the Cornish Mining World Heritage Site and acknowledges the international status of this. Draft Policy 'WDMP 3: The historic environment', includes the statement: 'Waste management development will not be permitted where it would significantly affect the following heritage assets or their setting'. There are no proposed site options for waste management development within or close to the World Heritage Site. The new Plan is unlikely to be adopted before 2014 and the Devon County Waste Local Plan adopted in June 2006 remains the waste planning policy.

## Conservation Areas

Beyond the statutory planning framework, local designations also serve to protect OUV including Conservation Areas. From 1998 to 2004 a partnership of English Heritage (with the Heritage Lottery Fund), Cornwall County Council, and the District Councils assessed the character and significance of 50 of Cornwall's industrial settlements. The Cornwall Industrial Settlements Initiative (CISI) studies included villages, ports and towns associated with Cornwall's nineteenth century industrial revolution based on metalliferous mining, slate and granite quarrying, and china clay extraction. These recommended the extension or creation of Conservation Areas in and around a number of mining settlements and where these have not yet been enacted these recommendations should continue to be pursued.

## The Cornwall and Tamar Valley Areas of Outstanding Natural Beauty (AONB)

The Cornwall and Tamar Valley AONBs together cover c.1,160 km<sup>2</sup> of Cornwall and west Devon respectively, and overlap the Areas of the WHS by c.73 km<sup>2</sup>, this being around 37 per cent of the WHS total area of 197 km<sup>2</sup>; c.73 km<sup>2</sup> of Cornwall and west Devon are therefore protected under both landscape designations.

The aims and objectives of the WHS Management Plan are set out to address the requirements of the UNESCO World Heritage Convention (1972) specifically, and relate to the seven landscape attributes which together comprise the Site's OUV (p.23 et seq.). The aesthetic qualities of the ten landscape Areas as inscribed do not form part of the Site's OUV but, where these are exhibited, are incidental to it. This is in marked contrast with AONB landscapes, however, where the areas included are designated through being attractive places to live and work.

Within the overlapping areas of the WHS and AONB designations, the statutory protection afforded to AONBs can be considered as a useful additional protection for some mining landscapes.

## 5.2.2 Workshop findings

The local authority partners in the World Heritage Site, charged with responsibility for protecting the Site and its setting, considered these and other related factors as part of the Management Plan Review in February 2012 and concluded;

- **Existing Statutory protection is by and large adequate if used appropriately.** Existing statutes and the planning policies in the National Planning Policy Framework (which is a 'material consideration' when determining planning applications, as well as providing guidance for planning making), provide a high level of protection. However, further discussions will be needed concerning any outstanding issues e.g. those relating to permitted development rights for removal of materials from mineral working deposits
- However, non-statutory instruments would become increasingly significant, including the need to **get local policies and guidance established** for issues not covered in the new national framework
- WHS Management Plan policies and detailed guidance should be integral to planners' evidence base



- **A Supplementary Planning Document that brings these existing elements together with further discussion of WHS principles** would be welcomed. This should be based on an evaluation of the application of WHS Management Plan protection policies since inscription
- **Training and professional development opportunities** for Local Planning Authority staff, which explain existing protections, tools and promote the use of these, are therefore a priority. English Heritage's Historic Environment Local Management learning programme (HELM) is a useful existing resource in this respect, but specific World Heritage modules are needed
- This needs to be supported by training for bodies involved with **Neighbourhood Planning** within WHS sites, **information for members, other related professionals, e.g. architects, community representatives (Parish and Town Councils) and the general public**, communicated through appropriate channels
- More use of Article 4 designations should be made to protect the character of the mining landscape in the WHS by removing some permitted development rights, so that the cumulative effect of multiple small scale changes do not result in the gradual loss of authenticity
- More use of local development orders should be promoted alongside Article 4 designations to enable residents to understand what changes they can undertake to their properties without needing permission. Local Development Orders, established by consultation with heritage specialists, provide valuable guidance to residents. They can specify what materials and design styles are considered appropriate within the area to which they relate and negate the need for planning consent, thereby freeing up professional resources to focus on those proposals that go against the guidance

Better awareness of and training in existing WHS planning tools, rather than creating new protections, was identified as the key, plus adequate resources to implement and enforce WHS policy. Training should also seek to address the issues arising from WHS designation being granted in perpetuity, whereas the normal cycle form for strategic planning is defined over the medium term.

One area where improvements in protection were thought necessary was in English Heritage's approach to designating some features of OUV at risk of inappropriate development, where these did not already enjoy statutory designation. The present national Listing and Scheduling criteria are not defined in a way that enables them to always align with WHS statements of significance. There have been significant features demonstrating OUV, vulnerable to inappropriate development, which have been rejected for Listing despite their international importance.

**The WHS Office does not currently have the professional planning staff or budget to take an active lead on protection issues.** The existing arrangements for ensuring WHS policy is factored in to spatial planning and development control decisions are made via Historic Environment teams in Cornwall and Devon and Conservation Officers, advising planning staff in partner planning authorities. For an extensive WHS with around 1,500 'pre' and 'live' planning applications per annum within its boundaries, this means that currently protection is mainly reactive, in response to applications as received.

The current protection provision would need to be supplemented in order to pursue a wider, proactive role in planning training, communication and economic development (see below). This requires additional fundraising or re-allocation of resources from other areas of activity.





**Top and above:** The former Miners' Barracks of New Consols Mine Lockett, before and after conversion to a dwelling; note loss of original doorway, bottom centre-right

### 5.2.3 Protection of Mineral Resource

As the Cornish Mining World Heritage Site is a landscape designation, the whole cultural landscape is significant and requires greater definition and understanding in order to secure its protection, including mineral resource assessments. As an evolving, living landscape, however, it is not our intention to sterilise or deny access to mineral resources for the future, providing that features of OUV are protected.

Cornwall and Devon have played a significant role in the development of the science of mineralogy, with the Cornubian Orefield possessing around half of the UK total of known mineral species. Many British and world first Type occurrences are attributed to Cornwall and Devon, and some of the most influential figures in mineralogy undertook lengthy study trips during the nineteenth century particularly. The sites of most mineralogical importance are designated at a local level as County Geology Sites in Cornwall and County Geological Sites in Devon (formerly RIGS Sites) and there are 24 of these within the Cornish Mining World Heritage Site - 19 in Cornwall and 5 in Devon. The Cornwall Wildlife Trust undertakes the monitoring of CGS and undertakes condition assessments periodically. In Devon, CGS sites are managed by the Devon RIGS Group.

The Cornish Mining World Heritage Site contains extensive secondary mineral deposits (mineral waste dumps) associated with either underground development or mineral processing, and these are important historic context for the mines with which they are associated, and contribute to OUV. Until relatively recently secondary mineral deposits of this kind were essentially unprotected, although under Devon County Council's Minerals Local Plan, Prohibition Orders can be issued to revoke existing planning permissions for the removal of aggregates from mine tips in the Tamar Valley.





**Above:** Ding Dong Mine, West Penwith

## 5.2.4 Protection of the Setting

In considering how to protect the setting it was necessary to establish

- Nature of the risks to the Site
- Extent of the setting within which these risks may exert an adverse impact

**Risk assessment** - the varied nature and extensive geographical scope of the Site required that a high level overview approach to identifying the likely risks needed to be taken. These risks differ depending on the nature of the landscape, but the primary potential risks to setting were identified as

- Wind turbines
- Industrial estates/business parks
- New trunk roads
- substantial housing developments

Assessment of threat to the OUV must take into account the industrial values of this WHS – it

could be argued that new business parks or energy sources are consistent with the Cornish Mining WHS landscape and its significance in industrialisation and innovation in power supply. In this instance, it would be issues such as quality of design, or the effect of the scale and mass of the new development on the appreciation of the historic elements of the landscape, that would be crucial – not the nature of the development itself.

**Defining the setting** - the visual effect of these potential risks varies. Given the geomorphology of the Site, dominated by the granite intrusions that form the 'spine' of Cornwall, the majority of Areas are intervisible. Particularly for structures such as wind turbines, for much of the Site it was not possible to define a line between Areas outside which there would not be a visual impact from points within the boundaries.

Also, the WHS boundaries were identified as a result of applying historic landscape



characterisation. This has resulted in generously defined Areas within which the significant historic features can be viewed in context, (as at Blaenavon WHS). These represent the most authentic surviving mining landscapes from our period of interest. However, beyond the WHS boundaries there are many individual monuments and other areas of mining landscape which have not been included, but which provide additional historical context. The setting of the WHS was interpreted as including these.

Given the above conclusions in respect of;

- the nature, size, and complexity of the Site and its setting
- the need to apply a range of tests in assessing risk
- the pattern and extent of existing protective designations

It was agreed that taking a case by case approach to all development proposals within the whole of Cornwall and west Devon was the only strategy guaranteed to minimise risk to the setting - visual, spatial or historical - of the WHS. This approach

ensures more consistency than relying on buffer zones with limited status under current planning law (unless co-terminous with the boundaries of existing statutory protection regimes). A more piecemeal approach was considered, where a few isolated buffer zones - for example around more tightly defined urban areas - were drawn, but it was concluded that this would risk undermining the credibility of the setting policy to be applied to other Areas, by implying that these need less protection.

### 5.2.5 Applying the policies – methodology

Historic Environment officers in Cornwall and Devon refer to WHS Management Plan policies when commenting on development proposals deemed to have an impact on the Site and/or its setting. Where a threat to the authenticity or OUV of the WHS is identified, the relevant planning authority is informed.

**Below:** West Wheal Owles (left) with Wheal Edward and Porthledden House





‘...substantial gains have been made in conserving the World Heritage Site since inscription in 2006...’

World Heritage Site Management Plan 2013-2018



**Above:** Engine house conservation by the National Trust at Wheal Trewavas, near Porthleven





**Above:** the historic Perran Foundry at Perranarworthal - one of Cornwall's premiere engineering foundries during the nineteenth century - now a privately financed conservation development to provide loft appartments, riverside houses and live-work units

## 5.3 Conservation and enhancement

The criteria for the European Union Convergence Programme, launched in 2007, did not offer the same opportunities for heritage investment as had the previous EU Objective One and Two programmes - the funding streams it was designed to build on in Cornwall and west Devon.

Nevertheless, substantial gains have been made in conserving the WHS since inscription in 2006 by utilising a number of strategic funding sources:

- **Heartlands** - a £35m project to regenerate the centre of Pool focussed on the Robinson's Shaft complex of former mine buildings, which was funded by £22.3m from the Big Lottery, EU Convergence and the Homes and Communities Agency (HCA)
- **Tamar Valley Mining Heritage Project** - £7m programme of consolidation of mining features and incorporation within new visitor infrastructure, funded by the Heritage Lottery Fund, EU Objective 2, South West Regional

Development Agency, Devon County Council, West Devon Borough Council, Devon Rural Renaissance, South West Water, and Tavistock Woodlands Estate in addition to the Tamar Valley AONB itself

- **Geevor Tin Mine** – a £3.8m project using funds from the Heritage Lottery Fund, Objective One, Cornwall County Council, Penwith District Council, and The National Trust, to conserve mine buildings and create the mining museum 'Hard Rock'
- **Caradon Hill Area Heritage Project** – a £2.9m programme including conservation of mining features, funded via the Heritage Lottery Fund, South West Regional Development Agency, Cornwall Council and local partners
- **East Cornwall Regeneration Project** – a £2.1m project, which ran until May 2008, complemented the Tamar Valley Mining Heritage Project, and was developed in partnership with the Tamar Valley AONB and the Cornish Mining World Heritage Site





**Above:** The restored arsenic labyrinth at Botallack Mine, West Penwith

- **Mineral Tramways** – The Mineral Tramways Heritage Project was a £6m heritage regeneration initiative, managed by Cornwall Council and funded by Objective One, the South West Regional Development Agency, the Heritage Lottery Fund and Parish and Town Councils in the Project area
- **Townscape Heritage Initiative/Historic Environment Regeneration Schemes** – e.g. Camborne, Redruth, Hayle
- **Harvey's Foundry, Hayle** – a £4.2m phased heritage led regeneration project of the former foundry complex, funded via a mix of sources including Heritage Lottery Fund, English Heritage and European Regional Development Fund
- **Natural England Higher Level Stewardship**- Closer working with Natural England and the Department for Environment, Food and Rural Affairs (DEFRA) over the last five years has secured additional funding for the conservation of mining features on privately owned farmland, through the 'Historic and archaeological feature protection' (HAP) option of individual HLS Agreements. Also, several mining heritage attractions have benefitted substantially from investment via the Rural Development Programme for England (RDPE) funded WHS led project, 'Discover the Extraordinary'

All these projects have made a substantial contribution to the regeneration of deprived areas, and created employment opportunities in construction, tourism and related retail and catering operations through the infrastructure and community assets that they have created.

### 5.3.1 Monitoring of OUV assets within the World Heritage Site

UNESCO's Periodic Reporting requirement obliges World Heritage Sites to undertake monitoring of respective Sites to ascertain the relative effectiveness of management plan delivery and the protection of OUV. The Cornish Mining World Heritage Site is due to be part of the review scheduled for 2012 and in order to fulfil this obligation a monitoring plan was produced in 2008. This covers three main areas where data is required: Conservation of OUV Authenticity and Integrity; People and the World Heritage Site; and Environmental Quality.

#### Condition Survey

Condition data is a key aspect of demonstrating the overall preservation of the Site. In 2010 the WHS Office commissioned a detailed photographic survey to record features and sites within the WHS to enable the creation of individual baseline condition assessments. The survey generated around 10,000 images and a record of baseline condition for each site/feature.

Examination of the condition data thus produced has revealed that around 82 per cent of the sites/features surveyed are considered to be in a 'favourable' state, using the assessment criteria set out in the survey methodology as agreed. The remaining 18 per cent of sites/features needs to be analysed and an order of priority established to help target future conservation expenditure.

Of particular note is the Luxulyan Valley (Cornwall Council) and Viaduct, (in the ownership of Cornwall Heritage Trust), the last major conservation project on which was delivered in the early 1990s. The WHS supports the Conservation Management Plan (2011), and fundraising for its implementation.





**Above:** the interior of the carpenter's workshop at Robinson's Shaft, South Crofty Mine, adapted for use as a café as part of the Heartlands regeneration project, retaining the original machinery in situ

## Cornwall Council WHS Assets capital needs assessment

Following the Condition Survey detailed above, the WHS Office commissioned a report to set out the cost of conservation work on those WHS assets in Cornwall Council ownership which were judged to be in unfavourable condition by the 2010 survey. This identified 27 features which require attention within 17 separate sites, and outline estimates of the likely cost of the works proposed in each case was made. This indicated that around £1million will be needed to deliver the works required to place all Cornwall Council OUV assets in a desirable state of conservation. The report was submitted as a capital needs bid as part of the Council's budget setting round for 2012/3.

The WHS assets in public ownership are globally significant, and require adequate resources to sustainably manage them. They have historic, archaeological, environmental and social value for the whole of humanity. Whether or not they currently have an economic use, they have a bequest value for future generations.

The WHS Partnership encourages public bodies to investigate all options when considering how to achieve appropriate maintenance, including re-use and collaboration with other organisations and volunteers. Where disposal is considered, this should only be undertaken in line with guidance in *'The Disposal of Heritage Assets'* (English Heritage, May 2010).

([www.english-heritage.org.uk/publications/disposal-heritage-assets](http://www.english-heritage.org.uk/publications/disposal-heritage-assets))



## At risk assets

Partners, notably English Heritage, produce specific lists of heritage assets at risk. Analysis of these indicates that a number of groups of features or components of significance to WHS OUV may be under particular risk at present, including;

- Ports and Harbours
- Churches and Chapels

English Heritage is taking the lead in developing strategic approaches to addressing these risks, and the WHS should collaborate with and support this work.



**Above:** The Tolgus Calciner near Redruth, a Scheduled Monument and the most complete example of this rare ore dressing structure

## 5.3.2 World Heritage Site status and economic regeneration

There is a desire amongst planning and conservation officers to use the WHS Management Plan proactively, to stimulate economic regeneration. There are no inherent obstacles as such for doing this already, as examples such as Heartlands in Pool, which was supported by the WHS Office throughout the seven year development process, have illustrated. However, other than those projects where the WHS team has played a direct role, there have been few references to WHS priorities as expressed in the Management Plan as contributors to regeneration by other organisations.

This could be addressed via the training and communication highlighted above. However, to support integrating the WHS Management Plan priorities with local authority regeneration agendas, Community Infrastructure Levy and economic development strategies, etc, there is a need to ensure regular liaison between the WHS Office and the regeneration teams. It may also require a review of where the WHS Office sits within Cornwall Council.

Two steps could be taken in the short term to enhance the use of the Management Plan as a regeneration tool:

- Highlight the WHS priorities for heritage led regeneration (Areas, sites and/or structures) in the Management Plan
- Incorporating WHS priorities into Local Authorities' place shaping agendas

**The latter is vital to realise the full economic potential of WHS status.**



### 5.3.3 Climate change

On average, temperatures in England have risen by about one degree Celsius since 1980, with 2006 being the warmest on record and 2011 the second warmest<sup>1</sup>. All regions of the UK have experienced an increase in the contribution to winter rainfall from heavy precipitation events between 1961 and 2006. In summer all regions except NE England and N Scotland show decreases.

Relative sea level (sea level taking into account changes in land height) in the South West has risen by approximately 250mm since 1916<sup>2</sup>.

The 2009 UK Climate Projections (UKCP09)<sup>3</sup> is the latest to be published. These show that the rate of climate change in the South West will accelerate as the 21<sup>st</sup> century progresses. By 2080 it is projected that summers will be hotter and drier, whilst winters will be warmer and wetter and relative sea level will be higher:

Ranges of projected climate change in the South West in the 2080s under the high emissions scenario demonstrate the uncertainty within the computer models used to model our climate. Predictions vary between;

- 2.1 - 5.1 Celsius winter mean temperature and 2.7 – 7.9 Celsius summer mean temperature increases
- minus 7 to plus 10 per cent annual mean precipitation
- 20 - 69cm relative sea level rise

Whilst climate change will impact over a long timescale, it will need to be monitored and the effects on the WHS assessed in the lifetime of this Plan in order to prepare appropriate policy responses in good time.

More frequent intense rainfall events will increase the flood risk from rivers and surface water runoff in particular. Devon County and Cornwall Councils now have the role of Lead Local Flood Authority (LLFA), to lead on local flood risk management.



**Above:** The harbour breakwater at Portreath

Locally agreed surface water mapping has been developed as part of the Preliminary Flood Risk Assessment for Devon to inform where there is surface water flood risk. It is to be used alongside the existing Environment Agency Flood Zones by Local Planning Authorities in the planning process, to reduce the potential risk from any new developments.

A substantial proportion of the Site runs along both the north and south coasts of Cornwall, and includes the extensive estuarine landscapes such as the Tamar Valley in Cornwall and west Devon. The impacts of sea level rise may be particularly noticeable in the industrial ports and harbours that are elements of OUV in these Areas. Accelerated erosion of surfaces and deterioration of building fabric within both coastal and inland areas could also result from the anticipated increase in extreme weather events and the warmer, wetter conditions anticipated during the winter months and hotter, drier conditions expected during summer. More extremes of weather could also increase demand for 'under cover' visitor facilities.

<sup>1</sup> Met Office (2011). *Annual 2011*. [online] Available at [www.metoffice.gov.uk/climate/uk/2011/annual.html](http://www.metoffice.gov.uk/climate/uk/2011/annual.html)

<sup>2</sup> Jenkins, G.J., Perry, M.C., and Prior, M.J. (2008). *The Climate of the United Kingdom and Recent Trends*. Met Office Hadley Centre, Exeter, UK. Available online: <http://ukclimateprojections.defra.gov.uk/media.jsp?mediaid=87933&filetype=pdf>

<sup>3</sup> UK Climate Impacts Programme (2009) *UKCP09*, URL: <http://ukclimateprojections.defra.gov.uk/>



The Environment Agency already require robust flood defence measures be taken as part of proposed development within these high risk locations. For areas of the Site where such measures would be damaging to OUV, the policy response needs to be discussed and strategies agreed.

Any new developments should not increase flood risk. The Flood and Water Management Act 2010 encourages the use of Sustainable Drainage Systems (SuDS) in new developments and re-developments. It does this by requiring drainage systems to be approved, against a set of National Standards. It will be the role of the newly established SuDS Approving Body (SAB) within Devon County and Cornwall Councils, to approve, inspect, adopt and maintain sustainable drainage systems for new developments exceeding one property.

Using Sustainable Drainage Systems (SuDS) to manage surface water has a number of benefits, such as improving water quality and the local environment. However, they also provide an important function in reducing the risk of flooding of homes and businesses, as well as adjacent or downstream properties, as a result of heavy rainfall. It is therefore a key consideration to look at the surface water flood mapping available and consider what drainage measures should be used.

Dealing with climate change will require a flexible and holistic approach. In some cases adaptation to cope with the effects would be inappropriate or not practicable, whereas in others change could be managed whilst still maintaining the authenticity and integrity of the WHS. The WHS Management Plan should also consider renewable energy technologies and carbon emissions reduction as means of lessening the negative impacts of climate change. This will require a cross cutting approach, including integration with protection, conservation, transport and sustainable tourism policy and strategy.

### 5.3.4 Risk management and emergency preparedness

For such an extensive WHS, it would not be practicable for the Management Plan to seek to address all risks for all features of the Site. The majority (85 per cent) of the Site is in multiple small scale private ownerships, so other than through awareness raising, the ability to influence risk management is limited. While this situation cannot be considered as ideal the impact of an individual 'disaster' type event affecting the whole Site is relatively low.

The focus should be on key **strategic** risks, and how to co-ordinate mitigation and emergency response. Measures could include;

- Audit major owners, including the National Trust, Cornwall Council parishes and town councils – and encourage these to ensure they have disaster contingency plans in place to reduce likelihood and impact of loss of significant features to flood, fire, unauthorised demolition
- Liaise with county emergency services regarding the key risks identified by the audit including vandalism, major fire
- Highlight the cumulative effect of multiple small scale risks – e.g. theft of stone from monuments, use of off-road motor vehicles at key sites

While not involving risk to the Site's OUV a related risk management issue concerns the safety of the public when visiting landscapes within the WHS which may contain untreated shafts or open mine access levels. These features are important elements of the mining landscape which preserve access to underground workings and should be retained. Members of the public should, however, have due regard for the potential hazards posed by these features which may be unexpectedly encountered in areas of moorland, or in woodland or coastal settings. The public are advised not to enter such features unless in the company of appropriately experienced cavers or mine



explorers, and with the permission of landowners. The WHS endorses the shaft safety treatment approach set out in the Cornwall Underground Access Group (CUAG) guidance: 'Underground Access' (1995).

The strategic actions in Section 6 include measures to scope major risks and co-ordinate response plans with owners, managers and emergency response organisations.

## 5.4 Presentation

This aspect of Site management includes interpretation, visitor management and sustainable tourism. Co-ordinated activity at national level is limited to that pursued by the Local Authority World Heritage Forum (LAWHF), with DCMS publishing the view that, *'It is for World Heritage Sites to decide on their own marketing strategies, individually or as a critical mass, or through the Local Authorities World Heritage Forum, in the light of resources they are able to devote to promotion. If they agree on a national approach, closer working with VisitBritain and, in England, through the Regional Development Agencies can be helpful.'* (World Heritage for the Nation: Identifying, Protecting and Promoting Our World Heritage, Government Response to a Consultation, DCMS, January 2010)

As LAWHF has very limited resources, national activity has been dependent upon fundraising or finding commercial partners to take initiatives forward – such as the Endemol/CBBC pilot series on World Heritage Sites broadcast in February 2012. This has inevitably limited what can be delivered, resulting in low general awareness of WHS status.

At regional level, the South West Regional Development Agency (SWRDA) part funded a three year (2007-2010) sustainable tourism promotion for all the WHS in the region (City of Bath, Cornish Mining, Jurassic Coast and Stonehenge and Avebury), which resulted in a joint promotional leaflet and travel website. Since



**Above:** The World Heritage Site 'Cousin Jacks' application for smart phones

the DCMS report was published, RDAs have been abolished and VisitBritain's funding reduced. Joint working at regional level is now being taken forward with funding from the Cornish Mining WHS 'Discover the Extraordinary' programme, but this project ends in September 2013.

Locally, the Cornish Mining WHS Marketing strategy, adopted as part of the previous Management Plan, focused on contributing to cultural tourism in the shoulder months – an approach consistent with regional tourism strategies, including that of the then South West Tourism.

It proposed a range of strategic actions, necessary to deliver the growth predicted by an Economic Impact Assessment that had been published as part of the WHS bid. The EIA had identified that £500,000 investment in promotional campaigns over three years could deliver additional tourism activity to the value of £11-12m per annum.

The WHS is marketed as a destination offer within the existing Cornwall and west Devon tourism product. Its key characteristics are a rich, diverse, distinctive landscape, created through a sustained period of technological innovation



**Above:** The internationally acclaimed opera singer Ben Luxon performing in Miracle Theatre's 'Tin', part of the World Heritage Site's Cultural Events Programme

and entrepreneurship by people whose industry shaped the modern world. It is distinct from many south west tourism 'honeypots' in that it is a distributed destination, available across the ten WHS areas, most of which are predominantly rural.

The Cornish Mining WHS accumulated intellectual and cultural capital to enable it to develop the new destination offer which included

- **'Our mining culture shaped your world'** - brand identity campaigns, which articulated the characteristics and values of the WHS (e.g. Paddington Station installation in 2007, 'Mine and Yours' campaign in 2008)
- An **interpretation strategy** which defines the 'story of Cornish Mining'
- Supporting the creation of the **Cornish Mining Attractions Marketing Association (CMAMA)** in 2006, a quality assurance and networking organisation of currently 18 members, advocating the role of mining heritage in the tourism economy
- **Collaborative projects** with local **tourism accommodation associations** and tour guides to ensure awareness of and access to the opportunities presented by WHS status

The cumulative commercial advertising value of WHS related events and PR campaigns since 2007 is in excess of £4m, and resulted in awareness levels of 54 per cent for the Cornish Mining WHS in visitor markets both within and outside the region.

However, marketing was undertaken with minimal resources, as the £500,000 identified by the Economic Impact Assessment was not forthcoming. To build on the gains made following inscription, and optimise the potential economic value of WHS status, greater investment in all aspects of the WHS tourism destination offer was needed.

In 2007 the WHS Office approached the Regional Development Agency with proposals for an integrated programme of product improvements, tourism industry engagement and promotion.



The key focus of this investment was on building the quality experience expected by the target markets for what was perceived as a world class destination.

The initial expression of interest developed into a £2.4m Rural Development Programme for England (RDPE) funded three year programme of activity, entitled 'Discover the Extraordinary', funding for which was confirmed in late 2009. A project team, including tourism, marketing and interpretation posts, has since delivered

- £1.1m of physical improvements at 11 CMAMA members attractions
- A series of 14 new trails and audio tours around the ten WHS landscape areas
- A new website, supporting audio, film and social media content to highlight the Cornish Mining story and how and where to access it
- Engagement with 300+ tourism businesses, over 100 of which are now hosting Cornish Mining content on their own websites
- Extensive media coverage of the WHS in local and national publications



**Above:** Invited tourism businesses experience World Heritage at Morwellham near Gulworthy

The Discover the Extraordinary programme (DtE) also funded market research which has improved understanding of the visitor preferences. This has informed the sustainable tourism priorities for this Management Plan period.

### 5.4.1 UNESCO World Heritage and Sustainable Tourism Programme

Since the WHS initiated the DtE programme, UNESCO has launched its **World Heritage & Sustainable Tourism Programme** (Nov 2011). This aims to create an international framework for sustainable outcomes related to tourism at World Heritage properties, based on 9 core principles to guide the development of tourism strategy in WHSs, which should;

- fit with protection, conservation, learning and outreach strategies
- be delivered through partnerships involving all aspects of the tourism supply chain, with access to the full range of skills and resources
- involve local communities in planning and developing
- equitably contribute to their quality of life and socio-economic development
- provide resources for ongoing protection, conservation and management of the Site

The formative research for this Management Plan with key tourism stakeholders in the WHS, defined the Site's visitor management priorities in the context of the above core principles. The WHS Partnership can undertake some of the resulting priority actions independently, including;

- Encourage local residents to visit local places and participate in events
- Use the website and social media to raise awareness
- Communicate with visitors as active contributors and participants

All these are aspects of previous activity that need to be carried forward in the next Plan period.

The remaining issues all require partners to assist in, or take direct responsibility for, delivery (e.g. traffic management). The key visitor management activities where stakeholders highlighted that the WHS could make a contribution included:

#### **Product Development:**

- Increasing and distributing economic benefits of WHS status widely throughout the Cornwall and west Devon
- Ensuring that attractions and other facilities linked with the WHS are exemplars of good, sustainable practice
- Undertaking a comprehensive audit of tourism travel options together with a delivery plan
- Ensuring that key WHS landscape destinations and WHS linked attractions can increasingly be accessed through sustainable means and private car usage is reduced
- Encouraging the tourism industry to promote sustainable travel and work together to develop sustainable travel packages
- Measuring impact of the WHS itself, and impacts upon it, and using that data
- Understanding, and responding to, the implications for the tourism industry of the current economic climate in general, and for the WHS in particular
- Developing the wider WHS landscape (rural and urban) product in line with visitor preferences for experiencing places – villages/ towns and communities within the WHS

#### **Marketing, Interpretation and Promotion**

- Integrating all aspects of protected landscapes as an attractor and social asset, rather than limiting activity to heritage and culture
- Optimising sensory experience to attract wider, more diverse audiences (and improving access for all)
- Ensuring socially inclusive access, challenging presumptions against and identifying the barriers to heritage tourism
- Contributing to out of season tourism in the region
- Engaging the whole supply chain of local businesses to work collaboratively with the Site team for collective benefit

- Encouraging all bodies involved in destination marketing to work together in a joined up approach, to deliver consistent messages and develop opportunities throughout the WHS, as part of the DtE exit strategy for WHS related tourism beyond 2013
- Developing CMAMA to become an effective and sustainable visitor attraction marketing organisation
- Facilitating national TV and media editorial
- Supporting overseas tourism linked with the Cornish diaspora

The majority of these were all rated as high priority, so the key issues for the Management Plan to address arising from these are outlined below.

### **5.4.2 Delivery Mechanisms for Visitor Management**

The WHS Partnership does not own or operate the WHS 'product' or have legal powers over it, and is not a destination management organisation or tourism agency in its own right. Additionally there are limited staff and financial resources directly managed by the Partnership to actively engage in all aspects of visitor management. The priority actions all require partners to either assist in delivery or take the lead. The WHS Management Plan strategic action plan should therefore seek to:

- **Scope all potential partners**, strengthening existing and creating new networks where WHS acting alone is not feasible or optimal
- Involve partners in the **exit strategy for Discover the Extraordinary**
- Produce new **visitor management and marketing plans**, as part of a wider sustainable tourism strategy that builds on the evaluation of DtE and the UNESCO WHS Sustainable Tourism principles, and especially
- Seek to **involve communities** in development of future initiatives
- Seek to **spread the benefits widely** across all areas and aspects of the tourism industry



The priority actions all require partners to either assist in delivery or take the lead

### 5.4.3 Sustainable Physical Access

During the initial Management Plan period, much progress was made in a number of areas related to visitor management and communication. The implementation of the WHS Signage Strategy, following the successful pilot scheme in the Tamar Valley, across the remaining nine WHS Areas in Cornwall, is an ongoing priority. This needs to be followed up with the encouragement of sustainable physical access to many of the key WHS visitor destinations and attractions.

There are a number of opportunities which should be taken forward during the next Management Plan period related to:

- Providing **signed links** from multi-use trails and national and regional routes to the main WHS attractions
- **Integrating public transport** with access to attractions, and for site owners to develop sustainable travel packages
- Examining the potential for **water-based transport** in areas such as the Tamar Valley
- Provision of **WHS information** at key transport nodes



**Above:** the World Heritage Site mobile 'Mine Traveller' interpretation display

- Implementing the findings of the **Signage Strategy** throughout the WHS
- Promoting '**explore what's on your doorstep**' to both visitors and local residents

Many of the WHS Areas contain existing public Rights of Way which should provide excellent sustainable access on foot or in some cases by cycle. However some public paths suffer from limited resources for maintenance which can result in poor condition, limiting their use. Public Rights of Way within WHS Areas should be well maintained, to support sustainable tourism objectives and the health and wellbeing agenda.

**Below:** World Heritage Site town signage in Tavistock, west Devon



## 5.4.4 Hierarchy of Interpretation Sites

The Management Plan 2005-10 identified the need for co-ordinated interpretation for such a complex WHS, including the identification of three Key Centres in the west, central and eastern parts of the Site to act as a signpost to other attractions and facilities and as a focal point for formal education. They needed to be of a quality that underlines the importance of WHS status and authenticity, and to meet customer expectations of a WHS related facility and national standards of service and customer care.

The WHS published its **Interpretation Framework** in 2006, which defined in more detailed the concept of Key, Area and Thematic interpretation centres, identified the Area clusters and established the criteria that Key Centres would have to meet.

The Interpretation Framework was essential supporting evidence for the **Discover the Extraordinary** RDPE bid, setting out the strategic justification for investment in the agreed Key and Area Centres. So far

- two Key Centres have been confirmed - Geevor Tin Mine in the west and Morwellham Quay in the east (with the central area likely to be the newly developed Heartlands, working in partnership with East Pool Mine and others in its Areas cluster)
- nine Area Centres have been established

There should be a periodic review of the Key Centre criteria, with a re-evaluation of whether the designated sites continue to meet these, in the context of updating the Interpretation Framework to take account of progress to date and identifying future development priorities. There is a need to examine the role that some towns or communities may have as first points of entry to the WHS, and also to enhance those WHS related sites

or attractions recognised in the hierarchy of interpretation but which have not yet received substantial investment.

## 5.4.5 Sustainable Operations

Businesses in the Cornish Mining tourism sector should be encouraged to operate in a more sustainable manner in order to become exemplars of good practice and to meet UNESCO tourism principles. Through the Discover the Extraordinary programme and working with other partners such as Coast and Visit Devon, opportunities will be provided for tourism businesses in the heritage mining sector to:

- **Operate in a sustainable way** through a range of initiatives, including the Green Tourism Business Scheme
- **Support visitor gifting** to help conservation and environmental projects in the area
- **Develop travel plans** as part of integrated transport packages

Additionally, the development of sustainable tourism linked to the WHS presents opportunities for creating a year-round attractor, with less dependency on good weather in the peak summer months, thus adding stability and sustainability to the tourism economy.



**Above:** Geevor Tin Mine in West Penwith, one of the World Heritage Site's Key Centres for interpretation





**Above:** Crowds gather at Carn Brea to enjoy the Smokin' Chimneys event, June 2008

## 5.5 Transmit

The responsibility to transmit WHS values to future generations is covered by Article 27 of the WH Convention.

*'1. The States Parties to this Convention shall endeavour by all appropriate means, and in particular by educational and information programmes, to strengthen appreciation and respect by their peoples of the cultural and natural heritage defined in Articles 1 and 2 of the Convention.*

*2. They shall undertake to keep the public broadly informed of the dangers threatening this heritage and of the activities carried on in pursuance of this Convention.'*

*UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, (1972)*



**Above:** Portreath school children receive commemorative Cornish Pennies from the World Heritage Site to mark the bicentenary of the Portreath Tramroad in 2009

### 5.5.1 Learning Strategy

**The UNESCO Young People's World Heritage Education Programme** seeks to encourage and enable tomorrow's decision-makers to participate in heritage conservation and to respond to the continuing threats facing the world's heritage. It focuses on young people, and its delivery is principally guided through the 'World Heritage in Young Hands' educational support materials.

The Cornish Mining World Heritage Site approach to learning builds on this, but takes a wider perspective on its audience, informed by the Inspiring Learning for All framework adopted by the Museums Libraries and Archives Council (MLA).

***'Learning is a process of active engagement with experience. It is what people do when they want to make sense of the world. It may involve an increase in skills, knowledge or understanding, a deepening of values or the capacity to reflect. Effective learning will lead to change, development and the desire to learn more.'***

*The Campaign for Learning 1999*

The Cornish Mining WHS approach to learning embodies an inclusive approach; 'learners' are not just schoolchildren and 'learning' is not just about the acquisition of facts and knowledge.

Within the context of marketing and interpretation





**Above:** Educational engagement at Morwellham

of the Site overall, a strategic approach to developing the learning opportunities afforded by WHS status was identified as a priority. This was informed by research to establish education audiences' needs, which was then compared with existing learning opportunities across a range of providers, including CMAMA attractions.

This revealed that a lack of capacity to deliver

effectively on a broad range of themes narrows the choices available to learning audiences and limits the appeal compared to other learning services providers. Most mining heritage attractions were not cultivating further opportunities to extend their provision or exploit their potential to deliver broader content. Creative educational approaches are key to the effective delivery of WHS related themes and engagement of learning audiences. Guidance is needed on how to develop new approaches to engage learning audiences. Other issues included;

- Formal education practitioners are more likely to use mining heritage locations as a context for learning where they perceive it will match curriculum requirements. Providers need to know what these are and be able to develop appropriate services
- Schools are deterred from extending their studies into the WHS landscape, or from visiting Cornish Mining heritage attractions, by a range of factors, which included in order of priority
  - Lack of appropriate resources and curriculum materials to support study in the classroom
  - Lack of outreach, such as special events or visiting speakers
  - The cost of transport
  - The preparation of risk assessments
- Lack of records from sites and providers



**Above:** The World Heritage Site's Cornish carol writing competition with (inset) the winners in 2006



make it hard to track learning audiences and define their activities. This creates difficulties in tracking the needs of and communicating effectively with learning audiences

- Many sites did not have access to professionally trained learning or education staff, and so are not able to offer the full range of resources and experiences to meet the needs of the audience

**The WHS Learning Strategy priorities are still relevant** but should be updated to take account of changes in government policy, Cornwall's White Paper for Culture and Museum Strategy, the Arts Council's strategy and emerging market trends.

The Learning Strategy delivery structure should focus on building capacity in existing organisations and within existing networks, possibly through a 'commissioning' process, similar to that used for the WHS Cultural Events Programme. To facilitate this, **the development of a full time post, and operating budget, is a priority**, to co-ordinate, commission and monitor the quality of delivery of the Learning Strategy through existing networks. The focus of the post should be building capacity across the existing heritage sector, promoting partnerships and driving up standards.



**Above:** 'Gonamena', part of the World Heritage Site's Cultural Events Programme



**Above:** 'Surfing Tommies', part of the World Heritage Site's Cultural Events Programme

## 5.5.2 Cultural Programme

The WHS Cultural Programme contributed to this aspect of Site management – providing audiences with the opportunity to understand aspects of the Cornish Mining story through events, performance arts, walks and talks. During the period of the previous plan

- Over 150 performances of 11 commissioned presentations/events
- Estimated audiences of over 25,000 people
- Over £400,000 additional income generated (Cornwall Arts Centre Trust)

Qualitative evaluation of the programme reveals a high level of satisfaction with, and learning impact from, the cultural programme. Given the high level of external income generated by events, the cultural programme represents a cost effective means of raising awareness of the WHS with new audiences and communicating the values to all attendees.

*"I learnt a lot about the history of the area, and the impact the mining industry had on Cornwall"*

*"I learnt what it really was like in the mines, and that people who lived around the mines never could hear anything but machinery working"*

(Audience feedback, Gonamena Community Play evaluation report Hilary Orange 2009)

This Plan period will see the 10th anniversary of inscription in 2016. Given the positive reactions to date to WHS cultural events as a method of presenting the Site's OUV, and the level of media coverage generated, priority should be given to planning and fundraising for a programme of celebrations in 2016 – possibly including touring exhibitions, cultural events and a lecture programme.

### 5.5.3 International co-operation

The Cornish Mining WHS is unusual in that its OUV can also be expressed in surviving landscapes across the globe. Research has indicated at least 175 locations around the world with a Cornish connection and most of these are related to hard rock mining. The audience for Cornish Mining is therefore global - over and above the issues relating to the international status and interest in World Heritage Sites as places that have significance

*'...which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity.'*  
(WHC Operational Guidance 2011)

Almost uniquely, Cornish Mining could be said to be a transcontinental WHS.

This offers enormous potential for building Cornwall and west Devon's reputation in communities around the world. Initial research for a proposed extension of the Cornish Mining WHS to incorporate a series of surviving Cornish Mining landscapes in South Australia, South Africa, Mexico, Spain and Ireland indicates great interest in re-establishing links with Cornwall and west Devon. This will bring social and economic benefits for all involved.

The WHS Policy Review conducted by DCMS in 2008-10 concluded the following with regard to international cooperation,

*'Stronger international links were welcomed by some respondents. We agree. UNESCO would like to see more international links between sites, such as through the development of Transnational or Transboundary World Heritage Sites, and the UK has taken an active role in working with other States Parties, through, for example, developing the Frontiers of the Roman Empire World Heritage Site. It is the role of DCMS as the State Party to take the lead in international links at Government level but there are a number of UK sites exchanging experience and best practice with site managers in other countries.'*

*(World Heritage for the Nation: Identifying, Protecting and Promoting Our World Heritage, Government Response to a Consultation, DCMS, January 2010)*

The Cornish Mining WHS Partnership will therefore support the proposal for a transnational serial nomination, working with partner State Parties, as a priority of this Management Plan.



**Above:** Linares, Spain, an extensive mining landscape with Cornish technological links





**Above:** Delegates attending the Eighth International Mining History Congress gather at Kind Edward Mine in 2009

### 5.5.4 Research programme

A Cornish Mining WHS Research Agenda was developed following inscription to;

- define the current state of knowledge within the various study areas relating directly to the Management Plan
- set out known gaps or insufficiencies in knowledge
- inform the preparation of appropriate research strategies

The Agenda guides WHS direct commissioning of or support for research by others where this relates to the vision and aims set out in the Management Plan, under two main categories;

- **The World Heritage Site: the resource and monitoring** - assessment of the Inscribed landscape to aid management and inform UNESCO Periodic Reporting requirements
- **The World Heritage Site: outreach related research** - research primarily to inform WHS education and interpretation initiatives, and to assist marketing

Since 2006, numerous research projects have been undertaken, many via partners. Notable examples include;

- Cornish Migration destinations study (Dr Sharron Schwartz)
- 8<sup>th</sup> International Mining History congress and publications of proceedings (with Stirling University)
- William West project (Trevithick Society)

The Research Agenda sets out principal areas for study but should be regarded as an evolving document which will be revised as research progresses. Delivery of the many and various aims and objectives of the Management Plan will undoubtedly pose new questions and research opportunities. The Research Agenda should be reviewed and updated during this Plan period.

Appendix 8.7 gives further background to research undertaken for the World Heritage Site and details the various publications and studies either commissioned or co-funded for the period 2005 to 2012 (available online: [www.cornishmining.org.uk/about\\_us](http://www.cornishmining.org.uk/about_us)).









**Above:** The Treffry viaduct and aqueduct in the Luxulyan Valley

## 6 Policy framework and strategic actions



The following pages list the policies and actions through which delivery of the obligations arising from the World Heritage Convention will be achieved.

The policies remain unchanged from the original management plan, but they have been reordered to refer back to the four core areas of activity set out in the Convention. All stakeholders in the Site should ensure that their actions and decisions are consistent with these policies.

The strategic actions are designed to both further the pursuit of these policies and as a response to the discussion of the key issues during formative consultation with partners, set out previously in Section 5. These are the high level activities needed to deliver improvements across the whole

Site, not action specific to one area. Individual partners and stakeholders will be encouraged to exercise their responsibilities for achieving the Management Plan Vision, Mission, Aims and policies specific to their organisations in their own planning documents.

The tables below indicate how the strategic actions relate to the policies, and identify the lead agencies required to implement them.

### **World Heritage Site Governance**

The governance arrangements for the Site were agreed following inscription, and provide a structure that enables the principal funders and strategic Site management organisations to co-ordinate their activities for the preparation and pursuit of Management Plan policies. The World

**Below:** The Taylor's and Davey's shafts site at Wheal Maid near Crofthandy





Heritage Site Partnership Board is a Joint Local Authority Committee (JLAC), with a Memorandum of Agreement for the period to April 2014. The original governance options appraisal conducted in 2006 identified that the legal form of the governing body should be periodically reviewed. Alongside the current JLAC form, alternative legal identities, such as Charitable Trust or Community Interest Company, should be re-examined in the light of experience gained since inscription and changes in the operating environment. A review will therefore be carried out during the course of this Management Plan.

## 6.1 Protection

Policies within this section are the basis for robust, long-term protection for the World Heritage Site. Their implementation by all partner planning authorities and integration into strategic planning documents is essential to preservation of the OUV and integrity of the Site. These policies encompass not just the Site itself, but activities in the setting that might have a negative impact on the Site's OUV or integrity.

The strategic actions necessary to ensure protection of the Site's OUV and integrity focus on ensuring widespread understanding and application of the policies and planning tools available.

**Policy P1:** The Partnership will ensure that all relevant strategic documents and programmes have regard for the Site and its Vision & Aims.

**Policy P2:** All relevant strategic planning documents will make provision for the protection, conservation and enhancement of the Site and its setting.

**Policy P3:** Planning authorities will ensure that new development protects, conserves and enhances the Site and its setting.

**Policy P4:** The review of statutory protection within the Site will continue through national designations.

**Policy P5:** Designations and protection systems will continue to be reviewed throughout the Site.

**Policy P6:** Local authorities and other agencies will make full use of the powers available to them for the protection and conservation of the Site.

**Policy P7:** There is a presumption against the removal, disturbance or burial of historic mine waste within the Site.

**Policy P8:** Developments outside the Site that will adversely affect its Outstanding Universal Value will be resisted.

Policy	Strategic Action /	Strategic Action / Lead Agencies
P1;P2	Include policies in Local Plans and LDFs	Local Planning Authorities
P2;P3;P5;P6;P7;P8	Develop a Supplementary Planning Document	Cornwall Council
P6	Develop training materials and programme for Local Planning Authority staff in discussion with English Heritage and HELM programme	WHS Office / Local Planning Authorities
P3	Develop information for elected members, development professionals and the general public	WHS Office /Local Planning Authorities
P4	Report on listing/scheduling needs within the Site	WHS Office / English Heritage

## 6.2 Conservation and Enhancement

This section relates to positive actions for improving the Site's condition and distinctive character, and the integration of WHS priorities into wider regeneration agendas. The policies cover a range of aspects involved in conserving the cultural landscape assets, including conservation and enhancement, and improvements to presentation within the Site.

The strategic actions focus on achieving these policy goals through influencing owners, managers and delivery agencies and providing the specialist advice and information they need to understand the WHS values of the landscape assets in their care.

*Policy C1:* Sustainable heritage-led regeneration will be encouraged and supported.

*Policy C2:* New development will add to the quality and distinctiveness of the Site by being of high quality design and respectful of setting.

*Policy C3:* There will be a presumption in favour of retaining and re-using historic buildings which are important components of the Site.

*Policy C4:* Proposals for the resumption of mining will be supported where they do not adversely affect the Outstanding Universal Value of the Site.

*Policy C5:* Landscape, nature conservation and agri-environment management regimes will have regard for the authenticity and values of the Site.

*Policy C6:* The conservation and continuing maintenance of the historic fabric of the Site will be undertaken to the highest standards to ensure authenticity and integrity.

*Policy C7:* The historic character and distinctiveness of the Cornwall and West Devon mining landscape will be maintained.

*Policy C8:* Traditional materials and skills will be encouraged in the maintenance of the authentic historic fabric within the Site.

*Policy C9:* Where the historic fabric within the Site has been lost or compromised through non-authentic materials, inappropriate details and poor workmanship, historic character and detail will be reintroduced wherever and whenever possible.

*Policy C10:* Resources available for conservation of the Site will be prioritised to address the Vision & Aims.

Policy	Strategic Action /	Strategic Action / Lead Agencies
C1;C3	Publish list of WHS priority regeneration target areas and circulate to Local Planning Authorities for integration with S106/CIL strategies and regeneration agendas	WHS Partnership, in discussion with local authorities and funding bodies
C12	Prepare an emergency mitigation and response advice note and encourage major owners to develop appropriate plans	WHS Partnership with emergency planning and response services
C6	Advocate for funding to address capital needs assessments for key WHS features in Local Authority ownership	WHS Partnership Local Authority Partners
C6	Produce capital needs assessment for WHS features in other ownership	WHS Partnership and owners
C6;C7;C8;C10	Advocate for ongoing maintenance funding for WHS features	WHS Partnership
C5;C7;C12	Develop protocol / policy with planning agencies addressing flood defence in the WHS	WHS Partnership / Local planning authority / Environment Agency / and other relevant agencies
C2	Facilitate enhanced supply of locally-distinctive building stones	Mineral Planning Authorities



*Policy C11:* Key moveable components will be preserved in situ unless relocation will conserve or enhance the OUV of the Site.

*Policy C12:* The risks to the World Heritage Site and its management will be regularly assessed and actions taken to address these risks.

*Policy C13:* Archives, collections and data concerning the World Heritage Site will be curated, catalogued and conserved and made accessible to all.

## 6.3 Presentation

This section sets out the policies designed to ensure that access to and enjoyment of the Site is sustainable and equitable. This is the shared responsibility of public, private and third sector organisations. Policies focus on ensuring that the unique qualities of the mining landscape and its World Heritage values are at the core of all presentation activity.

Strategic actions are focused on delivering the principles in the UNESCO Sustainable Tourism programme. This prioritises working with the full supply chain within the tourism industry to improve the quality and sustainability of the visitor offer, and develop an integrated approach to promotion, building on the success of the 'Discover the Extraordinary' programme. Actions include developing strategies to ensure that visitor management contributes to the wider landscape asset management agendas, including investigating new income streams. Better public transport and more coordinated information on how to access the Site are another priority.

All projects involving greater access to communities within the WHS will actively consult and liaise with the community.

*Policy PN1:* The Partnership should promote access to the World Heritage Site that is sustainable to the environment and consistent with the values of the Site.



**Above:** World Heritage Site Familiarisation Day at Geevor Tin Mine

*Policy PN2:* The World Heritage Site should be interpreted and presented as a distinctive, evolving, living landscape.

*Policy PN3:* Visitors should be encouraged to explore and learn about the physical, social and cultural aspects of the Cornwall and West Devon mining heritage.

*Policy PN4:* The marketing and interpretation of the World Heritage Site should be coordinated to ensure a consistent, responsible use of the World Heritage Site Inscription.

*Policy PN5:* The economic impacts of the World Heritage Site should be monitored and quantified.

*Policy PN6:* The economic benefits of the World Heritage Site should be promoted to support wider cases for sustainable heritage-led regeneration and cultural tourism.

*Policy PN7:* The communities within and outside the World Heritage Site should be engaged in the enjoyment, benefits and management of the World Heritage Site.

*Policy PN8:* Enjoyment of the World Heritage Site should be available to all regardless of ability or income.

Policy	Strategic Action /	Strategic Action / Lead Agencies
PN4;PN7	Develop and implement the exit strategy for Discover the Extraordinary Project, involving partners	WHS Partnership Board with  Destination Marketing Organisation  Tourism Partnerships/ networks
PN2	Review, update and roll forward the WHS Interpretation Strategy, taking account of achievement of Key and Area Centres and the potential need for and role that other centres might play in the future	WHS Partnership Board with  Cornish Mining Attractions Marketing Association  Other Tourism Partnerships/ networks
PN5;PN6; PN7;PN8	Produce a scoping report on all potential tourism partners, in preparation for strengthening existing and creating new networks to <ul style="list-style-type: none"> <li>involve communities in development of future visitor management and tourism initiatives</li> <li>spread the economic and social benefits widely across all areas and aspects of the tourism industry</li> </ul>	WHS Partnership Board with  Destination Marketing Organisation  Tourism partnerships/ networks
PN1;PN3;PN5; PN6;PN7;PN8	Produce new WHS visitor management and marketing plan, as part of a wider sustainable tourism strategy that <ul style="list-style-type: none"> <li>builds on the evaluation of DtE and the UNESCO WHS Sustainable Tourism principles</li> <li>enables both visitors and local residents to 'explore what's on your doorstep' –developing local tourism clusters</li> <li>encourages achievement of recognised sustainability standards by partner businesses</li> <li>enables visitor gifting to fund conservation and environmental management projects in designated areas</li> </ul>	WHS Partnership Board with  Destination Marketing Organisation  Tourism Partnerships/ networks  The Cornwall Sustainable Tourism Project
PN1	Develop a sustainable transport plan to include <ul style="list-style-type: none"> <li>public and private, rail, road and waterborne services</li> <li>provision of WHS related information at key transport nodes</li> </ul>	WHS Partnership Board with  Local Rail Partnership  Local Authority Transport Depts.  Service Operators
PN1	Roll out the WHS Signage Strategy across Cornwall	Cornwall Council Highways



## 6.4 Transmit

Awareness of World Heritage Sites within the UK is relatively low compared to many other UNESCO member states. The Cornish Mining WHS surveys report awareness levels of 54 per cent both within and outside the WHS areas, which is relatively high, but understanding of what is meant by World Heritage Site status is a different matter.

This section sets out policies aimed at increasing the understanding of the World Heritage Site and its OUV. Understanding underpins the appreciation and, ultimately, conservation of the Site in the long term. Policies and strategic actions within this section focus on learning, research and intellectual access through immersive interpretation, such as cultural events. It also covers action to address this issue locally and globally, focussing on the international values of and audience for this Site.

**Policy T1:** The values and significance of the World Heritage Site should be communicated to a wide range of educational audiences.

**Policy T2:** Research into Cornish Mining and its worldwide linkages should be facilitated and encouraged, published and disseminated.

**Policy T3:** The distinctiveness of Cornish Mining culture should be celebrated, promoted and propagated.

**Policy T4:** The Partnership will promote best practice in heritage management, heritage-led regeneration and sustainable remediation of Cornish mining landscapes worldwide.

**Policy T5:** The Partnership will actively facilitate the exchange of ideas, experiences and the stories of Cornish mining communities worldwide.

Policy	Strategic Action /	Strategic Action / Lead Agencies
T1	Update and Implement the WHS Learning Strategy	WHS Partnership
T3	Form a WHS 10 <sup>th</sup> anniversary working party to develop and implement cultural events	WHS Partnership Local Authority Cultural services and providers Funding bodies
T4;T5	Support the development of the 'Frontiers of Cornish Mining' Transnational Serial WHS proposal, working with international partners	WHS Partnership UK Government
T4;T5 (also PN7)	Develop Cornish Mining overseas contacts database and circulate information, newsletter etc	WHS Partnership
T2	Review and update the research agenda	WHS Partnership









**Above:** South Caradon Mine

## 7 Monitoring arrangements

## 7.1 Monitoring and the World Heritage Site

*The Cornwall and West Devon Mining Landscape World Heritage Site Monitoring Report (2012)* is the first such report for the Site, and identifies a suite of topic indicators for assessing overall management effectiveness across the multi-Area World Heritage Site (please see: [www.cornishmining.org.uk/about\\_us](http://www.cornishmining.org.uk/about_us)). Co-ordinated management of the WHS is undertaken in accordance with the 34 policies contained within this Plan, and the 14 monitoring topics contained within the Monitoring Report have been selected with direct reference to these.

Monitoring is also an established requirement of the UNESCO World Heritage Convention (1972) which requires that World Heritage Sites undertake a Periodic Reporting exercise every six years. Sites around the world are grouped geographically for this process with the United Kingdom being within the Europe and North America region. This region contains 524 of the 962 Sites currently inscribed worldwide, and due to the large number of Sites it is divided into two sub groups, with the UK being within the first. The data contained within the Monitoring Report will be used to inform the completion of Part Two of the Periodic Reporting questionnaire - that relating to individual Sites – and the UK is required to submit this to the UNESCO World Heritage Centre by 31<sup>st</sup> July 2013.

At 19,710 hectares in extent, the Cornish Mining World Heritage Site is the largest in the UK, and is defined through a suite of seven landscape 'attributes' which together comprise its OUV, or international significance, overall. The size and scope of the WHS presents significant challenges regarding co-ordinated management and the remit of the WHS Office, derived from the Management Plan policies, is wide-ranging.

Within the Monitoring Report the topics under discussion have been grouped as three principal themes, in accordance with the *Monitoring Indicators for the Cornish Mining World Heritage Site* assessment, as produced in 2009.

The principal themes are

- Conservation of outstanding universal value (OUV)
- People and the World Heritage Site; and
- Environmental quality

The respective WHS Management Plan policies have been quoted for each subheading to aid understanding of the respective topics and the attendant management objectives.

Given the scale and complexity of the Cornish Mining World Heritage Site, effective monitoring can only be secured through ongoing co-operation with the partner local authorities – through their relevant departments – and agencies with particular conservation remits. Accordingly the data contained within the Monitoring Report is the result of work undertaken directly by the WHS Office and the Historic Environment department of Cornwall Council, by the partner local authorities – West Devon Borough Council and Devon County Council – and by agencies such as Natural England and Cornwall Wildlife Trust.



**Above:** The Mount Foundry, Tavistock - sensitive adaptive reuse of an historic site



To date, considerable progress has been made in undertaking monitoring across the suite of topic indicators identified, but data gaps remain in some areas. In relation to the conservation of OUV particularly, much has been achieved with an extensive condition photomonitoring survey undertaken across the whole Site. Carried out during the autumn of 2010, this survey assessed over 900 OUV sites or features and produced over 12,000 geo-referenced digital archive images. In addition to this, in 2011 a subsequent survey addressed those OUV assets which are within Cornwall Council ownership specifically, producing the information required to enable conservation prioritisation, should suitable funding be available from local authority or other sources in the future.

Awareness raising and general promotion of the World Heritage Site and its many attributes has been a principal objective since WHS inscription in 2006. While the impact of World Heritage status on residents and visitors has yet to be assessed directly, the promotion and marketing initiatives being pursued by the World Heritage 'Discover the Extraordinary' project (DtE) are, to a significant degree, addressing this. Part of a £2.4 million European funded programme delivered via the Rural Development Programme for England (RDPE), DtE is undertaking market research to ascertain the public's perception of Cornwall and west Devon and the Cornish Mining World Heritage Site, and also how visitor's learn of and interact with the Site and the mining heritage tourist attractions within.

**At 19,710 hectares in extent, the Cornish Mining World Heritage Site is the largest in the UK**



**Above:** The Prince of Wales Shaft engine house at Phoenix United Mine

During the period of this Management Plan (2013-18) it will be a priority to address those gaps recognised within the Monitoring Report, and to pursue related objectives which enable more effective co-ordinated management in accordance with its stated policies. The ongoing co-operation and support of a wide range of stakeholder partners, including the public, will remain important in achieving this.

## 7.2 Monitoring themes and topics

### Conservation of outstanding universal value (OUV)

#### 1 Protection

*CWDML WHS Management Plan Policies: P4, P5, P6, P7, P8*

This provides detail of the protective measures that are available to secure long term protection of the Site's OUV - the WHS governance structure, local and national planning frameworks and policies, and statutory designations

#### 2 Condition surveys and risk assessment

*CWDML WHS Management Plan Policies: C6, C7, C8, C9, C10, C11, C12*

Outlines the condition photomonitoring survey implemented to assess the state of preservation of OUV components within the Site and details the results and conclusions of this

#### 3 Development pressures and change

*CWDML WHS Management Plan Policies: C2, C3, C5*

Sets out the topic of planning applications within the Site and figures relating to the total number of applications made, and the number of applications upon which Historic Environment planning advisors in Cornwall and west Devon have commented over a two year timeframe

#### 4 Setting of the World Heritage Site

*CWDML WHS Management Plan Policy: P8*

Introduces the issue of landscape 'setting' as it relates to the Site and how this could be monitored to gauge impacts on OUV

### 5 Impact of World Heritage Site designation

*CWDML WHS Management Plan Policies: PN5, PN6, PN7, PN8*

Lists the major mining heritage conservation projects undertaken within the Site and the estimated number of former mine sites which have been consolidated overall

### 6 WHS management

*CWDML WHS Management Plan Policies: P1, P2, P3*

Details the WHS governance structure, WHS Office staffing arrangements and number of enquiries processed by the WHS team



**Above:** Reynolds House, part of the Holman's No.3 Rock Drill Works in Camborne, before and after renovation



## People and the World Heritage Site

### 7 WHS awareness

*CWDML WHS Management Plan Polices: PN2, PN3, T1, PN4, PN5, PN6, PN7, PN8, T2, T3, T4, T5*

Covers how monitoring is to be undertaken to gauge awareness of the status and the role of the 'Discover the Extraordinary' project in this

### 8 Education

*CWDML WHS Management Plan Polices: C13, PN2, PN3, T1, T2*

Addresses the progress made towards the provision of WHS education objectives - *The WHS Education Services Audit*, and *WHS Learning Strategy (2010-2013)* – and how the effectiveness of the strategy will be monitored when delivered

### 9 Social impacts

*CWDML WHS Management Plan Polices: PN5, PN6, PN7, PN8*

Focuses on the social impacts of WHS status on communities within and around the Site, and how this can be gauged through surveys and awareness raising initiatives – the WHS Cultural Events Programme and community events. Volunteers contribute significantly to maintaining the historic fabric of the mining heritage sector in Cornwall and west Devon, and in presenting this to residents and visitors, and the requirement to gauge the impact of the designation on these is set out

## Economic impacts and visitor management

### 10 Economic impacts

*CWDML WHS Management Plan Polices: PN1, PN1, PN2, PN3, T1, PN4*

Sets out how economic benefits attributable to the status could be monitored through surveys undertaken by the Cornish Mining Attractions Marketing Association (CMAMA) – i.e. through attendance numbers and visitor spend - and in relation to the WHS 'Discover the Extraordinary' project; also the economic contribution of mining heritage conservation within the Site

### 11 Visitor management

*CWDML WHS Management Plan Polices: PN1, PN2, PN3, T1, PN4*

Surveys undertaken via the CMAMA network should be encouraged and used to provide information relating to total number of visitors and visitor satisfaction levels. Annual visitor numbers to Cornwall and to Devon should also be sourced for comparison against wider trends from Visit Cornwall and Visit Devon.



**Above:** Tourism businesses visiting the harbour at Charlestown on a World Heritage Site Familiarisation Day

## Environmental quality

### 12 Mineralogical value of the World Heritage Site

*CWDML WHS Management Plan Policies: P1, P2, P3, P5, P6, P7*

Sets out the background significance of the mineralogy of Cornwall and Devon and the Cornubian Orefield, and the arrangements for monitoring County Geology Sites (formerly RIGS sites) and Sites of Special Scientific Interest (SSSI) which relate to WHS OUV

### 13 Ecological value of the World Heritage Site

*CWDML WHS Management Plan Policies: C7, C10*

Introduces the issue of rare plant species reliant specifically on the spoil of former mineworkings and how these are being protected and monitored as designated Sites of Special Scientific Interest (SSSI) by Natural England

## 14 Sustainable physical access

*CWDML WHS Management Plan Policy: PN1*

Sustainable transport is an issue of growing global concern which has particular relevance to the CWDML WHS, given its serial multi-Area nature. This details how access to the Site should be monitored to supply the data required for successful visitor management and lobbying to transport groups and local authorities for enhanced services

***The Cornwall and West Devon Mining Landscape World Heritage Site Monitoring Report (2012) is available online as Appendix 8.6 of the World Heritage Site Management Plan (2013-18), at: [www.cornishmining.org.uk/about\\_us](http://www.cornishmining.org.uk/about_us)***

**Below:** The Poldice Arsenic Works within the Poldice Valley, a Site of Special Scientific Interest (SSSI) for rare bryophyte species





## Photo references

**Deborah Boden:** *pp.9&11, p.99, p.113*

**Ainsley Cocks:** *pp.2&3, p.14, p.31br, p.37bl&br, p.39t, p.43, p.45t, p.47t, p.51b, p.53, p.57t&b, p.59tl&tr, p.60, p.61t, p.63t, p.64, p.65, p.67tl&tr&b, pp.72&73, p.76, p.77t&b, p.81, p.82, p.84, p.88, p.89, p.90, p.91, p.98, p.102, p.103t, p.105t, p.106, p.107, p.121*

**Cornish Mining World Heritage Site:** *p.97, p.104b*

**Rob Frost:** *p.105b*

**Barry Gamble:** *Front & back cover, p.4, pp.6&7, pp.16&17, p.19, p.22, p.23, p.26, p.27, p.28, p.29, p.30, p.31l&r, p.32, p.34, p.37t, p.38, p.39b, p.41, p.42, p.44, p.45b, p.46, p.47b, p.48, p.49t&b, p.50, p.51t&m, p.55tl&tr&br, p.56, p.58, p.59b, p.61m&b, p.63m, p.69t&b, p.70, p.71, pp.78&79, p.95, p.101b, pp.108&109, pp.116&117, p.118, p.122*

**Steve Hartgroves:** *p.20*

**Heartlands:** *p.93*

**Dan Jones:** *p.103b*

**Silvia Lowe:** *p.52*

**Kirstin Prisk:** *pp.12&13, p.47b, p.101t, p.103t, p.104t*

**Andrew Richards:** *p.120b*

**Adam Sharpe:** *p.33, p.45m, p.63b, p.80, p.87t&b, p.92, p.94, p.119, p.120t*

**Emma Trevarthen:** *p.110*

Every effort has been made to present the correct credits for all photographs used in this document but apologies are given for any errors or omissions.

**Cover image:** The Bellingham's Shaft engine house at Wheal Jenkin, adjoining an embankment of the Liskeard & Caradon Railway

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