

**CORNISH MINING LANDSCAPES: PUBLIC  
PERCEPTIONS OF INDUSTRIAL ARCHAEOLOGY  
IN A POST-INDUSTRIAL SOCIETY**

THESIS SUBMITTED FOR THE DEGREE OF DOCTOR OF  
PHILOSOPHY

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I, Hilary Orange, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

## ABSTRACT

This thesis considers local residents' perceptions of Cornish mining landscapes, with a particular focus on tin and copper mining. The aim of the thesis is to better understand the changing economic, political and cultural values which Cornish mining sites and features have embodied during the post-war period (from 1950 to 2010). This research has focused on the familiar and the everyday including industrial remains of the later 20th century. The three case studies examined, Botallack, St Agnes, and Minions, are part of the Cornish Mining Landscape World Heritage Site (designated in 2006).

This research has been strongly informed by the social archaeology of industry and contemporary archaeology, and a number of complimentary ethnographic and statistical techniques have been utilised, supplemented by archival research and visual data methods. The themes which have been examined include: site descriptions; paths and networks; metaphors of industry; significant features in the landscape; time and change; contention in the landscape; and World Heritage Site status.

This research has concluded that public perceptions on Cornish mining landscapes are strongly informed by romanticism whilst the use of demonic, heroic and romantic tropes is another key theme. Since mine shafts were closed for health and safety reasons perception is now focused on the surface of mines and the subsurface world is largely out-of-sight and out of mind. Changes in the landscape are often defined around concepts of the 'local', the 'incomer' and the 'outsider'; the latter largely standing for external authority. Statistical analysis has shown that longevity of residence is a significant factor in shaping perception, whilst qualitative data has demonstrated different ways in which incomers become 'local'. There are many different connections to Cornish mining landscapes and these relict industrial sites are not dead or derelict spaces.

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## PREFACE

On 5 August 2010 a cave-in at the San José gold and copper mine in the Atacama Desert, Chile, drew the world's attention towards the plight of a group of miners trapped underground by the rock-fall. As relatives, rescue teams, government officials and media companies arrived to wait and pray, report on events or manage rescue efforts, the surface of the mine transformed into a tented community named *Campamento Esperanza* (Camp Hope). The rescue team drilled exploratory boreholes to search for the miners and 17 days after the accident a drill brought a note to the surface reporting that (some 2,300 feet underground) "*Estamos bien en el refugio – los 33* (We are well in the shelter – the 33)". On 13 October 2010 an estimated one billion viewers around the world tuned in to watch as a rescue capsule, designed in part with NASA technology, brought each miner to the surface (Franklin 2011; Pino 2011).

One month later international news reported serious blasts at the Pike River coalmine in New Zealand. The damage caused by the first blast, and the potential danger of gases leading to further explosions, prohibited a search and rescue mission. After a second explosion, the New Zealand police declared that all 29 miners were probably dead (Banyan 2010).

At an international conference in Innsbruck, Austria during April 2011 (*On the Surface: the Heritage of Mines and Mining*) (CTCC 2011), the events in Chile and New Zealand provided common ground for discussion. In his welcome speech, Mike Robinson reminded delegates that there are still around 30 million people involved in mining across the world (pers comm. 14 April 2011). The reminder was poignant given the previous year's events particularly as papers presented at the conference illustrated very differing socio-economic realities. In some countries, for example, China, Australia and the United States, mining is still a significant industry whilst in others, for example Japan, the mining industry is in serious decline. In Europe, there is an expectation that the ending of EU coal subsidies in 2018 will lead to the end of coal mining in Spain and Germany (Harrison 2010). The events in Chile and New Zealand were a reminder that (not that long ago) the mining industries in the UK were instrumental in shaping landscapes and communities. In the 1960s and 1970s, well within living memory,

Wales *was* coal and Cornwall *still* produced tin. In the UK a small number of collieries are still operating but the British coal and metal mining industries underwent a severe downturn in the 1980s and 1990s leading to widespread unemployment and (at times) violent strike action (Beckett and Hencke 2009; Milne 2004).

Despite differing national contexts, some industrial, others deindustrialising or post-industrial, the Innsbruck conference was concerned with exploring global developments in mining heritage. As the conference proceedings noted some “former mines, mining landscapes and communities have gained heritage status and have become popular tourist attractions while others lie abandoned as pertinent and problematic markers of a changed world” (Robinson and Schneider 2011: np). The potential cultural and economic value of tourism was certainly recognised by the Chilean President, Sebastián Piñera, when he pledged that the San José mine would never re-open and instead a new museum would be built (Roberts 2010). Mike Robinson argued, at the Innsbruck conference, that over time a “physical and emotive distance” develops between people in post-industrial regions and the processes and communities associated with working mines. Indeed, at the time the digital film footage of the miners inside the San José shelter may have provided many British TV viewers with unusual, if not uncanny, reconceptualisations of working mines and working miners. The British coal mining industry was also tragically spotlighted in September 2011 with the deaths of miners at Gleision Colliery near Swansea, Wales (BBC 2011b). As opposed to Wales, all of the Cornish tin and copper mines have closed, the last in 1988. This research seeks to explore the gap between mine closure and present day communities, to consider perceptions, memories and imaginings of mines which have long been redundant whilst others were the focus of a regional fight for industrial survival in the last 25 years. Like the San José mine, they are now (becoming) heritage.

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# CHAPTER ONE: INTRODUCTION

## 1.1. Introduction

Fifty years ago, the idea that the remains of Cornwall's tin and copper mining industries would one day be as significant as the Taj Mahal or the Pyramids would likely have led to a mixture of confusion, derision and laughter. The industry was still living and the *knacked bals* (derelict mines) which thickly littered the landscape were familiar elements of everyday life. Nevertheless, the intervening years have led to the Cornish Mining World Heritage Site (henceforth WHS) and to the iconisation of the Cornish engine house as a symbol of Cornish identity.

This thesis considers local residents' perceptions of Cornish mining remains. It does not consider the archaeology of mining, but rather mining heritage. The aim of my project is to better understand the changing economic, political and cultural values which Cornish mining sites and features have embodied during the post-war period (from 1950 to 2010). In this context 'perception' of industrial sites includes experiential encounter, sensory impressions of industrial remains (not solely concentrating on the visual), memories of the mining areas (during the live and relict period) as well as thought and opinion on usage and future management.

Cornwall is a county located in the southwest of Britain (Figure 1.1, Appendix A). Deep-shaft, hard-rock mining developed in Cornwall in the 17th century and formed part of the UK's relatively early (for Europe) industrialisation. By the 18th and early 19th centuries, the Cornish mining industry was of global significance (see Chapter Two, Section 2.4.). Unlike other industrialised regions of the UK, Cornwall did not develop large urban areas in association with its industry and in consequence mining remains in Cornwall are largely set, somewhat paradoxically, within rural rather than urban settings. The process of deindustrialisation also began earlier in Cornwall than elsewhere in the British Isles and was long-drawn out and painful (Brayshay 2006: 142-143; Thorpe *et al.* 2005: 8, 11).

By the First World War the region had largely deindustrialised and following the Second World War the economic base of the county shifted substantially towards tourism and other service industries. The centrality of the mining industry within

Cornwall for several hundred years and the emergence in the post-war period of claims for a separate 'Cornish' identity gave rise to the adoption of mining narrative and motif within an ethno-cultural movement (Deacon 2007: 209-10; Payton 2004: 285); the mines became broadly symbolic and iconic for the region.

In the latter 20th century a handful of 'super-mines' continued to extract tin and other minerals. Indeed, the last tin mine in Cornwall, South Crofty, near Camborne, stopped production on the 6th March 1998. Several other large mines, such as Geevor Mine, near St Just-in-Penwith and Wheal Jane Mine, near Redruth, were working in the 1980s. Within a few years of closing Geevor had reopened as a mining museum, South Crofty was running underground tours for visitors, and the possibility of a Cornish Mining World Heritage Site (inscribed in 2006) was mooted.

Unlike the South Wales coal mining industry, where former colliery sites were purposefully erased, being largely levelled and grassed over, the surface remains of Cornish tin and copper mines have largely persisted in the landscape (Brown and Acton 1997: 9). The industry left a legacy of extensive derelict and abandoned sites found within a variety of settings - on the moors, in river valleys, on the coastal fringe and within villages and towns. Mine buildings and chimney stacks are at the end of people's driveways, some in ruinous state, others converted into offices, homes and workshops. Dog walkers can follow the tracks of leat systems above the Atlantic cliffs and drivers following the A30, the main arterial route through the peninsula, will see engine houses recurring on the horizon.

The extent and varied settings of Cornish mining remains meant that my project could focus on the familiar and the everyday rather than industrial museums or ticketed attractions. This focus on the everyday significance and value of place closely reflects the ethos of the European Landscape Convention (ELC) which is focused on two main ideas: firstly that landscape is part of everyday life, and the process of identifying value and deciding on use should be democratic, and secondly, that landscape is a cultural construct. Within this, the idea of landscape as perception (rather than a fixed physical entity) is central. As Fairclough comments, there are "many different ways of understanding and appreciation. Not all of these ways are 'scientific', objective and material. Many are personal,

individual and subjective, or reflect intangible aspects of the environment” (Fairclough 2002: 25). ELC also closely informs Historic Landscape Characterisation (HLC) - a tool pioneered by the Historic Environment Service in Cornwall (in conjunction with English Heritage and the Countryside Commission (now Countryside Agency) to rapidly assess predominant historic landscape character according to broad ‘areas’, general ‘zones’ and more detailed ‘types’ (Clark *et al.* 2004; Herring 1998; Fairclough *et al.* 2002b). Its underlying approach, which reflects ELC, covers “both the material and ideational construction of landscape” but also recognises that material remains “underlie and support this perception.” HLC has been widely adopted by cultural heritage management organisations including local authorities in the UK and heritage agencies in Europe concerned with cultural heritage management (Turner and Fairclough 2007: 120).

My thesis is formed around three case studies – the hamlet and mining area of Botallack (located in West Cornwall), the small village of Minions and surrounding moorland (in southeast Cornwall, on Bodmin Moor) and the large village and resort of St Agnes (located on the north coast) form part of three (out of ten) mining areas which collectively form the Cornwall and West Devon Mining Landscape, a “unified cultural landscape” inscribed as a UNESCO World Heritage Site in June 2006 (Figure 1.1, Appendix A) (Cornwall Council 2011a). Despite the Devonian element, the WHS is known as the ‘Cornish Mining World Heritage Site’. The status gives recognition to “Cornish Mining’s excellence as a world class cultural heritage site and recognises the importance of ‘Cornish Mining’s historic landscapes, its outstanding mine buildings and other features, in addition to its important role in technological innovation and scientific research” for the period 1750-1914. The global impact is clearly stressed in the tagline to the site which reads “Cornish Mining – We Made Your World.”

## **1.2. Field of study**

A fuller discussion of the theoretical frameworks, which have informed this research, will be given in Chapter Three however, a brief introduction to define and explain commonalities and differences between key sub-fields of archaeology and anthropology is necessary. The sub-disciplinary fields which have strongly informed this research are the social archaeology of industry (as an emerging sub-

field of industrial archaeology, in itself influenced by social anthropology), contemporary archaeology and cultural heritage studies.

### **1.2.1. Industrial archaeology or the social archaeology of industry**

Firstly, it is worth considering how this research differs from industrial archaeology. Hudson defines industrial archaeology as “the study of the physical remains of yesterday’s industries and communications” (1976: 21). Industrial archaeology tends to concern itself with reconstructing the relationship between process, structure and system within living industry in the past, most typically by focusing on the remains of the Industrial Revolution (AD 1750- 1914) (Nevell 206: 31). My project differs by focusing on the post-industrial phase of sites including industrial remains of the later 20th century. In so doing it fits into a small, but emerging trend which is perhaps best described as the ‘social archaeology of industry’ (Gwyn 2009; Palmer 2010). This trend is characterised by an interest in combining anthropological or ethnographic methods alongside more standard recording techniques in order to document industrial processes as industries are closing down, or changing their working practices, or in the immediate post-closure period and thereby seeking, in Collingwood’s terms, the “inner side of the event” – i.e. to get at purpose and thought (1946: 222). A number of case studies of such approaches (Cocroft and Cole 2007; Falconer 2000; Malaws 1997; 2004) are discussed in Chapter Four (Section 4.4.).

### **1.2.2. Contemporary archaeology**

In considering the relationship between contemporary society and industrial archaeology of the recent past, this research has also been strongly influenced by contemporary archaeology (Buchli and Lucas 2001; Harrison and Schofield 2010). Harrison and Schofield define contemporary archaeology as the use of archaeological methods to explore contemporary phenomena in developed post-industrial societies with a temporal focus on the “late-modern” period (2010: 1-2). The late-modern encompasses the period after 1950. However, Harrison and Schofield stress that the period after 1970 is particularly significant. Firstly, it forms the period of “lived and living” memory and secondly, this period is characterised by increased leisure time and a quickening historicisation of the past;

aspects which link to the development of heritage management in the post-war period and embracing of 20th century/post-war heritage (2010: 2-4, 34-40).

Aside from the relevant temporal focus, contemporary archaeology also concerns itself with the tension between the 'monumentality' of heritage and the ephemeral trace of everyday experience (May *et al.* forthcoming; Penrose 2007). Buchli and Lucas identified the following dominant themes within contemporary archaeology - 'production/consumption', 'remembering/forgetting', 'disappearance/disclosure' and 'presence/absence' (2001: 171). Whilst production, consumption and remembrance are central concepts within heritage discourse, turning an archaeological gaze towards other themes (disappearance, disclosure, presence and absence) brings to light "aspects of life at the margins that are constantly being overwritten by dominant narratives" (Harrison and Schofield 2010: 11). Hence, contemporary archaeology provides a framework within which to question the relationship between the remains of the recent past, contemporary society, heritage-making and unofficial narratives.

As informal research networks the Society for Post-Medieval Archaeology and the CHAT (Contemporary and Historical Archaeology in Theory) group have been supportive and influential on my research. Both groups attract a cross-disciplinary range of researchers from contract archaeology, museums and heritage, anthropology, cultural geography and history and connect a number of researchers (including early career researchers) addressing deindustrialisation and post-industrial phases of sites. Perspectives are always varied and interesting and the research through CHAT and SPMA conferences and publications useful draws connections between differing theoretical positions, methodological approaches and cultural heritage practice (Dwyer 2009, 2011; Penrose 2007).

### **1.2.3. Cultural heritage studies**

The edges of contemporary archaeology therefore blur into cultural heritage studies. The latter is also concerned with the contemporary use of the past in the present including: commemoration and commerce; interpretation and re-enactment; and presentation and preservation. Cultural heritage studies are broadly relevant to this research in terms of considering the 'presentness' of

Cornish mining heritage at different points in time and the influence of particular political, social and economic concerns (Halbwachs 1992). The concerns of the present connect to the concept of values. A number of established frameworks (or value typologies) have been designed and are widely used within heritage practice to enable the analysis of multiple (and often competing) values which are inscribed by individuals or groups of people on heritage (for example, aesthetic, spiritual, informational and economic values). Again values are dependent on time, culture, context and viewpoint (Bender 1993; Darvill 1995: 40; Hodder 2000: 88-89).

As mentioned above (Section 1.1.), the concept of values is central to the European Landscape Convention (along with perception and everyday landscape) and ELC (and by association HLC) has been influential on my research. Heritage literature affords varied perspectives on landscape and heritage, including perspective embedded within ELC, characterisation and UNESCO 'cultural landscape'. As a category of World Heritage, the latter has been defined as "the combined works of nature and man (sic), and areas including archaeological sites which are of outstanding value from the historical, aesthetic, ethnological, or anthropological points of view" (Cleere 1995: 63). This was the designation awarded to the Cornish Mining Landscape in 2006. In Chapter Three (Section 3.2.2.2.) I will discuss different ideas of (heritage) landscape and explore concepts of landscape value and association.

### **1.3. Scope of the research**

This research focuses mainly on the surface features of mines rather than on the underground features – the mine workings such as inclines and levels - as it is the surface which forms part of local people's everyday experience. The WHS covers approximately 19, 710 hectares and an estimated 81, 535 residents live within the WHS (Historic Environment Service GIS, Cornwall Council 2011). The extent of the WHS, and its coverage of the most notable mining sites in the county, prohibited the choosing of a non-WHS case study and whilst the sites in this study are WHS (see Chapter Four, Section 4.5.1), they were not chosen because they are WHS. The status may well have a bearing on public perception; however, the designation is one element within this research rather than a primary focus.

The WHS inscription illustrates the broadness of mining remains – including transportation systems, ancillary industries, rows of miners’ cottages, the estates of the mineral lords and the pubs, hotels and miners institutes built whilst mining was in its hey-day (Sharpe 2007: 3). To ensure a manageable dataset this research focuses on mines, defined here as the places of extraction and processing. The types of features typically found on the surface of mines (without producing a fully comprehensive list) can be categorised in terms of extraction (for example, engine houses, boiler houses and mine dumps); the processing of ore (for example, stamps, buddles and dressing floors); transportation (paths, roads, tramways and railways etc.) and ancillary industry (such as arsenic calciners and labyrinths). A glossary is provided in Appendix B to explain mining terminology as well as Cornish words and phrases which are italicised throughout the text.

This research is only concerned with the perceptions of those who have encountered Cornish mining sites directly through bodily experience or engagement rather than those who ‘know’ the sites through representation, virtual technologies, literature and other media. The ‘public’ in the title of this thesis are here defined as those whose place of normal residence is within the case study areas – denoting ‘local’ residence. The vast majority of the local people surveyed for this research were not engaged professionally in archaeology or heritage management; however, informants with ‘professional’ relationships to the mining areas (for instance, archaeologists, heritage managers and former miners) were also interviewed. Both sets of data form the basis of this research along with archival research and observation (see Chapter Four). A parameter of the research was to collect data from adults (defined here as being aged 16 years and over), as the perceptions of children would have entailed a distinct study covering, for example, cognitive development, and would have involved additional complications regarding research ethics, such as access and the gaining of informed consent. Sampling of the population is of course necessary and a detailed account of sampling strategies follows in Chapter Four (Section 4.6.).

Conversely this research does not seek to (re)consider the history of live mines (mining history), for example, by following the excellent socio-historical research undertaken by the Institute for Cornish Studies (University of Exeter). Nor does it seek to develop the creditable work within industrial archaeology that has

surveyed mine sites and considered the form and function of buildings and integral engineering components. The importance of other extractive industries in Cornwall is also acknowledged; a by-no-means inclusive list includes the mining of silver, lead and tungsten as well as associated industries such as gunpowder works and fuse factories. Historically, slate extraction was an important industry in North Cornwall and china clay is still extracted in the St Austell area (which is known locally as ‘Clay Country’); the French company Imerys (formerly English China Clays) currently runs the china clay industry in Cornwall. All these other industries are beyond the remit of this research, although, it is worth noting that the Institute of Cornish Studies (University of Exeter) is currently conducting a programme of research on clay, landscape and culture (Payton and Trowler 2009).

#### **1.4. Research agenda and original contribution**

The post-war period has witnessed the development of industrial archaeology and industrial heritage in the UK (see Chapter Two, Section 3.2.). This development has included: the formation of industrial archaeology as a sub-discipline; the growth of related groups and societies (Buchanan 1980; Casella 2005; Palmer and Neaverson 1998; Orange 2008; Palmer 2010); the creation of industrial museums and visitor centres (for instance, the Big Pit, Ironbridge Gorge Museum and Geevor Tin Mine in Cornwall); an increasing number of specialist publications; the regeneration of industrial sites (Symonds 2005: 46); and an expanding list of industrial World Heritage Sites (Department of Culture, Media and Sport [DCMS] 2011a).

In recent years industrial remains have become of considerable concern to the UK’s statutory and public bodies (Palmer 2005: 59). At the time of writing: English Heritage are running a campaign to assess the condition of industrial heritage in the UK (English Heritage 2011a); the British Library is currently creating new oral history recordings including those relating to major British industries as part of their National Life Stories programme (British Library 2011); and more than £780 million has been awarded to over 2, 359 projects in the industrial, maritime and transport sector by the Heritage Lottery Fund (HLF 2011) .

Despite this growing interest in industrial heritage in the UK, there is a notable deficit in research on the public’s perceptions of industrial sites. In particular,

there are few studies which consider perceptions and experiences of redundant mining sites and the study of Cornish mining is largely characterised by research on socio-technical history during the 'live' period (Barton 1965; Buckley 2005; Noall 1972; Trounson 1968). Furthermore, research on Cornish mining remains is timely for a number of reasons. Firstly, the WHS inscription provides an apt point at which to reflect on the changing values of industrial archaeology in Cornwall. Secondly, as scholars of the First World War have noted (Saunders 2007), there comes a point in time when it is no longer possible to obtain first-hand accounts from those who were part of event and change. Cornish miners are still alive, as are those who remember the working mines and witnessed the consequent emergence of industrial heritage and tourism, so it is important to document their experiences now.

To briefly review comparable research (expanded on in Chapters Three and Four); indicators of the relationship between the public and Cornwall's mining remains can be found within newspaper reports, magazine articles, Cornish literature and the arts; however, there are few critical and synthesised publications. PhD research by the anthropologist Laviolette (2003) subsequently published in a recent monograph (2011) provides the closest comparable research to date. Laviolette considered Cornish landscape metaphors in relation to industrial heritage and concluded that the metaphor of death was a dominant theme which connects a form of social denial (over the collapse of the industry) with a felt-need for socio-economic redemption (discussed further in Chapter Three, Section 3.4.2.). A recent publication by the Cornish historian Schwartz, *Voices of the Cornish Mining Landscape* (2008) employed oral history testimony and whilst this is in the main an uncritical exposition on mining history it does contain some interesting sections on landscape change in the post-industrial period. A number of archaeological surveys and reports published by the Historic Environment Service of Cornwall County Council (formerly known as the Cornwall Archaeological Unit) are particularly useful in their detailing of the condition, social use and contemporary perceptions of mining areas, particularly Sharpe's surveys of the mines at St Just in Penwith and Minions (1989; 1992a, 1992b). In addition Sharpe's WHS report on Outstanding Universal Value (2007) also contains valuable details regarding the relationship between the local community and its mining

sites and is interesting for its phenomenological approach to the mining areas considering, for example, sound, smell and dominant colour.

My project therefore constitutes a major new piece of research including three detailed case studies which incorporates many original ideas, methods and interpretations. As deindustrialisation forms a common 20th century phenomena this research provides comparative data for other post-industrial mining regions, in the UK and abroad. This thesis also provides a clear case study regarding the relationship between archaeology and regional identity. On a related level, my research provides the opportunity to consider the significance of localism or nativism within mining and heritage discourse, and to test the existence of an insider/outsider perspective (Tuan 1974: 65, 246; other refs on this). The topic of the 'local' is currently highly significant in terms of the new Localism Bill, which aims to decentralise power back to local communities (Department of Communities and Local Government [DCLG] 2011a).

It is also hoped that this research will have interest to the following groups and individuals, some of whom are based in Cornwall, whilst others represent organisations with a wider remit (this is not intended as a definitive list): county residents, particularly those who gave their time to be interviewed and who filled out questionnaires, some of whom have expressed an interest in receiving research results; Diasporic communities across the world; museums (including Geevor Tin Mine and Museum, King Edward Mine, Poldark Mine, Cornish Mines and Engines and Levant Mine); major landowners (Cornwall Council, The National Trust and the Duchy of Cornwall); industrial groups and societies (for instance, The Trevithick Society; Cornwall Archaeological Society; Association of Industrial Archaeologists and SPMA); projects (World Heritage Office, Cornwall Council and Caradon Hill Area Heritage Project); stakeholders (particularly the Commoners Associations on Bodmin Moor) and academic (Institute of Cornish Studies (University of Exeter)).

## **1.5. Research questions**

Five primary research questions have structured the project, three of which are subdivided into subsidiary questions. These are addressed by a mixture of

ethnographic and other research methods including questionnaire survey, interviews, observation and archival research within the three case study areas (as explained in Chapter Four). The research questions are as follows:

### **1.5.1. How do local people perceive and experience the remains of the Cornish copper and tin mining industry?**

This question has been addressed mainly through the thematic analysis of interview data, questionnaire data and field observation. Perceptions and experiences of mining sites have been broadly questioned through a number of themes including a) descriptions of place b) paths and networks and c) the naming of significant features.

Descriptions of each mining area have been used to evoke a composite sense of place and draw out themes, associations and mining metaphors which are present. Alfrey and Putnam have asserted that industrial sites are commonly mythologised through the creation of demonic, romantic and heroic metaphors of place (1992: 40) and the presence and absence of landscape metaphor have been used to test this claim. In order to gain a phenomenological understanding of engagements with the sites, movement - through paths and other networks - has also been examined. Furthermore, where people go and what they see (and don't see) affects their perceptions of significant features on site in terms of their recognition, naming, value and, therefore, iconisation.

### **1.5.2. How have the mining areas changed over the last fifty years?**

This research question examines perception of landscape change, including physical landscape change and changing attitudes towards the mining sites, from a public perspective in order to better understand the processes and actors that have transformed Cornish mining sites in the post-war period. A number of sources of data have been used to a) identify key phases, events and interventions b) create textual and graphic timelines of change and c) examine a case of recent (or ongoing) contestation over landscape change. These sources of data include: questionnaire survey; interviews; archival data; surveys and reports; secondary data; and observation. Discrepancies between perspectives have been handled

through data triangulation which has allowed for the corroboration or contestation of different accounts.

### **1.5.3. What does World Heritage status mean, if anything, to local people?**

This research question addresses four related sub-topics: a) perceptions of the importance of mining sites b) local awareness of WHS; c) residents' expectations regarding WHS and d) perceptions of WHS impact. Through questionnaire and interview data residents' perceptions of the importance of Cornish mining sites (and therefore the existence of local significance as opposed to universal value) have been tested. Secondly, awareness of inscription has been examined: this cannot be assumed, for instance, comparative research at the Giant's Causeway in Northern Ireland found that locals and visitors alike had little or no awareness of the property's WHS Status (Hunt 1996: 212). Questionnaire data has been used to assess the strength of knowledge of WHS in each mining area and therefore question the potential influence of the status on public perception. Thirdly, the perceived costs and benefits of World Heritage Status have been assessed, including tangible and intangible costs and benefits. For instance, Fowler has stated that potential benefits of inscription include financial improvement and the development of tourism whereas one potential cost is that the inscription could "act as a ring-fence against radical change" (2004: 10-13). Meanwhile an expectation of the Cornish World Heritage Office is that status "will reinforce cultural distinctiveness and become a significant driver for economic regeneration and social inclusion" (Thorpe *et al.* 2005: 2). Finally, interview and archival data has been used to assess the impact of WHS to date by examining local residents' perceptions of post-inscription impact.

### **1.5.4. What is public opinion on the future management of Cornish mining sites?**

Through questionnaire data this question aims to probe public opinion on the future management and use of mine sites including their decay, preservation and re-use. Through questionnaire data the potential levels of support for industrial

heritage, WHS and future mining in the county have been assessed as well as public understanding of issues surrounding heritage management.

### **1.5.5. What is the relationship between Cornish mining sites and identity?**

A number of sources of data have been used in order to examine the relationship between Cornish mining sites and the construction of social identity in a number of related ways. Qualitative data has been used to broadly a) consider the cultural, politic and economic role of material culture of mining (signs, graffiti and other representation) within present-day Cornish society b) question different potential forms of social connection to the Cornish mining industry in the past and the present and c) inspect demographic distinctions embedded within concepts of the 'local' and 'non-local'. Quantitative data has been used to d) verify the significance of statistical relationships between survey data and key characteristics within the sample, and to then, where possible, make inferences concerning the population. The demographic variables which have been tested include sex, age range, occupation, employment, level of qualification, length of residency, connection to the mining industry and place of birth. The presence, or absence, of an 'insiders' and 'outsiders' perspective has also been demonstrated statistically.

## **1.6. Overview of the thesis**

In Chapter Two I will contextualise my project in time and space through short discussions on Cornwall's geography and geology; mining history; industrial archaeology; and aspects of contemporary economics, politics and culture which are relevant to the growth of industrial heritage in the county. Chapter Three will map out key theoretical territories which link to the scope and aims of the project and will provide further necessary background to the research. The first part of the chapter will outline the development of a theoretical framework in terms of a) the development of industrial archaeology in the UK, industrial heritage and the relationship between the public and industrial archaeology b) theories of environmental perception and c) concepts of identity, which are important in the Cornish context. The second part of the chapter will consider attempts by others to solve similar problems through a discussion of comparable research on the

public's perceptions of mining industries, including attitudes to mining sites in Cornwall and other regions.

Chapter Four will outline the research methodology including a justification of the reasons why certain methods were chosen and how they were developed (including decision-making processes relating to research design, preparation, pilot testing, administration, organisation, analysis and interpretation). Comparable research will be returned to in terms of approaches and methods which have influenced research design. Chapter Five details necessary background to the three case studies, following a format common to archaeological desk-based assessments each site's geology, mining history, geography, key features and modern-day economic/cultural activity systematically detailed.

Chapter Six will then discuss broad aspects of the data collected during fieldwork (with accompanying tables in Appendices C to G). This includes data drawn from the questionnaire surveys, interviews and secondary sources including oral history data. Alongside presentation of the data comment will be made of the 'goodness of fit' between the population and the sample through the comparison of expected percentages to observed percentages, and conclusions will be drawn regarding breadth, representivity and research bias.

Chapters Seven to Nine present the results of the research through separate sub-sections (linked to the research aims described above). These sections cover site descriptions, paths and networks, the naming of significant features, time and change, the future of mining sites and questions relating specifically to WHS (research questions 1.5.1, 1.5.2, 1.5.3 and 1.5.4).

Chapter Ten considers the case study sites in unison in order to discuss the relationship between identity and Cornish mining landscape. Firstly qualitative data will be used to consider connections between identity and Cornish mining sites, in particular teasing out the subtleties of perceptions of 'localness' within residential population. Secondly, inferential statistics will be used to test the presence of 'difference' according to key demographic variables. Importantly this chapter will also address the question of statistical difference. Data will be analysed globally rather than by single case study area in order to obtain the

highest possible counts and thereby improve (research aim 1.5.5) statistical analysis.

Following the case studies Chapter Eleven will draw together historical narratives, the theoretical framework, methodological approaches and the results of data collection, as presented in the previous chapters, in order to synthesise and discuss my research findings. Commonalities and differences between the case studies will also be commented on. Finally, Chapter Twelve will present my overall conclusions, comment on the potential significance of my project and suggest ways forward in terms of future research.

## CHAPTER TWO: INDUSTRY IN CONTEXT

Hast ever seen a mine? Hast ever been  
Down it in its fabled grottoes, walled with gems,  
And canopied with torrid mineral belts,  
That blaze within the fiery orifice?  
(John Harris, 1853)

### 2.1. Introduction

This chapter will set the scene for much of the subsequent commentary within the case studies and results chapters (Chapters Five, Seven to Ten). The aim of this chapter is fourfold; firstly, to place the research within physical space in terms of Cornwall's geography and geology; secondly to describe significant historical events and phases within the Cornish metal mining industry with a focus on the period after 1700; thirdly (for the period of deindustrialisation (1866-1988) and the post-industrial era [1988 to current, 2011]), to consider the condition and use of redundant mine sites (as detailed in published accounts); and fourthly to detail aspects of Cornwall's economics, politics and culture which are relevant to the growth of industrial heritage, and Cornish-Celtic identity, in the county in the post-war period (the relationship between identity, mining and material culture is discussed in depth in Chapter Ten). This contextualisation will serve to illuminate the significance and position (central, marginal or peripheral) of mines and mining over time and also serve to highlight interactions of scale in terms of local, national and global economics, politics and culture.

### 2.2. Cornwall's location, geography and geology

Cornwall is a long peninsula with a landmass of roughly 1, 600 square miles. It is surrounded by the sea, except to the east where it borders the county of Devon, and has over 240 miles of coastline. The county is somewhat geographically isolated from the rest of the country and has been described as almost an island

(Lavolette 2011: 17; Payton 2004: 293) (see Figure 1.1, Appendix A). The reason for this is the fact that the river Tamar has its source only four miles from the north coast and the river runs southwards into the English Channel. Without these four miles of land, Cornwall would be an island. (Lavolette 2011: 17; Payton 2004: 293).

The county's climate is maritime and generally characterised by mild winters and warm summers; however, it often experiences inclement weather with strong westerly winds and rain. The west and southeast of the county are characterised by high moorland with inland hills rising to over 1000 feet high. In the main the south tends to be more sheltered, while the north Cornish coast boasts rugged granite cliffs which take the full brunt of the Atlantic Ocean. Around the entire coastline can be found appealing sandy bays. With its largely treeless vegetation, few river valleys and a significant percentage of moorland the county can acquire a bleak personality in poor weather (Edmunds *et al.* 1975: 1-2).

Cornwall's geology has been succinctly described by Bristow as "hardened mud buoyed up by granite" (1993: 102). The "hardened mud" in this case mainly consists of sedimentary material, e.g. slates and shales (known locally as *killas*), which was thrown up by continental activity at the end of the Carboniferous period to form land. Subsequently, about ten million years later, molten granite welled up in a line to create a spine which runs from what is now the Isles of Scilly to Dartmoor in Devon, an event which Barton dates to the end of the Armorican orogeny (1964: 105). In Cornwall this has resulted in four large bosses of granite trending west-south-west namely Bodmin Moor, Hensbarrow Downs (the area of china clay extraction), Carnmenellis and Lands End, and the Isles of Scilly with a number of additional smaller outlying bosses, for example, St Agnes Beacon (Barton 1964: 105; Edmunds *et al.* 1975 43-44; Payton 2004: 2) (Figure 2.1, Appendix A).

The county's mineral wealth includes china clay and metals, and whilst many minerals have been extracted from Cornish stone over the years, including lead, zinc, silver, arsenic, antimony, iron and manganese, together with lesser amounts of tungsten, cobalt, nickel, uranium, baryte and fluorspar. Cornwall is best known for the mining of tin and copper (Barton 1964: 7-8; Bristow 1993: 103; Edmunds

*et al.* 1975: 85). It was within the fractures of the slowly cooling granite that metal rich veins formed. The relative position of different minerals depends on the temperature at which they crystallised. Copper crystallises at a lower temperature and sits in the cooler, outer zones nearer the surface whilst tin ore crystallises at high temperature and sits nearer the granite, usually at greater depth. Most of these metal lodes dip at more than 70 degrees and trend towards an east-west direction (Barton 1964: 133, 137; Penhallurick 1986:150; Shell 1978: 252; Sharpe 1989: 18).

In the west the tin ore is generally contained within the lodes (the metaliferous ore located between fissures of rock) whereas in the east weathering has carried more of the mineral to the bottoms of valleys through fluvial action resulting in the formation of gravel and, in addition, half buried boulders, or moorstone, littered across open valleys and stream-beds. Weathering and erosion has also exposed granite on the moors and is perhaps most visible in the form of high tors on Bodmin Moor, composed of seemingly precarious blocks of grey stone (Barton 1964: 105, 110; Gerrard 2000: 58; Payton 2004: 1-2; Peters 2005: 12).

### **2.3. Cornish mining literature**

The literature on Cornish mining history is extensive; to illustrate its range the Webpages of the Cornish Mining World Heritage Site (Cornwall Council 2011a) list over 360 publications which are broadly categorised into the following sections: General; The Industrial Revolution; Mining; Process and Administration; Mining Transport; Engineering; Mining Related Industries; Mining Settlements and Miners' Smallholdings; Great Houses; Estates and Mining Dynasties; Mining Social Infrastructure; Geology and Mineralogy and The Cornish Overseas. Many of these themes are outside the purview of this research and a much smaller selection of publications was used as source material for this chapter.

My discussion on early mining (Section 2.4.1) draws mainly on two key sources: Gerrard's *The Early British Tin Industry* (2000) provides a clear-to-read overview of the tin industry from prehistory to AD 1700. However, it is clearly aimed at a popular (and academic) market and hence there is a certain lack of detail (for example, relative/absolute dates) within descriptions of finds from excavations.

An excellent scientific paper *The Early Exploitation of Tin Deposits in South West Britain* (Shell 1978) fills in many of the gaps in Gerrard's narrative, although, it is now some thirty years out of date. Therefore, in addition, publications from the Historic Environment Service, Cornwall were checked for recent research and discoveries (Jones and Taylor 2004; Quinnell 2004).

Moving on to the industrial period, in 1953 Rowe's classic text on mining history, *Cornwall in the Age of the Industrial Revolution* was published. This volume provides a dense account of the rise and falls of the mining industry in Cornwall, with a particular focus on copper, and provides insights into the financial and social costs and benefits of the industry as well as the industrial culture that grew up around the mines. Buckley's excellent recent publication *The Story of Mining in Cornwall* (2005) is a richly illustrated volume which presents an expansive and authoritative overview of mining in Cornwall from prehistory to the modern day. Importantly, for this research, it sets 20th century mining within its political and social context and considers the ongoing developments at South Crofty Mine, near Camborne. Another thoroughly researched volume is Peters' *The Archaeology of Cornwall* (2005) which covers Cornish archaeology from prehistory to the modern day. Peters again, like Buckley, sets the industry within its socio-political context.

For the modern period, some sources have already been commented upon in Chapter One (Section 1.4) including Schwartz (2008), and Sharpe (1989; 1992a, 1992b). The Institute of Cornish Studies (ICS) (part of the University of Exeter, but funded by Cornwall Council and situated in Cornwall) was founded in 1970 (University of Exeter 2011). Under the directorship of Charles Thomas (until 1991) ICS had an explicit archaeological research agenda (alongside history, language, place-name research and botany), however, the subsequent and current director, the historian Philip Payton has moved the research department more firmly towards historical and social science research. Hence, many of the papers and publications which this chapter draws upon are the works of Cornish historians, social scientists and geographers.

Aside from a number of papers referenced from the Institute's annual *Cornish Studies* volume (published from 1973) key sources include: *Cornwall: A History* (Payton 2004) which provides a straight-forward chronological account of Cornish

history, and the edited collection *Cornwall since the War* (Payton 1993) which has been valuable in developing an understanding of mining and Cornish society in the post-war period. Papers of note within *Cornwall since the War* are: *Territory and Identity* (Payton 1993) and *And Shall Trelawny Die? The Cornish Identity* (Deacon 1993), which both discuss the politics of the nationalist movement in Cornwall and the relationship between this movement and its European counterparts, and *Wealth from the Ground: Geology and Extractive Industries* (Bristow 1993) which provides a detailed examination of the extractive industries in Cornwall, a useful outlining of Cornwall's geology and trends in production in the post-war period. Additionally, *Cornwall circa 1950* and *Economic Change and Opposition Politics* (Perry 1993a; 1993b) were of key importance in writing the post-war section of this chapter, the first for providing a detailed account of the county's art, politics, economics and culture at a particular point in time and the second for a well-balanced and erudite discussion of economic shifts in work and manufacturing including the development of tourism in the post-war period.

## **2.4. History of Cornish Mining**

### **2.4.1. Early mining**

Early mining, following Gerrard, is here defined as mining before 1700, after which time new methods radically altered the industry (2000: 11). Research and publication on early mining in Britain is far more limited compared to the well documented medieval and industrial periods, partly due to the obliteration of early mining evidence by later industrial and agricultural activity. Much of the evidence that does exist, however, comes from Cornwall and Devon (Budd and Gale 1997; Gerrard 2000: 10; Shell 1978).

The archaeological record for early mining in Cornwall has been established through two main sources – finds by tanners (tin streamers) and archaeological excavation. In the 18th and 19th centuries the re-working of tin-streams by tanners led to a number of finds of 'ancient' objects including tools, tin jewellery and ingots. As early as 1602 county chronicler Carew noted the ancient "thunder-axes" found in tin-streams, the "Pickaxes of Holme, Boxe, and Harts horne [...] daily found amongst the rubble of such workes" (8). In 1872 Borlase lists objects of bronze,

gold and jet as having been dug out of the “old men’s workings” (xi). In some cases, metal objects did not survive re-melting, and their discovery, and details, is only attested to by contemporary accounts. However, one of the problems with such artefactual evidence, as Jenkin noted in 1927, is that the provenance of the finds “is generally too vague to teach us much” (28). Furthermore, due to the practice of recycling, hoards and objects do not necessarily derive from ‘local’ metals.

Some of the more ‘substantive’ evidence for extraction comes from later excavations (ApSimon and Greenfield 1972: 355; Jones and Taylor 2004: 71). Overall, this evidence suggests that from as early as the Bronze Age, alluvial deposits were likely to have been streamed for tin (if this hypothesis is correct, tin streaming then continued as a principal method of extraction up to the 18th century)(Figure 2.2, Appendix A). Eluvial (weathered at source of lode) deposits would also have been recovered with tanners most likely practising a mixed economy with mineral extraction just one part of that (Gerrard 2000: 15, 20; Penhallurick 1986: 154; Shell 1978: 251-252). Copper ore does not occur in alluvial deposits and would have been extracted at source, for example, where it visibly outcropped on cliffs (Bristow 1993: 105).

Documentary accounts of mineral extraction in the southwest appear just before the arrival of the Romans. The first specific reference to Cornish tin appears c. 8 BC within the writings of Diodorus Siculus which appear to support the notion of pre-Roman tin extraction:

The natives of Britain by the headland of Belerium are unusually hospitable, and thanks to their intercourse with foreign traders have grown gentle in their manner. They extract tin from its bed by a cunning process [...] They wait till the ebb-tide has drained the intervening firth and then transport whole loads of tin on wagons. There the dealers buy it from the natives and thence convey it to Gaul (Diodorus Siculus, V. 22: source Muhly 1969: 262).

The archaeological evidence for tin extraction in the first two centuries AD is scarce and Gerrard surmises that tin in Cornwall may have remained unworked due to the expansion of Welsh mines and the availability of tin from Iberian mines

(Gerrard 2000: 21). With the exhaustion of Spanish tin in the third century it is presumed that the Cornish tin trade resumed (Beagrie 1985) and several sites in Cornwall tentatively support this hypothesis through third and fourth century finds including tin ingots of late Roman date, cassiterite pebbles and possible smelting sites. For example, at Trethurgy a late 4th century tin ingot (found at the base of a midden) and cassiterite pebbles in a structure of 8th century date indicates tinworking during the later period of site occupation (Quinnell 2004: 74-76).

#### **2.4.2. Medieval and early post-medieval periods**

A number of informative contemporary documents are available from the medieval period. A valuable, and hence often quoted, account of the work of the medieval miner can be found within Georgius Agricola's *De Re Metallica* (1556) which contains a number of illustrations of mining technology, for example, engineering devices for dewatering mines). In terms of Cornish mining, Richard Carew's *The Survey of Cornwall* (1602) and John Norden's *Speculum Magnae Britanniae Pars Cornwall* (c.1604) provide additional descriptions of how mines were organised and worked.

In the period following the Norman Conquest methods of tin extraction changed as available alluvial tin was gradually worked out. Tinnners turned their attention to working the lodes by digging shallow pits along the line of the lode (lode-back mining) or openworking (through one continuous cutting) - the best evidence for both can be seen in the hummocky landscape at Minions on Bodmin Moor (Balchin 1983: 147; Peters 2005: 159) (Figure 2.3, Appendix A). Hushing ore using water was also employed as a method and there is documentary reference to the use of divining and dreams to seek ore. The granting of a royal charter in 1201 by King John, and a number of subsequent charters, led to the formation of the Cornish Stannaries. The Stannaries consisted of four mining districts (Foweymore [modern Bodmin Moor], Blackmore [modern Hensbarrow Downs]; Tywarnhaile [modern Truro/St Agnes] and Penwith with Kerrier [West Penwith], each of which had their own legal system and a separate parliament which could oversee the collection of tin coinage (a form of taxation payable to the Crown). Under the stannary system miners enjoyed distinct privileges, for instance, the right to bound land, i.e. to stake

a claim on land without regard to normal property rights, and the right to be tried under Stannary law. In 1337 Edward III established the Duchy of Cornwall as government in Cornwall and proclaimed his son and heir the Duke of Cornwall. The Stannaries became an integral part of that system of government and in consequence the industry grew in importance (Gerrard 2000: 26-33; Payton 2004: 85).

Towards the end of the 13th century shaft mining was introduced and by the middle of the 15th century underground mining was routine for lodes that dipped or went too deep (Buckley 2005: 40-47; Gerrard 2000: 93-103). The dressing or processing of ore was normally carried out nearby with lumps of rock broken with sledgehammers, after which the ore was carried to water-powered stamps to pound the ore to sand before water was used to separate the lighter wastes from the heavier cassiterite (Buckley 2005: 62; Gerrard 2000: 123). The ore could then be smelted into transportable ingots.

The 17th century heralded the era of modern mining through new technologies and the more serious exploitation of copper (Bristow 1993: 105; Rowe 1953: 2). An increasing trend towards literacy enabled innovation and furthermore German miners coming to work in England brought improved mining technology (Buckley 2005: 64-65, 158). The Elizabethan period also saw government support for mining and the introduction of gunpowder for blasting (allowing for quicker and hence cost-effective extraction) (Buchanan 1980: 75-77; Gerrard 2000: 11-12; Peters 2005: 159, 173; Rowe 1953: 8, 9). The arrival of high explosives in Cornwall is evidenced in the Breage Parish Registrar by the death in 1689 of Thomas Epsley who “brought the rare invention of shutting (or shooting) the rocks” (Buckley 2005: 132; Gerrard 2000: 103). By the late 17th century as tin mines deepened an increasing tonnage of copper ore was being brought to the surface (Buckley 2005: 90).

#### **2.4.3. The industrial period: 1700-1866**

More intensive industry was facilitated in the early 18th century by developments in engineering and in particular the first generation of steam engines including the Newcomen engine (believed to have been introduced to Cornwall in 1716) (Figure

2.4, Appendix A) and, improving on this early design, Watt's engine (patented in 1769) (Buckley 2005: 96, 106; Rowe 1953: 79). These engines allowed for the more efficient lifting of ore and driving of stamps and as a result output escalated, employment increased and mines deepened (Buchanan 1980: 75-77; Gerrard 2000: 11-12; Peters 2005: 159, 173; Rowe 1953: 8, 9). Although tin by no means disappeared, in the 18th century it was copper which generated extraordinary wealth. The largest and most famous mine at the time was Dolcoath Mine (Camborne) dubbed 'The Queen of Cornish Mines' and the leading mining areas included Camborne, Chacewater and the Gwennap (the latter known as 'The Copper Kingdom'), as well as St Just in Penwith, St Agnes and Caradon (Barton 1964: 138; Bristow 1993: 105; Buckley 2005: 103). This transition from tin to copper was noted by a Swedish industrial spy called Henric Kalmeter, who visited Cornwall in 1724 and described the many copper mines which had once been tin mines (Buckley 2005: 90). To capitalise on increased copper output a smelters was established at Hayle in 1758 (Cornish Copper Company) and foundries established to make machines and engines, most notably Harvey's Foundry in Hayle (est. 1779) and Perran Foundry, near Falmouth (est. 1791) (Rowe 1953: 127).

By the 1850s Cornwall dominated world copper production. However, the success of the copper mines belied great disparities in wealth; whilst mine captains, shareholders and adventurers won fortunes the lot of the average miner was grim. Widespread poverty led to outbreaks of violence, evidenced by periodic food riots throughout the 18th century. In turn, news of the miners' lawlessness and thuggery (Buckley 2005: 113-115) reinforced existing notions (to outsiders) of Cornwall as the 'West Barbary' - with stereotypes of piracy, smuggling and wrecking and "heavy drinking roisterers who lived most of their lives underground" (Deacon 1997: 10).

The 19th century began with an increased demand for copper partly due to the Napoleonic Wars (1799-1815) (Rowe 1953: 128). Further technological improvements were introduced, for example Trevithick's pressurised steam engine, in part due to the expiry of Watt's engine patent. Improvements to the designs of boilers, pumping engines and pitwork also followed (Buckley 2005: 117, 121; Rowe 1953: 124). Taking the lead from German engineering the first man-engine was introduced in Cornwall in 1842, enabling the mechanised lifting of

miners 'to grass' and hence preventing the exhausting and potentially dangerous climbs up and down ladders which could reach over 1500 feet (Figure 2.5, Appendix A). On the surface, the 19th century also saw the expansion of transportation systems linking mines to ports through railways and tramways and the establishment of secondary industries such as gunpowder works. Following his invention of the safety fuse in 1831 Bickford established a fuse factory at Tuckingmill, near Camborne (Buckley 2005: 126-132). Modernisation also brought a reduction in the power of the old stannary system and by the mid 19th century the stannaries held little influence over the future direction of mining (Buckley 2005: 123).

The Cornish historian Payton asserts that by the mid-19th century the image of the West Barbary had been left behind, and in its place the stereotype of the Cornish miner was more refined. Modern and industrious, the Cornish had become a dynamic, confident and outward looking people. Culture and hence identity revolved around the mine and the chapel. Indeed, by the 1850s the industry directly employed one third of the working population of Cornwall (Payton 2004: 195-196). The dominant religion by this time was non-conformist Methodism, which had been introduced into Cornwall by brothers John and Charles Wesley in the 1740s. Methodism caught on as a popular alternative to Anglicanism and rapidly became "the Cornish national religion" and in so doing certainly played a key role in reforming the image of Cornish miners (Peters 2005: 179). The Methodists took a dim view of smuggling, wrecking and riot as a means of public expression and preached vehemently against all three. They were also instrumental in educating the miners, preaching a form of independence and 'self-help' which led to the formation of many mutual aid societies and education institutes (Payton 2004: 197-198).

Methodism had a secondary effect - it also favoured an industrial mentality. The Wesleyans made clear their opposition to superstition and folklore including folklore surrounding ancient sites. As folk culture went into decline, beliefs in fairy folk diminished, folk dances were no longer held and ancient mounds, formerly believed to be the home of Spriggans (an elf-like creature that brought bad luck, even death, to anyone who interfered with the ancient sites) were dug into by treasure seekers (Peters 2005: 180-181). Peters argues that in consequence

Cornish identity was seen increasingly in terms of the mining community rather than the land, and devoid of folk-life, “the land itself was simply a commodity, to be altered at will without social or religious cost” (2005: 180).

#### **2.4.4. Deindustrialisation: 1866-1945**

##### **2.4.4.1. Mining**

In the 1860s more than 340 mines were in operation, employing around 40,000 workers including men, women and children. Whilst boys were allowed underground, women and girls worked on the surface, processing ore. Tin and copper output peaked in the 1860s. Newly discovered minerals and fast developing mines (Buckley 2005: 134-139) most notably in Chile, South Australia, Michigan and Cuba caused the market to be flooded and copper prices crashed in 1866 (Schwartz 2008: 60). Afterwards, whilst some copper mines continued to be significant, tin re-emerged as Cornwall’s principal product with Cornwall’s central mining district transforming for a few years into an important tin mining area (Buckley 2005: 144).

The second half of the 19th century witnessed further developments in mining technology - cages for man-riding became the norm and surface plant became increasingly sophisticated as revolving Californian stamps were introduced along with Frue Vanners for ore concentration. In the 1860s the introduction of the compressed-air rock-boring machine allowed miners to drill shot-holes at twice the speed and Alfred Nobel’s experiments with nitroglycerine lead to the patent of a safer form of the high-explosive under the name ‘dynamite’. Although expensive to produce, eventually factories were set up in Cornwall, the most famous of all being the National Explosive Works at ‘Dynamite Corner’, Upton Towans, Hayle (est. 1888) (Buckley 2005: 148-151; Earl 1978: 3, 153). However, despite such advances tin mining also encountered problems. For one thing, tin was now mostly found at depth, below the unprofitable copper lodes, leading to increased production costs. For another, the market was volatile and foreign competition an ever-present threat. Whilst civil unrest in Malaysia in the early 1870s prevented production and export of Malay tin, resulting in a temporary boom in the Cornish market, by the 1880s the Malaysian mines were back in full production, and with

additional competition from Tasmanian and Bolivian tin many Cornish tin mines closed down (Buckley 2005: 153; Payton 2004: 219). By the 1890s the situation was so dire that those Cornish miners, and their families, had mostly emigrated, forced to seek work abroad, notably in South Africa, Australia and Mexico. The number that left is estimated at around 200,000 (to place the Diaspora in context, there are now an estimated 175 mine sites around the world with Cornish connections [Ainsley Cocks, pers. comm. 12 June 2009]). By the end of the century the industry was facing extinction with only nine mines left in production. To supplement income some mines began to extract arsenical pyrite (arsenic), formerly treated as a waste product (Bristow 1993: 110; Payton 2004: 205- 220).

The handful of mines that continued working through the 20th century survived by restructuring or becoming limited companies. Fortune as ever rested on external factors, particularly metal prices, and smaller mines opened and closed accordingly, with many taking advantage of the new power of electricity. One such mini-boom occurred at the beginning of the 20th century with mines opening in both St Just in Penwith and St Agnes, however, fewer than 20 mines survived the Great War and after 1918 miners returned to find mines in poor condition (Buckley 2005: 158-165). The price of tin continued to fall through the inter-war period, partly due to the Wall Street Crash of 1929 and the resultant economic depression (Buckley 2005: 168-169).

At the outbreak of the Second World War ore came principally from three mines: South Crofty, Geevor and East Pool & Agar (Bristow 1993: 107). The war proved favourable to British mining in that it created high demand for metals, including tungsten and tin, and in consequence the government stepped in to support Cornish mines, however, output slumped to a new low level due to a shortage of trained men (Hancock 2002: 61; Noall 1983: 105; Perry 1993a: 24-25). In response Ernest Bevin (Minister of Labour) set up a scheme whereby men (optants, nicknamed Bevin Boys) could serve in the mines rather than the forces but Noall noted that these men were largely unskilled and unwilling Noall 1983: 107; Perry 1993a: 24-25). Between 1939 and 1941 the civilian population of Cornwall rose by 20 percent to 370,000 due to the arrival of evacuees, refugees from Poland, Belgium and France, armed forces and German and Italian prisoners of war (Perry 1993a: 24-25). In desperation the mines 'employed' the POWs as their work

restrictions (not being allowed to work outside their camps after dark) made them ideal, yet untrained, miners (Buckley 1980: 170; Noall 1983: 107-9). Some Italian former POW's chose to stay on in the county after the war had ended (Hancock (2002: 58; Perry 1993a: 25).

#### **2.4.4.2. Celtic revivalism and tourism**

In the late 19th century Cornish culture opened up to external influences, partly through the Diaspora, which for a period saw the establishment of a global Cornish culture, and also through inter-related projects by the Cornish middle-class to 'reinvent Cornwall' and gain a new post-industrial identity (Payton 1997: 28, 36) – namely a Cornish-Celtic revival which focused on language and arts and the development of tourism – the latter seen by many as an economic panacea (Deacon 1993: 205; Payton 2004: 237; Payton 1997: 28, 36).

In many ways the Revivalists were making a deliberate attempt to become part of a wider 'Celtic Revival' that had emerged in Brittany, Ireland, Wales and the Isle of Man during the 19th century (Payton 1997: 28, 36) (the development of a British 'Celtic' identity has been covered extensively by Collis (2003)). In so doing they ignored 19th century notions of Cornish identity as based on industrial power and technology and instead, to quote Payton, busied themselves "in an antiquarian quest to gather all the fragments of (pre-industrial) identity before they were lost in the rush to post-industrial modernity" – with many of the symbols relating to ancient Cornwall, Celtic crosses and a timeless world of King Arthur (1993: 7).

At the same time other new cultural images and representations of Cornwall began to be circulated through what Deacon describes as a "guide book culture". Interestingly, this also revolved around concepts of 'difference' and 'timelessness' by evoking an ancient Cornwall, its ancient sites and legends as well as its seascape and alleged Mediterranean climate (Deacon 1993: 206). Since the railway had arrived in Cornwall in 1859 seaside holidays had grown in popularity, partly due to the fashion for sea-bathing. Leading Cornish resorts at the time were Penzance, Newquay and St Ives (Brace 2006: 231; Williams and Shaw 1993: 84-85). When the Great Western Railway introduced its 'Cornish Riviera Service' in the first half of the 20th century it only took passengers seven hours to travel from London to

Penzance. A highly successful marketing campaign by the GWR employed images which drew on popular images of Cornwall including the Newlyn School (Figure 2.6, Appendix A). These artworks almost completely ignored what Harris, the miner-poet called the “the slime of underground work” in favour of portraits of fisherfolk, agricultural workers and craftsmen – again in many ways pre-industrial images. However an exception can be found in the work of Harold Harvey who depicted industrial scenes in Cornwall in a late realist style (1993a: 32, 42; Williams and Shaw 1993: 85) (Figure 2.7, Appendix A).

The Cornish revival took organisational form in 1928 with the first meeting of the *Gorseth Kernow* (Gorsedd of Cornwall). Perry rather satirically described the meetings of the bards in terms of them wielding “stone age artefacts, quaint dialect sayings and pasty recipes” in some kind of “Celts-Victorian synthesis” (Perry 1993a: 27). He also suggests that widespread unemployment and hence poverty in Cornwall at the time probably made the (middle class) activities of the Revivalists irrelevant to many or just plain eccentric (Perry 1993a: 27). However, Payton has pointed out there was a high degree of collusion between Cornwall’s tourism developers, the Celtic Revivalists and the “image-makers” of the Great Western Railway (1997: 36). Deacon argues that the long-term effect was to link industrial Cornwall to the working classes and furthermore to create a divide between an ‘indigenous view’ of Cornwall, which largely drew on the experience of 19th century industrialisation and these new images (Deacon: 1993 206).

#### **2.4.4.3. Abandoned mining sites in the early 20th century**

The condition of mining sites in the second half of the 20th century is well covered within archaeological surveys and reports by the Cornwall Archaeological Unit (CAU) (for instance, CAU 1986; Sharpe 1989a; 1989b; 1992a; 1992b) and these, as well as other archaeological assessments, will be used to detail the extent and condition of industrial archaeology within each case study area (Chapter Five, Sections 5.1.7., 5.2.7. and 5.3.7.). Documentary sources on the condition and use of former mine sites during the early part of the 20th century however are very scarce, including contemporary paintings, photography or other forms literature which could be used to assess historic treatment. On closure the recycling of mine equipment was part of accepted economy and practice and in moving engines and

other reusable parts mine buildings were often part dismantled and useable fabric robbed (Schwartz 2008: 10; Sharpe 2007: 69). In 1953 Rowe writes that “gorse and heather were creeping over the unsightly heaps of ‘attics’ and ‘deads’ which the old miners had rejected and cast aside, while engine houses were crumbling down into ruins” (326). Schwartz has also discussed the loss of many engine houses due to episodes of vandalism (2008: 61) whilst more prosaically Palmer notes that the revegetation of mine sites, with unusual soil matrices, often resulted in the colonisation of rare plant species (1993: 50).

## **2.4.5. Post-war Cornwall: 1946-1988**

### **2.4.5.1. The end of the mining industry**

If the story on abandoned mine sites seems, from scant evidence, to paint a picture of slow decay the live mines, by comparison, were buoyant in the years following the Second World War. Post-war rebuilding had fuelled the demand for metals and the British government provided funding for the industry. Furthermore, in 1946 the United States Congress passed the Strategic and Critical Material Stockpiling Act. Being totally dependent on foreign exports of tin the US began to amass vast quantities of the metal and by 1955 had a stock-pile of 349,000 tons. In consequence world tin prices quadrupled and the Cornish mining industry prospered (Perry 1993a: 29; Baldwin 1983: 55-56).

In 1956 the International Tin Council was established to act on behalf of principal tin producers (including Cornwall) and buy up surplus stocks of tin and maintain tin prices at a steady level. With the ITC’s support and strong tin prices through the 1960s some Cornish mines reopened or new operations began. South Crofty and Geevor began expansion works and Buckley notes “an air of confidence as drilling rigs appeared on hillsides all over the old mining parishes” (Buckley 2005: 172). However, there was still a shortage of miners as many returning servicemen had chosen to find work in other fields or had found work in African mines. The government remained in control of the mines until 1949 under the Combined War Materials Board. Their response to the problem was to send Polish (many of whom had been working in the northern Collieries) and Italian workers (presumably

including former POWs) to the Cornish mines, including Geevor and South Crofty (Buckley 2005: 171-173; Hancock 2002: 142-145; Perry 1993a: 29).

During the 1970s world shortages in tin led to increased prospecting (Edmunds *et al.* 1975). South Crofty Mine announced a programme of expansion in 1971, Geevor's share-price also rose exponentially and new ventures began at Mount Wellington, Pendarves and Wheal Jane Mines. The OPEC oil crisis of 1973 proved a hiatus in this upward trend and in the midst of the energy crisis secondary mining industries, such as arsenic works, powder mills and fuse factories shut their doors (Perry 1993b: 53-54). After turning away interested sight-seers the management at Geevor Mine opened a museum amenity in 1977 at a redundant surface section of the mine including relics, models and other mining artefacts and Noall writes in 1983 of plans to extend this facility ending his volume on the history of Geevor Mine with:

It is hoped that in this Museum at least a part of the heritage of the old St. Just mining district may be preserved for all to see and enjoy and that miners, whether retired or still working, will find here a record of their industry of which they may well feel proud (139-140).

During the 1980s the increasing use of aluminium and industrial recycling schemes lowered the global demand for tin and in 1985 the International Tin Council collapsed as it was no longer able to maintain secure tin prices. The price of tin halved and in October 1985 the tin market crashed and trading was temporarily suspended. Despite a desperate struggle for survival, including the Cornish Tinnners March to Westminster in 1986, the Thatcher government refused to subsidise the Cornish mining industry (Harris 1986) (Figure 2.8, Appendix A). Unable to compete with tin producers in countries like China and Brazil the last surviving mines closed: Geevor in 1986; Wheal Concorde (St Agnes) and Pendarves in 1988; Wheal Jane and Mount Wellington in 1991. South Crofty, the last tin mine in Cornwall, closed on 6th March 1998 (Brayshay 2006: 143; Perry 1993b: 57; Schwartz 2008: 87).

#### 2.4.5.2. Tourism and nationalism

Deacon writes of an “increased perception and awareness of local difference” in the post-war period reflecting a broader trend towards ethnic consciousness seen elsewhere in the British Isles, Europe and North America. Whilst on the one hand globalisation seemed to be leading to an increasing homogenisation of Western culture (Deacon 1993: 209; Payton 2004: 268), on the other ethnic and territorial differences emerged as the foci for economic, cultural and political activity. This process can be identified within the formation of the European Union, with the subsequent emergence of a kaleidoscope of cultural and regional difference following the collapse of the Soviet Bloc and indeed, with social policy and practice in the UK and North America advocating a new multiculturalism (Payton 2004: 268). In the UK in the post-war period regional and cultural differences have emerged most strongly and politically (and in some cases violently) through conflict in Northern Ireland and political campaigning in Wales and Scotland (notably campaigns for devolution, see Section 2.4.6. below).

Following *Plaid Cymru* (Party of Wales, est. in 1925) and the Scottish National Party (est. 1934), in 1951 a Cornish nationalist party, *Mebyon Kernow* (Sons of Cornwall) was formed to lobby on various political and economic agendas, including a separate assembly for Cornwall, as well as cultural aims (Perry 1993a: 28). Interestingly as early as the 1960s *Mebyon Kernow* was defining Cornishness for membership purposes as “anyone who feels him or herself to be Cornish” (Thomas 1973: 14) – a ‘Cardiac-Celt’ model rather than an identity-based or, indeed, a territorial model. Indeed, the party retained this open membership policy; according to its website the party aims to fight for “all the people of Cornwall” (*Mebyon Kernow* 2011).

At the same time British seaside resorts were experiencing a golden age of tourism following an increase in private car ownership, longer holidays and the popularity of the traditional ‘bucket and spade’ holiday (Perry 1993a: 29, 39-40; Williams and Shaw 1993: 84). Cornwall was certainly no exception to this and Betjeman noted, with some derision, that “blocks of houses have been taken down in picturesque ports to make way for car parks; petrol stations proliferate; huge hoardings to attract the motorist line the entrances to towns” (1964: 9). Guide-books to the

county in the post-war period analogised mining areas to the 'Black Country' and if they were mentioned at all it was as places to avoid, with one guide from 1951 describing St Just as a "dingy town" (Martin 1951).

Following the pre-war trends described above (Section 2.4.3.2.) marketing material continued to favour colourful boats, beaches and cottages largely due to the fame and impact of the art colonies at Newlyn and St Ives, the latter led by international artists such as the potter Bernard Leach, sculptress Barbara Hepworth and painter Ben Nicholson. According to Perry such images imprinted a "vivid but lop-sided image of Cornwall on the minds of outsiders" (1993a: 41).

Opponents of tourism included retirees, artists and writers, but also working class supporters of an industrial culture for whom tourism represented an invasion of foreigners (Perry 1993a: 40). Cornwall also experienced increasing 'English' immigration in the post-1960s period, including retirees, entrepreneurs, New Age travellers and second-home owners (Deacon 1993: 209; Perry 1993b: 52-53). As Perry points out the costs of tourism were highly visible – traffic jams and "caravans sprawled across headlands" (Figure 2.9, Appendix A) – but there were few real economic benefits for many given the nature of part-time seasonal employment in a low-paid service industry (Perry 1993a: 40). Unsurprisingly, by the 1970s *Mebyon Kernow* was calling for a tourism tax, a moratorium on second homes and action against local estate agents who marketed homes in national magazines (Perry 1993b: 54).

By the 1980s many independent shops on Cornish Fore Streets (High Street in English) had been taken over by national chains. The subsumption of the local by the national was exacerbated by pressures on Cornish planners to encourage 'up-country' factories and businesses to relocate to Cornwall. Given the vacant lots, good climate and a cheap (often female part-time) work-force during the 1980s and 1990s Cornwall became a favoured location (Perry 1993b: 54-57; 70-71). These new business people formed, according to Perry, "a modernising elite" – relatively well-educated, well-qualified and with better professional experience compared to the local population. Often motivated by a desire to "escape the city rat race" many settled in the attractive coastal fringe (1993b: 70-73). The extension of the M5 motorway south to Exeter (from 1967-1977) and

improvements to the A30 and A38 (linking south Cornwall to Plymouth) greatly aided transport into the county (Charlesworth 1984). A consequence of these changes was that inland Cornwall became increasingly Cornish whilst the coastal fringe became both touristy and increasingly English. This paradox was noted by Payton who commented: “For outsiders, Cornwall is peace and tranquillity, a haven to which one might retire from the mad rush of modern life; for insiders, Cornwall is often poverty and poor housing and a struggle to make ends meet in a low-wage economy” (Payton (1996) 2004: 1). According to Johnson such differences contributed to the “sense of us and them, English and Cornish” (1996b: 151).

#### **2.4.5.3. Abandoned mining areas in the post-war period**

The condition of the post-war mining areas (up until and including the 1970s and 1980s) is commonly described within historical and archaeological literature in terms of abandonment, neglect, wasteland and dereliction. As an example of this, as late as 1996, the County Archaeologist, Nick Johnson, described the St Just mining coast as a “smashed and ruined landscape – a mirror to later deprivation – surrounded by areas traditionally reserved for flytipping, New Age Travellers and flat-roofed extensions” (1996b: 151).

During the 1970s and 1980s it was common for local councils to locate New Age travellers on mine sites, and furthermore, in the post-war period fly-tipping on mine sites was customary practice with cars abandoned amongst mine dumps and shafts used as places to dispose of the unwanted fridge (Schwartz 2008: 10; Sharpe 2007: 69). Payton has noted that the New Age camps provoked some conflict with many local communities who had “had little empathy for ‘alternative’ Celticism” (Payton 2004: 284). Yet such actions can be seen, not as apparent environmental anarchy but a continuation of the 18th and 19th century attitude towards land as a functional, rather than aesthetic commodity as described above (Section 2.4.2). Indeed Johnson, takes care to state that such landscapes were still “home for local people [...] for them mining and the relics of mining are a vital part of their sense of identity and sense of place” (1996b: 151).

Some historians had however, begun to move their focus from Cornish prehistory to the more recent, industrial period (Payton 1993: 7). Payton has argued that it

was the publication of Rowe's *Cornwall in the Age of the Industrial Revolution* in 1953, followed by Barton's books (1965; 1967) which sparked interest in industrial archaeology in Cornwall. However, the wider impact of these books is debateable for it is clear that at the time of publication the concept of mining 'heritage' had not yet reached the wider public imagination (2004: 285).

In Cornwall mining areas began to be transformed in the 1970s and 1980s following a number of statutory reviews (Thorpe *et al.* 2005: 18), moorland clearance subsidies and cleaning-up operations by the National Trust following acquisitions. In the early 1980s the Cornwall Archaeological Unit carried out surveys of mining areas recognising their archaeological significance (Sharpe 1989; 1992a; 1992b) and in the late 1980s mining areas were increasingly targeted by land reclamation schemes resulting in the capping of shafts for safety reasons (Palmer and Neaverson 1998: 129; Schwartz 2008: 62, 120; Sharpe 2008: 21). In 1984 members of the Trevithick Society (formerly the Cornish Engines Preservation Society (est. 1935)) restored a Cornish beam whim engine at Levant Mine (owned by the National Trust) which opened officially as a visitor attraction in 1993 (Anthony Power, pers. comm. 18 November 2011). Between 1984 and 1985 members of the Carn Brea Mining Society conserved the famous Crown Mine Engine Houses at neighbouring Botallack (Holmes 2010 192-202). A number of other mines have gained museum status and opened their doors to visitors (Poldark Mine (formerly Wendron Forge, opened in 1972) (Williams 2010) and King Edward Mine (Managed by the Trevithick Society for Cornwall Council) which opened to visitors in 1987 (Watton 2002).

#### **2.4.6. Post-industrial Cornwall: 1988-2010**

During this period Cornwall, the rest of the UK, plunged head-long into the industrial heritage business (Perry 1993b: 58). The growth of industrial heritage in the UK can be seen within its tentative lists for potential World Heritage nomination. The UK government's first list of tentative World Heritage Sites in 1986 only contained one industrial site – Ironbridge Gorge Museum. In 1999 the second tentative list contained ten industrial sites, out of the total complement of 25. These include the Blaenavon Industrial landscape in Wales, the Forth Bridge in Scotland and the Cornwall and West Devon Mining Landscapes (Cooper 2005: 156;

DCMS 1999, see Section 1.1 for information on WHS nomination). In addition an increasing number of specialist publications link industrial heritage to regenerative schemes, particularly within urban areas (Symonds 2005: 46). In consequence an increasing number of mills, mines and railways (not to mention other industrial sites) have been cleaned up and made to look attractive for visitors. According to Palmer and Neaverson this broad emergence of industrial heritage was a matter of the “acceptability of elements of past culture in the contemporary landscape” (1998: 141). In the mid-20th century industrial monuments were:

[...] regarded as relics of sweated labour and unacceptable working practice, consequently being swept away in urban development or land clearance schemes. Only in the last quarter of the twentieth century has the international significance of Britain’s industrial heritage been understood and its value as a cultural resource appreciated (Palmer and Neaverson 1998: 141).

Indeed, in Cornwall a number of initiatives around industrial began. Geevor Tin Mine in West Cornwall re-opened as a heritage attraction in 1993 and around the same time (early 1990s) the Mineral Tramways Project starting work on creating around 60km of trails in mid-West Cornwall, mainly using old tramway routes to link together mining sites (the project was completed in 2009) (Cornwall Council 2011d). In 1994 a *Derelict Land* conference (hosted in Cornwall by the University of Exeter) considered the “new values” of former mining land in “the post industrial age” (Shipman 1994). Around this time Bristow also noted the number of organisations concerned with different aspects of the environment including the National Trust, Cornwall County Council Countryside Services, English Nature, Cornwall Trust for Nature Conservation and the Cornwall RIGS Group (Regionally Important Geological/Geomorphical Site) (1993: 130).

Throughout the 1990s concerns were expressed about the consequences of heritage tourism on the Cornish way of life and landscape; illustrating the many ways that the industrial landscape had become a highly politicised space. The issue according to Payton was one of “moral geography” (2004: 284). Some believed that the county could be turned into one vast theme park (Perry 1993b: 58), while

*Mebyon Kernow* continued to argue that tourism was a bad thing (Payton 2004: 284) and Spalding published a paper arguing that the ecological value of mining habitats needed to be better considered (1995). These fears were summed by Payton that “a hitherto wild, dramatic, inherently Cornish landscape was being sanitised and anglicised, made safe and familiar for Home Counties refugees” (2004 : 284).

Besides tourism, heritage and immigration within a few years other questions concerning Cornwall and the ‘other’ were raised as plans emerged for separate Regional Assemblies in Scotland, Northern Ireland and Wales (granted Assemblies in 1999 under the Labour government) (Payton 2004: 268-270). The issue of a Cornish Assembly has been considered by Sandford in relation to the move towards devolution in the UK. Sandford defined devolution as new democratically elected institutions gaining political autonomy within existing and distinct administrative territories which were recognised by the British government as non-English parts of the British Isles. The case for home-rule in Scotland was supported by existence of Scottish Office, created in the 1880s as a territorial concession that Scotland was not the North of England. Sandford suggested that Cornwall lacks the same, distinct administrative territoriality that Wales, Scotland and Northern Ireland possess. Furthermore, he argues that claims of distinct regional identity, as with the northeast or Cumbria, has little bearing on the government’s ability to administer the region effectively (2003: 40-42).

Political autonomy has not yet happened in Cornwall, perhaps for the reasons that Sandford gives, however *Mebyon Kernow* still campaign for a Cornish Assembly. There have been some recent victories for those who feel they are ‘true’ Cornish (or ‘Cardiac’ Celts). In 1997 the MP for St Ives, Andrew George, gave his maiden speech in the House of Commons in Cornish. For the first time, in 2001 individuals were able to enter Cornish as nationality on the census and in 2002 the government added Cornish to the list of indigenous British languages, as recognised under the terms of the Council of Europe’s Charter on Regional and Minority Languages (Payton 2004: 294-296). In 2009 Cornwall became a unitary authority, scrapping its six district councils, and creating one council for the whole of Cornwall. As part of the move to unitary status, the Council changed its name from ‘Cornwall County Council’ to ‘Cornwall Council’ removing the unpopular

County element from its title (which suggests that it is an English county) (BBC 2009b).

Reflecting the fluid and mutable nature of identity, industrial sites now matter to the ongoing Cornish Revival movement, which as illustrated above, was born out of a desire to re-invent post-industrial Cornwall. This 'return' to the industrial past is expressed within the hyphenated identity of the 'industrial Celt' - an identity, melded according to the Cornish Mining World Heritage Webpages through a "proud and assertive regional identity" formed in the late 19th century and "other aspects of Cornwall's heritage" to shape the contemporary perception of the Cornish (by the Cornish) as "industrial Celts" (2010).

A return to the industrial past is also evident within material culture (I discuss different concepts of identity in relation to mining and material culture in detail in Chapter Ten). Alongside other established icons such as Cornish tartan, pasties, the chough (Cornwall's 'national' bird), Cornish crosses and the flag of St Piran, the patron saint of Cornish tanners (a white cross on a black background which symbolises tin metal set in a background of charcoal ash) (see Figure 2.8, Appendix A), Cornish mining iconography is now also fully adopted within the canon of nationalist Cornish symbols (Cornwall Council 2010; Deacon 1993: 205; Payton 2004: 285). Indeed, the silhouette of the engine house is a recurrent visual theme throughout the county, particularly since the introduction by Cornwall County Council Trading Standards Office in 1991 of the 'Made in Cornwall' scheme which adopted the symbol of the engine house as a logo on accredited Cornish products (Busby and Meethan 2008:151; Howlett 2004: 55).

However, this return to the industrial past fails to note the fact that 21st century mining in the county is not necessarily 'dead'. Several mining related businesses continue to work, including mining consultancies and contractors, plant suppliers and mineralogists, while Camborne School of Mines continues to train mining engineers for employment at home and abroad (Buckley 2005: 204-207). The current owners of South Crofty, Baseresult Holdings Ltd, are on record as stating that their long term aim is to resume mining, despite pressures to redevelop the site, and the mine is currently in a development stage, with considerable investment having recently gone into new equipment (Buckley 2005: 212).

Certainly well-paid, non-seasonal employment would appeal to many Cornish residents who are caught between the twin difficulties of high house prices (pushed up by economically advantaged incomers) and low wages (Payton 1993: 6; Verkaik 2006, 24). The latter is evidenced by recent European subsidies including Objective One funding, designed to support the economy in economically deprived areas (Usborne 2006: 30). However, there are objectors, particularly as the area is partly residential and could be redeveloped as housing, while health and safety demands would also need to be addressed (Schwartz 2008: 115). The question of the resumption of mining in the county is never far from the bars of Cornish pubs and newspaper columns, particularly with increased demand from China for metal, and most hopes rest on South Crofty Mine (Schwartz 2008: 74). If newspapers and bar stool conversation is to be believed, Buckley's assertion that no "true Cornishman or woman" (2005: 212) would wish for the current situation to continue i.e. no mining in the county reflects the views of many in the county and at the time of writing developments at South Crofty are being followed very closely.

## **2.5. Chapter summary**

Cornwall is a peripheral, maritime environment. Nevertheless, the great wealth contained within the county's granitic geology lead to the emergence of a period of intensive metal mining activity during the Industrial Revolution (AD 1750-1914), which had significant local, national and global impact. A slow period of deindustrialisation, from the end of the 19th century to 1988, has left extensive mining remains in the Cornish landscape; however some losses have occurred, mainly due to industrial and domestic recycling and later development.

Deindustrialisation coincided with the emergence of a Cornish-Celtic revival movement and the re-invention of the region as a centre for tourism. In the first half of the 20th century derelict mine sites were disregarded as representational markers of Cornish identity (as aimed at the English tourist market). Instead, concepts of Cornishness played with Mediterranean motifs and narratives from Cornwall's 'ancient' past.

In the post-war period, the end of mining converged with a number of cultural and economic trends which encouraged the transformation of derelict mine sites into

industrial heritage. These trends included the emergence of Cornish nationalism, growing UK-wide interest in the remains of the Industrial Revolution and the continued development of a tourism-based economy in the southwest. The Cornish Mining World Heritage Site was inscribed in 2006 and the Site has subsequently been promoted internationally. At a local level, over the last decade mining motifs have been adopted within the existing canon of Cornish-Celtic symbolism and representations of the Cornish engine house are now as visually common in the county as 'national' flags and Celtic crosses.

## **CHAPTER THREE: THEORETICAL FRAMEWORK**

Should we preserve a ‘motor car factory landscape’ at, for example, Cowley (now too late) or Dagenham (there’s just time)? And what about the power generation industry? – we can feel good about a folksy landscape of windmills in Norfolk and even wax romantic about those wonderful old gasometers outside St Pancras Station; but at what point does a redundant nuclear power station become cuddly? (Fowler 2004: 102)

### **3.1. Introduction**

This chapter will map out key theoretical territories which link to the scope and aims of the project and will provide necessary background to the research. The chapter comprises of four parts; the first part considers the development of industrial archaeology in the UK, and this is then followed by discussion of relevant debates concerning heritage. The third part of the chapter draws on a wide variety of sources in order to reflect on the relationship between the public and industrial archaeology. Finally, my theoretical framework is also shaped by a consideration of ideas drawn from archaeology, cultural geography, anthropology and philosophy regarding environmental perception, including theories which consider insider/outsider perspectives.

### **3.2. The development of industrial archaeology in the UK**

#### **3.2.1. The formative years**

It is thought that the first use of the term industrial archaeology appeared in 1896 in an article entitled ‘Archaeologia Industrial Portuguesa os Moinhos’ by Sousa Viterbo in the Portuguese journal *O Archeologo Portugues* in reference to mills which were disappearing. In the late 19th and early 20th centuries the subject only seemed to be of concern to a few individuals, mostly amateur historians (Labadi 2001: 77; Palmer and Neaverson 1998: 1; Symonds 2005: 37) and the term only became popularised within English-speaking circles in 1955 when Rix, an amateur historian published a short article entitled ‘Industrial Archaeology’.

Rix's article was enormously influential; he insisted that the preservation of the industrial past was urgent and necessary, stating that:

Within living memory the motor car, radio and aeroplane have been invented. Yet the 'Tin Lizzy', the crystal set and the biplane are already so out of date as to be museum exhibits (1955: 5).

Importantly Rix's message also provided representation for the disparate but growing number of amateur groups who advocated preservation of industrial buildings at a time when urban areas were experiencing post-war redevelopment. The key moment was the demolition of the Doric portico at Euston Station in 1962, which galvanised public opinion in opposition to its destruction (Buchanan 1980: 25). Samuel noted the contribution of these "enthusiastic amateurs."

It was not the economic historian but the steam fanatics – and after them the industrial archaeologists – who resuscitated the crumbling walls and rusting ironwork of eighteenth century furnaces and kilns; who kept alive, or revived a sense of wonder at the miracles of invention which made mid-Victorian Britain the 'workshop of the world' [...] (1994: 276).

Rix's article and the public's interest in Britain's industrial remains persuaded the Council for British Archaeology (CBA) to undertake research and advocacy. In 1959 the CBA set up a research committee on industrial archaeology (Palmer 2010: 6) and following the demolition of the Euston Arch the Industrial Monuments Survey was established in 1963. Initially it was run jointly by the CBA and the Ministry of Public Buildings and Works before passing to the care of Bath University in 1965 to become the National Record of Industrial Monuments. It then transferred to the National Monuments Record in the 1990s (Buchanan 1980: 361; Palmer and Neaverson 1998: 2). A national association in the form of the Association of Industrial Archaeology (AIA) was established in 1973 and a series of annual conferences were held at the University of Bath between 1966 and 1970. In 1976 a specialist publication *Industrial Archaeology Review* was launched (Buchanan 1980: 355).

Therefore, the post-war period witnessed growing public awareness of industrial archaeology, a unified record, a cohesive movement for documenting and recording industrial remains and an annual publication (Labadi 2001: 77). In 1980 Buchanan defined industrial archaeology as a field of study “concerned with investigating, surveying, and recording and, in some cases, with preserving industrial monuments. It aims, moreover, at assessing the significance of these monuments in the context of social and technological history” (1980: 22). The central interests in monumentality and technology are clear within the quote and whilst Buchanan does not define a period of study, according to Nevell there was a general acceptance that industrial archaeology dealt with the period from c.1750AD up until the First World War, a period commonly known as ‘The Industrial Revolution’ (2006: 31).

However, there are differences of opinion in regards to definition, scope and aims. Debate as to whether a period defined or production-defined approach should dominate began as early as the 1960s and 1970s (Casella 2005: 4; Nevell 2006: 31). Raistrick notably argued in 1972 that the label could equally be applied to Neolithic flint mines and by taking a broader temporal approach “it becomes much easier to see industrial archaeology as the investigation of the whole history of industry through the ages” (1972: 4, 10). The question of temporality still periodically re-surfaces and at the moment the boundaries between industrial archaeology and other sub-disciplines are becoming increasingly diffuse (see Section 3.2.5. below).

### **3.2.2. Industrial archaeology and academia (1960s and 1970s)**

During this period industrial archaeology remained, “on the periphery of the academic world” (Symonds 2005: 38). Indeed, the developing significance of industrial archaeology as described above was only very gradually translated into academic research in the UK during the 1970s and 1980s - a situation which Cranstone describes as being “painfully slow” (2005: 79; 2001: 77). The reasons for this are clear. It was seen by many academics as a preservation activity undertaken by “hobbyists” and has been dismissed as a “fun subject” (Buchanan 1980: 373; Palmer 2005: 60). Whilst the focus of interest was concerned with description and technological function it appeared to happily exist without any

apparent theoretical or methodological perspective (Grant 1987: 118; Palmer and Neaverson 1998: preface, 3). Furthermore, industrial archaeology's temporal range, dealing as it does with the remains of the relatively recent past, has also been cited as a reason for academic disinterest. When compared to prehistory, through which, out of necessity, much archaeological theory had been formed, it hardly seemed 'real' archaeology. In 1980 Buchanan positioned the subject as a sub-branch of historical studies and advocated that industrial archaeology should be re-conceptualised as a part of "physical history" (1980: 373-374). He perhaps recognised the problematic nature of the study of the industrial period in relation to the broader discipline. However, as the following section discusses, academic trends in North America proved - with hindsight - to open up industrial archaeology to new theoretical agendas.

### **3.2.3. Social archaeologies of industry**

By the 1980s North America had developed had developed a strong tradition in historical archaeology, characterised by structuralist and Marxist approaches to the study of industrial remains of the 18th and 19th centuries – exemplified, for example, by the work of Deetz (1977) and Leone (1987). Meanwhile, industrial archaeologists in Britain had gone in a different direction by continuing a thematic approach to the study of monuments before developing a more techno-centric approach in the early 1990s. However, a growing unease had set in within the UK camp, characterised by a feeling of disconnection between a conservation-led approach and wider academic thinking. The influence of North American research had trickled down and by the end of the 1990s a split occurred in British industrial archaeology (Casella 2005: 3, 7; Palmer and Neaverson 1998; Nevell 2006: 30-3). One side was concerned with the "interpretation of the surviving material evidence in order to understand past human activity" (and notably, following North American models, concerned with questions of consumption, power, identity and social relationships) and the other side was a preservation movement largely focused on the recording and description of individual buildings (Palmer 2005: 59).

### **3.2.4. Industrial archaeology and academia (1980s, 1990s and 2000s)**

During this period a new debate emerged as to whether industrial archaeology should retain its traditional techno-centric focus or whether it should also consider 'social' archaeologies (Gwyn 2009). Palmer noted in 2005 that "in the more professional and institutionalised climate of the last two decades, the distinction between the two meanings has become crucial to the acceptance of industrial archaeology as an academic discipline" (59).

During the 1990s industrial archaeology began to integrate, albeit slowly, into academic departments, particularly extra-mural departments (Cranstone 2005: 78-79). Units on offer at universities tended to concentrate on either the recording of standing buildings, therefore arguably continuing a 'descriptive' monument-focused tradition, or the management of sites - therefore suggesting that the subject was mainly seen as practice-based rather than theoretical (Palmer and Neaverson 1998: preface, 3). Likewise, historical archaeology also had a "rather dubious status" in Britain. As Tarlow and West noted, its role was "supplementary or illustrative at best, and at worst entirely irrelevant" (1999: 263). Industrial and historical archaeology continues to be poorly represented. In October 2011 Marilyn Palmer (Emeritus Professor of industrial archaeology at the University of Leicester) noted the lack of academic posts and the slowness of departments "in taking on and teaching post-medieval and modern archaeology". Arguing that the profession currently needs "specialists trained in building recording who can understand the significant features of industrial structures", Palmer therefore suggests that departments are therefore failing to teach graduates the skills that they need to work in the modern profession (Reisz 2011).

### **3.2.5. Industrial archaeology or 'other' archaeology?**

Inevitably questions have been raised over nomenclature and the relative position of industrial archaeology to post-medieval, historical archaeology (Nevell 2006: 31) and more recently to contemporary archaeology. The UK Society for Post Medieval Archaeology (SPMA) formed in 1967 to explore US-style historical archaeology. With a remit to study archaeology from the late medieval to industrial period (Palmer 2004: 1), it thereby potentially overlaps with research conducted by the AIA. However, contrary definitions exist; for example, Orser (2004) summarised

perspectives on historical archaeology as being either period-defined, method-defined (triangulating documentary and historical sources) or being concerned with the study of the modern world. Concerning the latter perspective Harrison and Schofield (2010: 48-53) have considered the distinctions between contemporary archaeology and historical archaeology, suggesting that contemporary archaeology commonly focuses on the period after the First World War (González-Ruibal 2008: 247-248) or the period which overlaps with living memory (Buchli and Lucas 2001a; Schofield 2000). This period (taken as starting at 1918 or from the 1940s/1950s) has in turn been distinguished as a distinct late-modern, post-modern or to use González-Ruibal's phrase - a 'super-modern' period (Augé 1995; González-Ruibal 2008; Harrison and Schofield 2010: 1-2). Characteristics which define this period include rapid change in technology, media, globalisation, migration and production (Harrison and Schofield 2010: 2) – aspects which in González-Ruibal's terms lead to trauma, destruction and conflicting memories (2008), concepts that still resonate loudly within many deindustrialising and post-industrial societies.

Some have argued that industrial archaeology is an obsolete concept and it should instead be reframed within a holistic archaeology of the later 2nd millennium (Clark 1999: 283; Cranstone 2005: 77). Nonetheless the term 'industrial archaeology' has largely been retained; for example, the key British text *Industrial Archaeology: Principles and Practice* (Palmer and Neaverson 1998) is firmly focused on pursuing the development of social theories. This does suggest that the term 'industrial archaeology' is not necessarily going to go away in the near future and it may become an increasingly broad church – meaning different things to different people.

### **3.3. Heritage**

Whilst industrial archaeology was still struggling to establish its parameters, the second half of the 20th century witnessed a transformation which turned industrial remains from derelict functional structures into 'icons' of an innovative industrial past (Alfrey and Putnam 1992: 41).

Heritage, like industrial archaeology, is a tricky term to define due to different meanings and usages (Carman 2002: 15); broadly speaking, definitions tend to focus on physical inheritance/conservation as well as inscribed cultural values. As examples, Harrison defines heritage as “things and practices, the material world and the customs and habits which inform social identity” (2010b: 9), whereas for Halbwachs heritage is a form of collective memory which is constantly shaped and re-shaped by the political, social and economic concerns of the present (1992). The ‘presenting’ of heritage runs through most definitions. For Lowenthal heritage domesticates the past “for present causes” (1998: xv) and it is this processing of the past which differentiates history from heritage (Schouten 1995: 21). For this research, my working definition of heritage is taken from the Council of Europe’s (CoE’s) Faro Convention (Framework Convention on the Value of Cultural Heritage to Society 2005). This has repositioned public participation within an enlarged, European-wide, cross-disciplinary concept of cultural heritage with an explicit human rights agenda, as the following definition demonstrates.

[...] cultural heritage is a group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time (CoE 2005).

Although such definitions can appear all-encompassing, not everything becomes heritage – it is rather the selective process of ascribing significance in relationship to the past which creates heritage (Harrison 2010b: 5; Uzzell 1996: 219-221). I will discuss the ascribing of significance (in terms of different heritage values) in more detail below (Section 3.3.2.).

### **3.3.1. Heritage debates**

Although there are exceptions (such as thanotourism which deals, for example, with slavery, war cemeteries or sites of massacres) the processes of constructing heritage usually focus on positive, even aspirational associations with the past and in turn a labelled and commodified past which can be used to attract visitors (Uzzell 1996: 219-221).

For several decades the heritage industry has stood accused of “inculcating within the public” a fake or simulated past which is “reactionary, superficial and romantic” (Uzzell 1998: 11). Hewison (1987) and Wright (1985) are usually cited as sparking the well-documented and long-running ‘heritage debate’ (Hewison 1987; Herbert 1995: 10; Lowenthal 1985, 1998; Wright 1985; Samuel 1994; Shanks and Tilley 1992). Hewison argued that in representing the past as entertainment and leisure the heritage industry effaces and weakens history, creating in turn a false nostalgia for the past that smokescreened collective denial regarding post-war decline (Hewison 1987). Wright (writing in the aftermath of the Falklands War) argued that a Conservative-led heritage agenda was in action – selectively engineering the past in order to generate patriotism. Both authors positioned heritage-making within the ‘crisis’ of super-modernity discussed above (Section 3.2.5.) – in Ferguson *et al.*’s words “a search for solidity in a world that is constantly changing” (2010: 278). Indeed, Cleere traced a desire for the preservation of cultural relics to the European Enlightenment and therefore argued that the origins of heritage management are Occidental in nature (1989: 7).

The heritage discourse, therefore, revolves around the power of the dominant hierarchy (nation state or Occident) to present a particular view of the world, to inevitably create inclusionary (and therefore exclusionary) narratives, and in so doing, to inform and construct social identities. ‘Identity’ can be defined as consciousness of what one is and what one is not. It encompasses ideas of being special, different or unique and is about the ways in which we represent ourselves and are defined by others, issues which have come to the fore within social theory within the last two decades (Smith 2004: 2; Tilley 2006: 8). Homogeneity and membership are also central constructs within the Saidian discourse of the ‘other’ where the inside is defined in counter-opposition to the outside (Graham and Howard 2008: 5; Harrison 2005: 7; Harrison 2010a: 1). Non-essentialist debates and approaches, informed by the post-modern concepts of pluralism, tend to destabilise an essentialist view of society and view identity as invented, inventive, fluid and mutable (Tilley 2006: 9-10). Therefore, identity can operate on many different levels and scales including the hidden, cognitive and family orientated as well as the organisational, national and regional.

This top-down hegemonic view of heritage was notably challenged in 1994 by Samuel, a social, and socialist, historian who played an influential part within the emerging Public History movement. Samuel accented the local and personal nature of heritage and the different ways that the past was celebrated. Foregrounded in oral history and memory-work, this new public history gave consideration to the “perceptions of the past which find expression in the discriminations of everyday life” (1994: 17). The ways that unofficial perceptions operate alongside and against official narratives was a central theme within Bender’s later publications which focused on the political dimensions of landscape and questioned “how people, differently engaged and differentially empowered, appropriate and contest their landscapes” (Bender 1993; Bender 1998).

The heritage debate continues with further critiques of the role of heritage within hegemonic processes. Notions concerning the democratisation of heritage practice are reflected within the ‘Faro Convention’ (see Section 3.3. above). Groote and Haartsen heavily implicated heritage in the process of national ideology – a strategy that can only be used by the cultural and political elite (2008). In the same vein Harrison has recently questioned whether “heritage is *not* about truth or authenticity but about deliverable political objectives – about reinforcing social cohesion through the construction of myths or origins, identity and moral examples” (2010a: 1). Tunbridge and Ashworth have written extensively about the “zero-sum” characteristics of heritage; that the creation of heritage potentially disinherits those who do not subscribe to a prevailing viewpoint (1996). Disempowerment was a theme taken up by Smith within her widely cited critique of the “Authorized Heritage Discourse” (AHD) which considered a range of professional practices employed within Western society. She concluded that these largely speak to each other and hence reinforce normative and dominant professional discourses, thereby excluding the public from having a role in the production of heritage (Smith 2006).

### **3.3.2. Values**

Part of the above discussion pre-supposes that someone somewhere has “privileged access to [...] a proper understanding of what history and heritage are *really* about” (Harrison 2005: 5). Heritage therefore is constantly subject to

“interpretation and reinterpretation, claim and counter claim, and negotiation” (Harrison 2005: 7).

If one accepts that “all knowledge of cultural reality is always knowledge from particular points of view” (Weber 1949: 81) then the relationship between heritage and particular viewpoints inevitably leads to consideration of values (Ashworth 1998: 112). Views of heritage operate at an individual level through a variety of different lenses; “nationality; religion; ethnicity; class; wealth; gender; personal history; and that strange lens called ‘insideness’” (Graham and Howard 2008: 2). Different meanings, associations and significance then in turn create different values which are inscribed on heritage (for example, aesthetic, spiritual, informational or economic values) which are dependent on time, culture, context and viewpoint (Bender 1993; Darvill 1995: 40; Hodder 2000: 88-89). A place can therefore hold multiple values (and Smith has argued that heritage in itself is a cultural value (2006) which vary in scale, which can be consumed and exchanged through communication, and which change as each individual creates an economic, political or intellectual relationship with the site. The same process could be described for intangible heritage including oral traditions, social practices and abstract qualities such as a sense of place (Mason and Avrami, 2002: 16; Graham and Howard 2008: 2).

Whilst values on an individual level give some things significance over others, valorising on a collective level can transform sites into symbols which can take on local, national or even global meaning (Avrami *et al.* 2000: 7). Valorisation and the labelling of sites can, somewhat paradoxically, fix values and meaning through, for example, interpretation, documentation, social media and expert opinion (Mason and Avrami, 2002: 23). However, such fixes are inevitably only temporary, as Harrison has pointed out:

As social relations ebb and flow, as one class or pressure group takes ascendancy over another, new perceptions, new views on the past and what was of value in the past, also take over. Previous accounts are challenged. Old statues are removed and new ones installed; Marx and Engels are replaced by new icons (Harrison 2005: 7).

### 3.3.2.1. International conventions and charters

Over recent years the heritage profession has moved from a position of managing lists of assets, reflecting a concern with the conservation of fabric, to managing values (Graham and Howard 2008: 2). A number of value-based typologies and have been developed, including typologies drawn up through international conventions and charters (Appendix A, Table 3.1).

Table 3.1 demonstrates how the classification of heritage values change and broaden over time reflecting wider political and social trends. In particular, an awareness of the impact of global politics on economies and a growing recognition of minority voices has resulted in a reorientation towards social value. The value typology of the 1964 International Charter for the Conservation and Restoration of Monuments and Sites (the Venice Charter) largely reflected post-war concerns with redevelopment focusing on the authenticity, preservation and restoration of built structures (Harrison 2010b: 8). By 1996, ICOMOS's Burra Charter (ICOMOS Australia, Charter for the Conservation of Places of Cultural Significance [1979, subsequently revised]) included social values in order to “embrace the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment” (ICOMOS 1999). The inclusion of social values within charters increasingly became the norm from the 1990s onwards (Labadi 2007: 9). In 2003 UNESCO adopted a Convention for the Safekeeping of Intangible Cultural Heritage which highlighted the importance of protecting intangible cultural heritage as a mainspring of cultural diversity (UNESCO 2003). Two years later the Faro Convention (see Section 3.3. above) expanded the concept of cultural heritage further by redefining it as “a group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions” (CoE 2005).

Although Faro is yet to be ratified by the UK government there is an expectation that Faro principles will impact increasingly on and set a new benchmark for cultural heritage management, and therefore place public perception of heritage more centre-stage. The 2001 ‘Florence Convention’ (the Council of Europe European Landscape Convention [ELC], see Chapter One, Section 1.1), however, has come into force in the UK (ratified in 2007) and also has particular relevance to

my research. In recognising everyday and ordinary landscape, the ways in which landscape informs and defines identity and the fact that landscape is in constant formation, the ELC has become a key instrument in developing European policy towards the cultural and natural dimensions of the environment. The ELC view of landscape as “part of the land, as perceived by local people and visitors, which evolves through time as a result of being acted upon by natural forces and human beings” (CoE 2000) closely reflects the ethos of this research and importantly also emphasises 20th century archaeology (Fairclough 2002). As previously mentioned (Chapter One, Section 1.1.), ELC has a close relationship to HLC; a method of landscape characterisation developed in Cornwall during the 1990s. Like ELC, HLC also sees landscape as “continuous and multifarious” (Cornwall Council 2011c) and sees the relationship between landscape and people in terms of a dialectic shuttle between material and perception. As Turner and Fairclough noted “central to the HLC approach is the treatment of the material remains of the past as part of present day perception” (2007: 121) including historical development and also use, value and associations.

### **3.3.2.2. World Heritage and universal value**

As UNESCO World Heritage Sites, the case studies which will be discussed in Chapters Six to Nine are part of “a world-wide heritage of, for and belonging to everyone” (Fowler 2004: xvii). Before considering the problematic nature of universal value some background to the World Heritage Convention and the designation of the Cornish mining landscapes as ‘cultural landscapes’ is necessary.

The UNESCO International Convention for the Protection of the World’s Cultural and Natural Heritage (the World Heritage Convention, [UNESCO 1972]) was conceived in order to establish “an effective system of collective protection of the *cultural* and *natural* heritage of outstanding universal value” (Cleere 1995: 63). In 1992 the World Heritage Committee adopted three categories of cultural landscapes into their operational guidelines thereby producing the first legal instrument to protect landscape (Fowler 2003: 15; Rössler 2000: 27-28). Cultural landscape was defined as “the combined works of nature and man (sic), and areas including archaeological sites which are of outstanding value from the historical, aesthetic, ethnological, or anthropological points of view” (Cleere 1995: 63). Sub-

sets of the cultural landscape category include 'relict' landscape – “archaeological sites, where a process of evolution came to an end at some time in the past”, including industrial landscape (Cleere 1995: 64) - and 'continuing landscape' “one which retains an active social role in contemporary society [...] and in which the evolutionary process is still in progress” (Rössler 2000: 2). However, the distinction between 'relict' and 'continuing' is problematic in failing to recognise that *all* landscape continues, a notion embedded within the European Landscape Convention (see Section 3.3.2.1. above).

Fowler has described a certain initial reluctance towards designating industrial sites as cultural landscape - referring in explanation to a prejudice against “landscape components which are not 'beautiful' in Western Romantic terms” (2004: 65). The former steelworks of Falun (Sweden) and Derwent Valley Mills (UK) were rejected in 2002 by the committee because of their industrial (as opposed to rural) nature (but were instead accepted as 'technological ensembles'), whilst the previous year the Welsh iron and coal mining landscape of Blaenavon was accepted. This inconsistency and an unsustainable philosophical attitude towards urban landscape/landscape associated with the Industrial Revolution was eventually resolved, thereby clearing the way for the successful nomination of the Cornish Mining World Heritage in 2005 (awarded 2006, see Chapter One, Section 1.1. and Chapter Two, Section 2.4.6.) (Fowler 2003: 24, Fowler 2004: 80-82, 91).

A universal ethos, when applied to cultural landscape presents an uneasy paradox – between considering belonging and locality (and recognising and managing local values) and managing a landscape which “all people of the world share an interest in” (Byrne 1991: 273). Unsurprisingly, universality has been the subject of heated debate and has been challenged on a number of counts. The concept of “a world-wide heritage of, for and belonging to everyone” (Fowler 2004: xvii) is highly contentious. Indeed, non-Western countries have objected to the imposition of universal standards as they argue that these standards reflect Western standards and are therefore not compatible with local values or attitudes towards heritage (Silverman and Ruggles 2007: 3). Once “classified and included on the World Heritage list it is expected that the values and conditions which give a site universal significance will be maintained” (Hunt 1996: 211) and, as Harrison has argued, WHS then overwrites the local cultural context, and local decision-making

processes, with a management styles aimed at international ownership (2010c: 155, 191). If it really is the heritage of the world, then it is “arguable that local permission should be required for issues that concern all humanity” (van der Aa *et al.* 2005: 20). WHS therefore provides one example of a mismatch with the UK government’s current agenda to decentralise power from central government to the local level (see discussion on localism, Chapter One, Section 1.4.).

Furthermore, a universal rationale is also fundamentally problematic if one accepts that perception of landscape mutates on an individual-by-individual basis across time and space. For such reasons the CoE have criticised UNESCO’s approach, describing WHS cultural landscapes (as compared to the ELC) as elitist and only focusing on extraordinary landscapes with positive associations (Fowler 2003, 22-23). Labadi has carried out research on values within World Heritage Site nomination dossiers, pinpointing industrial sites as an under-represented type of WHS site, along with European religious sites and non-European religious properties (2007: 148, 155). She concluded that the three values mentioned most often in the nomination dossiers were: a) those which related to the history and heritage of the property; b) description of architectural and aesthetic characteristics; and c) references to men from the middle and upper classes. The nomination dossiers tended to stress the monumentality and importance of the sites in order to provide an image of the nation as “heroic, grand and powerful” (2007: 157-158, 161) (Labadi’s value typology [2007: 157] has been adopted to analyse expectations of World Heritage Site Status data within this research).

Partly in defence of WHS cultural landscape designation, Fowler has acknowledged that irrespective of technical or scientific guidelines and categorisation many people “think of a particular landscape as ‘home’, even “theirs’ without any presumption to legal ownership.” Whilst thus acknowledging the local, he also asserts, however, that ascribed sites need to be about more than just local value (Fowler 2004: 105). The problem, as Tunbridge and Ashworth have noted, is that local versus other values can lead to the creation of conflicting space where ‘our’ space co-exists alongside tourist space, dwelling space, work space and sacred space (Tunbridge and Ashworth 1996).

### 3.3.3. Benefits and costs of WHS

Fowler has stated that “much of the world wants WHS” and “enormous efforts, great ambitions and, frankly, wildly optimistic dreams cluster around the WH concept” (Fowler 2004: 8). That people will want it is often assumed. A list of potential costs and benefits of WHS was drawn up by Fowler in 2004. The latter include three positive expectations of WHS from the perspective of local people (12-13) (benefits and costs of WHS are also covered in UNESCO 1972; PricewaterhouseCoopers 2007a; PricewaterhouseCoopers 2007b, see Chapter Four, Section 4.3.1.):

- That inscription will rapidly lead to local and personal financial improvement, initially in the form of grants from the UN and generally as a mechanism for accessing Western capitalism.
- That inscription will boost tourism, leading to improvements in the local economy by the creation of jobs in tourism and its infrastructure e.g. in construction, and by the injection of tourists’ cash.
- That overall a WHS Site will act as a catalyst for rapid and drastic changes towards something better.

In contrast two negative expectations of local people towards WHS include (2004: 12-13):

- That inscription will attract too many visitors who will have the effect of ‘spoiling’ local amenities and generally lead to a degradation of local life.
- That inscription will act as a ring-fence against radical change and will reinforce the maintenance of traditional ways of life e.g. by insisting that age-old methods of cultivation and herding continue, and by providing opportunities to welcome visitors and show off local traditions.

Other literature suggests that the tourism potential of sites is a ‘double-edged sword’ conferring economic benefits but potentially placing stress on the environment and local communities, and those who live in the WHS may not be the ones to directly profit from tourism yet may be the ones to bear additional costs

(Bandarin 2005: v; van der Aa *et al.* 2005: 19, 21). This may be particularly pertinent within rural locations where powerful stakeholders do not necessarily live locally. In his discussion of 'natural' sites Harrison asserts:

What is frequently found is that the residents of such areas want to build houses, develop their businesses, harvest the forest or the wildlife, and generally put their surroundings to work. By contrast, town dwellers or tourism promoters, who may exert considerable influence with the politicians, prefer the wilderness untouched, to be visited on vacations, at week-ends, for fishing or photography, perhaps, or to enable outsiders to commune with nature (2005: 2).

Some have questioned whether the benefits of WHS are waning as the list expands. In 2010 there were 878 WHS in 145 countries (Donnachie 2010: 126) and being one of nearly 900 is less of an honour. Furthermore, it is now more widely recognised that listing does not confer more protection and tourist capacity is often reached before the site is listed. The city of Cambridge turned down WHS nomination as it was felt that the status would bring additional responsibilities but no additional resources (van der Aa *et al.* 2005: 18-19).

An interesting case study on the World Heritage nomination of the Wadden Sea coastal area in the Netherlands (van de Aa *et al.* 2005) reported that public consultation revealed a lack of support from local people and environmental and tourism organisations (listed in 2009). The authors concluded that local stakeholders were against listing because they perceived it to mean interference from outside, with no real protection emerging and unclear other consequences (2005). The authors question whether this is an isolated incident or part of the wider trend suggestive that the power of the World Heritage brand might be waning.

### **3.4. Industrial archaeology and the public**

The following section considers the relationship between the public and industrial remains: the themes which emerge concern familiarity, time, decay and neglect.

### 3.4.1. Time and industrial archaeology

Reflecting the debate on temporal definition within industrial archaeology, as described above (Sections 3.2.1. and 3.2.5.), several academics have questioned where the past (and therefore archaeology) begins in the public imagination. In *The Familiar Past?: Archaeologies of Later Historical Britain* (1999), Tarlow and West ask whether the remains of the recent past are too familiar. They argue that the “archaeology of historic periods is often about de-familiarizing what we think is the known past” in order to re-valorise the (industrial) product (1999: 1). Symonds likewise asks whether “industrial remains are simply not old enough to be considered truly archaeological by most people.” In his opinion they may belong to a period “*after* history, i.e., belonging to a slightly earlier version of *us*, just beyond living memory.” Instead, he argues, people are drawn to the archaeology of ancient civilisations (2005: 34-36). To partly paraphrase the title of Lowenthal’s 1985 publication, this then suggests that ‘the past’ *has to be* a foreign (different and unfamiliar) country. If this is the case public attitudes to industrial archaeology could be indifferent or apathetic.

However, several commentators have referred to what is commonly seen as a speeding up of time in western society as a way of explaining increased interest in the heritage of the recent past. Edensor refers to an accelerated ‘archaeology’ in which the recent past becomes ancient history in the endless production of the ‘new’ (2005: 128). Indeed MORI’s survey in 2000 of 3,000 representative people in England found that 75 percent thought that the best examples of post-war building should be preserved (English Heritage 2000). A survey by the BBC History Magazine of its readership also supports the notion that heritage of the recent (and therefore, the familiar) past has public interest. When the magazine asked its readership the question “When does history begin?” the answers that came back ranged from “one second ago” to “before I was born” (2009). Alfrey and Putnam assert that the recent past now attracts attention along with pre-industrial sites (1992: 41). Indeed, it would appear that the recent heritage is considered important because it is more relevant.

### 3.4.2. The interval of neglect

Others have argued that industrial remains belong to a 'past' that needs to be forgotten. They *are* deeply symbolic, but this symbolism is highly negative. They are representative of a 'disturbing past'; one which is a reminder of economic and social decline and poor working conditions (Cooper 2005: 167; Trinder 2000: 39-41). For example, in a case study from the northwest of Britain, Cooper suggests that the region's industrial heritage is seen as "backward looking, as a drag on regeneration and economic development, and symbolic of decline and failure" (2005: 158). Alfrey and Putnam have asserted that industrial sites are commonly mythologised through the creation of metaphors of place, including the romantic and heroic (linking to positive aspirations of heritage) but also demonic metaphors (1992: 40). Laviolette's research on Cornish landscape metaphors (which in part considered industrial heritage) is interesting in this regard. Laviolette concluded that the metaphor of death is a dominant theme which connected a form of social denial over the collapse of the industry with a felt-need for socio-economic redemption (2003, 2011).

The literature suggests that post-war Britain held a deep antipathy for its abandoned industrial sites, with the dumping of rubbish typifying an attitude of neglect and disdain (Bowler *et al.* 2007: 22-27; Cooper 2005: 155-73) (see Chapter Two, Section 2.4.4.3.). Grunenberg has argued that dereliction becomes synonymous in the public's minds with "danger, delinquency, ugliness and disorder" (1997: 8) and in due course derelict sites can become a "locus horribilus" within which a range of deviant acts can take place by 'undesirable' people. For many, dereliction is taken as a sign for waste, signifying an anti-social present and perhaps more importantly an uncertain future.

It has been argued by a number of authors that this 'stage of abandonment' is a transitory period, through which the public come to terms with their 'disturbing' past and its connotations of industrial decline. Trinder presents a temporal progressive model of attitudinal change which transforms public opinion from such revulsion, to mild amusement at the passing of the familiar, to acceptance. He suggests that by the post-war period there was a "growing sense of the aesthetic qualities some (sic) of the monuments of the Industrial Revolution period, and a

feeling that they should be incorporated into the popular view of British History.” Trinder argues that the Romanticism contained within the popular writings of the historian Hoskins was an anomaly within this transition (2000: 41-45). In *The Making of the English Landscape* (1955) Hoskins berated the industrial landscape, however his approach to landscape history has been highly influential (Johnson 2007), leading Trinder to question the extent of Romanticism’s power over the popular imagination (2000: 41-45). Trinder’s temporal model is also echoed in Jackson’s observation that ‘ruins’ provide ‘the incentive for restoration, and for a return to origins’ (Jackson 1980: 102). Likewise industrial archaeology Buchanan agrees it was “necessary for the processes of industrialisation to mature and to develop through several stages, making obsolete the artefacts of earlier phases, before they could generate sufficient interest to encourage efforts to preserve them” (2000: 18).

The ‘interval of neglect’ model can therefore be seen to work in synchronicity with the post-war co-option of industrial ruins within ‘heritage’ and 21st century regenerative schemes (as discussed above in Section 3.3. and in Chapter Two Section 2.4.6.). Consequently, symbols of social deprivation and economic decline become over time symbols of pride (Alfrey and Putnam 1992) including narratives which “highlight the skill and resilience of former populations” (Symonds 2005: 37, 46). This model can be seen within Sharpe’s discussion of the 20th century history of South Wheal Frances Mine, near Camborne in Cornwall. Sharpe describes the mine’s closure in 1918 as “swift and brutal” and following its partial demolition local pride quickly turned to disdain. In the 20th century the site was overgrown, squalid and the haunt of fly- tippers. In the early 21st century however, the mine’s newly installed interpretation panels speak of “[...] of ‘cathedrals of industry’: it has become an icon to be visited and learned about, a must-see site within the recently inscribed Cornish mining WHS (Bowler *et al.* 2007: 26).

### **3.4.3. The redemption of industrial space**

In the case of South Wheal Francis Mine heritage has provided redemption and is the mechanism by which the interval of neglect comes to an end; through regeneration, narrative and interpretation. Indeed, Edensor has argued (in relation to industrial ruins in Northern England) that there is a purposive need within

society to reinvest space with (positive) meaning: “If spaces are conceived as disturbingly non-functional, they must be replaced and filled in – turned into abstract space – to remove these signs of unproductive and unfunctional blankness” (2005: 8). Although it is not industrial, Van Der Hoorn’s research on the former national-socialist town of Prora, on the island of Rügen and on the Berlin Wall is also interesting in terms of what she concludes is a public need to exorcise material remains. This exorcism is enacted through the plundering, recycling, demolition and memorialisation of fragments of national history often through the manufacture of souvenirs (2003: 191, 194). Again, this illustrates a desire to reclaim material culture and spaces which have lost (or have overly negative) function and meaning. Van Der Hoorn has asked how “can a long undesired piece of architecture all of a sudden become an attractive souvenir for tourists, talisman, a valuable object?” Within this, she questions the extent to which the public ‘act’ as passive witnesses or active protagonists in the transformation of their built environment and the creation of new national narratives. The public outcry over the demolition of the Euston Arch, although failing to achieve its aim, signifies nonetheless that public opinion can be collectively manifested, and can potentially influence local and national policy.

#### **3.4.4. Aesthetics and the singularity of industrial remains**

Euston Arch was demolished in order to redevelop and modernise the station, and reasons for demolition were not motivated primarily by aesthetics. However, where heritage, regeneration schemes are concerned, recognition and status is often linked to aesthetics, as Alfrey and Putnam put it, “conservation conforms to certain paradigms”, with its “concomitant ideas about order, tidiness and the appearance of things” (1992: 8). The example of South Wheel Francis (Section 3.4.2.) given above demonstrates how dereliction (and deviant behaviour) are often correlated with aesthetics. Indeed, the following statement from the Civic Trust states that: “neglected land not only looks depressing. It also encourages fly tipping, graffiti and fly posting, all of which ‘uglify’ the environment” (Joseph 1998: 7).

The tidying-up or ‘prettifying’ of mining landscapes has been the matter of some debate (Alfrey and Putnam 1992: 13). For instance, Palmer considered Cornish

metal mining in a paper which provides an illuminating account of the tensions between different values (archaeological, political and economic) during an economic recession (1993: 46). Palmer notes the concern from home owners to tidy-up or dispose of industrial eyesores (Palmer 1993: 49-50). Indeed aesthetic values compete with the desire to preserve the historic value of the archaeological context and issues of public health and safety. It is therefore important to question the role that aesthetics might play within public perception.

A further visual question concerns the singularity (of a building within the landscape) as opposed to totality. Fowler has suggested that most people (i.e. non-official or academic) see the landscape as “a totality” and not divided up into “buildings, geology, woodland, urban sites and religious landscapes” (2003: 56). Tuan, however, has argued that the eye searches for points on which to focus and perception requires certain phenomena to be clearly registered while others recede or are blocked out entirely (1974: 4). From an archaeological perspective an industrial landscape can “represent a single phase of industrial development or several hundred years of activity” (Alfrey and Putnam 1992: 182) with a range of features, some of which are visually distinct and others more ephemeral.

Perhaps ironically, the conservation-led ethic of industrial archaeology may also have created a tendency to emphasise singularity, to emphasise monumental architecture (Palmer and Neaverson 1998: 3, 25). Whilst the discipline does appear to be moving towards a position whereby whole complexes of buildings, monuments and landscapes are treated holistically, for example, through landscape characterisation (Fairclough and Rippon 2002), an emphasis on a particular feature, or number of features, is problematic as it affects the broader understanding and perception of complex industrial landscapes (Alfrey and Putnam 1992: 182).

### **3.4.5. Industrial Ruins: Space, Aesthetics and Materiality (Edensor 2005)**

The above discussion suggests that industrial ruins are problematic public spaces due to the complex range of issues and emotions they can invoke. Edensor’s 2005 publication *Industrial Ruins: Space, Aesthetics and Materiality* celebrated the urban landscape of central and northern England and central Scotland, and its manifesto

for industrial ruins deserves a particular critique. Edensor's discourse contradicts the equation between dereliction and anti-social behaviour, seeking instead to valorise ruined sites as "alternative play spaces for children and adults."

Since the original uses of ruined buildings have passed, there are limitless possibilities for encounters with the weird [...] unencumbered by the assumptions which weigh heavily on highly encoded, regulated space. Bereft of these codings of the normative – the arrangement of things in place, the performance of regulated actions, the display of goods lined up as commodities or for show – ruined space is ripe with transgressive and transcendent possibilities (2005: 4).

Edensor points out that those who live amongst industrial remains already have a relationship to them, exemplified through their use as "free car parks and as places to dump rubbish", these form part of the habitual and daily practices through which people engage with ruined sites, in ways which are however "unreflexively performed" (Edensor 2005: 8, 31). This closely reflects Johnson's description of the St Just mining area as a "beautiful but smashed and ruined landscape" (Chapter Two, Section 2.4.4.3.) which was still "home for local people" (1996: 150-151). An example of this kind of relationship to industrial sites can be found within Shane Meadows' film *This is England* (2006) set in a Midlands town in 1983. Against the backdrop of the Falklands War, the film portrays the indenture of an eleven year old boy into a skinhead gang and follows the gang's explorations around various derelict industrial sites.

Edensor also suggests a differential attitude to ruined structures (industrial as opposed to non-industrial) whereby castles, follies or "rural tumbledown cottages" are the subject of romantic themes, particularly within the arts (Edensor 2005: 10-11). Whilst prehistoric ruins have been given over to nature and relate in a Wordsworthian sense to landscape, national identity and romance, industrial ruins are still very much part of human culture, but analogously play the same role as the Victorian haunted house – as "a sort of modern Gothic." Ruins elucidate the close relationship between romance and horror, they "possess the attraction of decay and death, and to enter into them is to venture into darkness and the possibilities of confronting that which is repressed" (Edensor 2005: 11-13). Here, ruins create

a sense of melancholia and are a reminder of the cycle of life and death; sentiments which parallel Dekkers' assertion that human society has an innate fascination with decay, entropy and death (Dekkers: 1997).

This visceral, sensual and psychological approach to industrial remains means that Edensor's writing is phenomenological in nature; for example, he speaks of wanting "to capture something of the sensual immanence of the experience of travelling through a ruin." His discussion is largely anecdotal in nature, drawing on, for example, childhood memories. Any political agenda in terms of such spaces provoking an anti-establishment sentiment or action is not clear, although his concept of industrial play as 'anti-tourism' is clearly different from mainstream heritage literature. There is also no apparent attempt to accept, even in part, the contrary view that such sites are in fact economic, social or cultural waste.

Such criticisms aside, the themes that emerge are of industrial ruins as places where "forms of alternate public life may occur" – leisure, adventure, acquisition, shelter and creativity as well as the pursuit of illicit activities (Edensor 2005: 21). These themes, however, operate largely within a context in which individuals have freedom of access to sites; a situation which is likely to change as more sites are designated 'heritage' and therefore regulated. Importantly, however, Edensor highlights the social use and meaning of sites during the 'interval of neglect'. Furthermore, these may not be empty sites which are 'meaningless' or 'used-less'. People may value industrial sites for their historical or aesthetic value and for their possibilities of play. It is also important to consider the "discriminations of everyday life" (Samuel 1994: 17); the habitual and daily practices through which engagement (and therefore perception of industrial remains) most commonly occurs (Edensor 2005: 8, 31).

### **3.5. Theories on environmental perception**

The final substantive section of this chapter therefore considers theories regarding environmental perception. The literature on this is large and complex; as Tuan states, any study needs to take into account the individual person as a biological and socially cultured being and the characteristics of a defined environmental area (Tuan 1974: 245). The following summary is necessarily pared down and only

addresses themes which are specifically relevant to this research including ideas of landscape, space and place, the visual (including the visible, invisible and aesthetic value) and inside(ness) and outside(ness).

### **3.5.1. The names that we give things**

‘Landscape’ itself poses serious problems. Archaeologists, like painters, and connoisseurs, speak professionally of ‘landscape’. Soldiers speak of ‘terrain’, but most of us find it convenient to speak of ‘place’ or ‘area’ (Gwyn 2002: 187).

According to Tuan “naming is power – the creative power to call something into being, to render the invisible visible, to impart a certain character to things” (1991: 668). Naming in a sense creates shared or bounded space (Tilley 1994: 19). Naming provides a vehicle through which the relationship between the mining area and perception can be analysed. It is through the act of naming that the presence and absence of significant features within the mining areas can be examined (which links to the discussion on singularity in the landscape as discussed in Section 3.4.4. above).

One of the problems encountered early on in the research was what to call, or name, the environment under study. It was important to find a neutral term to use within verbal and textual communications with the public. ‘Landscape’ as a component of the name of the WHS (Cornwall and West Devon Mining Landscape), provided one choice, however, theories of ‘landscape’ make it clear that the word is heavily loaded.

The meaning of the term landscape has changed over time. Originally denoting a territorial division identifiable with a social group (Olwig 1993: 318-319), by the 18th century, following the influence of landscape painting (and particularly Dutch landscape painting), the word had come to mean a picturesque scene (Cosgrove 1984: 26). It has been argued that the use of perspective within landscape painting (developed in the Renaissance period) places the viewer externally to the scene (Cosgrove 1984: 26) - as Cresswell notes, we “do not live in landscapes – we look at them” (2004: 11). Furthermore, the types of scenes depicted did not reflect the harsher realities of agricultural work, land ownership or enclosure. In the late

18th and 19th centuries the English Romantic Movement also depicted a romanticised and timeless view of landscape, devoid of all signs of human activity or industry. Hence, landscape is argued to be an elite and romantic view and one which reflects not only aesthetics, but ideologies of power and nationalism (Edmunds 2004: 13; Cosgrove 1984; Berger 1973). According to Johnson, romanticism forms a backdrop to archaeological thinking on landscape (2007: 17). Therefore, I rejected the use of the word 'landscape' within public communication in order to mitigate against the evocation of the aesthetic and picturesque and instead the more neutral term 'area' was employed. Interestingly, this is the name of the separate components of the WHS (for example, the St Agnes mining 'area').

### **3.5.2. Theories of embodiment: place, space and taskscapes**

Landscape has more recently been reconceptualised within archaeology and anthropology as a cultural process through the development of what can broadly be called archaeologies of 'inhabitation' or a 'dwelling perspective' (Hirsch and O'Hanlon 1995; Ingold 1993). Ingold's discussion of taskscapes was central to this; he argued that landscape is a work in progress with humans taking a performative role but one which accepts the role of the tides, moon and other natural 'anima' within this scheme (Ingold 1993). These are landscapes, following Berger above, which are constantly in flux and which people live within. Whilst Ingold's ideas have been criticised for being too ahistorical (Bender 1998: 37), the notion of taskscapes incorporates themes of embodiment and perception of place which are useful for my research.

The notion of 'flux' also requires a consideration of movement within landscape. Drawing on work in cultural geography, theories of 'space' and 'place' are more typically concerned with movement and meaning. For instance, Tuan suggests that "if we think of space as that which allows movement, then place is pause; each pause in movement makes it possible for location to be transformed into place" (1977: 6) whilst for Relph place is "meaningful space" with meanings forming over time through repeated visits (1976). Stein defines these meanings as "definitions, associations, attitudes, sentiments, intentions, reputations, and other bits of consciousness" which are largely subjective and "mediated by human experience, whether real or imagined, concurrent or in memory" (2006: 60). Over time these

meanings may transform place into 'heritage' (Timothy and Boyd 2003: 3) (see Section 3.3. above). It has, however, been noted that there are places which do not attract meanings; they can lack distinctiveness and therefore have 'placelessness' (Ashworth 1998: 113 citing in part the work of Relph 1976). Within my research I felt it was important to examine movement on site through roads, paths and other networks in order to gain a phenomenological understanding of engagements with the sites – furthermore, where people go and what they see (and don't see) affects their perceptions of significant features on site and their recognition, naming, value and indeed iconicisation.

Much of the discussion on landscape, or place, focuses on how it is experienced primarily through the sense of sight. This is perhaps not surprising if one concurs with Tuan when he claims that "man (sic) is [...] predominantly a visual animal" (1974: 6). Agreeing with this supposition Berger states that we:

[...] never look at just one thing; we are always looking at the relation between things and ourselves. Our vision is continually active, continually moving, continually holding things in a circle around itself, constituting what is present to us as we are (1972: 9).

However, a number of authors have argued that vision has been overemphasised within research on environmental perception (Cummings and Whittle 2003; Hamilakis 2002; Mills 2005) and in response a number of studies have explored the role of hearing and touch in shaping our experience of the world (Hamilton *et al.* 2006; Houston and Taube 2000; MacGregor 1999; Watson and Keating 1999). Crouch has argued that it is through, rather than in front of, spaces that we experience the world and that vision is inter-related and held in tension with other senses, and others have noted the importance of movement along routes and pathways and the act of wayfinding in forming a kinaesthetic experience of landscape (Reeves 2007: 19; Seamon 1979). If Tuan is correct then it is movement which leads to pause and the creation of landscapes through naming and meaning.

### **3.5.3. The insider/outsider perspective**

The idea of meaningful space outlined above is also important as it equates place more strongly with the idea of home, of belonging and of the boundaries by which

we assign ownership and nativeness (Bell 1997: 813; Tuan 1974: 93). Within theories of landscape, space and place, theoretical distinctions exist between an insider's perspective (those who live and work within the area) and an outsider's perspective (proprietor or tourist). It has been argued that the perceptions of natives and visitors will show little overlap because their experience of place and intentions will have little in common (Tuan 1974: 246). For the people who live in a landscape, their physical and emotional investment in work, family and interests creates a 'sense of place', a term commonly used to describe the subjective attachment that people have to places whilst the visitor's perception of the environment will be essentially aesthetic (Cresswell 2004: 5; Hough 1990: 58; Tuan 1974: 64). However, it has also been argued that new or unfamiliar places can evoke strong feelings and responses, for example, by comparing 'home' to the unfamiliar. Tuan considers that the outsider's view in bringing a "fresh perspective" is as valid as the insider's (1974: 65). From this, however, it can be assumed that there may be differences between the perceptions of insiders and outsiders with the latter characterized by a more aesthetic and arguably romantic view.

### **3.5.3. Phenomenology**

Questions concerning perception and experience and the relationship between the 'self and world' led to the development of a Continental movement in philosophy and the arts in the inter-war period. Defined as the "study of lived human experience, and the conditions that make experience possible" (Johnson 2006: 126).

In one of the key texts (*Sein und Zeit*) *Being in Time* (1927 (1962)) Heidegger conceptualised humans as 'Beings in the World' and stressed the importance of 'dasein' (translated from the German to mean 'dwelling') in the world, thus challenging the Cartesian split of mind/body and culture/nature. Heidegger's ideas have been extremely influential, within philosophy, the arts, sociology, theology and anthropology, but were criticised by Marxists, feminists and post-structuralists for being overly romantic, particularly in relation to 'home' and the importance of authenticity of being and experience (Bender 1998: 36-37; Cresswell 2004: 22-26). Heidegger's ideas were developed, amongst others, by

Schütz (social science) and Merleau-Ponty (philosophy). Schutz successfully bridged the gap between sociology and phenomenology in order to examine social phenomenology including taken-for-granted aspects of mundane, everyday life (1932 [1967]). In his 1945 publication *Phenomenology of Perception* Merleau-Ponty contributed ideas on the 'intentionality' of the conscious mind, perception and the role of the body in perception with reflections on art, literature and politics (2006: 1-6).

An archaeological brand of phenomenology emerged within British landscape archaeology in the 1990s which aimed to describe the character of human experience, specifically sensory experience of the world (Brück 2005: 46; Hamilton *et al.* 2006: 31; Tilley 1994: 11). Bender *et al.* write (1997: 149):

Crucial to all these [landscape] studies has been the understanding that people don't just think and see things; they experience them physically and emotionally, from a particular point of view.

Tilley's groundbreaking text *A Phenomenology of Landscape* (1994) provided the first complete volume on the approach, and set a benchmark in terms of a methodology. This methodology focused on the idea of the archaeologist's bodily movement through the landscape, particularly by walking (1994: 26-34). Connecting to ideas of place and space outlined above, Tilley made a number of observations regarding the locations, appearance and building materials of various monuments which were then linked to a series of claims regarding a theorised value system in the past.

There has been a particular interest within archaeology in phenomenological approaches which aim to interpret the life-worlds and perceptions of people in the Neolithic and Bronze Age (Hamilton *et al.* 2006: 33; Tilley 1993; Tilley and Bennett 2001). There are a few historical case studies, for example, a consideration of a Medieval landscape (Corcos 2001) and Roman case studies (González-Ruibal 2002; Witcher *et al.* 2010), however, these remain rare examples.

Several critiques have been made of landscape phenomenology which largely rest on issues of subjectivity, selectivity and historical contingency. Brück has argued that it is unlikely that simply walking through a landscape will "provide us with an

authentic insight into the experiences of people in the past” (2005: 56) whilst Johnson sees phenomenology as a type of unrestrained empiricism; “just walk across the fields with the wind in your hair and you just know” (2006: 129; 2007: 26-27). After phenomenological research on way-finding and walking routes in contemporary Cardiff, Reeves (2007) (see Chapter Four, Section 4.4.) concluded that a preoccupation with studying monumental features of the landscape is an incorrect way of approaching a phenomenology of a landscape. His research highlighted the importance of ephemeral features, the temperature, and certain smells, interactions with people, and instances which evoked memories. As Reeves states “these senses, memories and indicators of change are what many people are looking for when conducting a phenomenological study; they are lost however, under a preconceived obsession with monuments” (2007: 21-22; *cf.* Eve forthcoming). Such criticism has been responded to by Hamilton *et al.* (2006) who argue that a concern with sensory experience does not preclude “the development of a rigorous methodology” (32). Through their work at the Neolithic settlement sites of the Tavoliere Plain, Italy, they have sought to devise a methodology which combines phenomenological archaeology (including the examination of the role of other senses than vision) with more traditional methods.

My interest in phenomenology, led to wider reading within cultural geography where the knowledge-claims in relation to place appeared to be more valid as they are orientated towards understanding human experience in the present. Hence my research is firmly orientated towards the recent past and also differs from traditional landscape phenomenology in being concerned with a functional (and, in its primary role, a secular) site type. In doing so (to paraphrase Hamilton *et al.*, 2006: 35) ‘the ‘I’ of the phenomenologist’ is replaced with the ‘they’ of present communities. The following chapter will detail my methodological approach to Cornish mining landscape and the ways in which I collected data from three resident communities.

### **3.6. Chapter summary**

In this chapter I have shown that the development of industrial archaeology in the UK has been largely characterised by a monument-focused tradition. More recent concerns regarding scope, aims and definition has led to an emergent interest in

the social archaeology of industrial sites, communities and processes. However, a generally perceived lack of theoretical drive has led to the slow integration of industrial archaeology within academia.

A consideration of the long-running 'heritage debate' has highlighted a number of relevant concepts including: authenticity; notions of the unofficial versus the 'AHD'; the role of heritage in constructing national ideology; heritage values; and potential scales of conflicting heritages in terms of the 'local', 'national' or 'universal.' This discussion has thereby suggested ways in which Cornish mining heritage might play a role in informing and constructing regional identity/ies as well as potential discord between the local and the global.

A number of progressive models incorporating an 'interval of neglect' have been outlined and the nature and extent of the public's involvement within 'progress' towards industrial heritage questioned. Drawing extensively on Edensor, I have highlighted the potential public use of derelict mine sites as places to 'play', to perform transgressive acts, or perhaps more mundanely, to continue everyday action. The chapter ends by drawing together different strands of thought from cultural geography and phenomenology in order to consider the potential significance of bodily movement and vision (and other senses) in constructing perceptions of the environment. This has suggested theoretical frameworks within which to consider perspectives on Cornish mining sites including the extent to which perception and experience are concerned with, for example, aesthetics, naming, way-finding, movement and pause.

# CHAPTER FOUR: METHODOLOGY

## 4.1. Introduction

This chapter will outline and justify why certain methods were chosen and how these methods were developed. Aside from the identification of research aims (covered in Chapter One, Section 1.5.) the methodological decision-making process has involved design, preparation, pilot testing, administration, organisation and analysis. In particular, consideration has been given to methods which can examine the relationship between the physical (industrial site and feature) and the cognitive (local residents' perceptions and memories) (as discussed in Chapter Three).

Following a consideration of comparable research methods (see Sections 4.2.1. and 4.3.1. below); the decision was made to employ both quantitative and qualitative research methods in a form of triangulation. Triangulation of different data types enables comparison and therefore the corroboration or differentiation of perspectives within the building of research themes and findings (Mason 2002: 66). Triangulation also reduces the risk that the conclusions will reflect the systemic biases of a specific source or method (Maxwell 2005: 93). The core methods employed in this research include ethnography (with a focus on interviews and questionnaire survey), statistical analysis of quantitative data (from the questionnaire survey) and archival research. Observation and visual research methods played a more minor, supplementary role. The following chapter, Chapter Five, will present the three case study sites and then Chapter Six will provide an overview of data collected.

## 4.2. Qualitative research methods

Qualitative research is commonly viewed as a set of research methods which seek to study the ways in which groups of people construct and experience the world around them. The aim is to create more or less generalisable models, typologies and theories regarding different ways of experiencing or perceiving particular physical, psychological or social phenomena (Mason 2002: 3, 9). Normally through a case study approach the researcher takes an emic, or participatory, perspective

on the social group or phenomena under examination. This includes analysing the perceptions of individuals in regards to their life histories and their everyday or uncommon practices (Angrosino 2007: viii). Townend and Whittaker define qualitative source data as “potentially any discursive accounts or expressive representations” (2011: 71). Mason groups such data into four categories: “interviews, observation, visual data and documents and notes” including “conversations, text, letters or a set of photographs (2002: 9, 51). Therefore, a major part of qualitative research is based around text and writing, from transcribing interviews to taking field notes and presenting the research (Angrosino 2007: ix).

Qualitative research is associated with both ethnography and phenomenology which both unite around the use of field-based observation as a core method of collecting data on different phenomena (Angrosino 2007: viii, ix; Mason 2002: 3; Phillimore and Goodson 2004: 3-4). As discussed in Chapter Three (Section 3.5.3.); phenomenological methods (when most typically applied to landscape archaeology) are typically concerned with the internal dialogue of the archaeologist as well as movement, moments of revelation and encounter whilst walking through and observing landscape features. Whilst observation is important, as evidence regarding the environment can be collected within the industrial setting as it occurs (Mason 2002: 54, 86) my research is primarily concerned with the observations, memories and perceptions of others (in this case local residents).

By comparison ethnography tends to be concerned with face-to-face contact with a social group. Meaning literally ‘description of people’ ethnographic research was pioneered by anthropologists in the late 19th and early 20th centuries as a reaction to, and rejection of, the work of ‘armchair’ social philosophers – instead advocating field-based research including long-periods of immersion within living social groups. The method has since been widely adopted by qualitative researchers across the social sciences and is often grounded in participant observation and interviewing. In the UK, and other parts of the British Empire, a particular interest in the systems and institutions of social groups developed into a branch of anthropology called social anthropology (Angrosino 2007: viii-xv, 2,14-15; Mason 2002: 3; Phillimore and Goodson 2004: 3-4). Malinowski’s work on the Trobriand Islands was particularly influential (to the extent that Malinowski is

known as the ‘father’ of social anthropology) in emphasising the importance of participant observation, the results of which can be seen in his ground-breaking work on the Trobriand system of gift exchange known as the Kula Ring (Malinowski 1922).

In contrast, in the United States anthropologists were interested in studying Native American social groups and ways of life that were either diminishing or had become extinct. In consequence a branch of anthropology known as cultural anthropology developed which relied on historical memory in order to reconstruct indigenous culture and society (Angrosino 2007: 2, 14). Amongst others Kroeber (who also conducted important work in archaeology and linguistics) collected data on the western tribes of North America and developed theories on the connections between archaeology and culture (1925; 1952). In the 1920s sociologists at the University of Chicago adapted ethnographic field methods to the study of social groups in ‘modern’ communities in the US, for example, Whyte conducted participant observation in the Boston slums, living in the slums for over three years and detailing different social groups and their political and economic relationships (1943). The ethnographic method concomitantly began to spread to other disciplines including education, public health, business and communications (Angrosino 2007: 3).

#### **4.2.1. Comparable qualitative research methods**

Linking to the sections discussed previously on comparable research (Chapter One, Section 1.4. and Chapter Three, Section 3.4.2.), Laviolette’s work on Cornish landscape metaphors (including industrial heritage) (2003; 2011) utilised a range of ethnographic methods including multi-sited fieldwork, participant observation, interviewer-led questionnaires, focus sessions and walks with key informants (including artists, amateur footballers, farmers, fisherfolk, immigrants, landscape gardeners, scholars and tourists). Laviolette conducted over 150 formal interviews with many of the informants formulating questions or advising on particular issues to address. Laviolette stratified the sample into ‘insiders’ (due to a “long-standing affiliation with Cornwall”) and ‘outsiders’ (“with perceptions influenced by representations and experiences of the coast”), including recent immigrants and coastal dwellers (see Chapter Two, Section 2.4.5.2. for a discussion of the

'Anglicisation' of the coastal fringe) (Laviolette 2003: 127). The addition of a standardised approach thereby "allowed for a greater degree of comparisons between the vocational identities of the groups examined and their particular landscape perceptions" (Laviolette 2003: 25-26).

Schwartz's *Voices of the Cornish Mining Landscape* (2008) utilised specially commissioned oral history recordings (commissioned by the Mineral Tramways Heritage Project in partnership with the Cornish Audio Visual Archive [CAVA]). CAVA volunteers interviewed members of the former mining communities in their homes and workplaces and asked them about their sense of place (Swartz 2008: 11). In her acknowledgements Schwartz lists 37 interviewees, but it is not clear how her interviewees were sampled. Oral history was also associated with a Museum of London Archaeology survey to document the transport system prior to the redevelopment of the London Overground East London Line (Dwyer 2009; 2011). This project also took into consideration the 'afterlives' of railway structures such as viaduct arches. A complementary oral history and community collecting project '*Overground Uncovered*' was undertaken by the London Transport Museum and formed an exhibition held at the museum between May 2010 and March 2011 (London Transport Museum 2011).

In North America, Bricker and Kerstetter (2002) conducted research on special place meanings for white-water rafters on the South Fork of the American River, California. On-site sampling took account of different times of the day and week. A short interview was followed by a mail survey within which individuals were asked to choose a memorable section of the river, describe it, comment on important features and say what it meant to them (thoughts, feelings, memories and associations) (2002: 397-402). Also in North America Stanton conducted ethnographic fieldwork in Lowell, Massachusetts, a city whose industry was based around textile manufacture in the 19th century. Her aim was to try to understand public historians as social actors within a process of socioeconomic and demographic change (2006: 29). Using the case study of the Lowell National Historical Park, created in 1978, her methods included: taking park tours; attending events; observing meetings, forums and workshops; in-depth interviews with park staff and local cultural activists (defined as those individuals who had a vested interest in the history of the park project); short interviews with randomly

selected groups of visitors and 'spot' interviews with audience members at the annual Lowell festival (2006: 31). The scale of the site and project was such that Stanton acknowledged that she would have to accept compromises, omissions and estimates in attempting to grasp the "workings of the interlocking ethnic, economic, political, familial, and professional worlds" that make up the city and relinquish some of the depth that ethnographers typically aim for (2006: 30).

The sociologist Dicks has conducted a number of ethnographic research projects focusing on the Rhondda Heritage Park (a coal-mining museum in the Rhondda Valley, South Wales). Her 2000 publication, *Heritage, Place, Community* examines the conditions of social, cultural and political-economic change within which the Victorian colliery was transformed into a heritage museum in the 1990s. Data analysed included archived public records, museum documents and reports, plus interviews and focus groups with the museum's funders, planners, designers, visitors, local inhabitants and staff. A follow-up project focused on the performance of ex-miners who had been re-employed as heritage guides (2008) and bears some methodological similarities to Stanton's work. Dicks examined the nature of performances and representations of class that were produced at the coal-mining museum by interviewing former coal miners and asking them to tell the story of their lives. These autobiographies contained reflections on the public narratives that the guides produce for visitors, as well as their position as guides and their memories and identities as coal miners (436).

### **4.3. Quantitative research methods**

Broadly speaking, a core aim with quantitative research methods is to process data statistically. Statistics enable description and measurement of phenomena, examination of relationships between variables (a characteristic or trait that can have more than one value, for example, sex has two variables, male and female), comparison of data, testing of hypotheses, developing of theory and the drawing of conclusions about populations based on sample data (Brown and Saunders 2008: 4-5).

Statistics are therefore crucial to the analysis of the questionnaire data; statistics enable data to be presented clearly, accurately (described in terms of counts,

percentages, sizes and ranges within tables and charts) and therefore enabling the examination of any patterns in data and ultimately making data more useful (Bernard 2006: 453; Shennan 1997: 2). Crucially inferential statistics can also be deployed (defined as statistics which allow for the drawing of conclusions about a population by analysing data from a sample) (Brown and Saunders 2008: 117). Consequently, inferential statistics will be used in this project to test the presence (or absence) of an insider versus outsider perspective on mining areas.

#### **4.3.1. Comparable quantitative research methods**

In 2011 English Heritage published the results of their 'Industrial Heritage at Risk' survey which provides a snapshot of public attitudes to industrial heritage in England and discusses the range of sites which are at risk of neglect, decay or demolition. 2007 people were interviewed online, the sample being drawn from an online panel, and respondents were asked a number of key questions regarding the value and significance of industrial heritage in their area. Data at national (England) level and regional level is available for comparison; 210 people from the southwest region took part in the survey (2011b).

In 2007 PricewaterhouseCoopers published a report (2007a) commissioned by the Department of Culture, Media and Sport, *Cadw* and Historic Scotland) on the costs and benefits of WHS (see Chapter Three, Section 3.3.3). A literature review of published sources (2007b) was conducted in order to establish categories of benefits and costs and a postal survey of residents across six WHS sites, including the Blaenavon Industrial Landscape, was carried out (2007a: 2, 21). In comparison, Dicks' small scale survey at the coal-mining museum in the Rhondda Valley mentioned above (Section 4.2.1.) was carried out by stopping a random sample of visitors who were waiting to join a guided tour. The demographic profile of these visitors was then analysed statistically for class profile and family connections to the Rhondda or mining industry (2000: 206-211).

Illustrating the way in which qualitative data (text) can be treated quantitatively, two separate research projects have analysed World Heritage documentation. Labadi sampled nomination dossiers of sites for inclusion on the World Heritage List in order to consider value-based typologies in relation to representations of

the nation and cultural identity (2007). Interestingly, alongside religious heritage Labadi strategically selected industrial heritage sites as a “non-traditional” category of cultural heritage (2007: 155). Utilising a CAQDAS (Computer Assisted Qualitative Data Analysis Software) program for the coding of text Labadi coded the nomination dossiers using a pre-determined value typology consisting of Social value; Architectural and Aesthetic value; Economic value; and Informational Value (Labadi 2007: 158, see Chapter Three, Sections 3.3.2.1. and 3.3.2.2.). The quantification of codes helped to determine “the frequency of values mentioned in the nomination dossiers and to draw patterns concerning their evolution” (2007: 155-157).

More recently Landorf carried out content analysis (a statistical method which summarises text by counting key words or phrases) of six industrial WHS management plans in preparation for the creation of a framework for sustainable heritage management (2009). One of the case studies sampled was the Cornish Mining WHS. Each plan was analysed using a coding instrument which had been previously employed (with some modifications) within research on sustainable tourism in New Zealand (Ruahnen 2004). A coding instrument forms a pre-determined, exhaustive list of variables under study (in this case, principles of sustainable development) and is used to systematically code and analyse the text. Results of the content analysis were presented statistically.

#### **4.4. Other comparable methods**

Visual and aural research methods provide additional insight. Tourism research has been influential for my research in providing detailed and varied methods of approaching environmental perception (which tend towards qualitative research methods). Two particular projects are of note: in New Zealand, visitors’ experiences of landscape were examined through the use of photographs of landscape views and land uses taken from typical viewing locations, for example, roadsides (Fairweather and Swaffield 2001: 219-223). These landscape surrogates were then used within interviews through Q-sort (rank ordering) during which participants explained in their own words their basis for sorting a set of photographs. In research at Simla, a hill station in northern India, Jutla (2000) sought to examine residents’ images of place, as well as those of visitors.

Participants were asked to sketch a map, to name places, to give one word descriptions of the city and were given disposable cameras in order to photograph the areas which they thought best represented their personal image of the city.

Photography has also played a central role within the methodology adopted by the national research agencies (English Heritage and the Royal Commissions) for recording industries which were about to undergo a change in working practice or those which had just closed. "Process recording" - capturing industrial practice and process - has been largely developed as a method by Malaws and Badcock (RCHAMW and ARCUS respectively). Examples of process recording include a photographic survey of a nuclear power station in Ayrshire, prior to decommissioning (Falconer 2000: 76), of the redundant Avenue Coking Works in the north Midlands (Badcock and Malaws 2004), and of the still-working Taff Merthyr Colliery in South Wales (Malaws 1997; Malaws 2004: 273). Recording at the latter found that the reality of process was far different from the 'official' colliery process flowchart (Figure 4.1, Appendix A). Photographic records were also made by English Heritage of South Crofty Tin Mine, just before closure in 1995, and Wheal Jane Mine, post closure in 1998; these images are available on the NMR Webpages (Figure 4.2, Appendix A) (English Heritage 2007). Although, not an industrial but a military site, photography was also used, alongside a characterisation study, to record the last nine months of draw-down and closure at RAF Coltishall, Norfolk. In addition sound and visual artists were employed to record their impressions. The different methods in combination sought to record both "the mundane and the ceremonial" and to document the "processes of change and their effect on service personnel, the local community and landscape" (Cocroft and Cole 2007: 12). The ethnographic or oral history component of these projects can be unclear when the record being created is highly visual, rather than textual. At Taff Merthyr Colliery and RAF Coltishall, for example, it is a presumption that conversations with site staff (however informal) inevitably took place and hence informed the projects.

Reeves incorporated photography and GIS technology in a study of the mapping of urban residents' way-finding experiences in Cardiff city. Reeves' aim was to "gain an understanding of how people move and think throughout a landscape" (Reeves 2007: 2). Organising walkers into small teams with the goal of wayfinding a route

between two given points, each team were given a handheld GPS receiver (to record location, speed and time elapsed between reference points) and cameras (to document any points of interest, including landmarks and more ephemeral features). On the completion of the walk each team member was asked to complete a questionnaire designed to judge their pre-existing familiarity with the route taken and “to assess the personal and social effects that the contemporary Cardiff landscape had upon them, if any at all” (Reeves 2007: 3).

Another unusual project (commissioned by English Heritage) sought to test the application of auditory archaeology to HLC (Mills 2005) in a survey area just north of Botallack (Trewellard Valley). Auditory archaeology aims to create a deeper understanding of the role of sound within landscape perception, which is important as sound can be overlooked in documenting the relationship between people and tangible/intangible aspects of place (Mills 2005: 2, 4). Following a desktop study which synthesised historic records on the sounds associated with a working mine, Mills strategically sampled the survey area and created sound recordings, movies and photographs (Mills 2005: 12-17). Following analysis of data the results were mapped using GIS based technology (Figure 4.3, Appendix A).

#### **4.5. Influence of comparable methods on this research**

As qualitative and quantitative approaches have their own unique strengths and limitations a combination of methods and approaches enable more robust conclusions to be drawn. My research integrates aspects of social and cultural anthropology (as described above) in examining both living systems and historical memory of place, and it incorporates ethnographic techniques (observation, interview and surveys) alongside statistical analysis. However, whilst observation is important within my research - as evidence regarding the industrial setting can be collected as it occurs - I have largely focused on the collection of data which describes others' perceptions of place, sometimes supplemented, challenged and supported by observations formed from field-notes.

The comparable research methods outlined above have informed this research methodology in a number of ways. Phenomenological research methods which focus on walking through the landscape (Laviolette 2003, 2011; Reeves 2007) have

been influential. Laviolette's research confirmed the effectiveness of conducting walking interviews, which would take place in the mining landscape and could gather direct data on perceptions and industrial metaphors (2003, 2011). Reeves' research also highlighted the importance of bodily movement and experiences of space and place, the extent to which vision (and other senses) centres on selected features, and the degree to which perception and experience are concerned with, for example, way-finding, ephemera, social engagement or memory (2007).

Many of the comparative research projects outlined above incorporated interviewing or the creation and/or use of oral history collections (Bricker and Kerstetter 2002; Dicks 2000, 2008; Dwyer 2009, 2011; Laviolette 2003, 2011; Stanton 2006; Swartz 2008) highlighting the usefulness of interviewing within ethnographic research. Here, Stanton's research was particularly influential in terms of her differing approaches towards site/event and type of stakeholder (2006). Other comparable projects collected quantitative data on perception and demographic characteristics through questionnaire survey (Bricker and Kerstetter 2002; Dicks 2000; Reeves 2007) and in particular Bricker and Kerstetter's research design (2002) was useful in terms of designing the wording of questionnaires (see Section 4.7.2. below). Finally, the visual data methods employed within tourism research (Jutla 2000; Fairweather and Swaffield 2001) informed the decision to use visual props such as maps during interviews and to ask informants to generate sketch maps following interviews.

Furthermore, Dwyer's survey (2009, 2011) (and the complementary London Transport Museum exhibition, 2011), confirmed the usefulness of using oral history as a method of recalling and recording the post-industrial phases of sites. Although this research comes too late to conduct process recording during draw-down (or the immediate post-closure period) the photographic recording projects by the national agencies (Badcock and Malaws 2004; Cocroft and Cole 2007; Malaws 1997, 2004) have nonetheless influenced a decision to create a photographic record of evidence of social use and activity on mine-sites in the post-industrial period, for example rock-climbing, illicit barbeques and graffiti. These photographs are posted on an online photo management and sharing application for public viewing (*Flickr*). A profile was created

([www.flickr.com/orangemining](http://www.flickr.com/orangemining)) with sets of photographs creating a combined total of 262 photographs (Figure 4.4, Appendix A).

Finally Labadi (2007) and Landorf's (2009) methodologies for codification and content analysis of WHS documentation have highlighted the value of analysing text (in this instance, oral history and interview data) through a CAQDAS program (see Section 4.3.1.). Labadi's value typology (2007: 155-157) has been adopted for analysis of values connected to local residents' expectations of WHS, results of which are discussed in Chapters Seven to Nine).

## **4.6. Sampling**

### **4.6.1. Selection of case study areas**

The decision regarding selection of three case studies was governed by a desire to achieve variance in terms of topographic, economic, tourist/non-tourist, and coastal/inland characteristics (see Figure 1.1, Appendix A). Having lived in the county for a number of years I was familiar with the sites within the WHS and following consideration, including consultation with Project Officers from the World Heritage Office in Truro, the sites of Botallack (St Just Mining District), St Agnes (St Agnes Mining District) and Minions (Caradon Mining District) were selected. Each site afforded particular characteristics which influenced my decision to include it within my project. To briefly detail the reasons behind site inclusion:

The hamlet and mining area of Botallack is the most westerly of the WHS and is located on the rough-ground, coastal zone, between the sea and the Penwith moors (see Section 5.1.1., Historic Environment Service GIS, Cornwall Council; Sharpe 1992a: 11). Botallack is one of the best preserved mine sites in Cornwall; importantly, the site demonstrates a range of mining activity including arsenic extraction and 20th century mining (see Sections 5.1.5. and 5.1.7., Noall 1972 (1999); Sharpe 1992a; Sharpe 1992b.). One of the most famous mines in Cornwall – Crowns Mine – is located on the Botallack cliffs, and under National Trust management (since the 1990s) the cliff-top remains have been the focus of a number of conservation programs (National Trust 2005). Significantly, the site's close proximity to Geevor Mine (which closed in 1990, see Section 5.1.6.1.) means

that mining is recent and within living memory: at Botallack it is possible to talk to former miners.

The village of Minions is located inland on the south-east edge of Bodmin Moor (see Section 5.2.1., Gilliard *et al.* 2004: 8, 16). Getting to the moor requires a lengthy and circuitous drive by car, and in consequence this part of the moor has escaped the large-scale tourist developments which typify Cornwall's coastal zone. Minions Moor is a notable multi-phase archaeological landscape (see Section 5.2.3., Stanier 2007): it exemplifies 19th century 'boom and bust' copper mining; evidence of early 20th century mining also survives; and importantly, despite later industry, a prehistoric ritual landscape of standing stones, hilltop enclosures, barrows and stone circles has survived (see Section 5.2.5., Gilliard *et al.* 2004; Sharpe 1989a; Stanier 2007). The moor is now largely used for the grazing of animals and as a destination for walkers and quarry climbers.

The large, well-serviced village and beach resort of St Agnes, situated on the north Cornish coast, is the most touristy of the WHS areas (see Section 5.3.1., Cahill and CAU 2002c; Historic Environment Service GIS, Cornwall County Council). The village largely serves as a dormitory for the city of Truro and the towns of Camborne/Redruth and in consequence villagers are relatively affluent (see Section 5.3.6.2., Cahill and CAU 2002c: 11; Sharpe 2007: 88). The mine sites within and surrounding the village reveal extensive evidence of small and large scale 19th and 20th century mining (see Section 5.3.5., Acton 2005a; Cahill and CAU 2002c); in addition the iconic coastal site of Wheal Coates is located a short drive from the village. As a WHS area St Agnes clearly demonstrates the integration of mining heritage within the development of 20th century tourism.

In terms of similarities all of the sites were straightforward to access by car; they have car-parking, museums or interpretation centres, and a resident living community.

#### **4.6.2. Sample taken from the population**

The inclusion criteria for the sample was that participants in the study were aged 16 years or over (to be confident of informed consent) and their normal place of residence (NPR) was the electoral ward/s encompassing each case study site. The

edited electoral registers formed the sampling frame (available on request from Cornwall Council) and the size and socio-economic characteristics of populations within each electoral ward were determined through the 2001 Census for England and Wales.

In order to draw comparisons between the sample and population, observed data (through a questionnaire survey) was compared to expected data (2001 Census for England and Wales (henceforth Census) (Office for National Statistics 2008) (see Appendix B). Census data is given in count and percentage, has unrestricted copyright for research purposes and is available at three levels - national, county and electoral ward level. Whilst it is unfortunate that the 2001 census is out-of-date, no alternative data exists (data from the 2011 Census is due to be released in 2012). However, its value is in its being a 100 percent survey and in having been collected solely to provide information, rather than as a by-product of other research projects. It is therefore the best available data to use.

A number of different forms of sampling have been undertaken:

- Probability sampling. This provides a statistical basis for saying that a sample is representative of the population as each member of the population has a known, non-zero probability of being included in the sample. Data collection involved a random postal survey using the edited electoral register as a sampling frame and a set of random computer generated numbers for selection of each registered elector (Fink 1995a: 29; Hannigan 1986: 45; Orton 2000: 14; Research Randomiser 2009).
- Nonprobability sampling. This sampling method relies on judgment and the needs of the survey (Fink 1995a: 29), in this case the need to ensure that participants had visited each case study location. Data collection involved the distribution of questionnaire surveys within each case study area. Different types of distribution methods were considered including self-administered, unsupervised, completed on-site, completed off-site, face-to-face and group (Borque and Fielder 1995: 8-9; Fink 1995a: 2, 42). A decision was made to distribute self-completed questionnaires in order to collect individual perceptions and to avoid the time cost of face-to-face

- questionnaire interviews. Questionnaires were distributed in a number of ways: around shops and businesses; by leafleting car windscreen wipers and by distributing questionnaires through a drop-box system in public places such as libraries, museums, pubs and institutes.
- Snowball sampling. This method is used where previously identified informants nominated others and is a helpful method when a list of names is not available or is impossible to obtain (Fink 1995a: 32; Fink 1995c: 23). This sampling method was employed in selecting key informants for interviews including walking interviews around each case study area.

Whilst random sampling is demonstrated to be a superior method (particularly as it yields representative samples) (Neyman 1934), my survey has also incorporated nonprobability sampling (due to the need to collect data from individuals who have visited the site). As participants may be unlike the majority of subjects within the target population it is necessary to demonstrate any variance between the population and sample in regards to important, discrete variables, such as age, gender, and education (Fink 1995b: 23, 27). ‘Goodness of fit’ between the population and the sample enables some conclusions to be drawn regarding representativeness and research bias with the latter defined by Brown and Saunders as “systematic error resulting from the collection procedures used” (2008: 8). Indeed, it should be noted that the sampling methods employed have the effect of stratifying the sample in different ways, not just in terms of those who have visited each mining area but also car drivers and passengers and individuals who frequent public places such as libraries.

Snowball sampling was necessary for the interviews as a sampling frame was not available and it was precautionary to vet informants through recommendations, rather than through advertisement, however, again recommendations may produce an inherent bias (Fink 1995c: 23). Stratification and sampling bias is discussed further in Chapter Six (Section 6.6.).

#### **4.7. Methods of data collection**

Table 4.1 (Appendix A) tabulates the possible sources of potential data for this research (following Mason 2002: 52) whilst Table 4.2 (Appendix A) links each

research question (see Chapter One, Section 1.5.) to a method of data collection and analysis.

#### **4.7.1. Interviews**

Within each case study, the aim was to conduct a maximum of 15 interviews with key informants – defined as individuals who had a ‘working’ relationship with the site, either in a private capacity (such as an artist) or through their professional role within an organisation (archaeologist or site warden). Informants chose where to meet, where to walk and for how long with most interviews ranging from one to three hours in length. Whilst the majority chose to meet on-site, some preferred indoor locations.

The approach to questioning was informal and the aim was, to quote Burgess, to have “conversations with a purpose” (1984: 102). An easy opening question (“Do you have any family connection to mining?”) was used as a starting point for conversation, then the informant was encouraged to speak for themselves in order to allow for the development of unexpected themes (Mason 2002: 62). The conversation had to remain contextual, however, in terms of the physical space (the mine) and/or a biographical narrative (the informants’ relationship to the site).

At the end of the interview clarification was sought on any particular issues and a set of eight questions was referred to in order to fill in any gaps (see the list below). The interview was recorded on a tape recorder. All informants were asked to sign a form giving consent to be interviewed, preferred status of disclosure (including the option for anonymity) and permissions regarding copyright. All informants were sent a copy of the transcript and if they wished they could make amendments, including additions and deletions to the text. In the following results chapters (Chapters Seven to Ten), those individuals who wished to remain anonymous will be referred to as ‘(anonymous) informant’; otherwise real names/professional roles will be given.

##### Walking interview questions

1. Do you have any connection to the mining industries?

2. What are your earliest memories of this area?
3. How would you describe this place?
4. What would you say are the key features in this landscape, and why?
5. Should mining remains be a) preserved, b) re-used or c) left to decay?
6. How has this mining area changed physically over time?
7. How have local people's attitudes towards this area changed over time?
8. Do you think that WHS is a good thing or a bad thing?

#### **4.7.2. Questionnaire survey**

Collecting data through interviews is time-consuming and produces large amounts of in-depth data from a relatively small group of people. Whilst interviews help to draw out emic data a more structured approach is necessary where data needs to be contrasted and compared (Thomas 2004: 202). A questionnaire survey, which can collect potentially large quantities of data, was therefore apt. The questionnaire survey was designed to gather both qualitative and quantitative data; however, the emphasis was more on quantitative data for ease of analysis and in order to test for significant statistical differences between survey data and demographic variables.

Questionnaire design followed extensive research on design methodology (Borque and Fielder 1995; Fink 1995a; Fink 1995b; Fink 1995c) with close attention paid to the type, number and wording of questions. Whilst Borque and Fielder advise that self-administered questionnaires should have closed questions, Fink notes that open questions are useful when the intricacies of an issue are still unknown and where you want the respondent to "describe the world as the respondent actually sees it" (Borque and Fielder 1995: 17; Fink 1995a: 15). The questionnaires employed a mixture of open questions (write-in responses in order to gather qualitative data), and closed questions (multiple choice or tick box in order to gather quantitative data).

The questionnaires were designed to gather data on the following seven themes which largely echo the list of questions used in walking interviews (Section 4.7.1.) (a copy of the questionnaire is available in Appendix C):

Questionnaire themes

1. Demographic profile of respondent
2. Descriptions of the mining area
3. Significant features within the area
4. Importance of mining remains
5. Time and change (physical and attitudinal change)
6. The future of mining remains
7. World Heritage Site

All of the questionnaires were anonymous and the distribution of questionnaires was not restricted to particular times/days of the week. A 'local' questionnaire was distributed through a drop-box system at public places within the electoral ward including libraries, community centres, pubs and cafes. In addition this questionnaire was distributed around local businesses and shops and either collected by hand or returned by post. This sample is therefore stratified in terms of individuals who frequent particular public places.

In addition an adapted 'universal' questionnaire (which omitted the question on time and change) was distributed on-site by placing the questionnaire (with self-addressed envelopes) under the windscreen wipers of cars in car-parks or lay-bys, effectively treating the car as a post-box. Car drivers and passengers, therefore, form strata within this sample. Data from county and out-of-county respondents was also collected through the distribution of questionnaires on-site; however, this data does not form part of my thesis (see Section 4.8. below).

Sample size was fixed in terms of the number of case study sites and the random postal survey (100 questionnaires distributed per site). The distribution of all other questionnaires was not fixed. Whilst a statistical rule of thumb according to

Fink suggests that you need a sample of 30 respondents in each sub-group this only really applies where data shows a normal distribution (1995c: 28). More useful perhaps is the “law of inertia of large numbers” which states that large groups of data show a higher degree of stability than small ones (Hannigan 1986: 46-47). A population which is known to be very variable (including variability of perceptions) will therefore need a larger sample to represent it, however, until the research is concluded and analysis carried out the degree of homogeneity or variability is unknown. A decision was therefore made to gather as much questionnaire data as possible, rather than fix sample size or utilise quota sampling which would necessitate the rejection of responses. An evaluation of data collection methods is given in Chapter Six (Section 6.7.).

#### **4.7.3. Observation**

Observations of the setting, of people’s interactions with the site and chance conversations were recorded in a field notebook (Angrosino 2007: 41; Mason 2002: 85). Digital photographs were also taken of the site, features, material culture and events associated with the mining area (*Flickr*).

#### **4.7.4. Archives**

Permission was obtained to use existing oral history collections and interview transcripts were collected from the Minions Survey (Cornwall County Council), Geevor Mine and Cornish Audio Visual Archives (CAVA). Parish and town council minutes were also accessed for each case study site. These include the minutes for St Just Town Council; St Agnes Parish Council, Liskeard Town Council and Linkinhorne Parish Council. Notes were taken using the following key-words as search terms: ‘Development’; ‘Mining’; ‘Industry’; ‘Tourism’ and ‘World Heritage’ for a five-year period from January 2005 to December 2010. In addition, newspaper archives were also accessed from the collection at Geevor Mine.

## **4.8. Research conducted but not included in this thesis**

### **4.8.1. Hayle**

Research was also conducted at a fourth site, Hayle, which was chosen for its urban rather than rural character. This case study was omitted from the thesis due to a concern over the number of chapters and word count. The sample for Hayle (69 questionnaires) is smaller than the other sites, and furthermore, as a town built around a foundry and harbour it is not a mine site and although of interest, is not directly comparable to the other three sites. In addition six interviews were conducted in Hayle.

### **4.8.2. County and out-of-county data**

The universal questionnaire also collected small amounts of data from county respondents (defined as respondents whose NPR is in Cornwall but outside the specified electoral ward) and out-of-county respondents (defined as those whose NPR is outside Cornwall, including abroad). Size and socio-economic characteristics of the County population can be defined through the Census, however, expected data for the out-of-county sample is unavailable, indeed, even if an out-of-county population could be defined, its geographical distribution would be problematic. I dropped the county and out-of-county data from my thesis as the sample sizes were too small to allow for comparison with the local data-set; across all four sites including Hayle 51 county questionnaires and 60 out-of-county questionnaires were collected.

### **4.8.3. Affective grid questionnaire**

A third questionnaire, comprising of affective grids (for all three NPR sub-groups) was also distributed through a drop-box system at visitors' centres/cafes on site and by leafleting car windscreen-wipers. This was adapted from Russell *et al.*'s affective grid (1989: 494) which was adopted within tourism research which sought to measure respondents' reactions to visual stimuli (photograph or text) (Thomas 2004: 202-204). Respondents were asked to respond emotively to diametrically opposed terms by placing a mark in a five by five grid, for example,

their perceptions of the mining area in terms of how old or young it feels, how romantic or unromantic it is or how clean or polluted it is (Figure 4.5, Appendix A).

Upon return, analysis of NPR revealed that large numbers of out-of-county respondents had returned the grid questionnaire; across all four sites including Hayle 145 out-of-county respondents returned grid questionnaires as opposed to only 57 county respondents and 39 local respondents. Instead, 280 local respondents and 52 county respondents completed either the local or universal questionnaires. Local respondents therefore seemed to prefer completing the local/universal questionnaires (knowledge/opinion based) whilst out-of-county respondents clearly preferred to complete the grid questionnaire (emotional response to the environment). The county respondents lay between the two in terms of preference. Whilst this, in itself, is a research finding, it did however mean that sample sizes (on a site by site basis) were not large enough to permit comparison.

## **4.9. Other methods not continued**

### **4.9.1. Flickr**

It was originally an intention to trial, and if successful, incorporate further visual research methods within this research (see Flick 1998; Banks 2007; Mason 2002 for a broad overview). The use of *Flickr* as a research tool was trialled. The aim was two-fold, to invite comments from members of the public and to evaluate the viewing of images in terms of most liked/least liked, however, very few comments were left and a decision was made early on in the research to abandon this method. Interestingly, however members of the public seemed to respond best to images which have a story contained within the caption or where other respondents had already posted comments. One unusual outcome of this exercise was a request from a hard-core punk-rock band from Columbus, Ohio to use one of the images (of the *Dry* (or changing rooms at Geevor Mine) as an album cover. The band's name was '*Clock Out*'.

### **4.9.2. Memory maps**

A small number of memory maps were created by informants following interviews (Figure 4.6). The aim was for the memory maps to complement the interview transcripts and detail site boundaries, surface versus subsurface representations, key features and points of memory and interest. Unlike Lynch (1960), whose cognitive maps represented urban environments using a specific legend of paths, edges, nodes, districts and landmarks, these maps were quick freehand sketches which were annotated with words and notes. However the majority of informants declined to draw maps and only ten were collected (six at Minions and four at Botallack) which was far too small a sample to allow for analysis. However, some do appear in the thesis as illustrative material. Other ways of creating maps were also considered but not implemented due to time constraints, however, future research could explore the creation of communal and electronic mapping.

### **4.10. Organisation of fieldwork**

There were three phases of fieldwork over two years (2008 and 2009) (Table 4.3, Appendix A). Trial fieldwork was carried out at Botallack in March/April 2008 (see Section 4.7.1. below) followed by two seasons of fieldwork in 2008 and 2009 between April and August. In total 74 days of fieldwork were conducted at the case study sites (a further 39 days of fieldwork was conducted at Hayle).

The two-week trial resulted in changes to the wording of questions on the questionnaires in order to remove imprecise and ambiguous terms. Following a number of negative comments, I removed a question on income bands from the section of the questionnaire which sought to demographically profile respondents. Originally, my intention had been to carry out face-to-face questionnaire interviews by stopping individuals on site, and by sampling, for example, every fifth person. However, this proved ineffective due to landscape topography and a complex network of paths, tracks and short-cuts. It quickly proved difficult to locate individuals in the landscape; I could hear people but not necessarily see them and 'tracking' them across the landscape seemed suspicious and felt embarrassing. Often a potential respondent would disappear behind a mine building or divert off across the landscape. After considering ways in which contact could be made with people on-site I decided to utilise car windscreen wipers as on-

site post boxes. If people could not be located, I could find their cars; however, as a female researcher, I only approached empty cars.

## **4.11. Analysis of data**

### **4.11.1. Data analysis programs: *Atlas.ti* and *SPSS***

Data collected (interviews, questionnaires, oral history archives, council minutes and newspaper archives) has been analysed through two well-established computer software data analysis programs: *Atlas.ti* (Version 5.6) one of several CAQDAS programs which enables the codification and thematic analysis of textual and visual data; and *SPSS* (Version 17) (Statistical Package for the Social Sciences) which enables the creation of descriptive and inferential statistics (Brown and Saunders 2008: 2, 5). A detailed discussion of the coding of variables from the survey questionnaires is given in Chapter Six, Section 6.2.4.).

In addition, secondary data (in the form of fieldnotes, photographs, leaflets, postcards and ephemera etc.) provide observational insight and illustration to the results and discussion chapters, however, this data has not been analysed *per se*, and is used in a supportive capacity.

### **4.11.2. Coding of data**

Irrespective of whether data was analysed by *Atlas.ti* or *SPSS* all data underwent a process of fragmentation through codification, with each code acting as a label which represents a particular idea or theme. Codes need to be meaningful and, in this case, they link specifically to the research aims discussed in Chapter One (Section 1.5.) (Fielding and Lee 1998: 86-87).

My approach to designating codes followed three organising principles (after Maxwell 2005: 96-97: 1) 'organisational' principles resulted in the creation of quantitative data 2) 'substantive' principles led to the generation of qualitative data and 3) broad 'theoretical categories' were used to group families of codes according to specific research questions.

### **4.11.3. Quantitative data analysis: Organisational approach**

The preparation of quantitative data for analysis in *SPSS* involves the definition of variables and the entering of data into the *SPSS* database. Once entered all values were double-checked for accuracy.

As discussed above, data from the questionnaires was coded in *SPSS* by a pre-established set of categories according to a clear rule (Mason 2002: 66; Maxwell 2005: 96). As examples, questions which prompted a YES/NO/DON'T KNOW response were coded numerically 1 for YES, 2 for NO and 3 for DON'T KNOW. Demographic categories were also pre-determined; hence the numerical code 1 was applied for females and a numerical code 2 for males (see Appendix B).

Descriptive statistics allow for data to be summarised clearly in order to be able to see the distribution of data and the overall relationship between a variable's different values and those values' frequencies (through frequency tables and charts) (Brown and Saunders 2008: 53). Typically the central tendency (the tendency of a frequency distribution to cluster around a single value) is measured (for example, the mode and mean) and the spread of data through, for example, range (the difference between the highest and lowest ranked data values for one variable (Brown and Saunders 2008: 53-58).

In order to move from the descriptive to the inferential, an examination of the relationship between survey data and key demographic variables was also conducted (Chapter One, Section 1.5.5.) through Chi-Square tests. The Chi-Square test is one, of a number of, non-parametric tests can be used to see if statistically significant differences exist between the observed data and the expected data of two categorical variables, through a two-way table, in which the categories of one variable form the rows and the categories of the other variable form the columns (Brown and Saunders 2008: 114; Vogt 1999: 39). With all tests significance level is set, as per convention, at  $<0.05$  (Shennan 1997: 59-61).

#### **4.11.4. Qualitative data analysis: Substantive and theoretical approaches**

A certain amount of preparation of textual data is necessary before coding and analysis with *Atlas.ti*. A text document cannot be altered once it is linked to the database as a hermeneutic unit and therefore, ideally text needs to be finished, and 'clean', e.g. without unnecessary symbols and with text removed from tables.

*Atlas.ti* enables the codification and thematic analysis of textual data through an active and reflexive process whereby consideration and exploration of the text (or visual images) will enable codes to emerge from data, (the concept behind grounded theory, Bernard 2006: 492-493) rather than being pre-determined. As familiarity with emerging categories is gained codes can be added, reviewed, changed and deleted. In addition the software can search for and recover codes allowing for comparative analysis. This type of software provides a "quantum leap forward from the old scissors-and-paper approach" which is "more flexible, and much, much faster" (Weitzman and Miles 1995: 18).

A substantive approach was applied whereby I reviewed the textual documents and highlighted relevant words or sections of text and then awarded a relevant, meaningful code. The codes I used represented a close reflection of the respondents' own perceptions including the use of the respondents' own words as codes (known as *in-vivo* coding).

The codes assigned to a document are apparent within a viewing pane to the right of the screen. Several codes can be applied to the same section of text. Through the grounded theory method codes continued to be added and periodically reviewed against other documents and the over-arching requirements of research aims. As an example, a quotation from an interview "the buildings 'belong to be here', as the Cornish would say" was highlighted and coded 'belonging' (Janet Quinton interview, Appendix E; Figure 4.7, Appendix A).

*Atlas.ti* also works at a higher level in terms of developing theory, allowing for codification of sections of text with abstract ideas and the grouping of codes into family groups. The latter enables the examination of "underlying structures" within the text, for example 'causes', 'is a' and 'is part of' (Fielding and Lee 1998: 10-11;

Silverman 2005: 187, 201). This theoretical approach was applied in order to provide umbrella categorisations which reflect the research aims (Figure 4. 8, Appendix A).

#### **4.11.5 Content analysis**

The questionnaires also contained write-in responses, for example, the question “Please list significant features in the mining area” produced fragments of text in the form of lists or short sentences. Once collated into a single document and coded through *Atlas.ti* data is open to statistical analysis. *Atlas.ti* can perform content analysis by looking at the number of times a particular code appears within a document and therefore providing data on the relative significance of codes within the sample (Townend and Whittaker 2011: 73). Grounded theory method is used to establish categories (for example, lists of significant features include the feature type mine dump/mine heap/burrow which lead to the creation of the category ‘mine dump’). The number of occurrences of the feature category was then counted, thereby transforming qualitative data into a quantitative result (Bernard 2006: 505-507).

As Silverman notes content analysis can produce reliable evidence about a large sample, however, the categories need to be “sufficiently precise to enable different coders to arrive at the same results” (2005: 160). Whilst CAQDAS programs can approach text by counting the instances of particular words or phrases, and excluding common words such as ‘a’ and ‘the’ as background noise, (Weber 1990: 50) notes that word frequencies can be misleading if context is ignored.

#### **4.12. Presentation of qualitative data within the thesis**

In the results chapters (Chapters Seven to Ten) members of the public who completed questionnaires are referred to as ‘respondents’ For differentiation those who took part in interviews are referred to as informants.

Throughout the results chapters write-in responses from the questionnaires are used, as quotes, to exemplify findings (Bernard 2006: 492-493). These quotes are not edited as it is considered important that the local respondents’ voices are not ‘cleaned up’. Where write-in responses are used as quotes a unique reference

number for that questionnaire will be given. This reference number employs the site conventions of B (Botallack), M (Minions) and SA (St Agnes). As all questionnaire data was anonymised, information on the respondent will be given in terms of the respondents' gender, age and occupation. For example, "quote" (67 year old retired male - B11).

Informants will be identified by their name and occupation unless they have asked for anonymity. The raw qualitative data (interview transcripts, oral history transcripts and write-in comments from questionnaires are presented on a CD-Rom at the back of the volume (Appendix E).

## **4.13. Considerations with data analysis**

### **4.13.1. Qualitative data considerations**

One of the points to note about the interviews is that I did not ask all the informants the same questions, as (following Mason 2002) different questions were required pertaining to the individual context of each person's biographical relationship to the site and their particular perspectives. Furthermore, the analysis of recorded interviews relies on the transformation of primary data (the sound recording) into secondary data (the transcript) and is open to bias in terms of the loss of text due to quality of the sound recording (which was an issue in windy weather; loss of text is represented within the text by consecutive dots, .....), the difficulty of recreating the voice during transcription and the choice of words and utterances to transcribe. Therefore the interview transcripts, and existing oral history archives, can only be viewed as partial reconstructions of the interview (Mason 2002: 77).

Despite all the benefits of software applications such as *Atlas.ti* there are, of course, many complexities and challenges within the process of analysing qualitative data. Choosing, and revising codes, can provide conceptual challenges and the process is slow (when compared to codifying data on SPSS) (Townend and Whittaker 2011: 72-73). There is, of course, more than one way to code text and more than one way to represent a particular idea. Although *in-vivo* coding provides one route to creating labels, care needs to be taken not to fragment an idea or theme in terms of

multiple labels. This can be controlled by reviewing and grouping all labels into families. The benefits of *Atlas.ti*, however, far outweigh such considerations.

Furthermore, there may be occasions where the veracity of data drawn from oral history archives and interviews comes under doubt (see Fielding and Lee 1998; Maxwell 2005: 106). As Laviolette (2011) has shown, and Alfrey and Putnam have argued (1992: 40), over time industrial sites can commonly be perceived through different metaphors, hence creating mythology. Some error when drawing on memory is to be expected, for example, dates of events or names. Whilst being aware and alert to factual error, and indicating if this has occurred, what I am interested in is not whether a particular fact or myth is more right or more wrong (when compared to, for example, site histories) but instead to consider how and why metaphor and mythology is created.

#### **4.13.2. Quantitative data considerations**

Compared to the complexities of qualitative data analysis described above statistical analysis can seem straightforward. However, statistical tests can be misused, leading to potential misinterpretation of results. For example, Brown and Saunders list common errors as bias (systematic error resulting from data collection methods, identified bias within this research is outlined in Chapter Six, Section 6.6.); using inappropriate tests; making improper inferences regarding the population (based on a sample); and drawing causation from correlation (concluding that two variables are related, when they are not, for example, if more female respondents within the sample had a connection to mining than male respondents, then an improper correlation would state that a mining connection causes the birth of more female babies) (2008: 7-8). Shennan also acknowledges that statistics can be a tricky area. He describes statistics as the meeting place of mathematics and “the messier parts of the real world”. Beyond simple description the patterning of data may not be clear cut and context must be considered when forming interpretations (1997: 3). Other technical considerations include, for example, the treatment of missing data (when a respondent chooses not to answer a particular question). I made a decision to omit such instances from non-parametric tests and to run with what remained. Missing data is, however, noted at the bottom of frequency tables (Appendix B and C).

#### **4.14. Chapter summary**

I have utilised a broad set of methods in my project in order to gain emic perspectives on Cornish mining landscape. Following a review of comparable research methods (drawn largely from archaeology, anthropology and tourism research) a number of complimentary ethnographic and statistical techniques were developed, supplemented by archival research and visual data methods.

In addition, I have used a range of sampling techniques including random, snowball and stratified sampling. My analysis of qualitative and quantitative data has followed well-established procedures within the social sciences and has been largely informed by grounded theory and statistics. Data was codified (through *SPSS* and *Atlas. ti*) and firmly linked to my research agenda according to organisational, substantive and theoretical principles; thereby allowing data to be interrogated at different levels. Ultimately, I have argued in this chapter that a range of different approaches to data collection and analysis is necessary in order to triangulate data and test the veracity, and therefore the usefulness, of emergent results.

#### **4.15 Introduction to Chapter Five**

The following chapter will present the three case studies which form the focus of the research. Necessary historical and socio-economic background to each case study will be presented in turn drawing on published archaeological surveys and assessments as well as guidebooks and contemporary travellers' accounts. Key sources include a number of surveys undertaken by Sharpe (1989a; 1989b; 1992a; 1992b; 2005; 2007; 2008); the *Cornwall Industrial Settlements Initiative* reports by Cahill and CAU (2002a; 2002b; 2002c); Stanier's guide to archaeological sites *Minions Moor* (1986 (2007)) and walking guides by Brown and Acton (1994a; 1994b; 1997; 1999; 2002). Following a format common to archaeological desk-based assessments each locale's geology, ownership, mining history, geography, key features and modern-day economic/cultural activity will be systematically detailed. An outline will also be given of the condition of the industrial archaeology in terms of its survival, re-use, and where relevant, redevelopment. Each case study section is accompanied by maps, aerial views and gazetteers of notable

surface features - see Appendix A). These gazetteers are by no means exhaustive, but aim to highlight how the range of features of mining sites illustrates the different stages within the deep metal mining process.

## CHAPTER FIVE: CASE STUDIES

### 5.1. Botallack

Botallack locks against too strong a force; blue-framed, nettled engine house, cliff-set (Thomas 1983: 48).

#### 5.1.1. Location

The hamlet and mining area of Botallack is located in the far west of Cornwall in a region known as West Penwith. Botallack centres on Ordnance Survey grid reference SW364336, is within the parish of St Just-in-Penwith, the electoral ward of Morvah, Pendeen and St Just and is part of the St Just World Heritage Mining Area, which covers approximately 2, 672 hectares, and is the most westerly of all the World Heritage areas (Historic Environment Service GIS, Cornwall Council; Sharpe 1992a: 11) (Figure 5.1, Appendix A).

The mining area is approximately four miles N-S by one mile E-W (Figure 5.2, Appendix A). It is geographically distinct from the hamlet being bounded on the west by the Atlantic cliffs and on the east by the edge of the settlement. The mining area can be accessed via an unmade track from the hamlet or via the South West Coast Path or the many footpaths which link the cliffs to settlements, former agricultural land, coves or earlier mine workings (Cahill and CAU 2002b: 15; Sharpe 1992a: 90). There is also a bus service from the nearby town of St Just.

#### 5.1.2. Geology

This stretch of coastline consists of underlying granite intruding killas and volcanic rock (greenstone). The metaliferous zones (lodes) are located within the geological interfaces between the granite, killas and greenstone and in this area are north trending, near vertical and narrow (less than a metre). The lodes contain mixed ores including a number of principal minerals including cassiterite (tin oxide), chalcocite, chalcopyrite, bornite (copper) and arsenopyrite (arsenic) which are of ore grades above the average for Cornish mines. In addition the Botallack cliffs contain many unusual minerals, for instance, jasper, sulphide of bismuth, haematitic iron and hydrous oxide of iron (which contains titanium).

Due to the orientation of the lodes, ore outcrops on the cliffs are very visible, for example the rust red of iron oxide and the blue-green of copper, and the lodes extend also out under the seabed leading to the development of submarine mining in the area (National Trust 2005; Noall 1972 (1999): 8, 17).

### **5.1.3. Character of the area**

HLC mapping of the area around Botallack shows three zones, the Atlantic sea and cliffs, a predominantly industrial coastal plain and a few miles inland anciently enclosed land bordering the Penwith moors (Figure 5.3, Appendix A). A National Trust guide to the area paints a picture of cliffs capped by heath, grassland and scrub; scattered farms, narrow stone-hedged lanes and granite cottages, and moorland surmounted by carns, heath and bracken (Hannigan and Luck 1999). West Penwith is particularly rich in prehistoric sites including surviving elements of prehistoric and medieval field boundaries and medieval settlements, however mining activity has eradicated parts of the earlier farming landscape (Sharpe 2008: 9-10). The area is relatively treeless and its weather typically varies between fog, wind and rain. Sharpe describes the colours and sounds of the area as:

Colours: Mostly light grey granite and almost black killas, varieties of foliage green, sea-blues, splashes of pink and white in spring; to the east, the white of Molina, the yellow of gorse and the khaki of heath, going purple in late summer. Dwellings are traditionally raw granite or painted in white or pale colours.

Sounds: Waves breaking on high cliffs, seabirds, buzzards, ravens, wind, an occasional bus or tractor engine in the distance, small plane engines droning off St Just airfield and international jet planes on trans-Atlantic journeys five miles above. Occasional choughs these days. To the east, skylarks, wind dominate. Sounds created by people are rare (Sharpe 2007:19).

One mile to the north of Botallack is Geevor Mine (which closed in 1990) whilst one mile to the south is the parish town of St Just-in-Penwith (St Just) (population 4690 [ONS 2008]) (see Figure 5.1, Appendix A). St Just forms the centre of much activity in the area and its development from a medieval churchtown into a mining

town in the 18th and 19th centuries can be seen in its formal squares, public houses, large Methodist chapel and rows of miners' cottages.

#### **5.1.4. Ownership and designations**

National Trust has been the principal landowners and managers of the mining area since 1995 (National Trust 2010). The St Just District World Heritage Site covers over 2,500 hectares including the most significant mines of the coastal plateau. The Botallack mining area also carries a number of designations including AONB, ESA and SSSI (the latter for its mineralogical importance). A search of the National Heritage List for England (for a 1 km area centring on Botallack) found five Grade II mine buildings (out of a total of 11) including the Count House and the Crowns engine houses (English Heritage 2006; Thorpe *et al.* 2005: 3, Figure 5.2, Appendix A).

#### **5.1.5. History of mining at Botallack**

From documentary sources mines were known to have been in operation on the Botallack cliffs by the 16th and early 17th centuries and by the mid-18th century small mines were working most of the important lodes in the area (Noall 1972 (1999): 11; Sharpe 1992a: 32, 39; Sharpe 1992b: 104). The group of workings now collectively known as 'Botallack' is an amalgamation of formerly separate mines leading to a complex inter-relationship of workings - many mines went under different names during their working lives, whilst smaller mines became subsumed (Sharpe 1992b: 1). By the mid 18th century the larger mines to emerge included Botallack, Crowns Mine, Wheal Owles (pronounced 'Olds') and Wheal Cock. Wheal Cock lies to the north of the case study area, in the centre is Botallack and Crowns and to the south Wheal Owles (Figure 5.4, Appendix A). Botallack eventually absorbed a number of smaller mines, including Crowns Mine and Wheal Cock (by 1841) and parts of the Wheal Owles group (by 1906) (Sharpe 1992a: 39-40; Sharpe 1992b: 98-99).

Mining activity intensified in the 19th century with the development of submarine levels which were driven out under the sea-bed to a distance of 1.5km from the shore and to a depth of up to 1,200 feet below high water (Noall 1972 (1999): 8;

Sharpe 2007: 26). At Crowns access to the sea-bed was improved with the building of the Boscawen Diagonal Incline Shaft in 1846 (Brown and Acton1994b:106). The shaft extended out to sea for 900 yards and reached 245 fathoms in depth (Ballantyne 1868 (2006): 41). By the mid-19th century Botallack Mine was working over a dozen lodes and had become one of the top producing mines in Cornwall with recorded output worth in excess of £1 million at 19th century values (Sharpe 1992a: 10, 40-41).

With the opening up of the west by the railways the cliff mines became something of a tourist attraction (Noall 1972 (1999): 37-39) and a number of 19th century travellers accounts describe the working mines (Brown and Acton1994b: 106; Courtney 1845; Folliott Stokes 1908), with most making mention of the Crowns engine houses, the noise of the stamps and the hustle and bustle of the cliffs (Figure 5.5, Appendix A). The red-ness of the cliffs was also frequently commented on within these accounts as well as the red stained water running out of the mine's adits into the sea (caused by a large iron vein which runs through the cliffs) (Courtney 1845: 139; White 1855: 279-280). Some more intrepid explorers visited the submarine levels and one of the best descriptions of a submarine visit can be found within *Paris' Guide to the Mount's Bay and the Land's End* (1824):

The workings of this mine extend at least seventy fathoms in length under the bed of the sea; and in these caverns of darkness are many human beings, for a small pittance, and even that of a precarious amount, constantly digging for ore, regardless of the horrors which surround them, and of the roar of the Atlantic ocean, whose boisterous waves are incessantly rolling over their heads (Paris 1824: 133-134).

Towards the end of the century a series of unfortunate events beset the mines. On April 18 1863 a chain broke on the Boscawen Incline tram wagon (Figure 5.6, Appendix A) as miners were being carried back to surface and eight men and a boy were killed. Despite the accident, two years later the Prince and Princess of Wales descended the Incline ensuring a fashion for more visitors to follow and Botallack Mine started to charge visitors half-a-guinea a head for underground tours (Noall 1972 (1999): 38, 35-56). 30 years later, at Wheal Owles on January 10th 1893 a group of miners working at 65 fathoms blasted through into the older, flooded

workings of Wheal Drea Mine having been misled due to a surveying error on the mine plans. The lower sections of the mine flooded and the bodies of 19 men and a boy were never recovered. The disaster closed the mine (Sharpe 1992b: 189-190). The following year in 1894 a cloudburst flooded Wheal Cock, followed by more flooding the following year (Sharpe 1992b: 100). The costs of pumping the mine dry were too high and the miners were paid off and surface plant sold (Brown and Acton 1994b: 106).

### **5.1.6. Botallack's recent past**

#### **5.1.6.1. Botallack and St Just in the 20th century**

Botallack Mine closed in 1895 but reopened in 1906 under new management. When no new body of ore was found the site was abandoned in 1914 (Sharpe 1992b: 101, 119). However, the opening of Geevor Mine in 1911 provided employment throughout much of the 20th century (Noall 1983: 160-161). In 1980 Geevor decided to extend its workings into the Botallack setts and in consequence Allen's shaft, positioned slightly inland, was refurbished and a new steel headgear built. Unfortunately the tin crash of 1985 prevented any underground development works at Botallack from taking place (Brown and Acton 1994b: 106). Geevor Mine ceased production in 1990 with the loss of around 380 jobs and the pumps were switched off the following year, flooding the underground workings.

#### **5.1.6.2. Botallack and St Just in the 2000s**

Geevor was purchased by Cornwall County Council in 2001, however, Pendeen Community Heritage (established in 2000) currently manages the site on behalf of Cornwall Council. The mine subsequently reopened as a museum and many of the former miners are now re-employed as guides (Jury 2006: 6; Sharpe 2007: 23). Alongside neighbouring Levant Mine, which boasts a restored working beam engine (National Trust) was the setting, Botallack forms one of a triumvirate of mining attractions in the immediate vicinity.

St Just is located between the town of St Ives, to the north, and the theme park at Land's End to the south (acquired by yachting tycoon Peter de Savary in 1987 (BBC 1987). Both, according to a survey undertaken during 2008/9, are top tourist

destinations, with the former ranked as the town most likely to be visited by visitors to Cornwall and the latter coming in second as a visitor attraction (after the Eden Project) (Visit England 2009: 7). A survey in 2009 highlights the importance of tourism for the area: in Penwith District 24 percent of employment was supported by tourism, there were 750,000 trips and £195,667,000 spent by staying visitors (Visit England). Since the closure of Geevor, a bakery, a local comprehensive school and tourism provide the main means of local income generation (Cahill and CAU 2002a: 11). According to the English Indices of Deprivation (published in 2010) the Index of Multiple Deprivation score for the St Just area currently ranks 13, 880 (42.73 percent) where 1 (1.00 percent) is most deprived (DCLG 2011b). A 2006 survey noted that one of the factors behind low income households was a higher than average number of retirees when compared to the rest of Cornwall or England (LEAF 2007: 11, 15, 17, 31) (reflected in the demographic profile of respondents to the questionnaire survey [see Tables D.2 and D.4, Appendix D]).

In the last decade St Just has established itself as an art colony and a rival to the established colonies of Newlyn and St Ives (LEAF 2007: 11). A number of notable artists live, or have lived in the area, and have drawn inspiration from the mining landscape, including Roger Hilton who lived at Botallack, Peter Lanyon, Karl Weschke, Kurt Jackson and David Kemp (Ruhrmund 1979: 67; Sharpe 2007: 16) (Kurt Jackson and David Kemp were both interviewed for this research – see Appendix G). Aside from the arts and industrial heritage, tourism is targeted at walkers, surfers, wildlife enthusiasts and sea-cliff climbers. Botallack also attracts literary tourists due to Winston Graham's *Poldark* series of books which were set in the local area and narrated an 18th century romantic saga of mine-owner Ross Poldark (Botallack Manor featured within the BBC's televised series of the books [from 1975-1977]) (Allen 2003: 24; Ruhrmund 1979: 6). More recently film adaptations of books by Rosamunde Pilcher have also featured the area extensively on both German and British television (2006). Botallack remains famous today and the Crowns Mine engine houses are, according to Sharpe, one of the "most visited and photographed industrial sites in the south-west" (1992b: 99).

Despite local initiatives to promote tourism in the area the 2006 LEAF survey found that 20 percent of local residents wanted to see significant restrictions on

tourism growth (2007:11, 32-33). An element of local resistance to tourism following the economic shift towards service industries has been noted and discussed by Sharpe (a long-term Botallack resident) in terms of the “persistence of a strong local (industrial) identity” (2007: 22):

St Just [...] was an almost entirely working class Area, whose inhabitants think of themselves as authentically Cornish. There is still considerable pride in that traditional way of life and in what their forebears achieved under such difficult circumstances, but its corollary is a degree of wariness of the outsiders who have pushed up local house prices, of the artists and the second home owners, and a resentment that real jobs for real men, and the pride which that brought, have gone forever (Sharpe 2007: 18).

St Just residents may be justly proud of “what their forebears achieved” The summary of the St Just Mining District Outstanding Universal Value (WHS) acknowledges the “persistence of strong local identity linked to Cornish mining culture” as OUV and then lists a considerable number of items exemplifying the area’s significance. Items that relate to Botallack include: significant mineralogy; the submarine mines; surviving Count Houses; combined tin and arsenic processing sites; iconic engine houses; and tin open-works (Sharpe 2007: 9-10). The following section considers the archaeological condition and significance of industrial features at Botallack in more detail. An aerial view of the mining area is presented in Figure 5.2 (Appendix A), along with a gazetteer including images of industrial features on site (Table 5.1, Appendix A).

#### **5.1.7. Condition of the industrial archaeology**

The survival of mining remains at Botallack is particularly good; partly due to the remoteness of the site, the agriculturally poor clifftop soil (which mitigated against post-industrial agriculture) and conservation work (National Trust 2005). The Crowns engine houses and the calciner arch were restored by the Carn Brea Mining Society in 1984 and an on-going programme of restoration work by the National Trust following their acquisition of the Botallack cliffs in 1995 has resulted in the decontamination and consolidation of the arsenic works and

labyrinth as well as the creation of a new car parking area, new pathways and the conversion of the Botallack Count House into offices, an exhibition and interpretation centre (opened in 1999) (Brown and Acton 2002: np; National Trust 2005).

Much that remains dates to the 20th century and is constructed out of plum concrete (either shuttered concrete or skinned in cement render) which used mine waste including residual pyretic minerals which have subsequently cracked and spalled (Sharpe 1992b: 119). The engine houses which belong to Wheal Owles have survived and the dressing floors and bases of the stamps are relatively extant; however, there is much which hasn't survived. Mine buildings have been affected by stone robbing and the weather, and Sharpe estimates that of the 100 engine houses that were once built in the area only 13 survive as near intact standing buildings. Of the major mines outlined above, very little survives of the surface workings of Wheal Cock mine, only the foundations of the engine house and fragments of one wall of the boiler house remain extant. Although the majority of mine shafts have been filled in, Wheal Cock skip shaft and engine shaft were collared and grilled in the 1990s, and engine shaft gives a particularly good view of a disused mineshaft (Brown and Acton 1994b: 107-108; Sharpe 1992b: 116). Mine dumps which were once prominent landscape features to the north of the case study area have disappeared due to re-processing by Geevor Mine in the mid-1980s. Some adits and gunnises can be safely accessed; however others require local knowledge and specialist equipment (Sharpe 1992a: 32, 58; Sharpe 1992b: 116-118).

Sharpe's 1992 survey also provided details of recent re-use of mine buildings and mining features by the local community. In 1992, the Botallack Count House was operating as a restaurant (1992a: 74). Deposits of rubbish in the gunnises led Sharpe to surmise that they were being used as dens by children. At some point the arsenic calciner was adapted into a 'summerhouse' by local residents, although no comment is made regarding details of this use (Brown and Acton 1994b: 112; Sharpe 1992b: 109, 119). Sharpe also noted the presence of a group of New Age travellers living near Kenidjack Head (Sharpe 1992a: 69; Sharpe 1992b: 185, 195). Three years later Brown and Acton report the clearance of the travellers site as "a result of the National Trust's acquisition" of the clifftop (1995: np).

According to Sharpe, in 1992 the most significant archaeological features on site are the gunnises; (1992b: 108, 119) the dressing floors (as they show the development of dressing floors from the early 1800s through to 1906 (1992b: 112) and the calciner and labyrinth (considered the best surviving example of a labyrinth in Britain).

### **5.1.8. Overview of Botallack**

The Botallack mining area (which forms part of the St Just District WHS) is located on a coastal plain in the far west of Cornwall. 'Botallack Mine', as it is commonly known, is an amalgamation of several different workings which bear testimony to intensive industry in the area in the 18th and 19th centuries. Botallack's submarine mines and the precipitous location of the 'famous' Crowns engine houses drew Victorian tourists to view the live workings. Two serious accidents during the second half of the 19th century were quickly followed by wider deindustrialisation and Botallack Mine closed at the advent of the First World War.

The opening of nearby Geevor Mine in 1911 provided much-needed employment in the local area. Geevor Mine carried out some development work at Botallack in the 1980s however this was unproductive. Geevor Mine closed in 1990 and subsequently reopened as a museum. The St Just area is economically characterised by relatively low-income households including a high number of resident retirees. Since the end of the mining industry a number of craft shops and galleries have opened in the area. Botallack continues to draw tourists, many of whom take photographs of the Crowns engine houses and local residents continue to use the site in a number of ways. Botallack is a full industrial landscape with good surviving evidence including significant examples of an arsenic calciner and 20th century dressing floors. The National Trust have owned the site since 1995 and along with a number of local societies have carried out conservation and access programmes.

## 5.2. Minions

Better 'an motor cars! Just 'orses and carts, or 'orses and wagons, is all what they 'ad. An' that's how it changed. Quieter life then, you know. You could travel the roads then (Claude Jasper, Minions Survey).

### 5.2.1. Location

The village of Minions is located in southeast Cornwall on the southeast side of Bodmin Moor, in an area of the moor known as Caradon (Figure 5.7, Appendix A). Minions centres on Ordnance Survey grid reference SX261712, is within the parish of Linkinhorne (Camp 2005: 16; Gilliard *et al.* 2004: 8, 16), lies on the boundary of the electoral wards of St Cleer and St Eve, and is part of the Caradon World Heritage Mining Area.

The village, and the extensive industrial archaeology in the surrounding moorland, is normally approached by car either from the southeast by following the Bodmin-Plymouth A38 road to Liskeard (six miles to the south) and taking the B3254 up to the moor, or alternatively by circumventing the moor's eastern edge by taking the A388 and A390 to Liskeard (Figure 5.7, Appendix A). As opposed to the other two case studies, this particular corner of the moor is remote and takes some time to reach. The areas of moorland around Minions villages can be divided into four smaller moors - Cheesewring, Craddock, Caradon and Kilmar Moors. This study largely focuses on the smaller and 'most popular' of the four moors 'Cheesewring Moor' (Stanier 2007: 7-9) which is approximately one mile N-S by one mile E-W (Figure 5.8, Appendix A).

### 5.2.2. Geology

On Bodmin Moor it is the edge of the moorland which signifies the contact zone within which the ores are contained and on this section of moor the granite-killas contact is intersected by parallel tin and copper lodes with the copper ore being particularly rich in the Caradon Hill area. The lodes generally trend E-W and are between 0.5m and 4.5m wide, the Phoenix lodes dip to the south at 70 degrees. Three lodes were the source of great wealth in the Minions area - namely Stowes Great Lode, New Lode and South Lode (Sharpe 1989b: 221; Stanier 2007: 47-48).

Phoenix United Mine is known for its specimen mineralogy including iron ore, native copper, black copper ore, malachite, vitreous copper, copper pyrites, iron pyrites and Cassiterite. Other rare minerals to be found in the area include bertrandite and phenacite (previously unknown in Britain before being recorded at Cheesewring Quarry in 1904-1905), whilst better known minerals to be found locally include anastase, chlorite, purple fluorite and wolframite (Sharpe 2008: 17; Stanier 2007: 47-48).

### **5.2.3. Character of the area**

At around 300 m above sea level Minions is the highest village in Cornwall and is situated, according to HLC mapping on upland rough ground (Figure 5.9, Appendix A). This particular part of the moor is characterised by soft, undulating topography which is punctuated by granite tors. The moorland stretches out extensively to the north and to the west, whilst to the south and east the plateau slopes away towards lower lying agricultural land which encircles the moor (Gilliard *et al.* 2004: 8; Sharpe 2007: 102; Stanier 2007). Views from the village are framed to the NW by Stowes Hill and Cheesewring tor and to the SE by Caradon Hill which rises 371m above mean sea level.

The moor is treeless and is characterised by scrub, grass, heath and bracken interspersed with areas of wetland which can lend it a remote and exposed quality (Sharpe 2007: 102; Sharpe 1989a: 17; Stanier 2007: 6). Moorland weather tends to be characterised by extremes of temperature and can be hot and cloudless but is commonly wet and misty even in the summer months. Sharpe describes the colours and smells of the area as:

Colours: Sky-blue, moorgrass-pale brown, mine waste-pale yellow, lichen grey-green, granite grey, mine waste grey-white. Smells: Heather, moorgrass, the occasional stench of sulphides and crushed rock, mixed with bracken and hints of heather honey (Sharpe 2007: 107-108)

Cheesewring Moor is a significant multi-period archaeological landscape with evidence of industry from the medieval to modern periods. It is also an important Bronze Age ritual landscape and numerous prehistoric monuments have survived later industrial processes including a triple stone circle known as the Hurlers

(1500 BC), several Bronze Age cairns and barrows (including Rillaton Barrow wherein a famous gold cup was found in 1837) and Stowe's Pound, a stone walled Neolithic enclosure.

Minions forms one of many small moorland settlements and three relatively large villages triangulate around Minions: Upton Cross to the northeast, Pensilva to the west and St Cleer to the south which, due to their remoteness, are well-served in terms of local shops (see Figure 5.7, Appendix A).

#### **5.2.4. Ownership and designations**

The major landowners are the Duchy of Cornwall (who own Phoenix United Mine), the Rosecraddock estate, Mr Daniel at Ley Farm, Cornwall Council (before unitary status, Caradon District Council) (Sharpe 1989a: 16; Sharpe 1989b: 374), and there are also areas of common land.

The Caradon World Heritage Mining Area covers 1, 437 hectares which includes the remains of a mineral railway, a number of important mines (including all westerly extensions of mine working on the surface and underground) and dispersed mining settlements (Historic Environment Service GIS, Cornwall Council; Thorpe *et al.* 2005: 6). The Minion mining area holds a large number of designations including: Conservation Area, OALS (village), AGSV, AGHV (Rillaton Moor and Craddock Moor), RIGS, AONB, AGLV (Caradon Hill), SSSI (Cheesewring Quarry), SAM, EH property in care (the Hurlers), Scheduled Ancient Monuments (including Rillaton Barrow and Stowe's Pound) (Gilliard *et al.* 2004: 18; Sharpe 1989a: 17) and Open Access. A search of the National Heritage List for England (2 km area centring on the village) found 17 Grade II listed mine buildings (out of a total of 23) including Houseman's engine house and the Prince of Wales engine house; 51 other structures of different types and dates are currently undergoing scheduling (for example, engine houses) (English Heritage 2006).

#### **5.2.5. History of mining at Minions**

Whilst there is evidence for early mine workings to the northwest of Minions up until the late medieval period the moor appears to have been used primarily for rough grazing land, although there are the remains of medieval field-systems north

east of Minions (Gilliard *et al.* 2004: 9). Industrial activity on the moor then intensified, partly due to the establishment of Foweymore (present day Bodmin Moor) as one of the four Cornish Stannary Courts, and extensive streamworks were established on the moor south-east of Minions. By the end of the 16th century surface deposits seemed to be running out and underground mining began (Gilliard *et al.* 2004: 8).

Mining in the area is dominated by the Phoenix group of mines, whose convoluted histories and renamings are covered by Brown and Acton (1999: 108-113). To briefly account for major transitions in mining on the moor, in the 1720s the first steam engine, a Newcomen engine, was installed at Stowe's Mine near the Cheesewring. By 1804 between ten and 12 stamping mills were operating there, however, this mining activity appeared to have little impact on the development of settlements on the moor. Stowe's Mine and a number of other mines also working the same lode were taken over in 1836 by the Cornwall Great United Mining Association (Brown and Acton 1999: 108).

At the beginning of the 19th century increasing amounts of prospecting took place on the moor and in 1836 rich reserves of copper were discovered just south of Minions at South Caradon (Gilliard *et al.* 2004: 9). What ensued is commonly analogised to the Californian gold rush with fortunes created (for some) and massive social and landscape change. A contemporary history by Allen (1856) testifies to the "mania for mining", the hundreds of miners who moved into the area into lodgings or temporary camps on the moor, of which there are no archaeological traces (Allen 1856: 397; Sharpe 1989a: 47). According to Payton lawlessness, brothels, fighting, and of course, the consumption of alcohol inevitably ensued (2004: 184). The need to accommodate the new workforce led directly to the development of new settlements and Minions was largely constructed between 1863 and 1881. The new village contained terraces of workers houses and detached small-holdings as well as public buildings including a public house (The Cheesewring Hotel), two chapels and a school (Gilliard *et al.* 2004: 11-14). Aside from mining the moor also has a long history of quarrying and stone-cutting with moorstone (loose rock at surface) having been exploited since the Bronze Age (Gilliard *et al.* 2004: 9). The most important quarries were Goldiggings and

Cheesewring with the latter first leased from the Duchy of Cornwall in 1845 (Gilliard *et al.* 2004: 9-10; Stanier 2007: 13).

In 1843 following the collapse of the Cornwall Great United Mine Association, Clanacombe Mine on the old Stowes sett was renamed Wheal Phoenix and a new company formed (Brown and Acton 1999: 109). In 1852 rich copper reserves were also discovered under the Stowe's sett and the company started a subsidiary mining operation to the south, near the village in 1847 (South Phoenix) (Brown and Acton 1999: 112). By this time Phoenix Mine, alongside South Caradon Mine (on the other side of Caradon Hill), were the highest producing mines in the east of the county. Wilkie Collins' description of Caradon Mine in 1851 (2004) depicts the machinery, noise and activity on the surface:

All about us monstrous wheels were turning slowly; machinery was clanking and groaning in the hoarsest discords; invisible waters were pouring onward with a rushing sound; high above our heads, on skeleton platforms, iron chains clattered fast and fiercely over iron pulleys, and huge steam pumps puffed and gasped, and slowly raised and depressed their heavy black beams of wood. Far beneath the embankment on which we stood, men, women, and children were breaking and washing ore in a perfect marsh of copper-coloured water. We had penetrated to the very centre of the noise, the bustle, and the population on the surface of a great mine (25-26).

Several other smaller mines opened and closed in the area through the 1840s to 1870s but they were either small or inconsistent in output (Gilliard *et al.* 2004: 10). The isolated position of the Minions industries and their distance from the coast led to the subsequent expansion of the Liskeard and Caradon Railway which was built between 1844-1866 (Sharpe 2007: 109). By 1869 a branch line was constructed to the mines at Wheal Phoenix and in 1877 the line was extended around Caradon Hill to Minions improving access for the Cheesewring Quarries and the Phoenix Mines. (Gilliard *et al.* 2004: 10).

Generally, by 1866 the copper ore output of the Caradon mines was in decline. Of the large mines in the area, only Phoenix had access to rich reserves of tin (Sharpe

1989a: 66-67) and by 1864, under new management, Wheal Phoenix was re-equipped to produce tin and this diversification for a time led to increasing production. In 1869 Wheal Phoenix acquired old Stowe's Mine and became Phoenix and West Phoenix United Mines (although it subsequently became known as Phoenix United). Increasing production also led to an increase in employment at Cheesewring Quarry and the expansion of Minions village at a time when the remaining Caradon mines were experiencing terminal decline (Brown and Acton 1999: 110; Gilliard *et al.* 2004: 10-12).

During the next ten years, however, shafts at Phoenix had to be sunk deeper and the price of copper and tin began to slump. The mine survived by cutting the workforce and wages but in 1898 Phoenix was abandoned and its equipment was sold for scrap and most buildings were demolished (Gilliard *et al.* 2004: 11-12). When mining ceased depopulation occurred on a massive scale, leaving the area almost deserted. At the very end of the 19th century a further blow hit the moorland community when the Cheesewring quarry began to suffer from the importation of cheaper granite from Scandinavia (Gilliard *et al.* 2004: 12).

## **5.2.6. Minions' recent past**

### **5.2.6.1. Minions in the 20th century**

In 1906/1907 a new company, Cornish Consolidated Tin Mines Ltd, reopened South Phoenix reequipping shafts and building new dressing floors, however, the new operations failed and the mine closed in 1911. Meanwhile, in 1907, the Phoenix United sett was leased to an Australian company (Cosmopolitan Proprietary Co. Ltd.) who invested heavily in a new shaft, new engine house and mine buildings. The pumping engine was officially started by the Prince of Wales in 1909 to great ceremony and perhaps unsurprisingly the engine house and shaft were named 'The Prince of Wales'. Despite considerable outlay only limited deposits of tin were found and the mine was abandoned in 1911 (closed in 1914) (Brown and Acton 1999: 112; Gilliard *et al.* 2004: 12; Crouch 2009).

The quarries survived into the 20th century largely due to the low transport costs of the railway. In 1916 the railway closed and the quarries switched to road transportation. Granite continued to be cut but by 1934 the quarry had ceased

work, (although Gillard *et al.* reported in 2004 that small scale quarrying continues) (12-14). Following deindustrialisation the moor returned to stock grazing; The landscape now has a predominantly agricultural feel and Commoners have the 'right of common' to graze sheep, horses and cattle on the moor. Minions village has had only a little expansion since the Second World War in the form of bungalows and detached residences (Gilliard *et al.* 2004: 12-16; Sharpe 2007: 102).

At Cheesewring quarry traces of railway sidings and other features could be seen until the spring of 1984 when the quarry interior and waste tips were searched for stone to repair a breakwater at Plymouth. According to Stanier the waste tips and quarry interior were devastated; once they had been the most impressive of their type in Cornwall, with level tops along which large angular waste stones were rammed (2007: 13). In the same year, Caradon District Council considered the heritage of the area, secured funding to carry out some stabilisation of former mine buildings and recommended the creation of a heritage trail around Caradon Hill. The hope was that such works would encourage tourism, stabilise areas at risk of collapse and discourage fly-tipping; the heritage trail never came to pass (Gilliard *et al.* 2004: 18-19; Sharpe 1989a: 20; Stanier (2007: 5). It was on the back of the District Council's interest in the area that the Minions Survey was undertaken by the Cornwall Archaeological Unit in 1987/1988 and produced a detailed survey of the mines, streamworks, quarries and settlements within a two-mile radius of Minions. The survey was slightly unusual in that it contained an element of oral history. It was felt that as quarrying and mining continued into the 20th century some local residents would be able to supply first hand information about those industries (Sharpe 1989a; Sharpe 1989b).

The survey therefore provides valuable comment not just on the contemporary condition of the archaeological remains, but also their usage in relation to economic and social issues on the moor. The use of the moor by horse-riders and walkers and the popularity of the area with both local people and visitors were noted, Phoenix United being a favourite place for exploration. Sharpe cautioned that "increased access" was leading to "the emergence of a number of areas of potential conflict of interest" (1989a: 19, 78; 1989b: 374). The lack of official car parks "resulted in over-parking in the centre of Minions village to the annoyance of local people." The following groups of people were identified as driving onto the

moorland: farmers, specialist groups (these were educational groups who were mostly interested in the quarries), casual visitors, fly-tippers, off-road vehicles and off-road motorcycles. Unrestricted vehicular access to the moor was abrading track-ways and resulting in littering and fly-tipping. The latter “enhances the view that no-one cares about these sites and encourages vandalism and other damage” (Sharpe 1989a: 78-82). The main area of concern, however, was the potential for conflict between walkers and landowners and in particular the position of landowners in regards to public access and conservation (or not) of mine buildings. Sharpe questions:

Of what use would it be to conserve an engine house if there were no right of public access, and what sense could there be in creating a footpath to an unconsolidated engine house, which would either remain downright dangerous, or would be liable to collapse within a few years? (1989a: 75, 77).

Circa 1997 Houseman’s engine house (formerly part of Phoenix Mine) was converted into the Minions Heritage Centre (Brown and Acton 1997: 29). In his 2007 publication, Stanier notes that since 1986 new car parks have been built at either end of the village (as these are not mentioned in Sharpe’s reports they therefore post date 1989) and Cheesewring quarry has become a popular inland climbing location in Cornwall (Stanier 2007: 5, 117-120).

As part of a wider, multi-period survey of Bodmin Moor, the CAU as part of English Heritage’s ongoing Monument Protection Programme has more recently provided an update of the industrial and post-medieval landscapes of the moor, providing an important update to Sharpe’s earlier Minions Survey of 1989 (Herring *et al.* 2008: xi). In the volume’s preface a number of changes over the intervening years are noted, particularly the concerning effects of reductions in grazing levels which have lead scrub cover obscuring archaeological features, decreasing access and potentially threatening sites through root and rhizome activity (2008: ix).

#### **5.2.6.2. Minions in the 2000s**

The first decade of the new century saw an increasing number of visitors coming to the moor with activity focusing on the pub, post office, tearooms and heritage

centre as well as the surrounding moorland (Gilliard *et al.* 2004: 13; Stanier 2007: 5).

Footfall on the moor was advantageously supported by new legislation. Under the Countryside and Rights of Way Act (the CROW Act) walkers were given the right to walk freely across mapped 'access land' including moorland without sticking to paths. There are certain restrictions, for example, it does not apply to horse-riders or cyclists and requires dogs to be kept on a lead between March and July or at any time near livestock. 'Open Access' came into effect across England in 2005 (Countryside Agency Publications leaflet 2006; Herring *et al.* 2008: ix).

Unsurprisingly, Sharpe has commented on the ongoing tensions and issues between traditional and new ways of life on the moor and furthermore, differentiating between different types of 'local' residents – 'real' locals (farmers), newcomers and town-dwellers:

This way of life is marginal, however, vulnerable to unwelcome changes in agricultural subsidies, easily disrupted. Newcomers now occupy many of the miners' cottages, especially in Pensilva, and their concerns are different again [...] Of most concern to local farmers are the day visitors, many coming up from Plymouth to explore the mines, walk the moors, exercise their dogs, and play with their expensive, gaudy off road bikes. With little to gain from such an influx, it is no surprise that the local commoners are not generally in favour of the promotion of enhanced access to the moors (Sharpe 2007: 106)

Whilst acknowledging that visitors (from urban environments) will find the moorland environment "exhilarating or intimidating in its openness, its raw, airy moorland quality" (Sharpe 2007: 106-107) Sharpe has noted the 'zero-sum' potential of WHS (see Chapter Three, Section 3.3.1) and has suggested that "local people, in particular the Commoners who depend on the moorland for their livelihood are concerned that the promotion of the [WHS] Area will have considerable impact on their lives, but will bring them few benefits" (Sharpe 2007: 110).

In 2006, alongside the announcement of World Heritage Site Status the Caradon Hill Area Heritage Project (CHAHP) was set up with the aim of conserving mining and prehistoric sites, protecting wildlife, maintaining local distinctiveness and involving local people in their local heritage. The project is led jointly by the former Caradon District Council and Cornwall County Council and has been awarded development stage funding (in total £2.8 million) from funding partners include HLF, South West Regional Development Agency and Cornwall Council. Project Development Stage I (timetabled December 2007 to December 2008) included specialist surveys, public consultation (including consultation with landowners), obtaining landowner permissions and statutory consent whilst Stage II (December 2008 to December 2011) has been timetabled as the project implementation stage (2011).

During the summer of 2009 CHAHP so-sponsored a series of events and exhibitions as part of the Phoenix 100 celebrations to commemorate the centenary of the 1909 Royal visit to open Phoenix Mine. A community play, *Gonamena*, was held at Sterts theatre and a mining festival was held within Minions village, whilst in Liskeard exhibitions were held at Stuart House (Crouch 2009; Orange 2009).

A survey in 2009 indicates the value of tourism in Caradon District: 15 percent of employment was supported by tourism, there were 585,000 trips and £145,789,000 spent by staying visitors (Visit England). These are lower figures than the other case study areas; the fact that tourism forms a small sector in Liskeard. According to the English Indices of Deprivation (published in 2010) the Index of Multiple Deprivation score for the Minions area currently ranks 15, 254 (46.96 percent) where 1 (1.00 percent) is most deprived (DCLG 2011b). and a felt-need to connect the town to the WHS was highlighted within a recent Community Strategic Plan (Liskeard Town Forum and MCTi 2008). The plan proposed that Liskeard is developed into a centre for 'well-being' which connects conventional and alternate medical services, holy wells, arts food stores, cosmetic services and WHS into a modern spa town. The plan notes that whilst WHS does not in itself confer funding it does confer a "certain prestige to the town" and "attracts people in. Its potential draw must be harnessed and worked on to form a major part of the 'Big Idea' for Liskeard's new role and identity" (2008: 26).

The summary of the Caradon Hill Mining District Outstanding Universal Value (WHS) does not, of course, contain any urban features as the town is set outside the WHS area, however, several items of significance relate to Cheesewring Moor. OUV is exemplified by: the 'boomtime' copper mining landscape, which only lasted around fifty years; significant mineralogy; important early 20th century mine complexes; the remains of a mineral railway; dispersed mining settlements; important streamworks and openworks; and the existence of rare fauna associated with copper-rich habitats (Sharpe 2007: 100-101). The following section considers the archaeological condition and significance of industrial features at Botallack in more detail. An aerial view of the mining area is presented in Figure 5.8 (Appendix A) accompanied by a gazetteer of industrial features on site (Table 5.2, Appendix A).

### **5.2.7. Condition of the industrial archaeology**

Compared to the rather patchy survival of mining remains on the rest of the moor the industrial archaeology in the Minions area is, according to Sharpe, 'exceptional', its survival due to the relative remoteness of the area (2007: 110; Herring *et al.* 2008: 65). A number of mine buildings, such as Houseman's engine house, have survived due to conversion into residential accommodation.

However, due to later activity on the moor much has been lost with survival being better at the later mines. Many engine houses have been almost totally destroyed due to the decay of incorporated timber and mortar, vandalism, stone robbing, the gradual collapse of underground workings and agricultural clearance. Indeed of the 42 that remain extant the majority are only fragments of standing remains and Sharpe estimates that only 14 would still be recognisable to members of the general public (1989a: 75, 84). The smaller moorland mines are largely little more than overgrown earthworks (Herring *et al.* 2008: 65-66), for example, an important early mine, Stowes Mine is represented by scattered, fragmentary and disturbed remains (1989b: 227). As is common on other sites most of the mineshafts have been capped or blocked by domestic rubbish. Low stocking levels have contributed to areas of the moorland becoming very overgrown with gorse and scrub which could destabilise foundations and surviving walls (Sharpe 1989a: 81, 83).

Each site holds its own history of decay. The 19th century engine houses at Phoenix United were partially demolished at closure when engines were scrapped or removed. In the 1940s mine dumps were plundered for stone and in consequence many features on the site were disturbed. Of more concern, perhaps, is the disappearance of the mine shafts in an area which is regularly crossed by people, motorbikes, horses and vehicles. (Sharpe 1989b: 246, 374-375). Meanwhile, the Witheybrook streamworks are reasonably well-preserved though Sharpe's 1989 report notes some damage caused by vehicles, horses and fire-setting (1989b, 306-307). Other examples of active and deliberate destruction include the demolition of engine houses and structures at West Phoenix and one of the earliest engine houses on the moor at that time, Witheybrook Mine (first documented in 1513) during army training exercises during the Second World War (Sharpe 1989b: 290-293). Table 5.2 provides additional information of notable features on the moor.

#### **5.2.8. Overview of Minions**

Minions village and surrounding moorland (part of the Caradon WHS Mining Area) is located in the southeast of Cornwall on Bodmin Moor. The adjacent moor (Cheesewring Moor) is a significant multi-period landscape, with notable prehistoric monuments, and carries a large number of designations. Industry on the moor has traditionally revolved around farming and stone-cutting/quarrying. However, in the mid-19th century the moor was the centre of intensive 'boomtime' copper mining which led to the building of Minions village.

Mining on the moor was dominated by the Phoenix group of mines, elements of which continued working up to the First World War. The landscape has now returned to farming and the moor is a popular place, with local people and visitors, for walking, riding and climbing. A number of detailed archaeological surveys of the moor have been conducted; these have noted many losses and problems with inappropriate vehicular access and flytipping. Despite the poor survival of a number of mines a number of industrial sites of note have survived including early and important streamworks, the remains of a mineral railway and early 20 century mine complexes. Since 2006 a local heritage project has been developing and running conservation and education programmes.

### 5.3. St Agnes

[...] those who run B&B's, shops and cafes are well aware of the qualities and attractions of the local beaches [...] but it is doubtful whether they appreciate the special qualities of the local industrial landscape or feel much connection with it beyond the inclusion on (sic) the iconic Wheal Coates Towanroath engine house on their website or advertising (Sharpe 2007: 88).

#### 5.3.1. Location

The large village of St Agnes is located on the north coast of Cornwall (Figure 5.10, Appendix A). St Agnes centres on Ordnance Survey grid reference SW713507, is within the parish of St Agnes, the electoral ward of St Agnes, and is part of the St Agnes World Heritage Mining Area which covers approximately 1, 228 hectares (Cahill and CAU 2002c: 8, 20-21; Historic Environment Service GIS, Cornwall Council).

Although the mining area is predominantly coastal many mines formerly operated within and between the cluster of hamlets which once characterised the village and therefore mining remains can be found within the settlement itself (Figure 5.11 and 5.12, Appendix A); the overall area measures approximately 4.5 miles SW-NE by 2 miles NW-SE.

The most common approach to the village is from the south along the B3277 road from the A30 and the city of Truro which lies some five miles to the south. Access to the mining area along the coast is via a network of minor single-track roads (with several convenient National Trust car parks) and the South West coast path. St Agnes is also connected to the towns of Redruth, Perranporth and Truro by bus services.

#### 5.3.2. Geology

The geology at St Agnes is characterised by relatively shallow *killas* overlying granite. St Agnes Beacon forms an exposed granite boss and encircling the Beacon concentric zones of contact metamorphism (the intense heat given off by the intruding molten granite bakes the country stone) can be clearly seen in the cliffs,

in the form of crumpled grey and black silty and sandy shale zones interspersed with occasional grit bands. The contact areas within the inner zones contain high temperature minerals leading to the high quality ores for which St Agnes became noted (Barton 1964: 60, 120).

Taking into account some variation, the lodes within the St Agnes area are generally characterised by having a flat northerly dip which run roughly E-W (Brown and Acton 1997: 78; Cahill and CAU 2002c: 8-9). Alongside cassiterite and copper the Mindat.org Directory lists over 50 further minerals as occurring in the St Agnes area (2011) including Wolframite, Hematite and Sulphur.

### **5.3.3. Character of the area**

HLC mapping reveals a more diverse landscape than that characterised at the other two case study areas; at a broad 'area' level St Agnes is mapped as 'urban' in character and incorporated into this urban area are zones comprising of coastal rough ground, recently enclosed land, anciently enclosed land and ornamental land - the latter being the village's green spaces and public/private gardens (Figure 5.13, Appendix A).

St Agnes has been described as one of the "most picturesque and attractive of all Cornish industrial settlements" due to unusual and varied topography and viewsheds, the quality of its buildings, sandy cove and coastal location (Cahill and CAU 2002c: 15); the SE, however, is characterised by relatively featureless farmland. The village is over-shadowed by the granite summit of St Agnes Beacon (192 m above mean sea level) which "dominates the landscape" (Preston-Jones 1997: 28).

Sharpe describes the colours and sounds of the area as: 'Colours: Sea-blue, granite-grey, splashes of the yellow of beach sand, gorse and copper waste, heath khaki.

Sounds: Surf, seabirds, skylarks, families on the beach (Sharpe 2007: 89-89).

The village of St Agnes is an amalgamation of a number of hamlets, namely Churchtown, Peterville, Vicarage, Goonown, Goonbell, Trevaunance and

Rosemundy. Although the village now forms a homogenous whole each element remains distinctive due to its different topographic setting. At the southern, inland end of the village Vicarage Road is built on a relatively flat terrace of land and is characterised by shops and civic buildings. From here the road curves down to Churchtown with its steeply dipping streets including Stippy Stappy, an iconic listed row of cottages, a picturesque church and finely built shops and public houses. In the neck of the valley Peterville is formed around an open rectangle, with roads entering at each corner and backed by tree covered slopes. From here the road descends to the cove with its surf shops, beach-cafes and craft shops. The results are interesting and diverse streetscapes with the sea and St Agnes Beacon forming backdrops. In all directions mining remains can be seen and the engine houses of Wheal Friendly, Wheal Kitty, Polberro Mine and the Gooninnis mine chimneys are particularly eye-catching (Acton 2005a: 79; Cahill and CAU 2002c: 8-21). Indeed, Sharpe surmises that the spectacularly sited engine houses are more important for their setting than their productivity during their live period (Sharpe 2007: 84, 90).

Outside the village a popular coastpath walk westwards leads to St Agnes Head, a well-liked picnic spot, which lies directly underneath the Beacon and provides spectacular sea views. One of the best known Cornish mine sites, the 19th century workings of Wheal Coates (managed by The National Trust) is situated a short walk west of the headland.

#### **5.3.4. Designations and ownership**

The majority of the village/coastal area is under private ownership including farmland, however, the National Trust have been buying land in the area since 1994. Acquisitions include St Agnes Beacon and land at Wheal Coates (acquired 1957, 89,253 hectares) Trevellas Coombe (2466 hectares) and St Agnes Head (42174 hectares) (both acquired in 2006 from Carrick District Council) (National Trust 2010).

The St Agnes District World Heritage Site covers 1, 228 hectares and includes the most important tin and copper mines, the mining settlement of St Agnes and areas of miners' smallholdings (Thorpe *et al.* 2005: 5). The centre of the village is a

conservation area and Trevaunance Cove is an AONB, AGSV and SSSI (for its mineralogical importance) (English Heritage 2006; Sharpe 2007: 86). A further AGSV also runs to the north and east of the settlement and the coastal area contains two SSSIs (again for mineralogical importance) (Cahill and CAU 2002c: 23). A search of the National Heritage List for England found 18 Grade II listed mine buildings (within a 2 km radius of the centre of the village) including the pumping house and chimney of West Wheal Kitty mine and the Wheal Coates collection of buildings (English Heritage 2006).

### **5.3.5. History of mining at St Agnes**

There is evidence in the St Agnes area for early clifftop workings including gunnissing at Wheal Coates, Trevaunance Cove and Trevellas Coombe (Cahill and CAU 2002c:8; CAU 1986b:11). By the late 14th century a chapel and a small cluster of cottages had been built at St Agnes and by 1511 mine setts had become established on the slopes of St Agnes Beacon and Polberro (Cahill and CAU 2002c: 8, 12). By the 17th century mines were established at Wheal Coates, Wheal Kitty and Blue Hills whilst the lodes to the south of Churchtown were being mined by the 18th century. By this time St Agnes had developed into a relatively large settlement with a grant to hold a market (Cahill and CAU 2002c: 8, 12) and mines had spread down to Churchtown itself (Figure 5.14, Appendix A).

The pattern of pre-industrial mining in the area was of numerous small mines leading to a complex pattern of setts, some probably overlapping, indeed, an advertisement in 1817 (West Briton & Cornwall Advertiser cited in Cahill and CAU 2002c: 9) lists over 100 tin bounds. Collectively the St Agnes mines formed an important mining district particularly as St Agnes tin was noted for its quality (Acton 2005a: 86; Cahill and CAU 2002c: 8-9).

The majority of these small mines were unable to survive the economic slump following the Napoleonic Wars and in the early 19th century around 15 large conglomerates were formed in the area (Brown and Acton 1997: 79). The exception to this downturn was Royal Polberro Consuls which by 1750 was already one of the largest and richest tin mines in Cornwall (Cahill and CAU 2002c: 9). The middle decades of the 19th century witnessed the usual episodes of

closings, openings and amalgamations (Cahill and CAU 2002c: 9, 13) and aside from Polberro the other principal mine to emerge from this process was West Kitty Mine (Brown and Acton 1997: 78). Wheal Coates, St Agnes' most famous mine today (largely due to its clifftop setting), had its peak production in the 1870s but was never very profitable (Caine and Gorton 2005: 8).

St Agnes also had other industries located in Trevaunance Cove (Cahill and CAU 2002c: 12-13). In the 17th century the harbour was mainly used for general trade and fishing but in the 19th century it began to service the mining industry including exporting copper ore and importing coal. By the mid-19th century two large iron foundries were established in the cove alongside a pilchard fishery and ship-building on the beach (Acton 2005a: 82; Cahill and CAU 2002c: 10-11) (Figure 5.15, Appendix A).

The different hamlets, as outlined above, had by the early 19th century grown significantly in response to population increase driven by mining activity. However, development tended to focus on in-filling the spaces between the hamlets. A high proportion of upper/middle-class houses including large villas suggest that miners generally lived in the outlying areas (Cahill and CAU 2002c: 12-13, 17-18). From the mid-19th century onwards St Agnes was a favoured location for the 'gentry' including retired shop-keepers and mine managers and its servicing role for these well-off residents and the local industry led to a large number of public houses, insurance companies, banks and a number of public buildings such as the Miners and Mechanics Institute (est. 1893) (Cahill and CAU 2002c: 9-11; Sharpe 2007: 85). After the 1874 tin crash there was a marked downturn in production with the usual mass migration, however, due to village's demographic characteristics, as just described, this seemed to affect the outlying areas more than the village itself. From 1880 St Agnes began the transition from a reliance on local industry towards a wider economic base. Tourism developed in St Agnes in the mid-19th century with, perhaps surprisingly the hotels leaning towards the wealthier end of the tourist market, despite the working mines (Cahill and CAU 2002c: 11).

### 5.3.6. St Agnes' recent past

#### 5.3.6.1. St Agnes in the 20th century

Mining activity in the St Agnes area continued into the 20th century. Blue Hills sett was reworked along with Penhalls and Wheal Kitty in the early part of the century but did not produce any significant amounts of tin (Brown and Acton 1994a: 45). Wheal Coates was also worked for a short period just before the First World War with the engine house at Towanroath Shaft modified in 1910 to house a pumping engine (Acton 2005b: 93). Wheal Kitty worked continuously through to 1919 producing some copper and iron but mainly tin (Brown and Acton 1994a: 38). In 1908 another dressing plant was erected at Wheal Friendly (part of the Wheal Kitty group) to cope with increasing quantities of low-grade ore when its existing dressing floors (based some way away in Jericho Valley) had reached their limits (Brown and Acton 1997: 79-83).

By the late 1920s the tin under Wheal Kitty, Penhall's Mine and Wheal Friendly was thought to be exhausted and attention turned to Polberro Mine with attempts made to locate the West Kitty lode by reopening the Turnavore shaft. From 1937 to 1941 electric plant was installed and the old engine house was re-roofed to provide a changing house for the miners. Despite deepening the workings to over a thousand feet the venture proved unproductive (Brown and Acton 1994a:38; Brown and Acton 1997: 97).

The 1903 the Truro-Newquay railway stimulated the development of all the north coast resorts (in part catering for the population of the Cornish towns) and in 1905 the first beach café was opened at Trevaunance Cove (Cahill and CAU 2002c: 11, 15). An *Official Guide to St Agnes* noted that tourism "may not be unwelcome to those who, having spent their early years in the district yet through stress of economic conditions have been forced to seek their fortunes in other lands" (Bulkeley 1925 iii) and contains long descriptive sections covering the area's unspoilt, scenic beauty and its therapeutic qualities.

Since the 1930s the mainstay of economic activity in the area has been tourism (Cahill and CAU 2002c: 11, 15). By the 1940s the mines had all closed and since that date there has only been small-scale tin streaming and exploratory works

(Cahill and CAU 2002c: 9). There is currently small-scale tin streaming at Trevellas Coombe, with a father and son team managing Blue Hills Tin Streams which Cahill and CAU refer to as primarily a tourist attraction (2002c: 11). For an entrance fee of £5.00 visitors can watch demonstrations of tin streaming and see working waterwheel-driven stamps (Wills and Wills no date).

In the post-war period new types of building have appeared in the village including bungalows and estate housing. In 1957, the National Trust acquired the section of coastline which included Wheal Coates (a relatively early acquisition of mining areas in Cornwall) and restored Towanroath engine house in 1973. In 1963 the railway line closed but with the rise of motor car ownership St Agnes' economy became firmly based on beach-tourism and the parish currently boasts substantial holiday accommodation. A small museum has since 1991 occupied a former chapel with seasonal opening and free admission with displays which focus on local minerals and mining (Acton 2005a: 88).

#### **5.3.6.2. St Agnes in the 2000s**

A survey in 2009 highlighted the value of tourism within Carrick District: 18 percent of employment was supported by tourism, there were 684,000 trips and £179,941,000 spent by staying visitors (Visit England). According to the English Indices of Deprivation (published in 2010) the Index of Multiple Deprivation score for the St Agnes area currently ranks 17, 161 (52. 83 percent) where 1 (1.00 percent) is most deprived (DCLG 2011b). The village remains a popular residential location for people commuting to the larger towns for work (Cahill and CAU 2002c: 11; Sharpe 2007: 88) and Sharpe notes that many of its residents are incomers, with its "indigenous population" pushed out "by spiralling property prices and a general lack of local work opportunities" (2007: 88). Current issues within the village include traffic congestion and car parking facilities whilst Churchtown is adversely affected by a preponderance of commercial and traffic signage (Cahill and CAU 2002c: 24).

The *St Agnes Guide and Street Map* which was freely available in the village during fieldwork in 2008 (St Agnes Chamber of Commerce 2008) lists surfing, walking and other outdoor activities as attractions, however, the guide also illustrates the

ways in which the area clearly seeks to capitalise on its mining heritage assets. The World Heritage Site is analogised to “the Pyramids, the Grand Canyon and the Great Barrier Reef of Australia” and the engine houses of Wheal Coates are described as an “icon” (2, 9). Sharpe suggests that although Wheal Coates is well known to many visitors other sites are little visited, except by walkers on the coast path (2007: 86).

Unsurprisingly, the summary of the St Agnes Mining District’s Outstanding Universal Value (WHS) notes the area’s iconic coastal engine houses. It also comments on the “fine mining settlement” with “fortunes reflected in its shops, pubs, hotels, chapels and public buildings”. Other items of significance are noted including: Blue Hills stream works; the remnants of industry in Trevaunance Harbour; and its internationally significant mineralogy (Sharpe 2007: 81-82). The following section considers the archaeological condition and significance of industrial features at Botallack in more detail. An aerial view of St Agnes is presented in Figure 5.11 (Appendix A), and an accompanying gazetteer including images of industrial features on site (Table 5.3, Appendix A).

### **5.3.7. Condition of the industrial archaeology**

Aside from the sites owned by the National Trust there has been little conservation of the mining remains in the St Agnes area (Sharpe 2007: 91) and the workings at West Kitty and Polbreen have been almost totally destroyed in bungalow estate development. Much of the open space in the village acts as a footprint of former areas of mine waste, now flattened into playing fields and public gardens (Cahill and CAU 2002c: 15, 19, 22).

In 1986 a CAU report noted that a rough but wide roadway had previously allowed vehicles direct access to the site, however, by this point a number of road blocks had been put in place to prevent this (1986: 14-19). In considering management options the report noted the lack of a “coherent visitor strategy”, suggesting that the public is “profoundly ignorant of the purpose and nature of surface workings.” The report recommended ‘the exclusion of vehicles from the site, and the resiting of car parking facilities; the rationalisation of footpaths to remove duplicate routes, prevent further damage, and to lead the visitor through the site on appropriately-

surfaced paths which are routed for educational as well as scenic reasons' (CAU 1986: 17-20). Following restoration of the Towanroath engine house at Wheal Coates in 1973 (Tanner and Luck 2000: 5) a period of restoration projects followed in the 1980s and 1990s. Between 1986 and 1988 more minimal restoration work was carried out at the associated stamps engine house (Acton 2005b: 94; CAU 1986: 15-16; Tanner and Luck, 2000: 5). In 2005 Acton noted an interpretive board had been provided by the National Trust (2005b: 93).

In terms of the survival of sites within the village other restoration projects were conducted at a number of sites; the Duchy of Cornwall carried out conservation works at Gooninnis in 1994 and Carrick District Council made St Thomas's pumping engine safe in 1990 (Acton 2005b: 86, 91; Brown and Acton 1997: 75, 81). After buying Wheal Kitty in 1997 Carrick District Council developed the site into the Wheal Kitty Industrial Estate. Some of the buildings were demolished whilst others were converted into workshops or offices. In 2004 it was announced that the site was "to have a £900,000 facelift" including the renovation of Sara's shaft pumping engine house and by early 2005 the engine house had been fully renovated externally, with new windows, doors, roof and bob plat, and its interior converted into office space (Acton 2005a: 83-84; Thorpe *et al.* 2005: 14). Brown and Acton criticise the restoration works in their 2002 walking guide to the area, commenting that due to car parking and landscaping, the site's mining character has been 'totally destroyed' (Brown and Acton 2002: np).

Wheal Friendly engine house and other associated buildings have also survived in good condition, the valley sides of Trevellas Coombe are carpeted and capped with waste dumps (Cornish Mining WHS website) and there is also disturbed ground and mine waste at the sites of Polberro and Wheal Kitty (Acton 2005a: 79-80). In 2006 the National Trust acquired 42,174 hectares of land at St Agnes Head and 2,466 hectares of land at Trevellas Coombe from Carrick District Council (National Trust 2010).

### **5.3.8. Overview of St Agnes**

The WHS St Agnes Mining District centres on the large village of St Agnes which is situated on the north coast of Cornwall. Mining in the area was characterised by a

large number of relatively small mines working high-quality tin lodes. Many of these mines collapsed in the late 19th century; however, a number continued working through the first half of the 20th century. All of the mines in the St Agnes area had closed by the 1940s.

The development of the village around the mines has led to the incorporation of mining remains with the 'urban' landscape; however these appear to add to rather than detract from the area's aesthetic qualities. A relatively large number of engine houses survive within, and on the outskirts of the village, several of which have been conserved or adapted for re-use. St Agnes is a popular residential location and centre for tourism. The latter developed relatively early (in tandem with late 19th century deindustrialisation) and the village now boasts a thriving tourist industry. Generally, the area exhibits a number of attractive qualities including: good services; a wide range of hotels; shops and galleries; a sandy beach; pleasant coastal walks; and interesting and varied views.

#### **5.4. Chapter summary**

In this chapter I have contextualised my case study areas in time and space by detailing the causal relationships between locations, geologies and mining histories. Additionally, I have presented a contemporary history of each locale including details of the survival, extent and significance of industrial archaeology within the WHS areas. These contemporary histories provide some insights into recent public usage of the mining areas which can be briefly summarised as the following:

Mining in the Minions area ended in the early 20th century and since then the moor has returned to farming. Cheesewring Moor is a significant multi-period archaeological landscape; whilst much of its later industrial archaeology has been destroyed some significant buildings remain. In the present day the moor is a popular recreational space for local residents and visitors for climbing, walking and horse-riding. However, a number of archaeological reports have noted issues over the last thirty years with vehicular access, fly-tipping and interference with livestock.

Production at Botallack also ended at the start of the First World War and since then no further economic use has been found for the heavily industrialised cliffs. During the majority of the 20th century mining activity in the area focused on Geevor Mine, a major employer in the area. The St Just area is characterised by relatively low-income households and a high number of retirees. The National Trust has, since 1995, managed the site and has undertaken a wide-ranging programme of conservation and access works. Botallack is best-known for the much-photographed Crowns engine houses, however, a number of other important industrial features are on-site, including an extant arsenic labyrinth and complexes of 19th and 20th century dressing floors.

Mining activity at St Agnes was characterised by a large number of small mine setts working high-quality tin lodes. Mining continued until the 1940s, however, the village underwent a successful shift towards a tourism-based economy at the turn of the last century. St Agnes is a large and prosperous village with pleasant walks and views. The National Trust are prominent landowners in the area and, partly due to conservation works by the Trust, St Agnes boasts a large number of surviving engine houses which form important local landmarks. Mining features are also, somewhat unusually 'built into' the village due to the development of St Agnes's former hamlets around the mines.

In the following chapter I will consider in detail data collected from my fieldwork in these three case study areas before discussing my results in Chapters Seven to Ten.

# CHAPTER SIX: DATA OVERVIEW

## 6.1. Introduction

This chapter will summarise primary and secondary data collected during fieldwork and provide a foundation for the following analysis within the results chapters (Chapters Seven to Ten). Firstly, primary data will be addressed: data from the questionnaire survey will be discussed and summarised (the extent of data, return and response rates). The demographic profile of the sample will then be addressed including (where relevant) the ‘goodness of fit’ between the population (residents of Cornwall) and the sample allowing conclusions to be drawn regarding the data’s representivity. Questionnaire data will then be compared to other surveys including general heritage access data and surveys relating to industrial sites in order to draw conclusions on how typical this sample is.

Once quantitative data on Cornish mining sites (again drawn from the questionnaire) has been outlined interview data and fieldnotes will be addressed. This chapter then presents secondary data such as oral history archives, newspaper archives and council minutes. The chapter concludes with a reflection and evaluation of data generated through fieldwork.

In the following discussion and within the appendices all percentages have been rounded up to one decimal point. Only valid percentages are given i.e. percentages derived from counts which do not take into account missing data (see Chapter Four Section 4.13.2). The following discussion excludes data collected but not included in this thesis (Chapter Four, Section 4.8.).

## 6.2. Data from the questionnaire survey

### 6.2.1. Summary of questionnaire data

In total 255 questionnaires were collected from local residents. Of these 32 were returned uncompleted or spoilt and were subsequently removed from the data-set

making a total sample number of 223 (Table 6.1, Appendix A). The table also shows that sample sizes compare well across all three sites.

The postal survey returned three questionnaires uncompleted with notes attached. These notes explained that the respondents felt that they had not lived in the area long enough to answer the questions. For instance, one respondent who came originally from Latvia had lived in St Agnes for four years (SA126). In retrospect, a line could have been added to the questionnaire to state that the views of all were instructive regardless of time lived in the area.

The majority of the spoilt questionnaires were collected from a drop-box placed within the Minions Heritage Centre. Of these 20 were spoilt by children scribbling and drawing pictures on them (the summer of 2008 was particularly wet and with very few places to shelter on the moor the questionnaires clearly provided drawing paper with which to entertain children). A further eight questionnaires were spoilt, by presumably, the same individual returning during a two-week period during August 2008 and writing obscene and offensive comments on them. These comments were sexual in nature and suggested that the research was a pointless exercise. This reaction may be indicative of misogyny or antagonism towards outsiders/academics/the heritage industry. At the other end of the spectrum a respondent who completed a questionnaire in the Royal British Legion of St Just composed lines of poetry in response to the questions and included a home address to presumably facilitate further contact (68 year old retired male from Botallack – B26). Despite the effort put into responding, this questionnaire, unfortunately, could only be treated as spoilt. Furthermore, five respondents failed to note the PTO request and only completed the first page of the questionnaire.

### **6.2.2. Collection methods and return rates**

Table 6.2 (Appendix A) shows the frequency (by site) of the questionnaires returned by collection method (not including spoilt and uncompleted questionnaires). The return rates are also given by percentage. Table 6.2 shows that overall a combination of varied survey methods proved successful in generating a relatively large amount of data.

Different data collection methods have their own merits and drawbacks. Fink has noted that postal surveys, that include no incentive to return the survey, usually achieves around a 20 percent response rate (1995d: 14-15). This data, with an overall response rate of 20.2 percent, compares (almost) exactly with Fink's statistical prediction. Although expensive the postal survey yielded reasonable results and is of benefit in providing random selection.

The use of drop boxes in public places proved effective in generating data. However this method of data collection was substantially assisted by members of staff in libraries and museums who were willing to distribute the questionnaires; staff in St Agnes Library, St Agnes Museum and St Just Library were particularly helpful. Data collection at Liskeard Public Library was ineffective, with the questionnaires relegated to a windowsill where library users were unlikely to see them. The issuing of large envelopes for return by post enabled continued collection after fieldwork on-site.

The most time-consuming data collection method entailed the distribution of questionnaires around local shops and businesses. Although in total only three shop/business owners or employees declined questionnaires, the return of forms often involved repeat visits or eventually the issuing of stamped-addressed envelopes for postal return. Nevertheless, the method created a reasonable amount of data, and the personal contact produced a high return rate; additionally the method proved valuable in building local contacts and information on the local area emerged from such visits, indeed business keepers and shop-workers often appeared very well-informed on local development issues.

The distribution of universal questionnaires via car windscreen wipers produced a small amount of responses from local residents (a much larger amount of county and out-of county data was collected). Distribution was expensive and relied on concentrations of parked cars to be particularly effective, hence the busy car-parks at Minions proved the most productive, whilst at Botallack and St Agnes many local people walk to the site from the neighbouring hamlets and villages. Overall, the response rate to the return of questionnaires by windscreen wiper method was quite good (26.0 percent including county and out-of-county responses). Whilst

some spoiling due to inclement weather was expected, some respondents returned questionnaires after drying them out.

After a feature on the research in the newsletter of the Cornwall Archaeological Society, four members of the Society requested questionnaires which were subsequently received electronically. Of these four were resident within the case study areas.

### **6.2.3. Response rates to questions**

Table 6.3 (Appendix A) shows the response rates to the demographic questions on the questionnaires whilst Table 6.4 (Appendix A) shows the response rates to the site-based questions.

Response rates to the questions were overall very good indicating that the questionnaire design was clear and well structured. In the demographic set the least favoured question was on the respondents' level of highest qualification whilst within the site-based set the question "Do you think that WHS is a good thing or a bad thing?" produced the lowest response. It is possible that even with a 'Don't know' option respondents were unsure how to answer, perhaps due to the youth of the World Heritage Site.

### **6.2.4. Demographic profile of the sample by key variables**

The following section discusses tables of demographic data (presented in Appendix D) gathered from the questionnaire survey in order to describe the characteristics of the respondents who form the local sample. Where relevant, this discussion also includes explanation of the coding of variables.

#### **6.2.4.1. Sex (Table D.1)**

The local sample compares favourably to expected data, with slightly higher responses from females than males; however, there is no problematic weighting in the sample in terms of sex differentials.

#### **6.2.4.2. Age (Table D. 2)**

During research planning the best available source of information on the Census was through the Webpages of Cornwall County Council (2007a). Within this, data on age was categorised according to the following age bands: 16-19; 20-29; 30-59; 60-75 and 75 and over, and hence the same bands was adopted during the design of the questionnaires. Subsequently, more detailed information giving age by year, rather than age band, became available through the Office for National Statistics (ONS). Therefore, whilst the banding reflects the Cornwall County Council categorisation ONS data was used to analyse the age of respondents.

Table D.2 shows that the local sample is under-represented by the younger age groups (16-19 and 20-29) and over-represented by the 60-74 age groups. There are very low (or even zero counts) at all sites for the younger age groups. The other age groups compare well.

#### **6.2.4.3. Occupation and economic activity (Tables D. 3 and D. 4)**

Data regarding occupation has been used in two related ways, firstly to analyse occupation type (Table D. 3) and secondly, economic activity (Table D: 4) (including data on those who are retired, unemployed or sick). Data on occupation was categorised according to Standard Occupational Classifications (SOC 2000) which are maintained by ONS. ONS classify occupations according to the following major groups: a) managers and senior officials, b) professional, c) associate professional and technical, d) administrative and secretarial, e) skilled trades, f) personal service, g) sales and customer service, h) process, plant and machine, and i) elementary occupations. SOC 2000 does not provide coding for economic inactivity. As SOC 2000 codes were also used to classify the Census a comparison between the sample and population was straightforward.

Coding for economic activity/inactivity was based on the following Census classifications: a) economically active (which corresponds broadly to the occupation data discussed above), b) unemployed, c) student, d) retired, e) looking after family/home, f) permanently sick/disabled, g) other, and h) economically inactive.

Although there is a degree of variability across sites, Table D.3 shows that data is biased towards higher counts in the professional and technical occupations counterbalanced by lower counts for elementary, manual and skilled trades. Table D.4 shows that the sample compares favourably to the population in terms of the ratios of economic activity and inactivity. However, the observed economically inactive sub-categories are weighted heavily towards retirees (which correlates to the high counts in age band 60-74 discussed above, see Table D.2). Consequently this creates a patterning of slightly deflated counts in the other inactive categories and here the sick/disabled category is notably low.

#### **6.2.4.4. Qualification (Table D. 5)**

The Census adopted an approach whereby respondents indicated the numbers of qualifications held within the following six categories (ONS, UV24):

- No                    No qualifications.
- Level 1            Highest qualification attained was 'level 1'. Level 1 qualifications cover: 1+'O' level passes; 1+ CSE/GCSE any grades; NVQ level 1; or Foundation level GNVQ.
- Level 2            Highest qualification attained was 'level 2'. Level 2 qualifications cover: 5+'O' level passes; 5+ CSE (grade 1's); 5+GCSEs (grades A-C); School Certificate; 1+'A' levels/'AS' levels; NVQ level 2; or Intermediate GNVQ.
- Level 3            Highest qualification attained was 'level 3'. Level 3 qualifications cover: 2+ 'A' levels; 4+ 'AS' levels; Higher School Certificate; NVQ level 3; or Advanced GNVQ.
- Level 4/5        Highest qualification attained was 'level 4/5'. Level 4/5 qualifications cover: First Degree, Higher Degree, NVQ levels 4 and 5; HNC; HND; Qualified Teacher Status; Qualified Medical Doctor; Qualified Dentist; Qualified Nurse; Midwife; or Health Visitor.

- Other Had other qualifications but the level of those qualifications was unknown – includes other professional and vocational qualifications.

This system was simplified and respondents were asked to write in the highest qualification that they held, rather than the number and types of qualifications they held. For the purposes of data comparison, the categories shown above were compressed into the following four categories: a) no qualifications, b) O and/or A Level and equivalent (relating to Census Levels 1, 2 and 3), c) degree Level and above and equivalent (relating to census Levels 4 and 5) and d) other. Responses which gave job titles or membership of organisations were codified on *SPSS* as missing responses.

Unsurprisingly, the sample follows the demographic trends discussed above in regards to occupation and economic activity (see Tables D.3 and D.4). The sample comprises of higher than expected counts in the degree level and other professional qualification category. In turn there are lower than expected counts from individuals in the no qualifications or O and/or A Level and equivalent categories.

#### **6.2.4.5. Cornish identity (Table D.6)**

A decision was made to explore Cornish identity through place of birth, rather than through a tick-box approach, i.e. Cornish, English, British or other. The problem with the latter approach is that respondents might tick more than one option leading to mixed or hyphenated identities making analysis more difficult. Instead, place of birth leads to two distinct categories ‘Born in Cornwall’ and ‘Not born in Cornwall’. This assumes that those born in Cornwall are more likely to consider themselves to be Cornish. It needs to be acknowledged that some respondents who were born in Cornwall may consider themselves English, and correspondingly this doesn’t take into account respondents who had been born elsewhere but are ‘Cardiac Celts’ (as discussed in Chapter Two, Section 2.4.5.2.).

The sample contains just under a third of respondents (29.1 percent) who were born in Cornwall. Cornish nationality could only be entered on the Census (Ethnicity, UV09) through the category ‘White: British’ and then writing the word

Cornish next to the sub-category 'Other'. Forms returned from those who wrote-in 'Cornish' produced a figure of 6.8 percent of the population (Cornwall Council 2009b: 27). A Quality of Life survey undertaken by Cornwall County Council in 2007 produced a significantly higher figure. A random postal sample, including a tick-box Cornish option, drawn from residents in the various Community Network Areas (CNAs) of Cornwall found that 25.9 percent of the population considered themselves Cornish. Data also suggested variability across the CNAs; 39.5 percent for the Penzance CNA (which covers West Penwith wherein Botallack is located), 20.9 percent for the Liskeard CNA (six miles distant from Minions) and 35.4 percent for the Camborne/Redruth CNA (the appropriate CNA for St Agnes) (Cornwall Council 2007b: 7, 23-24). This sample therefore more strongly reflects the Quality of Life Survey than the 2001 Census, and the lower percentage in the Census reflects the lack of a specific 'Cornish' option. Therefore, the Quality of Life data in this case is taken as being more robust.

#### **6.2.4.6. Connection to mining (Table D. 7)**

The Census does not contain data on relationship to particular types of industry beyond that outlined in the occupation section above (see Section 6.2.4.3.). Connection to the mining industries was established through write-in responses. Through content analysis using *Atlas.ti*, different types of connectivity were identified including familial, past professional, current professional, research and leisure. Write-in comments showed that those who answered 'Yes' to a connection tended to be either employed, or formerly employed with the mining and extraction industries, or had relatives/ancestors who had been employed in the industry. For the purposes of this research a connection to the mining industry had to be more than geographical location, for example, living in a former mine building was coded as a 'No' response as otherwise all responses would have been categorised as having a connection through residency within the World Heritage Site. The data was also analysed statistically through SPSS in terms of two categories 'Connection' and 'No connection'. Table D.7 demonstrates that the local sample contains approximately a quarter of respondents (24.4 percent) who have a connection to the mining industries. No comparable data on connection to the mining industries exists for Cornwall.

#### **6.2.4.7. Time lived in Cornwall**

The Census does not contain data on the length of time that residents have been living in the county. Table D.8 shows that the profile of the sample by time lived in the county is evenly spread with the mode appearing in the one month to nine years range.

#### **6.2.4.8. Summary of demographic data**

Taking all 223 questionnaires as a group the following demographic characteristics emerge. A comparison of observed to expected counts shows that the local sample has 'goodness of fit' in terms of the ratio of males and females (Table D.1); overall, data is weighted disproportionately towards older age groups (60 to 74 year olds); 85.9 percent of the sample is aged between 30 and 74 (expected percentage would be 73.1 percent) leading to an under-representation of younger people and the very elderly (75 years plus) (Table D.2).

Just over a half of respondents (58.3 percent) were economically active and over a third (35.3 percent) of respondents were retired (Table D. 4). A comparison of observed and expected counts reveals that the sample is weighted towards those in upper social status employment; with the exception of respondents who fall into the category 'Sales and Customer Service' the sample is under-represented in terms of those employed within lower skilled, trade and manual occupations (Table D.3). Furthermore, the sample is biased towards those who are highly educated. Just over half (55.5 percent) of respondents were educated to degree level or equivalent (the expected percentage for the local sample is 20.2 percent). Overall only 5.2 percent of respondents had no formal qualifications, this forms a clear under-represented sub-group as the expected percentage for the local sample is 26.1 percent (Table D. 5).

Nearly a third of respondents were born in Cornwall (29.1 percent) (Table D. 6) whilst roughly a quarter (24.4 percent) of respondents had a connection to the mining industries (Table D. 7). The sample is evenly spread in terms of the time lived in Cornwall from a few months or years to long-term inhabitation.

#### **6.2.4.9. Comparison to other surveys**

In order to ascertain how typical it is, the demographic profile of this sample can be compared to other surveys, including general heritage access data for the UK (collected by national agencies), museum surveys, and survey profiles at industrial heritage sites in the UK.

The report on costs and benefits of WHS by PricewaterhouseCoopers (2007a) unfortunately does not provide details of the demographic profile of residents (from six selected WHS areas) who took part in a postal survey (see Chapter Three, Section 3.3.3.). English Heritage's recent survey (2011b) on public attitudes to industrial heritage (see Chapter Four, Section 4.3.1.) (data collected through an online survey) obtained a representative sample and hence few demographic details are provided. However, details of the time that respondents had lived in each region are provided. For the southwest region six percent had been in residence for less than ten years, 48 percent for between ten to 30 years and 46 percent for more than 50 years. Interestingly, when the respondents were asked whether the area they lived in was well-known for a type of historic industry only nine percent indicated mining (including one percent tin/copper/lead mining). I would therefore question how many residents of Cornwall took part in the survey; however, data is not available at county level. Therefore, neither of these national surveys provide comparative data.

More usefully, since 2005 DCMS (along with four partners: Arts Council England; English Heritage; Museums, Libraries and Archives Council and Sport England) has commissioned an annual survey on different aspects of leisure, culture and sport in England, collecting high-quality demographic information on respondents (2010-2011 sample size was 14,102; households were randomly selected for face-to-face interviews). Usefully the 2010-2011 survey contains data on the proportion of the sample who have visited a heritage site in the previous year. The characteristics of these visitors is as follows: 43.1 percent were male and 56.9 percent were female; 58.1 percent were classified as being from upper socio-economic groups (taken to mean ABC1s i.e. the lower to upper middle classes) and 41.9 percent were classified as being from lower socio-economic groups (taken to mean C2DEs). The age profile of heritage site visitors was: 16-24 (9.4 percent), 25-44 (32.1 percent),

45-64 (32.9 percent), 65-74 (14.0 percent) and 75 plus (11.7 percent). One of the conclusions drawn from this data is that the under 24 age group and the over 75 age group are less likely to have visited a heritage site (DCMS 2011b).

Moving down in scale to surveys of specific industrial sites, a number of visitor surveys of industrial heritage sites provide comparative data, many of which focus on industrial sites in Wales. In 1993 Prentice *et al.* (1993) conducted a visitor survey at the Rhondda Heritage Park (coal-mining) and interviewed a sample of 403 visitors to the park including holiday tourists and day-trippers. 75.7 percent were from non-manual households, 32.0 percent had a first or higher degree as their highest formal educational qualification. Reflecting the museum data discussed above, the visitor profile of the park was middle-aged, with 32.8 percent of all interviewed aged 35-44 years and 20.8 percent aged 45-54 years. However, a later albeit smaller survey, by Dicks at Rhondda Heritage Park in 1995 somewhat challenged Prentice *et al.*'s data. Dicks' sample showed a more diverse social profile: only nine percent were from social grades A and B, whilst the largest groups were C1s and C2s; 13 percent had a degree whilst 40 percent had no qualifications. Dicks suggested that the previous sample was biased as collection was according to head of household rather than on an individual basis (Dicks 2000: 206-207). Meanwhile, the connection between social class and museum visiting was discussed by Dicks (2000) drawing on data from a number of earlier published studies regarding museum visitation. Data suggested that ABC1s are more likely than other social classes to visit museums (Selwood *et al.* 1995). Furthermore, museum visitors tended to be in the 34-64 age bracket and to be in full-time employment or retired on company pensions (East Midlands Museum Service 1996).

Interestingly, a survey of three Welsh industrial heritage attractions (the Welsh Slate Museum, Dolaucothi Gold Mine and Cefn Coed Colliery Museum) found that whilst the managerial and professional classes were generally over-represented at heritage sites (for example ecclesiastical sites or castles) there were a higher percentage of skilled and manual class visitors at industrial sites (Light and Prentice 1994). Similar findings were made by Divall (1988) who concluded that visitors to the National Railway Museum were closer to the socio-economic average of the general population than is commonly the case with other museums.

Hannigan has noted that in many surveys certain groups tend to be under-represented including the very rich, very poor, young adults and working housewives (Hannigan 1986: 48). Whilst the visitor survey data outlined above is the product of different methods (for instance, face-to-face interview, online survey and postal survey), and in part concerns visitors to ticketed attraction rather than local residents who live next to and among relict industrial remains in open landscape, it is nonetheless clear that survey data contains certain parallels with this research.

None of the datasets reflect a particular trend in sex, although heritage sites (and therefore heritage site surveys) appear more likely to attract the retired and the middle-aged, rather than the young or the very old. The surveys outlined above do, however, suggest that industrial heritage sites may appeal to those from the skilled and working classes. The research data collected for my project therefore appears to be typical in terms of age profile when compared to other comparative data; however, it is weighted towards those with higher social status employment/higher level qualifications.

#### **6.2.5. Quantitative site-based data from the questionnaire survey**

Tables of quantitative site-based data, gathered from the questionnaire survey are presented in Appendix E. Coding was predetermined and overall this data is clear. There are, however, a few points of note. Table E.1 presents data on 'best description'. Respondents were asked to pick one of the following eight categories to best describe the mining area: archaeological; industrial; mining; cultural; natural; heritage; and seascape. Although it could be argued that 'mining' and 'industrial' do not make discreet variables, the point was to consider nuances between the two similar terms. The extent to which respondents were biased in choosing 'mining' as a category (as the questionnaire focused on mining) is unknown, however, Table E.1 shows that although 'mining' as a category is the overall mode (30.5 percent) there is differentiation between sites, for example, the mode descriptor at St Agnes is 'heritage' (31.7 percent). Likewise it is difficult to say how many may have chosen 'heritage' or 'mining' because they had prior knowledge of the Cornish Mining World Heritage Site. The category seascape only applies to the sites of Botallack, Hayle and St Agnes but not Minions (the latter

being located inland). A problem with responses arose as a number of respondents (14.3 percent of the total), ignored instructions and chose more than one category. These responses were coded as missing responses and removed from the dataset.

With the question on the future of Cornish mining sites, respondents could choose options a-d (preserve, re-use, decay or other) and were afforded space to write-in comments (Table E.7). On analysis of write-in comments for option d) 'Other' a combination approach was advocated. In hindsight, a further category 'demolition' could have provided a further option; however, demolition was not suggested as a write in response through the 'Other' option.

Some of the sample sizes vary in size as some questions did not appear on early versions of the local questionnaire (Table E. 3 'Physical change'; Table E. 4 'Attitudinal change' and Table E. 5 'Knowledge of WHS'). Furthermore, questions on physical, attitudinal change and support for WHS (Table E. 6) were not part of the universal questionnaire design (20 responses on the universal questionnaire were from local residents). However, the sample sizes from sites still compare well and the data still forms a reasonable sample. Additional write-in comments are presented in Appendix F.

### **6.3. Data from interviews**

Tables summarising details of the interviewees including names (unless anonymity was requested in which case 'informant' is used), location of interview, date of interview and relationship to site are presented in Appendix G.

In total 32 interviews were conducted including 15 in Botallack, seven in Minions, seven in St Agnes and a further three with individuals who had a county-wide remit. Two informants withdrew their consent for the interview to be used within the research (St Agnes and Minions); one further tape (a short interview of 20 minutes) was lost during fieldwork (Minions) and another tape was found to be damaged after interview (St Agnes). This means that the total interview data amounts to 28 transcripts (see Appendix G).

## **6.4. Data from fieldnotes**

Fieldnotes were also made during each season of fieldwork and collections of photographs taken. These photographs can be viewed on *Flickr* ([www.flickr.com/photos/orangemining](http://www.flickr.com/photos/orangemining)).

## **6.5. Secondary data**

Additionally secondary data was drawn from three oral history archives – the Cornish Audio Visual Archive (CAVA) (held at the Institute of Cornish Studies, University of Exeter) which contains recordings relating to Cornish mining heritage (nine transcripts, interviews in 2006), Geevor Mine Oral History Archive (16 transcripts, interviews from 2002) and interviews conducted as part of the Minions Survey (nine transcripts, interviews in 1987/1988 (Sharpe 1989)). The total amounts to 34 transcripts. A summary of oral history data is given in Appendix G.

Council minute books from Linkinhorne Parish Council and Liskeard Town Council (Minions), St Agnes Parish Council and St Just Town Council (Botallack) were also consulted for relevant data and notes taken. Appendix G gives details of the minutes by date range and access. The notes taken are not available in this thesis except where used for illustrative purposes. Secondary data in the form of site advertising, postcards, leaflets and other merchandising ephemera were also collected. Newspaper archives dating from 1981 to 2007 were also accessed at Geevor Mine and notes taken. These data are not available in this thesis; however,

## **6.6. Research bias**

Research bias is an inevitable part of research. The complexities of generating data inevitably leads to research bias - some foreseeable and other unanticipated bias, all of which the researcher might hope to avoid. Some of these biases have been identified as systematic and non-compensating and hence cannot be reduced by an increase in sample size (Hannigan 1986: 48), for others research methods were adapted in order to try to mitigate against them.

The sample drawn from the questionnaire survey is clearly biased in a number of ways - towards those who own/drive cars or are car passengers and those who frequent public places such as shops, libraries and museums. The sample is also biased towards commercial business owners and workers (and as an occupation group this is reflected in subsequent demographic data – see Appendix D Tables 11 to 16) however this research method produced a good fit between sample and population. The sample is also notably highly educated (55 percent holding a first degree or equivalent) which could reflect a bias within the self administered questionnaire methodology. Ongoing reflection during research, and a close examination of data collected, has led to the identification of a number of research biases as discussed in more detail in Table 6.5 (Appendix A).

### **6.7. Evaluation of data**

Care has been taken to develop a rigorous sampling strategy and to embed triangulation within the research methodology in order to generate enough data to draw adequate conclusions. The questionnaire sample generally reflects the opinions of the highly educated middle-class. There is an under-representation of younger residents and the very elderly and occupation, economic activity and qualification levels reveal an over-representation of respondents with high level qualifications/higher employment status.

The trend of a low younger age count was identified at the end of the first year of fieldwork (2007) and steps were taken in 2008 to target specific younger age groups (for instance youth clubs and surfing schools) but despite efforts this had minimal success. It may well be that certain age groups are inherently more difficult to survey for a multitude of reasons. Younger age groups are less likely to be registered on electoral registers and (perhaps) less likely to visit libraries and museums (except on school trips): from other data they appear to be less interested in visiting heritage sites and, for this research, are more likely to be car passengers than owners/drivers. Retirees may be more inclined to complete questionnaires/spend time in public venues or be more interested in visiting industrial/heritage/mining sites, whilst the very elderly may have mobility issues

Overall it is clear that the collection methods were not entirely successful in achieving a representative sample and data is not perfect. However, comparative surveys reflect similar patterning and comparable issues. The sample does, importantly, reflect long-term trends in the profiles of visitors to heritage sites and museums in the UK. It is clear that these are the people who are typically interested in heritage, and who visit and care about heritage sites. The questionnaire data is also supplemented by many other varied sources of data and, overall, is robust enough to draw adequate conclusions whilst being clear about their limitations and characteristics.

## **6.8. Chapter summary**

In this chapter I have detailed data collected during fieldwork, with a focus on primary data drawn from the questionnaire survey in order to interrogate its 'goodness of fit' with the population. The questionnaire survey achieved a typical response rate and generated a large amount of data. Comparison to published census data has confirmed that questionnaire data has 'good fit' in terms of male/female ratios; however, it is weighted towards older residents and those from upper social status occupations with higher qualification levels.

National and regional heritage access surveys exhibit some differences in their demographic profiles of visitors, for instance, surveys from Wales have indicated that visitors from lower social status occupations may be more likely to visit industrial sites. In general, however, heritage access profiles are weighted towards older visitors/respondents and my data therefore appears to be typical in this regard.

In this chapter I have also outlined other types of data collected during my project including interviews and data drawn from secondary sources. During research planning and execution I have attempted to mitigate against research bias through periodic evaluation of methods of data collection, however, some systemic bias remains. Research bias is ultimately an inevitable element of research practice; however the triangulation of different data sets can usefully corroborate or challenge emergent findings and thereby help to reduce such bias.

## **6.9. Introduction to Chapters Seven, Eight and Nine**

The following chapters (Seven to Nine) present the results of data collected from the three case study sites. The first section of each chapter will address present-day perceptions of the mining area through different site descriptors. Examination of roads and paths, as well as observations of signage, heritage interpretation and activity in each mining area, will lead into an analysis of significant features on-site. Next, each chapter moves back through time to detail local residents' memories of landscape and attitudinal change over the last fifty years. In addition an episode of landscape change, considered significant from a public perspective, will be highlighted in order to exemplify conflicting values which surround Cornish mining landscape.

Each chapter then changes tack in order to discuss data on the World Heritage Site. The importance of the sites will be quantitatively measured, and knowledge of inscription and perceptions of costs and benefits examined. Bearing in mind the youthfulness of the inscription this section also provides preliminary results on impact. Each chapter ends with a discussion of respondents' opinions regarding future management of Cornish mining sites in terms of their re-use, preservation or decay.

## CHAPTER SEVEN: BOTALLACK

### 7.1. Site descriptions

#### 7.1.1. Botallack is...

Respondents were asked to provide short write-in descriptions of the Botallack mining area. Selected examples of these (from a sample of 82, see Appendix D) are collated in the extract below in order to express Botallack's present day 'sense of place' from a local perspective. These extracts have been deliberately dichotomised into firstly, extracts which largely reflect positive attributions of place (skill and bravery of the miner, sublime setting and natural beauty) and secondly extracts which reflect negative attributions of place (poverty, decline and dereliction, danger, pollution and ugliness):

[Botallack is] "a very unusual ex industrial site, bring perched high above the sea. The remnants of mine workings that can be seen on rocks below the cliff are awe-inspiring as is the thought of men working in tunnels that went under the sea-bed" (30-59 year old male, artist - T8). "A rugged coastal area with the scars and interest of historical mining" (58 year old female, care home cook and holiday property owner - B71). "Mixture of beautiful landscape, and sea and industrial images and history of a hard life" (62 year old female, retired social worker - B66). "Dramatic landscape with evidence of mans (sic) ingenuity and history" (40 year old female, health care assistant - B27). "A magnificent natural setting that tell (sic) a story of the skill and courage of my forefathers" (65 year old male, minister - B92). "A great place in the winter! Without the tourists!" (54 year old male, builder/miner/coastguard' - B110).

[Botallack is] "rugged small communities peaceful poor" (38 year old male, teacher - B120). "Run down and ruined by abandoned mines" (47 year old male, decorator - T33). "Industrial wasteland - danger past & present" (71 year old female, retired - T9). "Beautiful and rugged, enhanced with evidence of mining activity - engine houses and amazing

chimneys, but also afflicted by the enormous areas of mining waste on the cliffs where little can grow as it is full of poisonous heavy metals” (50 year old male, builder/artist – B68). “Needs a bit more development” (72 year old female, retired - B20). “Poor – run down N.T. need to spend sum (sic) money and put it back more as it woz (sic) in working times” (45 year old male, carpenter/joiner - T34). “Now-spoiled by the restoration work, removal of burrows and endless out-of-proportion mine collars” (60-74 year old male, cafe-owner - T44).

### **7.1.2. Keywords**

Content analysis of the write-in descriptions produced the following top-six keywords for Botallack:

Beautiful. History. Industrial. Landscape. Mining. Rugged.

### **7.1.3. Best descriptor: A ‘mining’ landscape**

Data from the questionnaire survey shows that Botallack is best described as a ‘Mining’ Landscape (44.4 percent), followed by ‘Natural Landscape’ (20.0 percent) and ‘Heritage Landscape’ (15.7 percent) (Figure 7.1, Appendix A, see also Table E.1, Appendix E). The data indicates that even though Botallack is perceived by some to be ‘natural’ the industrial dimensions of the site take precedence. It can also be noted that the more specific term ‘mining’ is preferred over the more general terms industrial, archaeological, heritage or cultural.

### **7.1.4. Roads, paths and signs**

On the B3306 coastal road, approaching Botallack there were no signs to indicate the mines, and no signs within the hamlet itself. Those who had come from nearby St Just may well have driven or walked past paintings in art galleries depicting the famous Crowns engine houses, if they wanted a small and cheap reproduction the local newsagent or post office sells postcards of the Crowns but in terms of ‘sites’ the signposts in St Just point the uninitiated, instead, towards Cape Cornwall. There are no external signs advertising the WHS, the Tourist Information Centre (located in the public library) contains information and the St. Just-in-Penwith

Area Guide (52 pages) is freely available at the newsagents and contains ten pages on the WHS.

Those visiting the site therefore had to rely on pre-existing knowledge, a map or the National Trust guidebook. Once past the settlement's granite-built properties an unmetalled track leads to the mining area and on-site drivers have a choice of parking areas: pulling up on the verge, or parking in a rough car park (next to the Count House) or on the terraces of the former dressing floors closer to the cliffs (see Figure 5.2, Appendix A for an aerial view of the site). With better sea views the latter option was the more popular place to park on site (Figure 7.2, Appendix A).

Inside the Count House a small number of interpretation boards present information on the area's mining history, geology and fauna and a selection of relevant leaflets are available, however, the majority of the building forms offices for the National Trust staff and an art gallery/community event facility. Outside the Count House there is a notable lack of information and signage. Indeed, the only signs on site are coastpath signs, a memorial to the miners at Wheal Owles (which takes some finding) and a small sign indicating whether or not the visitors' centre in the Count House is open.

According to local resident and Geevor Mine guide, Janet Quinton, one of the "main uses of the site is dog walking and horse riding". From observation during fieldwork the site gets busier at weekends, early in the morning and early evening with locals walking their dogs. Sunny weekend weather also brought picnickers and families to the site whilst other users were seen engaging in bird watching, painting and photography. In the summer these regular users are joined by day-trippers and holidaymakers. Some visitors to the site (who parked on the dressing floors) were observed enjoying the experience of being on-site without getting out of their cars, whilst others chose to picnic alongside their car. In both scenarios visitors were extending their private space (the car) into the site and having an experience which was mediated by the environment and technology of the car, for example, by light, sound (radio) and temperature. However, during fieldwork the site was rarely very busy, it was usual for there to be three or four cars at most as well as a few coastpath and dog walkers passing through by foot. In wet and foggy weather, which is common in West Penwith, the site was often deserted.

However, in better weather, visitors have the opportunity to explore the site via a crisscrossed network of tracks, paths and rough shortcuts. According to one (anonymous) informant, many of the paths connect to farms and hamlets whilst others had long-gone historical use. Some, for instance, disappear over the cliff-line to embarkation points for stone hacked from quarries. Other 'paths' turn out to be the remnants of leats and water systems and some have peculiar histories. South of the arsenic labyrinth is a buddle yard which is entered via a set of large granite steps (Figure 7.3, Appendix A) and is bounded on the south by a granite wall consolidated and decoratively capped with quartz blocks. The buddle yard is a favourite place of artist David Kemp, who has workshops on-site next to Allen's shaft. David explained that the route to the buddle yard had originally been a rabbit path which was enlarged by workmen pushing wheelbarrows during conservation works,

[...] this whole field here is a field full of buddles so the gravity is laid out geometrically across the site, the settling tanks and the buddles. We're walking through in a strangely eccentric way that we're wandering and it seems like a path. The only reason why the path is here is when they finished restoring all this stuff they had a little time and money left. Instead of just backing up they re-traced their tracks and where they'd left lines of scaffolding planks to run their wheelbarrows up and down to get the masonry in and out they put some bits of stone in to make some steps.

Therefore, the path to the buddle yard and the steps are accidental elements of Botallack's post-industrial phase and not part of the original yard. Botallack is a vertiginous site, set out across a number of terraces, and exploring requires some steep climbing and scrambling. A flight of steps is unusual on site and to some extent enhances the entrance to the yard. Nearer the car parks well-trodden paths lead to the most popular parts of the site with most footfall visible between the car parks, the arsenic labyrinth, the cliffs above the Crowns (where the famous engine houses can be viewed) and the path to the Crowns (Table 5.1, Appendix A). According to one informant the paths have reached stasis: there are so many that new ones do not need to be created and given that much of the site is covered in bracken or gorse short cuts are uncomfortable and inadvisable given the dangers of adders and mine shafts.

Indeed, local resident and archaeologist Adam Sharpe (archaeological consultant to the National Trust) explained that the maintaining a degree of visitor discomfort was a deliberate policy as it served to protect visitors' health and safety on site, particularly those who were new to the area:

We get a lot of requests from people like the Coastpath Association, saying 'can you do something about the path surfacing' and we've taken the view that you might get someone who's jumped in the car in London or Birmingham, driven down here and stopped at a Happy Eater or something. If they got out and they got into a pristine car park and from that followed beautifully surfaced paths they would be lead to edges of cliffs and in a way the sort of semi-hostile surfacing says the ground is rocky and uneven, this says to them 'look you've got to look after yourself here'. And it's fairly obvious it is a wild environment.

According to one (anonymous) informant, the wildness of the site also serves to [REDACTED] With the lack of signage, there is an idea that those coming onto the site should 'work' towards an understanding of Botallack's mining heritage; this is not freely given. However, the same informant quickly added that [REDACTED] and indeed Cornwall Council are currently developing plans to roll out brown heritage signs across the WHS areas (St Just Town Council, 25 January 2010, Item TC.203).

### **7. 1.5. Walking and sailing around Botallack**

Whilst pausing to take in the view of the Crowns Engine Houses from the top of the cliffs, Adam Sharpe explained why he felt that this particular scene has such a strong appeal (Figure 7.4, Appendix A). The power of the scene, he suggests, lies in the co-existence of perceptions of Botallack-now (natural beauty and the sublime) and Botallack-past (legacy of miner's skill and endeavour):

Here is nature at its most awesome and rugged yet here is man clinging precariously to it and doing extraordinary things with it at the same time, so it's combination of the awesome and the romantic and the natural and also man's ingenuity and industry and all those sorts of things [...] that's why people still come down here, because they come

down here and they love the rugged, natural scenery and then they see the two engine houses and they think 'how on earth did they get those down there?' And how awesome it was that men were working out under the sea. The whole thing links together.

Within the extract, it is notable that Adam also uses the adjectives 'rugged' and 'awesome' to describe what he believes is a common reaction to the view, and in so doing mimics the site descriptors and key words (Sections 7.1.1. and 7.1.2. above). Botallack (or rather the Crowns) might be beautiful, awesome and rugged however interviews with local informants strongly indicate that such perspectives are tempered in the minds of local people by the harshness of the environment and knowledge of the harshness of the lives of miners in the past. Botallack is an isolated location, sounds on site typically include seagulls, waves against rock, voices (but you can't necessarily see people), at times a fog horn and an occasional car. Its far westerly location and precocious Atlantic weather systems can create a peripheral and vulnerable experience, as one (anonymous) informant noted:

[REDACTED]

Another informant, David James a local bookshop and cafe owner has firsthand experience of the Atlantic weather systems. On a walk around Botallack he recalled his first memory of seeing the chimney stacks and engine houses of Botallack from the decks of a ship whilst stormbound off the Cornish coast in December 1965:

I was at sea with the Fishing Protection, small ship, mine-sweeper. We were storm bound at Penzance. This was 1965. It was blowing a huge gale and we were due to go to Bristol and eventually when the wind went down we came round this coast and we went really quite close in. It was an awesome coast and there were these huge chimneys and mine buildings on the skyline. My impression of that was how bloody awful it was. It was appalling, bleak, hard, scary. The miners must have had the

most hellish life. It was dramatic – unbelievable! Especially in that weather. Especially at that time.

Botallack is also run-down, poor and was a hellish place to work. The “hellish” lives of miners was reflected on most commonly during interviews in relation to the ‘old men’s workings’ – a term used to describe the period before mechanisation when miners would descend and ascend the levels of the mine by ladder (see Chapter Two, Section 2.4.3.). Aside from being out at sea in a storm reminders of the daily ‘hell’ that miners in the past went through is present within local churchyards with gravestones indicating early death, it may be gleaned from history books, storytelling and from experiences of exploring underground workings. Indeed, Janet Quinton a guide at Geevor Mine suggested that “you do get your engineers, who are anoraks about looking at the winders and things but the bulk of people are interested in the human side. What the miners went through in their daily work and their social lives” which she suggests is poorly interpreted at mine sites.

In the following extract, retired- [REDACTED]  
[REDACTED] recalls his first trip underground at Levant Mine (the number of the level denotes its depth in 100 feet increments)- [REDACTED]

[REDACTED]

[REDACTED]



Such dire histories are commonly reflected in site descriptors that speak of slow death by respiratory disease or quick death by mining accident. Indeed, for some informants the Botallack cliffs are peopled by ‘ghosts’ of dead miners. During interview at Geevor Mine, Fiona Young, the museum’s Education Officer, reflected on the 1893 Wheal Owles disaster (see Chapter Six, Section 6.1.5.):

I think the bodies of some miners are still down there, I think it flooded. So you do get a sense of what has come before and I like to walk around there on my own - I don’t like to walk around there with someone trying to hold a conversation with me because I actually get this very strong sense of people and a life that has gone.

The temporal closeness of the industry means for some their view of mining is personal, their perceptions coloured by family history. Within the first few minutes of starting the walking-interview around Botallack, retired teacher Adrian Rodda, explained that he is part of the first generation within his family not to be involved in mining and he admitted that his attitude to mining is scarred by the financial and physical dangers which his family experienced;

I was born in 1943 and particularly my father’s family were the ones who were involved in tin streaming and that’s a family business. So my attitude towards mining and mining sites is probably very strongly influenced by the fact that their business went bankrupt; by the restrictions that that put on the family; by the Victorian attitudes that went with it; by the attitude that my mother’s family had who were not involved in mining and were always very grateful they never had to be involved because of the physical dangers and the financial dangers too I think. I recall my grandmother on my mother’s side talking about when they heard the sirens go and she described all the women from the village and the area rushing to the mine to find out what had happened – the stress and the worry there’d been an accident of some sort and I

suppose I was brought up with stories of mining disasters [...] at the memorial [Wheal Owles] there we will see people who were killed of the same name because the same family got together and they would be the *tributers* who bid for work, or the *tutters*. And the accident that was here at Botallack on the big incline shaft when the carriage gave way and eight people were killed there were brothers, fathers and sons involved in it - it was very close on a tin stream. I can't look at these landscapes without thinking of the people.

If Adrian's perspective is coloured his memories are also coloured – he went on to comment that his over-riding memory of his family's tin streams were “that they were red, that everything smelt metallic and when my father came home from work, his clothes were covered in red dust and he had this sort of metallic smell about him all the time” referring to the red dust and red mud because of the iron in the soil. Indeed, if Botallack is associated with death, then the colour red aptly symbolises danger on site. The accidents at Wheal Owles, the Boscawen Incline and neighbouring Levant mine still 'haunt' the imagination of local residents particularly when they walk around the cliffs. Council minutes (12 October 2009) record plans to mark the 90th anniversary of the 1919 mining disaster at neighbouring Levant Mine (which killed 31 men) through a memorial service and the laying of flowers by local schoolchildren (BBC 2009a; St Just Town Council 2009).

#### **7.1.6. Significant features**

The choice of which path to follow obviously influences experience of the site and features seen, depending on the path you take your experience of the site will lead to very different encounters, some intimate and others offering extensive views, whilst other paths appear to go 'no-where'. John Negus, a guide at Geevor Mine made an important point during interview. He said “when you're walking the footpaths where you've actually got to look at where you're going”. He doesn't mean the view; he means you need to look at the path or more specifically at your feet. This should mean that the most significant feature on site, if one goes on the basis of most used and most viewed, is the network of roads and paths, but it isn't. John also suggested that in order to be noticed a feature must be “small enough to

be accessible at a glance” and the following analysis reveals that significant features on site (from a public perspective) focus on strongly structured elevated features which can be clearly against the sea/sky.

Only two respondents listed the coastpath as a significant feature (40 year old female, health care assistant – B27; retired male pilot aged 79 - B84). Out of a total of 103 listed features, the overwhelming majority (80.6 percent) were industrial features. Of these 9.7 percent were mine setts or workings, whilst the remaining 70.9 percent were specific industrial features as shown in Table 7.1 (Appendix A). A further 17.5 percent comprised of natural elements such as sea, cliffs, gorse/heathland, rocks and sea (see Appendix F).

Data shows that the most significant features at Botallack are: the Crowns Mine engine houses; engine houses; chimney stacks; mine buildings; and the Atlantic cliffs. The Cornish word *wheal* is shorthand for mine, and colloquially has come to mean engine house.

Data from the Table 7.1 can also be compared to ‘expert’ perceptions of significance (Table 7.2, Appendix A) , in this case the key features listed on the *National Trust’s Self Guided Walk leaflet to Botallack* (2005) which is available to the public on-site through a small display of leaflets in the Count House.

Despite their proximity to the Count House and the two car parks on site, the headframe of Allen’s Shaft is not listed; neither is Wheal Cock and the count for the early 20th century dressing floors is also low. Mine shafts were listed as key features by a female bar-tender (aged 43 - T35) whilst the response “stone tubes coming out of the ground” (18 year old female, student – B5) was interpreted as meaning mine shafts but could possibly mean chimney stacks. The number of references to the Crowns (engine houses) is notably high.

Write-in comments and interviews throw some light on why certain features are considered more significant. The Crowns are famous: “The fact that the Crowns features on the cover or inside most books on industrial archaeology says it all” (65 year old male, retired head teacher - B79). Furthermore, they are visually sublime and recent restoration work has awarded them added value: “The Crowns are spectacular and the wheals are well preserved” (female gallery manager, aged

30-59 - T14). Materiality is also evident within the following comment made by a respondent who felt that “the old buildings and chimney remains are quite picturesque, contrasted with unsightly waste heaps and concrete remains” (female, 46 year old – T70).

Meanwhile, Fiona Young commented that the chimney stack was iconic because “the protrusion into the skyline is wonderful, the stuff that’s very low to the ground isn’t quite so dramatic as a stack that rises from the earth up to the sky” (Figure 7.8, Appendix A). Local artist Bren Unwin drew inspiration for a set of prints from the arsenic labyrinth, and whilst looking over her portfolio, she remarked that “something like the arsenic labyrinths – the structure is so profound, that structure provides the atmosphere for that print” (Figure 7.5, Appendix A).

#### **7.1.6.1. Naming of significant features**

The way that significant features at Botallack were named revealed, on categorisation, five levels of knowledge, understanding and vocabulary ranging from the demonstration of knowledge of the site’s history, to broad and generic descriptions of mine workings or mine buildings, to the use of analogy and illustration. The five levels, with exemplars, are detailed below:

Level One: Knowledge of the sites history.

Brunton’s calciner; 1860s engine houses; 1900s mineral processing installations.

Level Two: Naming of specific mine setts.

The Crowns; Mines at Crowns; Crowns engine houses; Wheal Owles; Wheal Edward; Bunny surface workings.

Level Three: Awareness of functionality and/or knowledge of mining terms.

Crowns engine houses; engine houses at the base of the cliff; old engine houses; well preserved machine towers; Count House; arsenic flues; arsenic works; mine stacks; mine chimneys; chimney stacks; tall chimneys; old mine stack; stacks; dumps; waste heaps; the mineshafts.

Level Four: Broad and generic descriptions.

old workings of mines; mine workings; ruined buildings associated with the mining industry; stone buildings; derelict buildings; buildings; mining buildings; mine engine houses and buildings; mine buildings remains; ruins of mine buildings; old mine buildings; old mining buildings; repaired mines; the old mine down in the rocks; repaired mines.

Level Five: Analogy and illustration.

“stone tubes coming out of the ground” (taken to mean mine shafts) (19 year old female, student – B5) “these awful buildings shaped (drawing of engine houses)” (30-59 year old male, retired – T21) (Figure 7.6, Appendix A).

#### **7.1.7. Overview of descriptive data**

There are a number of points and themes to emerge from the descriptive results outlined above. Taking the six keywords Botallack is perceived as a beautiful and rugged landscape of industrial (mining) history. It is perceived more strongly in terms of its former mining industry rather and is not (yet) strongly perceived as a heritage landscape. Furthermore, perceptions of Botallack’s ‘pastness’ take precedence over its present day ‘natural qualities’.

Botallack’s pastness also informs perceptions of a darker side to its character. The Atlantic weather systems in combination with a peripheral location make it, at times, a harsh environment – rain battered and isolated. It was also a hellish place to work, a place which is still today strongly associated with poverty, accident and death. The cliffs are haunted by the presence of people from the past, not only the ubiquitous miner as ancestral, but also through names that can be put to this landscape - family members, fathers, grandfathers and names known from memorials and reports of accidents. For some, Botallack is a burial site and a ‘ghosted’ site, and the dead are remembered. In these ways site metaphors fit Alfrey and Putnam’s ‘demonic’ associations of industry (Chapter Three, Section 3.4.2.).

The site is not yet signposted, and outside the Count House there is no interpretation. Out of the two car parks, one official and another unofficial, most drivers prefer to park close to the cliffs, and a few do not leave their cars. The cliffs are replete with paths, those much worn lead to the site's iconic landmark features (Crowns engine houses and the arsenic complex); others are not quite what they seem. Despite World Heritage status the National Trust are retaining a policy to maintain 'wild paths', in order to preserve a sense of discovery and protect visitors' wellbeing on site.

The most significant features on site are the Crowns mine, engine houses, chimney stacks, cliffs and mine buildings. The Crowns mines are famous; aesthetics also play a role in ascribing significance and simple strong structure which protrude into the skyline are considered more significant than low-lying surface features. There are different ways that features can be named including through analogy and with historical detail.

## **7.2. Changing Botallack in the post-war period**

The questionnaire asked respondents whether the Botallack mining area had physically changed in the time that they had lived in the area and if they had observed attitudinal change towards the mining areas during the period of their residency. 62.2 percent had observed physical change (n = 45), 28.9 percent had seen no physical change and 8.9 percent didn't know if the area had physically changed. 55.3 percent of respondents felt that there had been changes in attitude towards the mining area (n = 76), whilst 28.9 percent said there had been no change and 15.8 percent didn't know (see Appendix E, Tables E.2 and E.3).

### **7.2.1. A timeline of change**

From write-in comments (see Appendix F) a textual and graphic timeline of change, from the perspective of respondents, has been drawn (Figure 7.7, Appendix A). This timeline illustrates the interplay of intervention, event and changing socio-economic life in the Botallack area.

The period before National Trust acquisition, the 1960s to 1980s, were described as a period of decay with damage to unmetalled tracks from vehicle use (T70) and the gradual loss and decay of the fabric of mine buildings as well as episodes of vandalism and graffiti (B25 and B67). Operations by Geevor Mine to re-work Botallack were recalled by one respondent who remembered “attempts to re-commence mining at Allen’s shaft. A steel headframe was erected and a start was made on re-lining the shaft which is 1600ft deep” (71 year old male, retired mechanical engineer - B86) (see Table 5.1, Appendix A).

The removal of mine dumps for re-processing by Geevor Mine during the late 1970s/ 1980s was also recalled by several respondents:

“Many waste tips have been levelled (and) removed” (54 year old male, water treatment technician - B67). “Removal of many spoil heaps” (65 year old male, retired headmaster - B79). “The lack of spoil heaps and with the exception of the Count House and bit of restoration by the National Trust buildings have disappeared over the last 70 to 100 years” (73 year old male, retired farmer - B88). “Changed since the removal of its spoil heaps during the 1970s by Geevor Mine to recover tin or copper still retained in them from earlier days” (60-75 year old male, shop owner - T44).

The cessation of production at Geevor in 1990 and the subsequent closure of the mine are described in terms of death and loss. With closure an industrial way of life ended and that way of life is still mourned. The following comments also strongly suggest that, as opposed to mining, tourism is not seen as ‘real’ work (see also T17; T23; T43 and B60):

“Its now just a tourist trap – used to be part of most people’s life” (75 year old retired female, worked at Geevor during ‘live’ period - T18). “This was a hard rock mining area with a strong work ethic – mining landscapes were part of a living industry – now they are just tourist attractions and are viewed as such with cynicism and sadness” (60-74 year old male, shop owner - T44). “From being reminiscent of what they did its now tourist” (50 year old male, police sergeant - B23).

Death inevitably leads to memorialisation; mining only exists within memory and gradually those with first-hand experience of the industry are themselves dying. In consequence, some respondents felt that over time mining has become romanticised (see also B120):

“Having spent my childhood and youth in the area, it was the time that Geevor was a major employer. It’s now just a memory for those who remember it as such” (30-59 year old male, retail worker - T42). “As time passes there are less people with first-hand experience. Gradually the view of mining becomes softened and slightly romanticised” (50 year old male, builder/artist - B68). “With the closing of active mining it (Geevor) has become a romantic setting (60-74 year old male, mining consultant - T25).

Acquisition of the Botallack mining area by the National Trust followed (1990 and 1995). Many respondents were aware of the conservation works undertaken by the Trust and other industrial societies and the restoration of the Count House (opened as a community facility in 1999), the cleaning and conservation of the arsenic works (consolidated by the National Trust in 2004 [Joseph 2010: 185]) and conservation of mine chimneys being specifically mentioned (B66; B68; B89; B93 and T7) (see also Brown and Acton 2002). The ‘cleaning-up’ of the mining area included the eviction of a group of New Age travellers in 1995 from their camp on the Botallack cliffs (B7, see also Brown and Acton 1995, np; Brown and Acton 2002, np). For some local people, the site has been over cleaned:

[Consolidation work] “looks awful when first done – too clean – better after some bad weather and plants grow back” (40 year old female, health care assistant - B27). “It has been sanitised. It is no longer the wild, disorganised warren of holes and ruins it was fifty years ago. It is pretty now it was awe inspiring then” (65 year old male, minister - B92).

Conservation and cleaning-up have, however, increased the value and significance of the industrial remains, as a retired male dental surgeon (aged 60-74) noted, “interest in the remains of the industry has increased in inverse proportion to the actual mining activity” (T2). Throughout the mid to late 1990s and 2000s interest

in the area's industrial remains increased – Botallack became 'heritage' and 'history' and its importance was confirmed by the area's inclusion in the WHS nomination (T15; T39; T69; B67; B70; B83; B71; B82 and B86). Some respondents commented on the way that mining now informs a sense of Cornish identity: "Cornish history was not taught in schools, dialect and accent were to be eliminated say 50 years ago. Now the past is better understood and its influence better appreciated" (71 year old female, retired - T9) (see also T21).

"They are now revered" (30-59 year old female, foster parent - T26).

"World Heritage status has bought pride" (55 year old male, consultant/bookseller - T36). "I think people have become more aware of their importance historically" (no demographic data - B7).

Unsurprisingly, the economic value of mining heritage is now more widely appreciated, however, there is a concern that preservation in tandem with tourism will lead to the creation of 'theme-park Botallack' with one respondent referring to the theme-park at Land's End, a site acquired in 1987 by yachting tycoon Peter de Savary (see also T14; B27):

"People are more aware that they need to be looked after, for the tourism" (65 year old male, worked in a tin washing plant for four years -B94). "Awareness of possibility of theme park exploitation of Geevor, opinions polarised (no one wants another de Savary Land's End)" (65 year old male, retired - B87).

Throughout the post-war period a major change to affect the St Just area was immigration (B22). On the theme of different identities several respondents suggested demographic differences in perceptions of mining remains including the young/old, locals/tourists, those who had worked in mining as opposed to those that hadn't.

(Attitudes have changed) "Only those who do not live locally because they do not realise it is a way of life/job" (30-59 year old female, works in education - T22). "Locally people are very proud of their heritage. Though this is more noticeable in older generations who may have worked in mining themselves" (45 year old female, postmistress - B72).

“There is more interest shown by people coming into the area to live along with tourists in general” (73 year old male, retired farmer - B88).

“Made more accessible for tourists and general public. Local youngsters value the past more” (72 year old male, retired lecturer - B25).

The views expressed above on attitudinal change illustrate the existence of contrary, and potentially conflicting, perceptions of the ‘other’ and what the ‘other’ might think. The different actors within these scenarios of change are: the National Trust, Geevor Mine, coach drivers and passengers, schools and TV producers, geology, motor-cyclists, walkers, tourists and the general public, vandals, incomers and non-locals, and locals (including youngsters and older people) and lastly the developer Peter de Savary.

However, for over a quarter of respondents (28.9 percent) the Botallack mining area has not changed. These respondents have experienced stasis and an alternative timeline therefore exists which forms an unannotated continuum of dates .

### **7.2.2. Contestation over landscape change**

From write-in comments and interviews one particular type of intervention into the industrial landscape stood out. The removal of mine dumps by Geevor Mine in the late 1970s and 1980s was a recurring topic of conversation within interviews and was noted above by several respondents. In the following section interview data, newspaper reports and oral history archival data reveal a number of competing values towards mine dump removal in Botallack (and across West Penwith) including archaeological, economic, aesthetic and natural (wildlife conservation) values.

It was during Kenneth Gilbert’s tenure as manager (1966 to 1973) and managing director (1973 to 1986) at Geevor Mine (Geevor Mine 2011) that mine dumps at Botallack and in the surrounding Penwith area were removed and the land leveled. An interview in September 2002 with William Old (born in St Just in 1934) is held within the archives of Geevor Mine Oral History collection (interviewer Fiona Young). In the extract below William Old describes the events of the 1970s (punctuation has not been changed from archive):

The only point I come to in the 1970's, this is quite a pet subject of mine this is, Mr Gilbert the Manager of Geevor, I say that he was responsible or his advisors or helpers or whatever, I'd regret but I know he did it for commercial reasons, I always regret his taking away the Mine burrows what we called the mine burrows the dumps. You find the St Just, Botallack and Pendeen area in my opinion is not the same and will never be the same again as to what they were when the mine the actual mine spoil heaps were actually in existence. They took away a lot of them, a lot that we were taken for granted. I suppose if somebody was going to tell me when we were young 'Oh that will disappear here in twenty or thirty year's time', I wouldn't have believed them, you know. All those great mounds of stone and gravel and whatever it was all piled up I appreciate it was probably sitting on some green field when it was put there it was probably put on green fields, but I never thought in my wildest dreams there'd ever come a time when they were all cleared away and gone, which they are, you see.

The "great mounds of stone and gravel" were also remembered by David James; in the mid-1960s he recalled the mining area at Botallack as being "piled high with mine dumps [...] about 15 or 20 foot high and there were a lot of them." Amounting to "small hills" in the landscape their removal was viewed by David as "industrial vandalism" (Figure 7.8 and 7.9, Appendix A). Circa 1980 a second milling plant was opened at Geevor (Brown and Acton 1997: 146). Former miner-

[REDACTED]

[REDACTED]

Within a few years in June 1985 local newspapers were reporting complaints from members of the public regarding a further planning application to remove six dumps in West Penwith. Concerned locals near Penzance signed a petition against the proposal stating:

We are seriously opposed to this. It will remove small hillsides from the landscapes. The spoil heaps have become part of the local ecology with bushes, heath and hawthorn thicket growing [...] Our main concern is for the ecology and keeping certain areas unspoiled as natural areas. It is very popular with many local people for walking and riding (Williams 1985a).

Geevor Mine Ltd responded to complaints by pointing out that modern technology allowed tin to be extracted from the waste and furthermore, the land was being returned to its 'unspoilt' preindustrial condition. However, objections from Cornwall Trust for Nature Conservation led to a compromise decision by Cornwall County Council's planning committee which gave permission to Geevor to remove three further dumps (Williams 1985b). Newspaper reports dating to November 1985 (Williams 1985b) record Kenneth Gilbert's response to the decision:

[...] the decision (for removal of half) would prevent the mine from recovering half of the 9,000 tonnes of dump material, which was all needed for the mine to be able to be sure of maintaining its output during 1987-88. What we are proposing is to be allowed to remove, with the utmost care, the material from those dumps and then leave the site in far better condition. We would be willing to restore an area of the moor which has been spoiled by past mining activity and then desecrated by the indiscriminate dumping of household waste.

This reply is all the more poignant, with hindsight, considering that the month before this newspaper report was published the International Tin Council collapsed heralding the end of the industry in Cornwall. It is clear that conservationists had been successful in garnering media exposure and protecting wildlife habitats on the heaps. However, besides wildlife conservation and economics interviews revealed that the mine heaps also held mineralogical,

recreational and archaeological values. Geoff Treseder worked at Geevor as a miner but admitted during interview to having strong feelings about the removal of the dumps. His feelings in part stem from his memories of arriving in the area as a young man (having been born and raised in Wales and visiting from 1972, then moving to West Penwith in 1975/1976). In the following extract he describes the scene at Botallack in the 1970s:

One thing, I said I mentioned that I came here as an enthusiast in mining and I have a strong feeling that I'd be out and about looking on dumps and there'd be loads of people doing similar things. There were a lot more people coming in then who were interested in minerals in particular and people with a general mining history interest - much more so than today. If you think about it, it was harder to find out about things back then - there was no Internet. But I encountered loads of people. I spent a lot of time at Wheal Edward looking over the dumps out there and throughout the day there'd be a steady trickle of people who were either doing something similar or just had a vague interest - families out with hammers but at the time things like mineral collecting were quite popular[...] those that do collect now are pretty obsessed and will dig big holes in dumps but what's lacking is that slightly more amateurish family outing - you'd hear it - you'd hear hammers beating on dumps and it wasn't unusual whereas now [...]

Walking around site in July 2009 Geoff was clearly nostalgic for the Botallack he remembered as a young man – the removal of the mine dumps led to a decrease in activity and less interest in mineral collecting and Botallack is now a quieter place. There is no longer the sound of children and adults clambering over the heaps and striking rock with hammers. Aside from their mineralogical value, the mine tips also held archaeological value as William Old explains in this extract from his interview with Fiona Young (Geevor Mine Oral History Archives, Appendix G):

I do feel they could do with the Mine Tips back again sort of thing and explain what they were, I mean it would bring home to people that bit more of how much space must be under or was and is underground and when you consider all that mound of stuff taken out of the shaft. See

now you can come along and show them the shaft, there's a hole in the ground and miles and miles of tunnels down there, and so forth and so forth, but they can look around and things are flat and clear, there's a little bit down there at Geevor a bit of sand and gravel and whatever but the actual quantities of spoil are gone. So there we are.

The mine heaps therefore represented the sub-surface on the surface and were a physical reminder of what was below ground. They were also a physical manifestation of the size and scale of the workings and the effort of extracting ore. Despite the councils, (too late) compromise decision, a rapid survey of the site in 2008 revealed that the heaps at Botallack have gone, or in a couple of cases are severely truncated, for example, the heaps to the east of Wheal Edward/Wheal Owles engine houses.

### **7.2.3. Overview of changing Botallack in the post-war period**

The majority of respondents have seen physical and attitudinal changes to the Botallack mining area during the period of their residency, however a significant proportion have experienced no change. This timeline of change also reveals that the period starts with decay and ends with restoration and cleaning up of the mining areas. A major 'faultline' of change occurs in a five-year period between 1990 and 1995, a period which begins with the closure of Geevor Mine and ends with the acquisition of the Botallack cliffs by the National Trust. Indeed, within respondents' write-in comments, and interviews, change is referenced in terms of before and after these key dates – 'before' Geevor closed or 'after' NT acquisition. With the closure of Geevor mine an industrial way of life ended, and gradually Botallack's mining remains have been memorialised and romanticised. Some respondents are concerned that unsympathetic intervention will lead to the 'theme-parking' of Botallack. Immigration has resulted in demographic changes and it is suggested, to different attitudes towards mine sites.

The removal of mine dumps from the West Penwith landscape in the 1970s and 1980s resulted in local protests over their removal. Interview and archival data reveals that a public debate centered around different concepts of what is considered 'natural' in the landscape – on the one hand the restoration of a pre-

industrial landscape or, on the other, the protection of a revegetated and recolonised post-industrial landscape. Despite Geevor's protestations that they were 'restoring' the land, of course, economic imperatives lay behind Geevor's decision to reprocess the spoil. An alternative, and publicly quieter, set of archaeological, scientific and recreational values lay behind other objections to removal. Ultimately important archaeological features which act as material manifestations of the sub-surface world are now absent in the landscape.

### **7.3. World Heritage Site status**

After considering present day descriptions of Botallack and the ways in which the mining area has changed in the post-war period this section focuses specifically on World Heritage Site status in terms of local (as opposed to universal) perceptions of importance (or significance), awareness of the status, expectations of the status and, impact of the status. It presents preliminary observations regarding the significance of the status (as one of the many designations in the area) within the first few years of inscription.

#### **7.3.1. Importance of Botallack's mining remains**

The majority of respondents (67.9 percent) (Appendix E, Table E. 4) felt that the area's industrial archaeology was of 'high' importance (Figure 7.10). Only 3.8 percent of respondents felt that conversely Botallack's mining remains were of low importance.

#### **7.3.2. Awareness of World Heritage Site Status**

The vast majority of respondents (86.4 percent) knew that the Botallack mining area was part of the World Heritage Site (Figure 7.9, Appendix A and Table E.5, Appendix E).

#### **7.3.3. Costs and benefits of World Heritage Site status**

The vast majority of respondents, 76.8 percent, considered WHS status a 'good thing', only 14.5 percent felt the designation was bad for the area, whilst 8.7 percent didn't know (Appendix E, Table E. 6).

The results of content analysis of write-in comments (see Appendix F) regarding perceived costs and benefits of WHS are tabulated in Table 7.3 (Appendix A) (using Labadi's value typology [2007: 158], presentation based on Bart *et al.* 2004).

The perceived benefits of WHS demonstrate a strong emphasis on architectural and aesthetic, and informational values (see Chapter Three, Section 3.3.2.). WHS is expected to lead to the protection of the heritage resource (architectural and aesthetic value - T13; T14; T20; T26; T36; B29; B61; B72; B78; B86 and B93), a raising of the awareness of the area's historical importance (informational value - T36; B61; B63; B66; B71; B81 and B82) and community well-being in terms of local pride (social value - T7; T8 and B68). WHS is also perceived to benefit future income generation through the development of local businesses and tourism as well as regeneration and the creation of jobs (economic value - T37; T42; B61; B70; B75 and B87). One respondent voiced an expectation that WHS will lead to further funding (economic value - B71).

The perceived costs of WHS again focus on architectural and aesthetic value but also on economic values. WHS is perceived as leading to the loss of integrity, explained in terms of the 'theme-parking' of mining areas and the associated dilution of cultural identity (architectural and aesthetic value T7; T19; T42; B7 and B92) as one respondent noted "I fear it will be altered so much by further health and safety meddlers that it will be more Disney than Cornwall" (65 year old male, minister -B92).

A few respondents felt that the WHS was an incorrect nomination - they argued that the mining area was not unique or special and protection should be afforded first and foremost to 'natural' sites (aesthetic and informational values - T70 and B121). One respondent commented on a certain local resentment felt towards money being spent on preservation - the argument being that financial support wasn't there to save the mining industry. "The mishandling of money for Geevor Mine has irked a lot of people. Locals resent the amount of money spent on restoration work at Botallack" (46 year old female - T70), the nomination was therefore seen as an inappropriate investment (T21).

#### 7.3.4. Impact of World Heritage Site status

Informants were asked to comment on the impact of WHS to the area and whether it had led to tangible or intangible difference. It had not, according to one informant, led to an increase in visitor numbers [REDACTED] Likewise, during interview at Geevor Mine in April 2008:

[...] a lot of people initially had some very high hopes for what would happen to the area when World Heritage Site status was achieved. I think it's perhaps a little bit early to tell but the signs are that it's probably not doing a great deal to stimulate tourism which is the only way in which we are going to get some positive economic benefit out of industrial heritage. That's probably not happening yet, but it's going to be interesting to watch that; certainly now I think more people see it as an asset than a liability perhaps.

The minutes of St Just Town Council demonstrate that the status has been used instrumentally (even before inscription), alongside other 'conservation' designations, to influence the outcome of planning decisions. The first instance appears in January 2005 when minutes document a planning application by South West Water for sewage treatment facilities within the Botallack area. This application was refused (in part) because the Council felt that traditional stone built Cornish hedges "should replace fencing and posts at the Botallack site. This is particularly important due to the pending application for WHS and the significance of Botallack in that bid" (St Just Town Council, 24 January 2005, Item 2309, Section 2c). A further use of the designation occurs five months later when the publican of the Wellington Hotel in St Just submitted a proposal to place outdoor seating in front of the property in Market Square. The minutes document the following council decision:

The Council instructed the Clerk to write and inform Mr Gray that his proposals were completely unacceptable to the Town Council. The reasons being that the widened footway was undertaken in order to provide a more satisfactory pedestrian access particularly for wheelchairs and pushchairs and the fact that this was a Listed Building raised further concerns particularly in the Article IV conservation area.

In light of the WH Status being awarded in 2006 the preservation of the uniqueness of the area is the responsibility of us all (St Just Town Council, 20 June 2005, Item 2366, Section 17b).

Although the arguments against the proposal concerned pedestrian and disabled access, it is clear that the forthcoming WHS status provides an additional instrument in arguing for the preservation of the existing character of the town. Aside from these instances informants reported an increase in local community pride (as described above in Section 7.3.3.). However, during interview Adam Sharpe (April 2008) suggested that following initial media attention, awareness and interest in the inscription may already be on the wane. Indeed, comparing WHS with another designation Adam asked rhetorically “There was a lot of news at the time of the inscription, but little in any shape or form since. It’s a fact that it is an SSSI but does that impinge on their [residents] lives?”

#### **7.3.5. Overview of World Heritage Site status**

Overall, respondents felt that Botallack’s industrial archaeology was of high importance, the vast majority of respondents knew that Botallack was part of the WHS and the majority thought that WHS is a good thing.

The perceived benefits of status connected strongly with architectural/aesthetic and informational values including the preservation of fabric and transfer of historical information on Cornish mining. WHS is also perceived to be of benefit in terms of future income generation. There are fewer perceived costs, with most concerns relating to the potential loss of integrity/theme-parking.

WHS had not (at the time of fieldwork) led to an increase in visitors. The designation had, however, been used alongside other designations to influence planning decisions. Therefore, in the first few years of designation, its impact is mainly intangible – in terms of community pride.

#### **7.4. The future of the Botallack mining area**

While I was waiting at Botallack, I know this guy, he’s a friend of my brother’s but I don’t know his name but he was out there walking his

Staffordshire bull terriers and had lots of tattoos. “Hey! I’m waiting to meet this nice person who wants to know what I think about the landscape. What do you think should be done with all these buildings?” “Put lids on ‘em’ basically.” He put one or two expletives in there and “rebuild em, rent em, use ‘em” for either light industry or galleries. I don’t know if he said accommodation but certainly the impression I got was light industrial use, don’t just leave ‘em half ruin, neither fish nor fowl, put them back as they ought to be (David James).

When asked for their views on the future of the Botallack mining area, the majority of respondents, 71.3 percent, felt that they should be preserved. Only 12.5 percent agreed with David James’ acquaintance, that they should be re-used. Less, 7.5 percent felt that they should be left to decay. A further 8.8 percent of respondents chose more than one option, thereby advocating a combined approach (Table E.7, Appendix E, see Figure 7.11, Appendix A).

Reasons for choice were explained within write-in responses (sample of 67) which are considered in turn within the following sections.

#### **7.4.1. Preservation**

Respondents who advocated preservation (T7; T21; T36; B24; B64; B67; B75; B83 and B93) were strongly motivated by perceptions of the historical value of mining remains (T13; T16; T22; T26; T27; T38; T69; B23; B29; B66; B70; B71; B81; B85; B89 and B90), stating that mining remains are important carriers of knowledge about industrial Cornwall to future generations (T1; T14; B82 and B74). A desire for preservation was also motivated by tourism and income generation (T18; T25; T37; B5; B68 and B87). Notions of historical value intersect with the mine’s role in informing a sense of Cornish identity and providing a site for memory and commemoration (B19; B21; B78 and B86). Preservation for health and safety considerations (T8 and T70) and contribution to landscape character (T32) were more rare responses.

For some, preservation was not seen as a practical option for all sites and buildings and would cost too much money (B92 and B121). A few respondents argued that preservation has a detrimental effect on the authenticity of sites and structures

whilst others argued that it is impossible to ‘freeze’ or ‘fossilise’ the landscape (T9; T19; T43; B27; B69 and B92). One respondent noted succinctly that the problem with preservation “is knowing at what stage in their life and death to preserve them at” (65 year old male minister - B92). The following quotes provide exemplars:

For my children to (be) sure how their great granddad use to live and work. For the history of mining (42 year old female, pre-school deputy leader - B89).

They stand as they are as sentinels to a great past (when any deep hole anywhere in the world had a Cornishman at the bottom of it). Should be protected as they are (69 year old female, retired local government health officer - B93).

Helps to attract tourism and encompass (sic) them to take up a lasting interest in related subjects (72 year old male, retired lecturer - B25).

Principally for safety reasons in view of the fact that publicity means more people now go to look closely at these remains (30-59 year old male artist - T8).

They ought to have some integrity in our lives, but it is impossible to freeze them, and you cannot keep everything (30-59 year old male artist - T17).

#### **7.4.2. Re-use**

Respondents who advocated re-use considered a range of possibilities (T17; T33; T34 and B76). Some suggested the educational value of re-using mine buildings as interpretation centers, with an emphasis on providing working examples; here references were made to nearby Geevor Mine and Levant Mine as examples of good practice. It was noted that such re-use also had potential benefit for the tourism industry. Others felt that Botallack could become a site of industry again and provide much-needed sustainable employment (B20; B60; B65; B88 and B110), however, only one respondent considered the reintroduction of mining to Botallack: “the price of tin has risen, so it may well prove to be viable, would bring

the heart back to the community” (58 year old female, retired funeral director - B22)‘.

For some, however, re-use was impractical and a waste of money. It was felt that alteration destroyed existing values (B69), former mine sites had no potential use (B75 and B83) and a resumption in mining was a pipe-dream (despite reports in the press) (B71; B79 and B92).

(Re-use) gives a chance for the area to be regenerated leading to a better economy and less unemployment (80 year old female, retired - B65).

They are essentially ruins but it would be a shame if they deteriorated further. There are certain sites where they have been brought back into some form of use e.g. Levant Geevor etc (54 year old male, water treatment technician - B67).

Returning them to use would be way to (sic) expensive even with improved tin prices (58 year old female, cook and holiday property owner - B71).

### **7.4.3. Decay**

Some respondents felt that, as the mining industry is dead, decay is natural (B7 and B27). For others mine buildings are ugly, eye-sores which over time decay will remove (B84). Wildlife conservation values were also strongly evident in this set of responses, i.e. the re-greening of mine sites creates wildlife habitats (B27).

Meanwhile to leave them to decay would be “unsightly and dangerous” (B71-local). Post-WHS another respondent questioned whether decay was really an option, for “we are now a recognised site of world importance” (58 year old female, cook and holiday property owner - B79).

Nature should be allowed to take its course too in the recycling of old buildings – they can become great habitats for wildlife and wonderful places of exploration for the more adventurous visitor (no demographic data - B7).

These remains are the skeletons of a dead industry. Like a battlefield nature, the elements should be left to soften and blur. The harsh ruins – leaving man’s imagination to gaze and wonder (60-74 year old male, bookshop owner - T44).

#### **7.4.4. Combined approaches**

Some respondents put forward arguments for combined approaches (T2; T42; B7; B72; B84 and B120, mostly approaches which combined preservation and re-use and advocated micro-management on a case-by-case basis:

Difficult to answer. Each needs to be assessed on its own merit. Cornwall is peppered with mining remains and it is not practical or essential to preserve or restore all of them, but some significant ones would benefit restoration and being used again (45 year old female, sub-postmistress - B72).

One respondent provided an unusual point for continuing mining – that future industry created the industrial archaeology of the future.

Older remains should be conserved whilst allowing use of modern engineering installations. If mining is prevented, 1000+ years of ongoing evolving mining history will have been prematurely terminated. If there is no industry ‘today’ there will be no industrial archaeology ‘tomorrow’ (no demographic data - B62)

#### **7.4.5. Overview of future**

Overall, respondents strongly advocate the preservation of Botallack’s mining remains. They are important to preserve for future generations, they hold historical value, are of global significance and are the focus of considerable local pride.

However, preservation and re-use are seen by some to be prohibitively expensive, unnecessary and impractical – there are also necessary considerations of scale. There is also a recognition that decay and intervention lead to consequences and further problems. Too much intervention can affect cultural and physical integrity.

Some clearly would like to see a working Botallack, and a few dream of returning mining, however, overall this is not seen as a likely option.

## **7.5. Chapter summary**

In this chapter I have presented the results of data on public perceptions of Botallack which can be summarised as following:

Botallack is perceived, somewhat paradoxically, as a beautiful and harsh landscape. Visitors to the cliffs experience the 'industrial sublime'; however, empathy for the lives of miners in the past has heavily imbued the landscape with demonic themes and the area is still strongly associated with its former industrial use. The site is poorly signposted and the cliffs are filled with industrial features and paths, however most activity takes place between the Count House, the site car parks (one official/one unofficial) and the area of the cliffs which overlooks Crowns Mine.

The most significant features on site are elevated, simple structures, including the iconic Crowns engine houses. The St Just/Botallack area underwent rapid change between 1990 and 1995 (a period marked by the closure of Geevor Mine and National Trust acquisition of the cliffs). The removal of mine dumps from the landscape in the 1970s and 1980s resulted in the loss of important archaeological features and the controversy over mine dump removal has highlighted a number of competing values.

There is good public awareness of WHS, and support for the designation and the perceived benefits of the status connect strongly to architectural/aesthetic and informational values. WHS does not seem to have lead to an increase in visitors; nevertheless, there is evidence that the designation is being used to influence planning decisions. Overall, there is strong public support for future conservation works at Botallack. The mining area is felt to be important in local and global terms, however, a few respondents and informants still dream of a return to mining

## CHAPTER EIGHT: MINIONS

### 8.1. Site descriptions

#### 8.1.1. Minions is....

Respondents to the questionnaire were asked to provide write-in short descriptions of the Minions mining area. Selected examples of these (from a sample of 66) are collated in the extract below. These extracts have been deliberately dichotomised into firstly, extracts which largely reflect positive attributions of place (unusual palimpsest of archaeological remains, natural beauty, mystery, weather systems, openness (moorland and sky) and secondly a rare extract which reflects negative attributions of place (neglect and decay of mine buildings):

[Minions is] “the highest village in Cornwall bordering bleak moorland and a former mining community” (65 year old male, bus-driver - M156). “Beautiful, natural landscape with a wealth of historical remains” (57 year old female, author - M168). “Richest copper mine in the world in the 19th century, rich mining and industrial archaeology area, typical Cornish post-industrial landscape supplanted on a prehistoric and historic landscape” (60 year old male, company director - M69). “Unexpectedly beautiful - the waste heaps are each a distinctive shape and each chimney is like a megalith. Although there is no rational similarity they look like wild barrows and standing stones” (37 year old female, university lecturer - M19). “A real natural area of Cornwall. With low cloud and poor weather the area is bleak and typical of Cornwall, on a clear day the scenery is spectacular” (47 year old male, manager of a timber company - M123). “Bleak in winter, full of tourists in the summer but full of history and mystery” (53 year old female, nurse - M121). “Very interesting. There’s an excellent heritage centre that explains it all in a simple clear way. Good long walks, great views, healthy air, good to be there in all seasons” (58 year old female, tutor - M188). “Lovely, the scenery on a clear day is wonderful you can see as far as Dartmoor” (48 year old female, librarian - M128).

[Minions has] “a sad collection of once proud buildings in neglect surrounded by beautiful moorland” (47 year old male - M46).

### **8.1.2. Keywords**

Content analysis of the write-in descriptions produced the following top-six keywords for Minions:

Beautiful. History. Industrial. Interesting. Mining. Moorland

### **8.1.3. Best descriptor: A ‘natural’ landscape**

Data from the questionnaire survey shows that Minions is best described as a ‘Natural Landscape’ (35.1 percent) followed by ‘Heritage Landscape’ (31.6 percent) and ‘Mining Landscape’ (21.1 percent) (Figure 8.1, Appendix A) (see Table E.1, Appendix E). The data indicates that Minions is perceived most strongly for its natural qualities and heritage assets. It can also be noted that the more specific term ‘mining’ is preferred over the more general terms industrial, archaeological or cultural suggesting that the former mining industries take precedence in the perception of respondents over the moor’s other industries – quarrying and stone-working.

### **8.1.4. Roads, signs and car parks**

According to Mike Habbeshaw (Liskeard and District Tourist Information Centre) the moor acts “as a sort of playground if you like” for the townsfolk of Liskeard. The moor as a local place is demonstrated within the Liskeard Community Strategic Plan which notes that “currently, tourism forms a small sector in Liskeard” despite being the southern gateway to the World Heritage Site (Liskeard Town Council and MCTi 2008: 4, 17). Observation in Liskeard concluded that the moor is not prominently advertised to tourists, despite World Heritage status. Merchandise inside shops as well as posters on shop fronts and shop doors during the summer of 2008 detailed few images of Minions Moor, or the WHS, with only Liskeard and District Museum (incorporating the Tourist Information Centre) showing more. Indeed, the town appeared to be in a time-warp, its original

Victorian shop-fronts adding to the effect that this is a 'time before tourism' with fast-food restaurants also notably missing. There are a number of 'Cornish' themed shops including 'Taste Cornwall' a food suppliers and 'Celtic Corner', suppliers of Cornish Tartan. One bookshop had a small rack of postcards including a postcard of the Hurlers; however, the rest of the range provided more visual enticement to visit Mevagissey or Looe (both on the south coast). However, the relationship between the townspeople and the industrial archaeology on the moor was evident in the form of large murals located in different parts of the town centre. The street-facing facade of the town's Co-op (on Barras Street) boasts a large mosaic depicting quoits and engine houses (created by Julian George in 1996, see Figure 8.2, Appendix A); nearby in Pigmeadow Lane, a mural painted by David Whitley in 1998 (Figure 8.3, Appendix A) depicts the history of Liskeard including the impact of the industrial revolution. Finally, the stairwell of the public library (also on Barras Street) contains *trompe l'oeil* banners of local clubs and institutions emblazoned with Celtic/Cornish symbolism including engine houses (Figure 8.4, Appendix A, artist and date unknown).

For townsfolk and people who live in the neighbouring moorland villages the 574 bus leaves Liskeard at 10.30am every Monday to Saturday for Minions village. After a 23 minute journey passengers then have just less than four hours in the village before the last bus of the day, at 2.50pm returns to town. Pausing on a walk around Caradon Mine, local guide Ian Rowe pointed out that although one bus a day was minimal, on "Sundays when most people would like to go to the Minions there are no buses whatsoever." In consequence, and unsurprisingly, he added "the only way up is for people to take their vehicles up." The village thus has two large car parks on the outskirts of the village, Hurlers car park (on the south-eastern outskirts) and Station car park (on the north-western outskirts).

Minions is a small village, and four hours is more than enough time to walk around and take notice of its various buildings – a converted 1863 Primitive Chapel, a Post Office/cafe/b&b, the Cheesewring Hotel whose sign tells you it is 'the Highest Pub in Cornwall' (at 995 feet above sea level) and a second cafe, the Hurlers Halt. It is common to see sheep in the village, grazing on the grass verges, having wandered off the nearby moorland.

However, as informants noted few visitors come by public transport and Mike Habbeshaw commented on the popularity of the moor with people from the surrounding towns and villages, saying that “at weekends even in winter the car parks are full” and in the “evenings its favoured to go up and take the dog for a walk and have a drink in the Cheesewring.” For those interested in the area’s industrial heritage, the village’s Post Office has a range of postcards (including engine houses, the Cheesewring and the Hurlers), maps and guidebooks, as does the ‘Hurlers Halt’, a cafe across the road. The back of the menu of the former also provides introductory information on the area – after stating that it is “the highest post office, shops and tearooms in Cornwall” the menu goes on to inform the reader of “the famous stone circles, the Hurlers, and the Cheesewring stones” a short walk way, as well as archaeology of the tin and copper mining industry. The menu also notes that Minions is now a “designated World Heritage Site also an area of outstanding natural beauty.” At the opposite end of the village the Minions Heritage Centre is opened daily and contains interpretation boards detailing aspects of the area’s history, from prehistory through medieval tin streaming to 19th century mining. It also offers information on the area’s geology and topography, including an explanation of why mineralisation occurs. The boards also refer to the once important quarrying and railway industries, proudly noting the fact that the Albert Memorial and the Tower Bridge in London were built from granite quarried from Cheesewring Quarry.

There are also directional signs at the edges of the village’s two car parks to the Cheesewring and the Minions Heritage Centre. From the two car parks, even without a map or observation of footpath signs, popular walks are clearly marked by trampled grass and the most popular routes from the village loop out towards the Hurlers and Cheesewring Tor/Quarry. Beyond these landmark sites the ‘paths’ become less distinct.

According to informants the popularity of Minions and its moor doesn’t just lie in fine food and drink, the moor offers a sense of unrestrained access. During a walk with Peter Butts around Cheesewring Quarry, he described the appeal of the moor in terms of openness and freedom, a feeling that evokes memories of his childhood:

As a child whenever we came up onto the moor, onto this area, I was always intensely excited by it, because it was a completely different environment to that I was used to on the coast and it seemed to offer a greater freedom, and I suppose it was its wildness and history I used to find really exciting.

The desire for excitement also extends to the many activities which regularly take place on the moor. Pausing at the top of Cheesewring Quarry to take in the far-reaching views, a group of climbers scaled the sides of the quarry. Peter commented on the “very difficult climbs here, quite severe” and mentioned that alongside climbers and walkers and dog-walkers the moor also attracts bikers, “lads (who) ride their off-road bikes up and down the mine barrows.” Whilst the climbers in the Cheesewring Quarry may have been in Cornish parlance, from *up-country* and minibused in with their ropes and harnesses, the bikers are known to be local lads.

#### **8.1.5. Significant features**

As noted above, the moor is a popular place to walk dogs, especially in the evening or at the weekend. According to Peter Butts, a local geography teacher, however, dogs might not necessarily be walked very far:

It's [Minions] still predominantly local, you'll get a little honey pot there; within two or three hundred yards of the car park you'll find tourists but if you walk five minutes in any direction you won't see anyone [...] Just beyond the Hurlers you've got all kind of things, you've got stone rows and processional routes, circles - no one gets to it. You might find in the evening a few families walking along this track but I don't think they stray from it at all.

Where people go and what they see can also be influenced by popular publications and newspaper articles. [REDACTED] has lived in the village for over twenty years and often out working in her front garden she has been repeatedly asked, over the years, for directions to landmarks and has seen changing trends which she believes depends:

[...] on what publication is around at the time, I probably get asked for The Hurlers more often these days. It used to be the Cheesewring. There was a spell, and presumably there had been an article in a newspaper or something, probably about 20 years back, when people used to ask for the Rillaton Barrow - 'Where's the Rillaton Barrow?'

No respondent to the questionnaire survey listed the car parks as significant features, or the road to Minions or the moorland paths (see Table 8.1, Appendix A). Out of a total of 133 listed features, just over a half (54.1 percent) were industrial features. Of these 14.3 percent were mine setts and workings, whilst 30.8 percent were specific mining features, 5.3 were quarries and 3.8 percent represented the transportation system (Liskeard and Caradon railway) which served the extractive industries. A further 12.8 percent of the list was formed by prehistoric features whilst just under a quarter (23.3 percent) were natural elements such as moorland, tors and Caradon Hill. Finally, 9.8 percent of the list formed an 'other' category including commercial premises, communication (Caradon Hill TV mast), farming stock and interpretation (Minions Heritage Centre).

Data demonstrates a wider selection of choices than at Botallack and confirms that the most significant features at Minions are: engine houses, the Hurlers stone circles, Cheesewring tor, chimney stacks, mine/workings, mine buildings and the moorland. It is clear that industrial features compete with prehistoric and natural features in terms of perceived significance.

Data can also be compared to 'expert' perceptions of significance, in this case features of interest on Stanier's guided walk across Cheesewring Moor (2007, 10), copies of which were on sale to the public in the village post office (Table 8.2 and Figure 8.5, Appendix A).

Mine shafts were only mentioned by two respondents (42 year old female, teacher M71; 58 year old male, education advisor - M23). Reflecting data at Botallack it is clear that of less significance are the surface features – the pits of lode back workings, leats, gullies, wheelpits, streamworks and blocked shafts which receive zero or very low counts. Write-in comments on the questionnaires and comments in interviews throw some light on why certain features are considered more

significant. Engine houses are 'iconic' (M23, as above), and two informants noted that in their decayed form they are "pretty" and "we attribute romance to them." The highest vertical 'object' on the site is the Caradon Hill television transmitter (erected in 1961) (Figure 8.6, Appendix A) and was listed by three respondents.

explained in interview why:

It's a landmark for a lot of people out walking - people say locally if you get lost head for the Caradon mast and that will get you to the road [...] The parish did a mug for the children for the Millennium and we asked the children what they would like to see on it [...] and although a lot of adults would say that's a bit of an eyesore, the children wanted the mast because at night its all lit up and its magical as far as the kids are concerned.

Again, following on from the points raised in Chapter Seven (Section 7.1.6.), that a feature needs to be seen in its entirety to be recognised/or considered significant, it is clearly not just low surface features which become blurred by infilling and overgrowth. Features can also prove visually indistinct due to scale. Two walkers with a map were observed at the Cheesewring looking for Stowe's Pound – a Neolithic enclosure bounded by natural geology and stone walls. They couldn't find it because they were 'in it' (Figure 8.7, Appendix A). Their frustration was caused by difficulty understanding the scale of the feature from the plan and perhaps imagining reconstructions in three-dimensions.

#### **8.1.5.1. Naming of significant features**

The way that significant features at Minions were named revealed, on categorisation, four levels of knowledge, understanding and vocabulary ranging from the demonstration of knowledge of the area's history to broad and generic descriptions of mine workings or mine buildings. The four levels with exemplars are detailed below:

Level One: Knowledge of the area's history:

Natural inclination is to say the engine houses as these are iconic, but there are other features that bear testament to the technologies of their

time – medieval and pre-medieval tin streaming waste, later lode pits that trace the lodes across hundreds of metres of open country, the spoil heaps – an Aladin’s (sic) cave for mineral collectors still – the shafts and adits, and of course the mineral tramways that criss-cross the area (58 year old male, education manager - M23).

Level Two: Naming of specific mine setts:

South Caradon Mine (34 year old female, teacher – M100).

Level Three: Awareness of functionality and/or knowledge of mining terms:

Chimneys; Chimney stacks from mines; tin mine stacks; mine chimneys; the engine houses; old engine houses; remains of the old engine houses; old mining engine houses; the odd disused engine house; the historical engine house; ruined engine houses; railway track beds; old railway; railway lines; Liskeard railway track; old railway track; spoil heaps; mine tips; ground fallen in over shafts.

Level Four: Broad and generic descriptions:

Remains of the mining industry; mining remains; old mine; deriled (sic) buildings; old mining buildings; the old tin mines; old buildings; remains; remains of an industry; old mine workings; the mines; old mine buildings; various mining buildings; disused mines; old mines; old mining; the mining houses; the deep mines.

### **8.1.6. Overview of descriptive data**

There are a number of points and themes to emerge from the descriptive data outlined above. Taking the six keywords, Minions is a natural and beautiful moorland with an interesting mining history. Descriptions and content analysis provide a picture of an elevated landscape, one which is bleak, open and wild but nevertheless beautiful. It is also a former centre of industry set within a prehistoric landscape of barrows, standing stones, hut circles and enclosures. Seasons and weather create very different senses of place, from the fullness of summer and the tourist season to the emptiness of the moor in winter. Local people perceive the

moor strongly in terms of its natural qualities and its provision for varied outdoor activity – and these take precedence over its former industrial role.

With very limited public transport, and being popular with local townspeople and villagers alike, most people arrive in Minions by car. Data suggests that walkers do not venture far from the car parks and the focus of activity seems to be around the Hurlers/Cheesewring. Commercial premises in the village and the Minions Heritage Centre provide a range of guides and interpretive material on the area's industrial archaeology. The most significant features are engine houses, the Hurlers, Cheesewring tor, mine buildings/workings and the moorland. Features can be named in different ways, from descriptions which include potted histories of the site to those which employ mining terminology, to vague and broad descriptors.

## **8.2. Changing Minions in the post-war period**

The questionnaire asked respondents whether Minions had physically changed in the time that they had lived in the area and also if they had observed attitudinal change towards the mining areas during the period of their residency. Respondents were evenly split on the subject of physical change, 43.4 percent had observed physical change, 43.4 percent had seen no change and 13.2 percent didn't know if the area had changed. 40.4 percent of respondents felt that there had been a change in attitude towards the mining areas, whilst just under a third of respondents (30.8 percent) felt that there had been no change in attitude. 28.8 percent didn't know (see Appendix E, Tables E.2 and E.3).

### **8.2.1. A timeline of change**

From write-in comments (see Appendix F) a textual and graphic timeline of change, from the perspective of respondents, has been drawn (Figure 8.8, Appendix A).

In the post-war period the industrial archaeology around Minions was run down; buildings had deteriorated, either fallen down or robbed of stone (M46; M66 and M67). Changes to agricultural practices had an impact, the annual burning of the moor no longer took place and more barbed wire fences have been built (M111 and M124). The reduction of grazing following changes in government subsidies

also led to the overgrowth of plant life (M95 and M111), although the effect on archaeological remains was not specifically mentioned.

Several respondents recalled the removal of stone from Duchy-owned Cheesewring Quarry and nearby finger-tips in 1984. This was an event recalled with some criticism by respondents, the quarry being “spoilt by (the) removal of granite” (73 year old female, retired - M105) and “tips plundered for hard core (and) flattened for health and safety reasons” (78 year old male, retired - M70).

Comments also attest to conservation measures, the introduction of interpretation and signage and the tidying-up of the moor undertaken by Caradon District Council Minions Area Heritage Project (after 1985) as well as works by private landowners including the Duchy. Restoration work on some of the mine ruins was noted, with chimney stacks being specifically mentioned (M23; M69 and M108). The moving of Minions Heritage Centre from behind the post office to Houseman’s engine house was recalled (1995 (Beryl Martin, pers. comm. 1 November 2011)) (M23 and M96) and the building of Station car park noted (M112) (built 1995-1996 Beryl Martin pers. comm). One respondent complained that “(Minions) had become over repaired, tidied, and car-parked and now resembles a theme park. The peace, beauty and atmosphere are mostly gone” (60 plus female, retired - M16). Only one respondent noted that the Caradon area had achieved World Heritage Status (M47).

Overall respondents felt that people were more interested in the area’s industrial remains and more aware of its significance. The area’s industrial heritage has had more publicity and according to one respondent this has “raised the profile of the industrial past” (62 year old male, retired lecturer/civil servant - M107) (see also M66; M70; M71; M84; M106; M112 and M118). The increasing value of the area’s mining heritage is expressed in the following quotes:

“I think they have become more valued for their inherent qualities, rather than dilapidated remains of a dead industrial past” (73 year old male, semi-retired farmer/cheesemaker - M116). “People are realising that the Cornish Mining industry had a huge impact on World Mining as so many left to emigrate and work in mines in Australia and South

Africa for instance. Therefore the beginning of it all is so important and what is left should be maintained for future generations” (61 year old female, retired - M117).

One respondent linked increasing interest in Cornish mining to a heightening of Cornish identity over recent years suggesting that there was an “increasing feeling that ‘preserving the past’ is important. Increasing sense of ‘Cornishness’ as well as ‘wanabees’” (60 year old male, company director - M69). Others felt that people now looked back at mining romantically, through rose-tinted glasses (M124 and M189).

Other changes to the moorland community reflect wider social trends such as social mobility (changing demographics), media and communications, leisure and the tourism industry. Key drivers behind social transition can be summed up by four words: ‘more people/more cars’. There were more people around in the summer and more non-local people had moved to the area. There were more holidaymakers and more horse-riders (M116; M126 and M128). There were “more cars parked outside houses” (37 year old female, visual display specialist - M127) and “motor propelled vehicles have changed the landscape” (76 year old female, retired - M106). In the following quote one respondent reflects on the loss of localness and the creep of globalisation:

The sense of community has been eroded by the motor car, commuting lifestyle, suburbanisation of surrounding villages like St Cleer, Lewannick, Pensilva. The world in general is less ‘localised’. All this diminishes local focus and a sense of place. Mass media and communication (60 year old male, artist - M126).

In consequence the Minions area had “become a tourist attraction” (53 year old female, nurse - M121) and its popularity had lead to the opening of new cafes (M23) and the building of a few new houses. One respondent complained that the pub (The Cheesewring Hotel) could be noisy (M129).

Again opinions and perceptions of the ‘other’ were raised. One respondent suggested that “people who have moved into area do not have the same sense of

Cornish history as Cornish born and bred people” (53 year old male, driver - M98). Whilst “mining in Cornwall is always highlighted within the Cornish people” another respondent remained unsure what it meant to “people who move here” (48 year old female, librarian - M128).

The different named actors within these scenarios of change are: stone-robbers, central government, local farmers, the Duchy of Cornwall, Caradon District Council, landowners, car drivers and passengers, horse riders, holidaymakers, commuters, cafe owners, publicans and pub-goers, the Cornish and non-Cornish, and incomers and ‘native’ residents.

However, for 43.4 percent of respondents Minions has not physically changed, and 30.8 percent of respondents felt that there had been no changes in attitude towards the mining landscape. Therefore an alternative timeline exists which forms an unannotated continuum of dates.

### **8.2.2. Contestation over landscape change**

An ongoing issue of contestation on the moor over the last thirty years concerns access, and interview data and archival data clearly demonstrate that WHS inscription (in 2006) a year after the introduction (or imposition) of Open Access (in 2005) has exacerbated concerns over the future of ‘working life’ on the moor. The following section details these concerns, in terms of the actual and perceived threat of increasing numbers of traffic, footfall and dogs on the moor.

#### **8.2.2.1. Cars and dogs**

The village has historically a troubled relationship with vehicular access. Problems with cars driving onto the moor are documented within Sharpe’s surveys (Chapter Five, Section 5.2.6.1.) and the placing of granite boulders to prevent drivers parking on the grass verges within the village was noted by Gilliard *et al.* (2004: 15).

\_\_\_\_\_

\_\_\_\_\_ Hurlers car park was built in 1992 specifically to cater for visitors to the Hurlers stone circles, whilst as noted above, Station car park was built circa 1995-1996 the same time that the Minions

Heritage Centre relocated to Houseman's engine house (Beryl Martin pers. comm. 1 November 2011). As ██████ explained during interview there were a number of reasons why she felt that the village needed additional car parking:

I wanted to see the car parks built on two bases. People were driving all over the moor, in fact they were parking everywhere and also at that time people were driving off-road up on the moor. Driving up to the Cheesewring and driving all out and around. You may have noticed that the track is gated now. If a family was walking up to the Cheesewring or wherever they don't want cars chasing up behind them. If you looked at who was driving up, it wasn't the old folks it was the youngsters. People who were well able to walk up there. So there was a feeling that if the car parks were built it would regularise where people would park. You park there or nowhere. There are still a few people who disobey that. Also there was a kind of hope that, to some extent, once the car parks were full, people would perhaps move on.

The gating of the track to the Cheesewring, which ██████ refers to, happened after the solar eclipse in August 1999. Cornwall was forecasted as one of the best places in the UK to view the eclipse and leading up to the event there was concern that large numbers of people would want to view the eclipse at the county's prehistoric and landmark sites. ██████ recounted the scene at Minions with roads becoming blocked "as people drove up and couldn't get in the car park and it was getting near time, some wanted to see it at the Cheesewring, some at the Hurlers so they just started to abandon their cars on the road."

While the solar eclipse was an isolated event, efforts to prohibit vehicular access do, to some extent, seem to have worked. A review of the minutes of Linkinhorne Parish Council reveals few references to cars on the moor, instead there is a replacement issue of concern – that of quad bikes and motorcycles driving around the moor (28 November 2005, Item 4, 29; 11 September 2006, Item 4 [Police report], 65). This perhaps demonstrates that issues with transportation, and solutions, evolve over time.

Council minutes also reveal that cars, particularly cars driving at speed, have killed livestock; minutes from September 2006 record on-going issues with “speeding motorists across the moor and three sheep had been killed in the past week between Siblyback and Minions” (Minutes of Linkinhorne Parish Council, 11 September 2006, Item 4, 65). Furthermore, cars bring dogs and again, Council minutes record episodes of sheep-worrying and dog-fouling (Linkinhorne Parish Council, 12 May 2009, Item 8). In the following interview extract [REDACTED] suggests that the problem with dogs off leads is a regular occurrence and furthermore explains why dog-fouling presents another potential threat to livestock:

Regularly you see sheep being chased/moved on by dogs and sheep are killed by dogs up here. So there was concern about that and there was also concern by the commoners about dogs because they carry a parasite and if they're not wormed that gets into the sheep, and my understanding is that it means that sometimes the carcass might be condemned because of the damage.

The Commoners, who hold rights which have evolved from medieval law to graze livestock on the moor, have a more complex relationship with the land when compared to 'normal' transfer of property rights or access. The following section of an interview with the CHAHP project officer, Andy Robinson, explains the way that common rights currently operate on the moor:

Andy Robinson: At the moment there's an area of moorland here, which is about 240-odd acres for sale which is about £20,000 pounds. It's got common rights on it, and even if you own it as the landowner you can't do anything with it because the commoners have first rights to graze it, so the landowner can only actually come in after the commoners have finished with it [...]

Hilary Orange: Is there any way as a landowner of getting rid of common right?

Andy Robinson: Only if it's not used or by buying them all up.

Common rights do not however take precedence over mineral rights. According to informants there are around 70 Commoners on the moor surrounding Minions (Craddock Moor), however only two or three were active graziers. The Commoners and landowners are organised into associations, for instance organisations for the whole of the moor (Bodmin Moor Landowners Association, the Bodmin Moor Commons Association) and more locally, the Craddock Moor and St Cleer Commoners Association. The moor is situated within three different parishes, and Parish Councils have no direct relationship with the Commoners Associations. However, the Commoners associations and landowners are vocal in terms of defending their interests, particularly in regards to issues which directly affect their property or livelihoods; they hold respect and a degree of power on the moor, as one (anonymous) informant commented:

When it comes to things like a campaign to keep dogs on leads etcetera, the parish along with the police, along with the commoners and everyone else, we're planning to do something next year with that and everyone has said 'yes they'll be involved' but in general everything that happen on the common is left to the commoners and the landowners.

Interview data identified different perceptions of 'localness' on the moor. Whilst the Commoners are generally considered the 'authentic local', as they represent the traditional working life of the moor (which pre-dates the relatively brief period of industrialisation), those born and bred in the area, many of whom can claim links to the area's former industries, can also claim nativeness. These two 'local' or 'Cornish' groups are differentiated from incomers who, it is claimed, lack an understanding of moorland ways of life. The topic of the relationship between 'locals' and 'non-local' incomers arose during interview with one informant who here discusses the factors which can lead 'indigenous locals' to feel resentment towards incomers who have settled locally.

There's always going to be a certain amount of jealousy [...] A lot of people moved out here, they commute into Plymouth and so they do this perceived nine-to-five and seem much wealthier on it than a lot of the locals who've lived here all their lives. You've also got a scenario developing particularly between the Commoners and some of the other

people who've moved in is that actually this area is their farming landscape - they make money off it. Their incomes come from it and therefore if somebody is hitting a sheep by driving too fast or their dogs are worrying sheep, you know - it is actually affecting their income. [...] between March and July any dogs are supposed be on a two metre lead but yet you went out and asked people about that, bet your bottom dollar, ten percent might know.

Despite such ongoing issues, the landowners and Commoners are, according to Peter Butts, “pretty tolerant unless you catch them on a bad day [...] as long as you keep dogs on leads and keep to the paths” however; with the introduction of Open Access requests to stick to paths have become problematic.

#### **8.2.2.2. WHS, Open Access and third party litigation**

2005 to 2006 saw the launch of the Caradon Hill Heritage Area Project, the inscription of World Heritage Site status and the introduction of Open Access on the moor. In interview [REDACTED] reported that there was a “certain amount of local pride in World Heritage Status but then there is also a lot of concern.” Wider rights of access and a spotlight on the area’s heritage raised fears of increasing heritage tourism on the moor, linking to the ongoing issues with cars and dogs, as outlined above, but also highlighting a new topic of concern – that of third party liability and increasing insurance premiums. Besides these concerns any additional heritage designations (see Chapter Five, Section 5.2.4.), whether they are WHS or scheduling, risk ranking locals who already feel besieged by the ongoing imposition of external agencies, as one informant noted: “there’s a history of imposed solutions on the landscape and community.”

Open Access areas are marked on Ordnance Survey maps but not on the ground. Walkers may be aware that the moor has Open Access but may not be aware of restrictions (CROW Act 2000). These restrictions include having dogs on leads between March and July, and ‘excepted land’ includes buildings where people live and work but not derelict industrial structures or features (Countryside Agency 2006). Walkers who are not aware of access rules or who have not studied a map therefore run the risk of venturing inadvertently out of the Open Access areas and

encountering a landowner having a “bad day”. Perhaps with renewed interest in the area’s industrial heritage they also run the risk of venturing off designated footpaths to explore ruined mine buildings.

Whilst occupiers’ (landowners’ and farm tenants’) liability under CROW 2000 is reduced it is not negated and occupiers still have a duty of care towards visitors walking in Open Access areas, and in the case of litigation in the civil court the court would take into account “the importance of maintaining the character of the countryside, including features of historic, traditional and archaeological interest” (Countryside Agency 200). As Iain Rowe commented with some sympathy “if a brick falls off a building and hits someone on the head the landowner is responsible even though its Open Access – which is totally bizarre.” Furthermore, landowners are, of course, responsible for the upkeep of listed buildings. Open Access therefore presents occupiers with the necessity of securing third-party liability insurance in case members of the general public have an accident on their land. With more cars and more people on the moor, the mine buildings have become, for some, a physical liability. Three months following WHS inscription, Council minutes note “issues around the Moor in the sense of it now being a WHS and in respect of Access Land” (Minutes of Linkinhorne Parish, 11 September 2006, Item 4, 65).

Some public information initiatives were being undertaken in Minions to remind users of the moor of their rights and responsibilities regarding dog ownership and Open Access as well as signs warning of potential hazards. Hand-painted wooden ‘Danger Mineshaft’ signs are posted alongside popular tracks whilst more official warning signage and fencing stops walkers from venturing too close to the quarry edge. In the Minions Heritage Centre warning signs remind visitors that they are in an industrial landscape to proceed with caution whilst interpretation boards remind visitors that the moor is a ‘living landscape’ and dogs off leads and parking on the moor is not appreciated. Free leaflets are also available on Open Access. Meanwhile recent signage in the Station car park (erected since 2008) includes information on Open Access and the law (Figure 8.9).

### 8.2.2.3. Caradon Hill Area Heritage Project

As project leader of the Caradon Hill Area Heritage Project (see Chapter Five, Section 5.2.6.2.), Andy Robinson is well placed to speak on heritage management issues on the moor. The project has not been straight forward. The funders set a requirement that each project stage had to gain a letter of approval from the local commoners associations, following a vote. Stage I, the development stage of the four-year project, was originally planned to start in 2003-2004, but the commoners voted against the project starting. Council minutes record the project being hotly debated during the summer of 2007 (Linkinhorne Parish Council). The issue again seemed to revolve around the fear of increasing numbers of walkers on the moor and some landowners and commoners “not wishing to pay the public liability that would be necessary if the scheme went ahead” (Linkinhorne Parish Council, June 2007 - 89/07).

As Andy Robinson explained in interviews, advocating conservation and getting landowners on side is far from straightforward:

I can see the point on the mine sites, they're a liability because if you're farming on the land and you've got an engine stack on your land you've also then had Open Access imposed on you, which means that people can wander across it, but it's not policed which means they can also go across it on the four-wheel drives and motorbikes and dogs and everything else. But if a bit of the engine house falls off and lands on them and they hurt themselves they then sue you. So you've got to keep it insured with third-party liability.

We come along and say 'look we'll rebuild that engine house for you. We're not going to pay you any money for it but we'll rebuild it. When we've rebuilt it its then up to you, you've then got to sign a ten-year minimum management licence because its using Heritage Lottery Fund money to do so but you'll maintain it in that condition and not allow it to deteriorate. But at the same time it's going to attract more people, so you'll have more people crawling over it therefore your insurance risk is going up and you're going to have more people interfering with the livestock and whatever else.'

Why on earth should you? And their perfectly reasonable comment is ‘we’ve got half a dozen mine stacks, two of which are in pretty good condition and look interesting, we’ve got a couple of tatty ones - you can hardly tell they’re mine stacks at all, they’re really rough. Why can’t we knock down the two that are really rough, use the stones from those to consolidate the good ones and then what’s left we can sell off?’ Because the corner stone is worth £200 or £300 pounds a piece [...] And that gives us some income to offset the extra cost you’re imposing on us, because you’ve brought in Open Access and World Heritage Site and God knows what else.’ And that’s a perfectly legitimate argument, and the only argument people ever come up with against that is ‘well why did you buy it in the first place and why don’t you sell it?’

For a local, community-focused project, whose aims include education and training on the natural and historic environment, such delays were frustrating. Despite delays the project was launched in July 2010; the CHAHP blog (<http://chahp.blogspot.com/>) reveals that by August 2011, Stage II project implementation was well under way, demonstrating that eventually - despite concerns - the Commoners’ and landowners’ agreement was eventually obtained. Restoration works on South Caradon Mine are underway and the project archives reveal a range of community projects relating to wildlife, education and training.

Back in the Tourist Information Centre in Liskeard Mike Habbeshaw reflected on the sensitivities of marketing the area more widely:

I would like to see it [WHS] advertised but at the moment I’m not sure it’s ready for the numbers of people who might hit it. I think there’s a lot to be done up there of not necessarily restoration, but certainly preservation, because you know, it disappears under footprints. It’s quite a sensitive area anyway, moorland like that, vast numbers of people would go a long way to destroy it.

Such an understanding of the sensitivities of the moor has resulted in the area being left behind as World Heritage areas further west have moved forward more quickly in promoting their area’s attractions to tourists. Pausing in a walk around South Caradon, Iain Rowe admitted that he appreciated the “peace and quiet”

however he also felt that the area's heritage assets could be "trumpeted a bit higher" as he commented "there's no mention of Cornish mining this side of Truro its all very West Cornwall."

Although it is clear that there are more people on the moor (in particular more car drivers, as outlined in Section 8.2.2.1. above) this change predates WHS inscription, CHAHP and Open Access, as noted above the majority of users of the moor are 'local' – from local villages and from the town of Liskeard. However, any heritage initiative will generate concern that more visitors, and tourists, will become interested in visiting the moor.

### **8.2.3. Overview of changing Minions in the post-war period**

Respondents are evenly split over whether the Minions area has changed physically indicating a degree of environmental stasis, while a third of respondents felt that there has been no change in attitude towards industrial sites. A timeline of change reveals transformation in farming practices over recent years, restoration works by landowners, more interest in mining sites, more people and cars arriving on the moor, incomers taking up residence within the moorland villages and in consequence, for some, a loss of a sense of localness.

There are ongoing issues with motorised transport on the moor. Measures have been taken to physically restrict and contain vehicles, however, the problems change and morph over time. As discussed in Section 8.2.2. above there is an ongoing tension between the traditional, working life of the moor and recreational access. These are tensions which reveal a complex relationship between increasing traffic on the moor (whether real or perceived), the politics of identity (including different shades of localness), the traditional moorland economy of grazing and concerns over third party liability in specific regards to ruined industrial buildings.

The concurrent introduction of WHS, Open Access and a local heritage project in 2005/2006 reinvigorated concerns regarding heritage/tourism initiatives and heightened resentment over the imposition of external authority. As a result a local community focused heritage project, CHAHP, has experienced delays.

### **8.3. World Heritage Site status**

After considering present day descriptions of Minions and the ways in which the mining area has changed in the post-war period this section focuses specifically on World Heritage Site status in terms of local (as opposed to universal) perceptions of importance (or significance), awareness of the status, expectations of the status and, impact of the status.

#### **8.3.1. Importance of Minions mining remains**

The majority of respondents (63.1 percent) (Appendix E, Table E.4) felt that the area's industrial archaeology was of 'high' importance (Figure 8.10, Appendix A). Only 1.5 percent of respondents felt that conversely Minions' mining remains were of low importance.

#### **8.3.2. Awareness of World Heritage Site Status**

A majority of respondents (76.6 percent) knew that the Minions area was part of the World Heritage Site (Appendix E, Table E.5).

#### **8.3.3. Expectations of World Heritage Site status**

The vast majority of respondents, 82.6 percent, considered WHS status a 'good thing', only a few, 4.2 percent, felt it was bad, whilst 13.0 percent didn't know (Appendix E, Table E. 6). There is a clear discrepancy between these statistics (WHS is good) and the qualitative data outlined above (Section 8.2.2.) (WHS is problematic) which drew largely on interviews and Council minutes. Taking into account attempts to sabotage my collection of survey data on site (see Chapter Six, Section 6.2.1.), and the demographic profile of the Minions' respondents (See Appendix D) I am aware that my survey data is biased towards advocates of heritage and I am potentially lacking responses from those with anti-designation viewpoints. Indeed, looking at all the questionnaires only one respondent worked in a traditional moorland industry (25 year old male, stonemason – M112). Therefore, data on public expectations of WHS at Minions needs to be treated with due circumspection. My inclination is that the council minutes and interviewees are more reflective of expectations of WHS.

The results of content analysis of write-in comments (see Appendix F) regarding perceived costs and benefits of WHS are tabulated in Table 8.3 (Appendix A) (using Labadi's value typology [2007: 158], presentation based on Bart *et al.* 2004).

The perceived benefits of WHS focus strongly on architectural and aesthetic value. It is "important to preserve the evidence of a huge industry" (47 year old female, lecturer - M111) and "attracts the resources to maintain sites" (76 year old female, retired female - M106, see also M10; M17; M19; M21; M46; M81; M94; M116; M122; M123 and M124). Other less strongly held values include transfer of historical information about Cornish mining (as one respondent commented, how else will evidence of past activity be researched/viewed by any that visit?, 60 year old male, schoolmaster - M114, see also M17; M22; M100 and M106); increased wealth including funding and revenue from tourism (economic value – M22; M81 and M106) and local pride (social value – M67; M117 and M189).

The perceived costs of WHS are far fewer with detractors focusing on architectural and aesthetic, and social values. There will be more visitors, "heritage status will create expectations in the minds of non-local people that this is 'a place to go to.' It will increase the number of 'gawpers' meandering around with ice-cream in their hands" (60 year old male, artist - M126, see also M106). WHS could result in a 'theme-parked' landscape (M16), and the imposition of outside authority was considered by one respondent who was "naturally suspicious of any policy emanating from London. Usually results in the Cornish getting screwed" (60 year old male, company director - M69), demonstrating a lack of understanding as to who is behind the designation.

#### **8.3.4. Impact of World Heritage Site status**

The Caradon Hill Heritage Area Project builds on WHS status and the designation has been significant in raising awareness of the area's industrial heritage and has strengthened CHAHP funding applications. In addition, Andy Robinson acknowledged that WHS reports had been useful in preparing the project, for instance a WHS education audit had been utilised within the CHAHP strategy.

The question of whether there has been extra footfall due to WHS remains unclear, however, informants indicated that to date there had not been a significant

increase in people on the moor since 2006.

Drawing on her [REDACTED] remarked during interview in August 2008 that “People are very keen to use it [WHS] if they are opposing a planning application. “This is a World Heritage Site - you can’t do this here”. A search in the Council minutes of Linkinhorne Parish found two references to WHS within discussions over planning applications in 2006 and 2009.

In 2006 a planning application for a new antenna to be built at Caradon Hill TV station (Figure 8.6, Appendix A) was submitted by Ian Hewitt Associates (telecommunications specialists and agents for the present owners, Arquiva). The proposal stated that the new antenna would raise the height of the mast to 249.9 m and would necessitate an additional building. The council “resolved to write to Ian Hewitt Associates in respect of the general untidiness of the site, the increasing harmonics of the mast and request a picture of a similar mast where such a proposed antenna swap had already been achieved and recommend that EH approval be sought as the area was now covered by WHS” (Linkinhorne Parish Council Minutes, 13 November 2006, Item 5b, 73-74). It appears that this application proved unsuccessful as the current mast height is 228.9 m (The Big Tower 2010). Over three years later WHS was again raised in connection with a planning application to install solar panels on the roof of Upton Cross School (which lies 1.5 miles east of Minions). After a vote the council recommended to neither object nor support but to raise concerns regarding “visual impact” in “this AONB/World Heritage site” (8 June 2009, Item 14a).

### **8.3.5. Overview of World Heritage Site status**

The majority of respondents consider Minions’ industrial archaeology to be of high importance. The vast majority knew that Minions was within the WHS area and consider the designation to be a good thing. The perceived benefits of WHS focus strongly on preservation, highlighting architectural and aesthetic values, and there are fewer perceived costs. Most of these relate to the unwelcome development of tourism and the unwelcome imposition of authority.

The status has proved useful to CHAHP. While extra footfall as a result of the status is difficult to determine, informants suggest that tourism has not significantly

increased. WHS has been used by the local parish council for suggesting modifications to planning applications.

## **8.4. The future of the Minions mining area**

As long as they don't deteriorate any more, if funding could be used to conserve them, that would be terrific. But I do think that Cornwall has to look at its future and what it's going to be in 20 or 30 years time and I really don't want it to become a theme park and one of the risks of Heritage Status is that we do look to the past too much (Peter Butts).

When asked for their views on the future of the Minions mining area, the majority of respondents, 72.1 percent, agreed with Peter Butts – mining remains should be preserved. Only 11.8 percent felt that they should be re-used. Less, 5.9 percent felt that they should be left to decay (Table E.7, Appendix E). A further 10.3 percent of respondents chose more than one option, thereby advocating a combined approach (Figure 8.11, Appendix A).

Reasons for choice were explained within write-in responses (sample of 65) which are considered in turn within the following sections.

### **8.4.1. Preservation**

Respondents who advocated preservation strongly believed that the area's mining remains should be preserved for future generations (M66; M72; M77; M85; M91; M95; M96; M104; M105; M106; M110; M120; M123 and M172); and for their historical value (M47; M48; M104; M107; M111 and M124). Other motivators included maintaining archaeological exemplars of type (M19 and M98), maintaining a physical connection to the past (M67; M79; M109 and M117), preventing further deterioration (M22; M97 and M104), meeting public expectation and reinforcing their value as a recreational resource (M68). Rare responses noted that mine buildings add to landscape character (M121 and M127). The following quotes provide exemplars:

For the next generation to enjoy (62 year old female, bookseller –M81).

Some remains should be preserved to educate the public about the mining heritage (70 year old female, retired – M99).

As a permanent example of what our forefathers did (over 60 male, local government officer – M88).

In the Minions area the preservation of the existing engine houses would be a good thing before they fall down (61 year old female, yoga teacher – M22).

They define the area, an important part of the landscape (53 year old female, nurse – M121).

It's nice to have as a reminder of where Cornwall came from. They also make a great day out, and provide fantastic material for local artists and photographers (19 year old male, shop supervisor – M68).

With the possible exception of limited granite quarrying, the public expects the buildings to be treated like ancient remains elsewhere (73 year old male, semi-retired farmer and cheesemaker – M116).

#### **8.4.2. Re-use**

Respondents who considered re-use of mine buildings a preferable option presented a range of possible uses. Working examples were supported (M112 and M118); engine houses could be converted into residential accommodation (M161). It was felt that re-use prevented decay (M125 and M128) and sites could be profitable again (M49), however, only one respondent suggested re-starting the mining industry (M16).

It would be nice to see an actual working example. This would give a better insight into the workings, life, and history (52 year old male, draughtsman – M118).

Engine houses converted into houses (60 year old male, retired teacher – M161).

Re-open mines where possible (South Crofty etc), do the minimum repair for safety and preservation to the rest (over 60 female, retired – M16).

Some respondents were against reuse, they preferred the buildings to remain unaltered in order to avoid sentimentalising the former industry (M108 and M94). Another felt that a revival of mining was unlikely from an economic viewpoint.

Because would not be real (Disney like) (55 year old female, psychologist – M48).

There seems little point in imagining a revival of mining – the economic climate seems to be totally hostile (37 year old female, university lecturer – M19).

### **8.4.3. Decay**

Only one respondent noted that “decay is dangerous” (61 year old female, retired - M117), for others decay was part of a natural process and therefore decay should be allowed to take its own course (M75; M71; M83 and M168). One further respondent felt money spent on other options “could be better spent on other projects which don’t require such a large amount of work” (55 year old female, shopkeeper – M73). However, the complete loss of any historic structure was to be avoided (M19):

This is a very slow natural process – real history not theme-park style artificial re-enactment (57 year old female, author – M168).

With the occasional exception landscape is not fixed, it is living, to freeze it at any point is a snapshot view of time, whereas it is in flux (42 year old female, teacher – M71).

### **8.4.4. Combined approaches**

A few respondents put forward arguments which considered a combination of approaches. Issues taken into account included the scale of remains leading to a selective and practical approach to preservation (M23; M69; M114; M165 and

M159) and re-use, with the provision of educational resources guiding the latter (M129):

All of these depending on which is appropriate on a case by case basis. The best should be stabilised for the historic record. It's as well to let the rest decay slowly under a general 'conservation landscape' protection for now (60 year old male, artist – M126).

Some useful buildings that explain the heritage, c) some may decay beautifully – balance between the two (58 year old female, tutor – M188).

#### **8.4.5. Overview of future**

Minions' respondents strongly support the future preservation of their area's mining remains and present a wide range of reasons to support preservation, most notably preserving for future generations and for historic value. Re-use is advocated by a few, particularly as working examples/heritage interpretation. A few see decay as a 'natural' part of the life of the building. A number of respondents consider the complexities of heritage management and consider the need for a combination of approaches to mining landscape that selectively preserve, adapt and manage decay.

#### **8.5. Chapter summary**

This chapter concludes with a summary of the key themes to emerge from data on public perceptions of mining remains on Cheesewring moor. Broadly speaking, the moor is perceived primarily as a natural landscape. This perception partly derives from the moor's use as 'parkland' by local residents. Aside from its 'natural' qualities, this area of Bodmin Moor contains a rich multi-layered archaeological landscape with notable prehistoric monuments and industrial complexes. Observation of paths suggests that most walkers remain within sight of the village which influences the range of features named as being 'significant'.

A notable number of respondents felt that Minions had not physically changed over the last fifty years, indicating a degree of perceived stasis. However, others

respondents noted changes in farming practice, conservation works and increasing numbers of cars/people visiting the moor. The concept of the local versus the 'other' resurfaced in 2005/2006 with the introduction of Open Access, WHS and a local heritage project (CHAHP). Ongoing tensions on the moor regarding access highlight the perceived threat of the other and perception of identities can be variously defined in terms of the 'real local' (moorland born/farmer), the 'incomer' (who needs to learn moorland ways of life) and the outsider (external authority/tourists).

Data from the questionnaire survey is potentially biased towards advocates of heritage. However, taken at face-value data demonstrates that mining heritage is considered of high importance. In addition there is good awareness of WHS and WHS is supported. The status has proved useful to CHAHP; however, data on impact, in terms of increased numbers of visitors, is indeterminate. Survey data does demonstrate a strong desire to protect mining sites for their historic value and for future generations. The future is generally preservation oriented.

## CHAPTER NINE: ST AGNES

### 9.1. Site descriptions

#### 9.1.1. St Agnes is...

Respondents to the questionnaire were asked to provide write-in short descriptions of the St Agnes mining area. Selected examples of these (from a sample of 66) are collated in the extract below. These extracts have been deliberately dichotomised into firstly, extracts which largely reflect positive attributions of place (beautiful unique landscape, impressive scenery and ever present heritage) and secondly extracts which reflect negative attributions of place (the harshness of the mining lifestyle in the past, ugliness of industrial archaeology and the effect of immigration of local identity and sense of place):

[St Agnes is] “a lovely friendly village” (33 year old female, teacher/nanny/pharmacist - SA165). “One of the most beautiful and idiosyncratic landscapes in England. Possibly the world’s first case of a truly post-industrial landscape which has returned entirely to its wild original nature and therefore of great hope to us all” (49 year old male, student - SA40). “St Agnes was one of the most active mining areas in its time” (77 year old male, clergyman - SA114). “Mining shaped the look of almost everything more than 100 years old. All the walls were built from spoil, even the floor in the church was back-filled with spoil” (33 year old male, ceramic tiler - SA101). “A lasting monument to an industrial past” (41 year old male, civil servant - SA55). “Because of the number of mine buildings within the village – unique” (75 year old female, retired - SA9). “Once rich in tin and copper, now rich in scenery which includes impressive ruins still withstanding storm and gale on the cliff tops and others ivy-covered in hidden coombes” (79 year old female, retired lecturer - SA149). “The heritage is present wherever you go” (31 year old male, shop assistant - SA113). “Rugged and beautiful - relaxing in all the seasons and great for the outdoor life whether on land or sea. The mining remains benefit and do not detract” (45 year old male, company director - SA117).

[St Agnes is] “dead! Not making the most of the heritage” (43 year old male, company director - SA104). “Evocative remains seem romantic now, but must have been horrible places to work. So beauty tinged with horror” (54 year old male, retired teacher - SA102). “Apart from a few derelict (sic) engine houses on the coast that are quite interesting the rest, mine waste etc. is pretty miserable” (82 year old male, retired architect - SA49). “Some old buildings do require renovating as they can look ramshackle, most are reasonably good and enhance the countryside” (53 year old female, administrator - SA22). “A Cornish mining village which has now been despoiled by an influx of second home owners” (87 year old male, retired accountant - SA122).

### **9.1.2. Keywords**

Content analysis of these descriptions produced the following top-six keywords for St Agnes:

Area. Beautiful. Buildings. Interesting. Mine/mining. Old.

### **9.1.3. Best descriptor: A ‘heritage’ landscape**

Data from the questionnaire survey shows that St Agnes is best described as a ‘Heritage’ Landscape (31.7 percent), followed by ‘Mining’ Landscape’ (27.0 percent) and ‘Natural’ Landscape’ (17.5 percent) (Figure 9.1, Appendix A) (see Table E.1, Appendix E). Again, it can be noted that the more specific term ‘Mining Landscape’ is preferred over the comparable term ‘Industrial’ (3.2 percent). It is also interesting that the option ‘Archaeological Landscape’ resulted in zero selection, suggesting that local people see the remains of the mining industry as ‘heritage’ but not as ‘archaeology’.

### **9.1.4. Signs, car parks and benches**

Driving into and through St Agnes there are multiple signs to village attractions at crossroads and t-junctions - the beach, hotels and public houses, but no signs to tell a visitor that this is part of a WHS. The area’s industrial heritage is by no means forgotten, not only are the remains of the mines still within the village, but



Seated on a commemorative bench facing the (more scenic) sea view (Figure 9.4, Appendix A) [REDACTED]

[REDACTED]

[REDACTED]

It is interesting to note that within this extract, [REDACTED] places the surviving industrial features on the clifftop at Wheal Kitty (so far, unlike their associate mine buildings, untidied) in synchronicity with 'wild' nature, rather than in opposition. There is a sense that the mine waste and jumble of dressing floors have authenticity, however, the seats are perceived as unwelcome intruders into the industrial/natural wilderness – a recent phenomenon which is indicative of leisure and recreation.

The benches are one example of different ways in which the comfort of holiday makers (and therefore simultaneously local residents) is accommodated within the village and [REDACTED] rant against increasing 'urbanisation' of the village is a debate that can be extended into the coastal zone. Along the coastal plain westwards of the village are a number of untarmaced car-parks and laybys which cluster around

the popular locations of St Agnes Head, St Agnes Beacon and Wheal Coates. These car parks are all on National Trust land and are free to use. Two miles west of St Agnes the popular beach of Chapel Porth (also owned by the National Trust) boasts a tarmaced car park with visitor facilities in the form of toilets, a café and picnic tables. The car park provides access to the beach for swimmers and surfers and in addition a short well-trodden section of the coast path leads to the landmark site of Wheal Coates. The car park is free to National Trust members; however, there is a charge for non-members (£2.50 in 2008).

[Redacted text block]

[Redacted text block]

The combination of people, cliffs, sea and industrial remains mean that accidents nevertheless do happen. In a twelve month period (from August 2010 to July 2011) St Agnes coastguards dealt with accidents on beaches, lost children, dogs fallen over cliffs, people stranded by the incoming tide and surfers in trouble. In November 2010 an injured motorcyclist was pulled out of mine workings at Wheal Kitty. In July 2011 an elderly woman was rescued after spending the night in her car which she had inadvertently driven over the side of the cliff at St Agnes. They are not necessarily all hapless visitors, who may be less aware of the dangers and are feeling too relaxed for caution. In October 2010 a local fisherman was taken by air-ambulance to hospital after he slipped over the cliffs at Trevaunance Point (St Agnes Coastguard 2011). The fact that such instances are relatively rare makes them newsworthy. However, any media attention reinforces concerns that measures should be taken to increase safety in Cornwall's coastal areas. After a fatal fall down a mine shaft on nearby Perranporth beach in the summer of 2010 warning signage was suggested to prevent further accidents (BBC 2011a).

#### **9.1.5. Being at home in 'Aggy'**

Whilst to some extent St Agnes' tourism operators are, now post-WHS, advertising St Agnes' as an industrial settlement, observation during fieldwork concluded that that the area markets itself primarily as a quality beach resort. [REDACTED]

[REDACTED]

[REDACTED] Although the beaches around 'Aggy' do not compare to the premier surfing beaches of nearby Newquay there is a thriving surf scene in St Agnes and the village has its own lifesaving club which operates out of Trevaunance Cove.

St Agnes/'Aggy' therefore has a dual identity – as a surfing/beach resort and as an industrial settlement, perhaps best summed up visually by the logo of the St Agnes Surf School which depicts an engine house above (or perhaps surfing) waves (Figure 9.5, Appendix A). The best description data (Section 9.1.3.) above suggests that respondents perceive the area more strongly in terms of its industrial heritage (however 15.9 percent described St Agnes as a seascape). Whilst surfing or sea-

gazing are both part of life in St Agnes residents also share intimate proximity with the remains of the village's mines. Industrial remains are at the end of their gardens, in their drives and come into their homes as views through the window. Chimneys form part of the streetscape on the walk to work or the shops and the footprint of housing estates encircle and overlay mines (Table 5.3 and Figure 9.6 Appendix A). The mines are therefore woven into the fabric of the village and the experience of everyday life. Clive Benney, the village's former police officer and official recorder for the St Agnes Parish chose to be interviewed at home; standing at his east-facing living-room looking across towards Turnavore engine house he commented on his daily view of mine waste and chimneys:

As you go through St Agnes main street there's one [an engine house] right in the middle of the village, you know, and the village was there when the engine house was built. It's incredible really. You wouldn't build a mine right next to it but back then they didn't care. If there was ore down below you built an engine house, a shaft and you worked it. You look out of my window and you can see two, three engine houses, most people's properties are the same, people can look out of their window and look across at Gooninnis. They're in amongst us - aren't they?

#### 9.1.6. Significant features

[Redacted content]

[Redacted]

[Redacted]

This extract demonstrates local ownership of ‘correct history’ versus ‘official history’ – as [Redacted] quite rightly points out, the expertise lies, not with heritage professionals, but with those who worked in the mines or have other connections to the industry. If the choice is between simplifying too much and provoking the anger of local mining buffs or providing too much detail and failing to communicate key information to the general public (not only visitors but also incomers and generations who have grown up in post-industrial Cornwall), it is not surprising that on-site interpretation is problematic and therefore limited.

[Redacted]

[Redacted] data from the questionnaire survey showed that the engine houses were considered ‘significant features’ (Table 9.1, Appendix A). Out of the total of 92 listed features, the vast majority (84.8 percent) were industrial features. Of these

7.6 percent were mine setts or workings whilst the remaining 77.2 percent were specific industrial features. A further 11.9 percent of the list was made up of natural elements such as the coastline, flora and beaches. An 'other' category took up 3.3 percent of responses including the coastpath (and also including village residences and St Agnes Museum). Data shows that the most significant features at St Agnes are engine houses, chimney stacks, (generic) mine buildings and Wheal Coates (engine houses).

This data can also be compared to 'official' perceptions of significance, in this case key features listed on 'Walk no 2' within the *Heritage Trails* series of walks produced by St Agnes 2000 Regeneration Forum (2006) (Table 9.2, Appendix A) which was available for sale to the public during the period of my fieldwork. This nine-km walk encompasses Wheal Coates, St Agnes Head, Trevaunance Cove and Wheal Friendly and therefore incorporates village and coastal features. Table 9.2 only includes extant features mentioned in the guided walk and excludes features specifically relating to wayfinding.

Considering its role as a popular picnic spot, it is surprising that St Agnes Head is not listed, and neither are spoil heaps, despite the fact that massive tips overlook Trevaunance Cove and the sides of the valley are covered in waste. The coastpath was not considered a significant feature and only one respondent listed mine shafts (66 year old retired female - SA17). Furthermore, St Agnes Beacon does not appear to be an iconic landmark within this sample, despite its visual dominance over the area (Chapter Five, Section 5.3.2.). Again, the high frequency of engine houses is notable and Wheal Coates is the most named mine site.

Write-in comments on the questionnaires and comments in interviews throw some light on why certain features might be considered more significant. A 45 year old male commented on the "prominence of chimneys" (SA23) (which were listed by 11 respondents). A 33 year old male (tiler - SA101) noted that "engine houses are everywhere." A 79 year old retired male engineer reflected on the marketing of images of Wheal Coates "pictures of which adorn so many publications about, + advertising Cornwall" (SA150).

### 9.1.6.1. Naming of significant features

The way that significant features at St Agnes were named revealed, on categorisation, five levels of knowledge, understanding and vocabulary ranging from the demonstration of knowledge of the site's history, to broad and generic descriptions of mine workings or mine buildings, to the use of analogy to describe features when respondents lack vocabulary to describe them textually. The five levels with exemplars are detailed below:

Level One: Knowledge of the area's history:

The houses built during the 'boom' are quite grand and certainly well built (33 year old male, tiler – SA101).

Level Two: Naming of specific mine setts:

Wheal Kitty; Wheal Coates; Towan Roath; Blue Hills; Wheal Charlotte; Wheal Friendly.

Level Three: Awareness of functionality and/or knowledge of mining terms:

Old miners' houses; engine houses; disused engine houses; sleepy engine houses ; old engine houses; remains of shafts; Wheal Houses; remains of Wheals; stacks; mine stacks; chimney stack; the stacks ; the prominence of chimneys; dressing floors; coastal workings; old mine workings; mine pump houses; mine captain houses.

Level Four: Broad and generic descriptions:

Preserved mines; archaeological sites; industrial relics; all the mines on the coast; the remaining mines; industrialised remains; historical remains ; structure of the old mine; old tin mines; ruins; mine building; mining remains; buildings.

Level Five: Analogy:

The towers of the tin mines (taken to mean a mine stack or an engine house).

### **9.1.7. Overview of descriptive data**

There are a number of main points and themes to emerge from the descriptive data outlined above. Taking the six keywords, St Agnes is a beautiful and interesting area with an old mining heritage. Mining remains add value to landscape character rather than detract from it. Local people perceive the area strongly in terms of its mining heritage. This perhaps reflects the relatively recent World Heritage Site status and the fact that industrial remains are an intrinsic part of the settlement. St Agnes' other side to its personality is summed up by its nickname 'Aggy' representing surfing culture and a beach resort.

Descriptions paint a picture of a happy, pleasant and prosperous village and an appealing place for tourists to visit. The many varied services within the village provide comfort and pleasure, however, a degree of urbanisation is evident through a preponderance of street furniture. The National Trust's management of the coastal area involves a number of challenges in terms of protecting natural values and paying due care to visitor's health and safety. Signage policy has relaxed over recent years and the iconic site of Wheal Coates, and Chapel Porth now has interpretation, however, getting this interpretation right has resulted in its own problems and challenges.

Outside the village popular locations include the western section of the coastpath, St Agnes Head, St Agnes Beacon, Wheal Coates and Chapel Porth and a number of car parks stretch out along the coast as a result. The most significant features on site are engine houses, chimney stacks, mine buildings and Wheal Coates. There are different ways that features can be named, generically, through analogy and with awareness of functionality.

## **9.2. Changing St Agnes in the post-war period**

The questionnaire asked respondents whether the St Agnes mining areas had physically changed in the time that they had lived in the area and if they had observed attitudinal change towards the mining areas during the period of their residency.

Respondents were evenly split on the subject of change, 47.7 percent had observed physical change whilst 44.6 percent had seen no change. 7.7 percent didn't know if the area had changed. Just over a half of respondents (54.5 percent) felt that there had been no change in attitude towards the mining areas, whilst a quarter of respondents (25.8 percent) felt that there had been changes in attitude (see Table E.2 and E.3, Appendix E).

### **9.2.1. A timeline of change**

From write-in comments (see Appendix F) a textual and graphic timeline of change, from the perspective of respondents, has been drawn (Figure 9.7, Appendix A):

The timeline begins in 1957 when the National Trust took over Wheal Coates (SA52). Broadly speaking, in the post-war period, comments reflect on loss and decay – engine houses demolished (SA11), mine stacks and other buildings gone (SA2; SA111; SA113 and SA124) and “stone waste piles” removed (SA72). As well as the loss of fabric due to human intervention, nature has intervened in a continual process of erosion and re-vegetation:

A lot of the spoil heaps on the cliffs near Chapel Porth have eroded and are washing down onto the beach (39 year old female, environmental campaigner - SA127). Nature claiming a lot back. (41 year old male, sales assistant - SA21). Much of the workings are overgrown and not accessible (76 year old male, master builder - SA124).

The acquisition of areas of the coastline by the National Trust (the most recent acquisition in 2006) was noted by one respondent: “The National Trust have taken control of some areas locally and have imposed restrictions and parking charges” (45 year old male, company director - SA117). Others commented on general renovation and maintenance works within the area (SA2: SA104 and SA114); “Buildings have been made safe” (79 year old male, retired industrial installation engineer - SA150) and there was also “more signage to make (the area) accessible to visitors” (45 year old male - SA23). Carrick District Council's ‘Operation Minecap’ (1983-1984) was also recalled with one respondent noting that “work has been done to cap old mine shafts for safety reasons” (86 year old male, retired - SA116).

In 1992 Wheal Jane tin mine closed. The mine was located six miles south of St Agnes and would have been a straightforward commute for St Agnes residents. One respondent remembered being a child growing up in St Agnes: “When I was younger the Wheal Jane mine was still in production and I knew people who were employed there. It was important to them. I think these people feel a sense of loss” (39 year old female environmental campaigner - SA127).

The establishment of a visitor attraction at Blue Hills (situated in Trevellas Coombe/Jericho Valley, opened c. 1997 (Clive Benney pers. comm. 1 November 2011) was also noted: “Blue Hill Tin Stream becoming a tourist attraction” (41 year old male, sales assistant - SA21). The extensive restoration and rebuilding of Wheal Kitty was noted by several respondents as a significant change (see also SA11) (see Table 5.3, Appendix A):

(There are new) “paths and improvements to (the) Wheal Kitty area [...]” (41 year old male, sales assistant - SA21). “Engine house has been roofed and made into a useful industrial unit” (82 year old male, architect - SA49), “(at great expense) by Carrick Council” (60 year old female, secretary - SA18). “(It) is now used as offices and an independent radio station” (33 year old male, self employed ceramic tiler - SA101).

As at the other case study sites conservation interventions had resulted in a general sense that the mining areas are now much tidier:

“Efforts have been made to improve (the) appearance [...] of the area” (65 year old female, retired - SA15). “Many areas have been tarted up to conform to people’s desire for neatness” (70 year old female, retired - SA103) “and there are always people maintaining the grass and opening up new paths” (33 year old male, self employed ceramic tiler - SA101).

Comments on changing values towards St Agnes’ mining areas in the post-war period indicate an increased interest in, and awareness of the significance of the area’s mining heritage (SA54; SA72 and SA104). Explanations of increasing interest include a perception that mining is now historical rather than personal (SA12) - it therefore ‘belongs’ to the wider community, rather than the individual

miner, the family that is supported by mining, or the workforce at the mine. The role of books and TV programmes in valorising (and romanticising) the past was also commented on (the Poldark series and the works of Daphne de Maurier being specifically mentioned) (SA102). A changed awareness of the role of mining heritage within local tourism and economics was also recognised, again leading to an increased romanticisation of the industrial past (SA40). Changing value and significance in turn leads to a desire to have a share of that that which is now considered important. One respondent argued that once “they [local people] are aware of the socio/techno/historical importance they take ownership” (60 year old male, teaching assistant - SA109).

In terms of ‘who thinks what’ there were also a number of reflections on perceived differences in perception:

“In my experience the only people really interested are local people whose ancestors worked in the mining industry” (82 year old male, architect - SA49). “The older people die, the younger and people from other parts of the Country probably appreciate them less, as more and more move here” (41 year old male, civil servant - SA55). “Older people still show interest but youngsters do not” (71 year old male, retired - SA80).

The post-war period had also witnessed changes in housing and demographics. The development of new housing in the village was noted, and some of this was felt to be unsympathetic to the area’s historic and natural character (SA17 and SA44). Following national and regional trends house prices were now high, a trend partly blamed by one respondent on an “invasion” by second-home owners and “retired down-shifters.” In consequence “the demographic of the population now has less working Cornish people” and house prices were in many cases too high for the indigenous ‘locals’ (49 year old male, student - SA40).

The different named actors within these scenarios of change in the post-war period are: local businesses; TV; books; people with ancestral connections to mining; older people (including retirees); younger people; local people, second

home owners; the National Trust; Carrick District Council; the Wills family (Blue Hills); visitors; property developers, Wheal Jane mine and, weathering and erosion.

However, for 44.6 percent of respondents there have been no physical changes to the St Agnes mining area and furthermore 54.5 percent of respondents had witnessed no change in attitude to mining areas. Therefore an alternative timeline exists which forms an unannotated continuum of dates.

### **9.2.2. Contestation over landscape change**

Interview data, and the write-in comments outlined above, revealed different values towards the mining landscape in the recent past. In the early 1980s Carrick District Council acquired substantial funding to cap mine shafts in the district – a programme known as ‘Operation Minecap’. The capping of the mine shafts, and the associated cleaning-up of mining areas, was a recurring topic of conversation when informants were asked how St Agnes had changed and these conversations revealed tensions between an emerging health and safety culture and recreational use of the mining landscape by children. In the following section, interviewees initially reflect on their childhood experiences playing on ‘open’ mine sites before discussing the impact of capping on the landscape and concomitant changes in communal use and activity on sites.

During interview- [REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Mine sites, and shafts particularly, were used as places for local residents and farmers to dump large household items and by-products from the farming industry. Farmers not only disposed of animal carcasses down shafts but also noxious substances as Clive explained “rat poison, or anything that was a little bit iffy [...] then they’d just chuck it down the shafts.” This practice was widespread

throughout Cornwall as [redacted] explained (see Chapter Two, Section 2.4.5.3.); it was “something which went on from wartime” up “until the shafts were capped during the 1980s.” Official household waste recycling facilities, such as United Mines near St Day (which opened officially as a waste disposal site in 1974 (SITA pers. comm. 18 October 2011) did not exist until relatively recently and therefore Cornish residents had to find alternative means of disposal. The redundant mine sites were therefore a pragmatic solution for large items. As former policeman Clive Benney recalled during interview:

It seemed at that time acceptable to do it. It was accepted that it was done, I mean nowadays people would be ringing up the council and complaining but then it was accepted that a hole in the ground could be filled up with rubbish. [...] There was no like we’ve got now, the St Day dumps. The dustbin men came but if you wanted to throw out an old bed or something large there really wasn’t anywhere to dump it. And you wouldn’t believe what would go down the mine shafts - some farmer’s cow dies. The best thing you could have on your land was a mine shaft - everything got tipped down there.

Therefore playing on the mine sites, also meant playing around a lot of rubbish and whilst [redacted] was playing war games, Clive was scrambling round the holes and spoil heaps “looking for old prams and things to make go-carts.” The still open workings also, of course, enabled exploration. Former miner-[redacted]—describes the excitement (and potential danger) of one such trip underground:

[redacted]

[REDACTED]

[REDACTED]

there were of course dangers - the danger of collapse, a fall and contact with contaminants. Unsurprisingly parents could be wary of their children playing on the mine sites. Clive Benney recalled:

We used to go up onto the Beacon and there were tunnels up there and you could go into these tiny holes and you'd crawl in and they'd open inside and you'd go in with these bags of straw to sit on and candles and things like that. My mother came up one day trying to find me and she looked in and saw this hole and she had a fit and banned us from going up there again.

[REDACTED]

Nevertheless, whether the dangers of open mine shafts were 'real and apparent' or parental fear, by the 1980s health and safety concerns started to materially change the mining areas. In 1979 a survey of disused mineshafts began in the Carrick district, in 1983, with 2,538 mineshafts counted, the District Council's Minecap Unit embarked on a two-year operation to make them safe (see Table 5.3, Appendix A and Figure 9.8, Appendix A). Again, there were concerns over the effect on wildlife, particularly concerns over the threat to bat species, which roost in abandoned workings. In consequence an adapted capping device was developed which allowed the animals access. Its innovation led to a £40,000 Department of the Environment award for future use and development (This is Plymouth 2009).

Different details of the project were recalled by informants. [REDACTED]



[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] a reference to the innovative 'bat castle' design created by engineer Ken Quimby (This is Plymouth 2009). In checking for bats in the shafts, the cappers would make some large and rather surreal discoveries – as [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

For Clive Benney some of the capping seemed unnecessary, the cappers closing up “any small hole in the ground.” As he argued during interview:

You can understand if you drop a stone and you start counting and you think gee-whiz - after 15 seconds you think you've got a 300ft mine shaft here and you might want to cap it but these little grills appear everywhere and you think surely there wasn't anything actually there that was a problem. But I don't know what their remit was. They might have been told anything that resembles a shaft put a cap on it.

With the surface/subsurface connections closed off (to humans) the mine no longer breathed. This idea of breath isn't just a metaphor echoing other metaphors of an embodied mine in life or death, [REDACTED]  
[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]

After Operation Minecap, the character of the landscape changed particularly in terms of the relationship between the surface and the underground working. The publicity surrounding the capping drew attention to the potential dangers of the mine sites and appeared to increase rather than decrease concern regarding safety.

[REDACTED]

[REDACTED]—The opportunity to explore adits, and underground workings has also decreased, and furthermore with the closure of the shafts mine sites are no longer viewed primarily as convenient depositories for household refuse. The mining landscape is safer and cleaner; however, there are arguably less opportunity for exploration and bodily engagement.

**9.2.3 Overview of changing St Agnes in the post-war period**

Respondents in St Agnes are evenly split over the subject of physical change to mining areas; however, more respondents felt that there had been no attitudinal changes towards sites. A timeline of change reveals that the National Trust and the former district council have been key agents in maintaining and restoring mining sites along the coast and within the village with the restoration of Wheal Coates and Wheal Kitty being noteworthy. An increasing interest in the area’s industrial archaeology has dovetailed neatly with the village’s established tourism industry. Since the 1980s mine sites have been cleaned up and made safer; Carrick District Council’s Operation Minecap resulted in changes of use, particularly amongst younger generations of villagers, and effectively closed the surface of workings.

The village has experienced social-demographic changes, particularly housing development and immigration (connected to second home ownership and a commuter lifestyle). A number of respondents reflected on possible differences in perspectives towards the area’s mining heritage.

### **9.3. World Heritage Site status**

After considering present day descriptions of St Agnes and the ways in which the mining area has changed in the post-war period this section focuses specifically on World Heritage Site status in terms of local (as opposed to universal) perceptions of importance (or significance), awareness of the status, expectations of the status, and impact of the status.

#### **9.3.1. Importance of St Agnes' mining remains**

The majority of respondents (57.4 percent) (Appendix E, Table E.4) felt that the area's industrial archaeology was of 'high' importance (Figure 9.9, Appendix A). No respondents felt that conversely St Agnes' mining remains were of very low importance.

#### **9.3.2. Awareness of World Heritage Site status**

The vast majority of respondents (85.7 percent) knew that the St Agnes mining area was part of the World Heritage Site (Appendix E, Table E.5).

#### **9.3.3. Expectations of World Heritage Site status**

A very high percentage, 91.9 percent, considered WHS status a 'good thing', very few, 1.6 percent, felt it was bad, whilst 6.5 percent didn't know (Appendix E, Table E. 6).

The results of content analysis of write-in comments are tabulated in Table 9.3, Appendix A (using Labadi's value typology (2007; 158), presentation based on Bart *et al.* 2004):

The perceived benefits of WHS focus on economic, architectural and aesthetic, social and informational values. Most strongly WHS is expected to lead to an increase in wealth through job creation (SA3; SA40; SA19; SA50; SA102; SA07; SA107; SA110 and SA167) and the development of tourism (SA6; SA19; SA102; SA107; SA10 and SA167). In addition the status will protect historical information, as one respondent commented "World Heritage Site = protection, some funding, information to a wider public, global recognition of the importance of the area" (49 year old female, careworker – SA50, see also SA2; SA13; SA103; SA120 and SA122).

Interestingly, the status is also perceived as being of value in preventing inappropriate development, for example as one respondent commented: “any housing developments should be very strictly controlled and kept to an absolute minimum - for local people and not second homes” (79 year old female retired college lecturer - SA149, see also SA40; SA53 and SA150). In raising the profile of Cornish mining at a local and a global level local pride is strengthened, as one respondent remarked: “it lets people know about the meaning of the roots of Cornwall” (31 year old male, shop assistant - SA113, see also SA1; SA13 and SA55).

Only one respondent expressed a perceived cost of the status, in his opinion there were “too many silly regulations for the whole area” (71 year old retired male - SA80).

#### **9.3.4. Impact of World Heritage Site status**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Informants were not able to provide examples of tangible impact and again it was suggested that it was too early to tell.

[REDACTED]

[REDACTED]

[REDACTED]

St Agnes Parish Council minutes provide two instances of use of the status. In 2007 planning applications were submitted to convert and extend Wheal Friendly into holiday accommodation, exhibition, meeting and event space. The existing engine house would be extended, a new swimming pool constructed and nine existing holiday units replaced with six holiday units (4 June 2007, 98/07 and 99/07).

Wheal Friendly is located in the centre of the village on the slopes of Trevaunance Coombe and its granite silhouette is a landmark feature for walkers or drivers heading down to the cove (see Table 5.3 and Figure 5.15, Appendix A). The minutes recorded strong local opposition to the plans (following a public meeting)

and two councillors strongly objected to the application – the structure is a Grade II listed building; it is situated within a SSSI and is within the World Heritage Site.

During interviews the topic of the proposed Wheal Friendly conversion was raised by a number of informants. In the following extract Clive Benney narrates his visit with his wife to view the planning application, and explains some of the contentions around the adaptation of engine houses for residential use:

We went to see the plans, the bloke had put in all sorts of plans to convert it and chalets he wanted changing and everybody was dead against it: 'We don't want this, and we don't want that' but myself and my wife said 'well let's be sensible, let's go down and see what his plans are and what he wants to do and look.' And actually there were some quite nice ideas that he had. For example, they were going to put some sort of glass roof on it so the appearance wouldn't have changed too much. It would have been developed and maintained and kept looking something like it is now. But then they had other strange ideas like a bubble with a swimming pool in it and things like that. I didn't dismiss it right out of hand and I thought some of the ideas were quite nice but a lot of the people in the village without even seeing the plans, 'We're not doing anything like that' and this is the problem you get, not just local people, you get a lot of outsiders coming into St Agnes who don't want to see any change because they've moved to St Agnes because its a sleepy little Cornish village and they don't want to see any change at all. Personally, I'd rather see it as a house than fall down, you know what I mean? [...] But I think Wheal Friendly, I mean it's been there so long, and the ivy growing on it, I think that people just want it left as it is and because of its position above the beach people want it to be left.

From observation during fieldwork in 2008 it was clear that the Wheal Friendly engine house remains unconverted. However, a report in the *Telegraph* (McGhie 2009) reviews six state-of-the-art eco-houses which make up Wheal Friendly Garden (proprietors Nigel and Helen Chapman) commenting that "Wheal Friendly Garden has erased a clutch of post-war holiday chalets and replaced them with what Nigel feels are 'works of art'". The planning application was therefore partly

successful and the St Agnes villagers have retained their ruined landmark building (until it is preserved or falls down).

Secondly, minutes from June 2009 demonstrate that the status has been used to attract further funding. A report to the council chambers by St Agnes Museum Trust stated that ‘with the benefit of World Heritage status a grant application for £50,000 had been submitted. The funds would be used to improve both the physical and intellectual experience of the Museum’ (15 June 2009). Two years later the St Agnes Museum website reported that this funding, a share of a £2 million grant to Cornish Mining World Heritage sites from the Rural Development Programme for England’s ‘Discover the Extraordinary Project’, led to extensive renovations. The museum reopened in 2011 with improved gallery spaces, IT equipment and improved disabled access (St Agnes Museum 2011).

### **9.3.5. Overview of World Heritage Site status**

The majority of respondents consider St Agnes’ mining heritage to be of high importance; the vast majority knew that St Agnes was one of the WHS sites and a very high percentage consider the status to be a good thing. The perceived benefits of WHS strongly connect to income generation, particularly through the development of tourism, and the protection, or preservation of the heritage resource. Only one respondent listed a perceived cost, the status for him represented more “silly rules.”

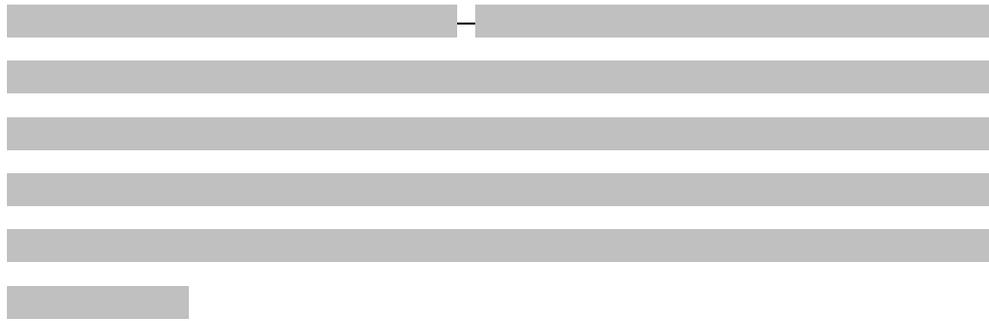
The [REDACTED] has not witnessed a significant increase in visitors since inscription, but informants pointed out that it is perhaps too early to tell. The designation has been beneficial in securing funding for the renovation of the local museum and in addition, was used by the parish council as grounds to object to the conversion of a local landmark building into residential and holiday accommodation, plans which had generated strong local opposition.

## **9.4. The future of the St Agnes mining area**

[REDACTED]

[REDACTED]

[REDACTED]



When asked for their views on the future of the Botallack mining area, the majority of respondents, 73.9 percent, felt that they should be preserved. Only 7.2 percent felt that they should be re-used. Far less, 1.4 percent felt that they should be left to decay. A further 17.4 percent of respondents chose more than one option, thereby advocating a combined approach (Table E.7, Appendix E and Figure 9.10, Appendix A).

Reasons for choice were explained within write-in responses (sample of 71) which are considered in turn within the following sections.

#### **9.4.1. Preservation**

Write-in comments demonstrate that a strongly felt preservation ethic is motivated by the preservation of historic value (SA12; SA13; SA22; SA25; SA30; SA32; SA103; SA105; SA106; SA107; SA109; SA112; SA113; SA124; SA129; SA149; SA165 and SA166) linking to the desire of the current generation to be guardians of heritage for future generations (SA9; SA19; SA24; SA27; SA54; SA80; SA107; SA112; SA114 and SA117). The remains also fulfill an important commemorative function (SA21; SA28; SA31; SA41; SA44 and SA149) and bring in tourists (SA4; SA13; SA44 and SA116). Rare responses reflected on the role that mining remains play a further role in informing Cornish identity (SA12), the necessity of managing ruination for health and safety reasons (SA21), the pleasure in exploring mining sites and the ruined mine buildings' aesthetic value (SA 118 and SA166). The following quotes provide exemplars:

The mines are Cornwall (71 year old female, housewife - SA128).

It brings holiday makers in for sight-seeing and helps the economy (75 year old female, medic - SA4).

To stop them becoming dangerous. Also believe they enhance the landscape, and are a reminder of a bygone era (41 year old male, sales assistant - SA21).

However, others cautioned that preservation can go too far, with remains fossilised in time, or changed to a point where their original character is lost (SA2).

#### **9.4.2. Re-use**

Relatively few respondents advocated re-use. Those that did consider it as an option suggested that buildings could be converted for residential use (SA72) or noted the possibility that mining might one day return to Cornwall (SA110). However re-use was felt by one respondent to change the structure's original character (SA103).

Old engine houses could be sold and converted to housing. Those who buy will be obviously enthusiastic and want to preserve the structure for their own gains. The outside of the building and the landscape would look pretty much the same only the money would be privately funded (32 year old male, engineer - SA111).

As China, India, Brazil and Russia gain their economies at staggering rates this world demand for metals like tin and copper means higher prices and old mines here will again become economically viable (40 year old male, student - SA40).

[...] they are part of Cornwall heritage and as such should be preserved. If brought back into use the character of the original buildings would be changed (70 year old female, retired teacher - SA103).

#### **9.4.3. Decay**

The very few respondents who advocated decay felt that money should be spent on creating jobs, not preserving dead relics of the past. Instead Cornwall should look to its future and its industrial sites are becoming increasingly irrelevant. However, one respondent argued that leaving things alone (to just decay) has its dangers:

They are monuments to an age that is dead and gone R.I.P. (87 year old male, accountant - SA122).

Of more historical value if left alone (49 year old male, police officer - SA74).

#### **9.4.4. Combined approaches**

A number of respondents put forward arguments for combined approaches (SA49; SA52; SA71; SA101; S104; SA120; SA125; SA127; SA150; SA164 and SA167) mostly advocated approaches which combined preservation and re-use, however, one respondent, (79 year old male retired industrial installation engineer) considered managed decay appropriate for features which had already deteriorated to a point of no return:

There is probably no simple answers to this question. Many buildings have been preserved and brought into use as private dwellings or industrial centres but have kept their character. Some have decayed to the extent that there is little to preserve. Generally a mixture of preservation, re-use and decay, with re-use strictly controlled (79 year old male, retired engineer - SA150).

(Preserve) the chimney stacks, (re-use) buildings here have been turned into homes and offices, (decay) can equate to environmental problems. If poisonous (eg arsenic waste) it should be treated. If open mine shafts remain – they must be capped. My sister’s dog fell down a 100ft mine shaft last summer and died. It was awful (39 year old female, environmental campaigner - SA127).

#### **9.4.5. Overview of future**

Overall, respondents from St Agnes strongly advocate preservation of the village’s mining remains; they should be preserved for the future, for their historic value, for their role in informing Cornish identity and to encourage future tourism. The mining sites therefore contain strongly felt informational, social and economic values. It is interesting that respondents don’t feel that a resumption of mining is a

likelihood and that the re-use of buildings isn't strongly favoured. The latter perhaps links to the history of conversions in the village (proposed but not permitted in the case of Wheal Friendly and developed in the case of Wheal Kitty) and some concerns over authenticity

## **9.5. Chapter Summary**

This chapter has presented the results of data on public perception of Cornwall's mining heritage from the final case study. St Agnes, a beach/surfing resort on the north coast of Cornwall, is described by respondents as a pleasant village with varied scenes incorporating mine sites and features. The village has experienced a degree of urbanisation in the form of street signage and furniture in response, I suggest, to its development as a centre for tourism. The National Trust manage a number of coastal areas which include iconic mine buildings and management of these sites needs to balance the protection of the 'wild' 'natural' coastline, the integrity of sites and structures and the maintenance of access and interpretation for the tourism market.

The naming of significant mining features by respondents was clearly influenced by a relatively large number of extant mine sites within the village and in close proximity to coastal roads/coastpath. The integration of the village and the mining landscape has led to the retention of the names of mines as place-names and aside from the iconic mine complexes of Wheal Coates, Wheal Friendly and Wheal Kitty, engine houses, chimney stacks and mine buildings were also considered to be significant.

A timeline of change reveals that conservation measures have been taking place in the area for over fifty years and here the National Trust and former district council have been key agents. During the post-war period an increasing interest in mining 'heritage' integrated neatly with developing tourism, however some change has been unwelcome. Carrick District Council's 'Operation Minecap' in the 1980s closed shafts to younger explorers and marked the increasing introduction of health and safety features on sites. In addition, the village has experienced bungalow estate development and immigration.

The majority of respondents were highly supportive of WHS; mining sites are considered of high importance and most respondents were aware of the inscription. Perceived benefits connected to the development of tourism and income generation as well as conservation. WHS has been used to mitigate against an unpopular planning application and has also lead to the acquisition of funding towards the renovation of the local museum. As yet, the inscription has not lead to a noticeable increase in visitors to the mine sites under the care of the National Trust. Overall, respondents advocate preservation of mining remains for future generation, for their historic value and for their role in encouraging tourism to the area.

## CHAPTER TEN: IDENTITY AND DEMOGRAPHICS

Cornish lads are fishermen and Cornish lads are miners too, but when all the fish and tin are gone what are the Cornish boys to do ?(Graffiti on boundary wall of South Crofty tin mine, near Camborne, painted in 1999 – the year following the mine’s closure)

### 10.1. Introduction

This chapter presents the final results of my research. It considers data from the case study sites in unison, rather than by a case-by-case level, in order to examine the relationship between Cornish mining sites and identity. This includes the different ways in which mining heritage and material culture connect to concepts of localness and/or Cornish identity (which could incorporate nationalism).

The chapter is divided into two sections. In the first section I discuss qualitative data (questionnaire survey, interviews and oral history archives) in order to address a number of inter-related themes. To begin with I will consider the material culture of mining (signs, symbols and graffiti) in order to question what such representations might signify culturally, politically and economically. I will then outline potential ‘forms of connection’ to the Cornish mining industry including the demographic profile of ‘Cornish’ miners in the past; residual bonds between mining communities; and the significance of memories of the UK (or indeed global) mining industries. Drawing on the previous results chapters (Chapters Seven to Nine), distinctions between the local and the non-local will then be teased out.

The second part of this chapter (Section 10.7.) considers statistical relationships between respondents’ perceptions of Cornish mining areas and demographic variables. Through inferential statistics (Chi-square test) I will present my findings and draw some tentative conclusions regarding patterns of perception within the wider population. This section will therefore provide statistical evidence which can support, or indeed challenge, the qualitative data set out in the first section of this chapter. Again, statistical data will be treated globally, rather than at site level, in order to use higher counts and improve the quality of statistical results.

## 10.2. Signs, symbols and other representations of mining

The graffiti artist who painted the poem with which this chapter begins provided an apt reminder that Cornwall's history, indeed the county's identities of place, have long resided with its traditional industries. Alongside miners and fishermen, china clay workers and farmers could also be added to the poem. In the same way that there are other traditional Cornish industries there are many representations of Cornish identity. Commonly occurring symbols include the Celtic cross, St Piran's Flag and the engine house as well as images relating to Cornwall's ancient sites and maritime traditions. The meanings behind these symbols lead back, in some cases, to mining. Aside from the unambiguous engine house, St Piran was the patron saint of Cornish tinnerns (Chapter Two, Section 2.4.6 and Figure 2.8, Appendix A). White on black is incorporated within the Cornish national tartan along with the gold of the 'ancient' Cornish kings, red for the beak and legs of the chough and blue for the Atlantic sea.

As demonstrated in the previous results chapters, engine houses are 'significant features' in the Cornish landscape. Representations of engine houses have become visually dominant over the last five years. This trend, I would argue, is driven by the promotion of the image as branding for the 'Made in Cornwall' campaign and the WHS (Chapter Two, Section 2.4.6). Representations of engine houses were found across all three case study sites. On my daily drive into St Agnes I would pass Presingol Farm Camping and Caravan Park on the outskirts of the village with its entrance signage incorporating an engine house motif. In Churchtown the pub signage of the St Agnes Hotel showed the iconic Wheal Coates engine houses. Amongst the stock of the 'Cornwall Shop' on Vicarage Road was a large number of postcards, paintings, books and illustrations which featured engine houses. The St Agnes Sunday School banner hanging in the village's large Methodist chapel was comprised of a number of symbols - a simple cross, an engine house and a bible. In the front garden of a house in Quay Road was a reconstruction of a miniature engine house. Nearby, as previously mentioned (Chapter Nine, Section 9.1.5. and Figure 9.5.) the St Agnes Surf School was represented by an engine house and waves. Finally, in the car park next to the public library I saw an engine house bumper sticker on the back of a Honda car and then bought a packet of sandwiches, also depicting an engine house.

At Botallack, a site without streets and shops or public institutions, and therefore merchandise and advertising, Cornish symbolism was portrayed very differently. Here, it was anonymous, unofficial, disordered and in part, very political. In 2008 I photographed extensive graffiti which covered the horizontal and vertical concrete sections of the 20th century dressing floors. This graffiti included drawings (using red and white stone as 'chalk' rather than spray paint) including simple drawings of St Piran's Flag and engine house designs (Figure 10.2 and Figure 10.3). The graffiti on one large stretch of wall (on the lower terraces (Figure 10.4) was much overdrawn, and along with scrawls, names, dates and geometric patterns were slogans in English and Cornish including 'English Out', '*Kernow vys Byken*' (trans. 'Cornwall Forever') and 'I Am Local'. This graffiti had according to David Kemp, been there for around "thirty years." When I visited the site in 2009 the slogans had been painted over (Figure 10.5), presumably by the National Trust, but other graffiti remains.

The walls in Liskeard were also interesting in terms of the large scale public murals in the town centre. The murals along Barras Street and Pigmeadow Lane (Chapter Eight, Section 8.1.4., and Figures 8.2 and 8.3, Appendix A), as well as the murals inside the public library (Figure 8.4, Appendix A), all show the ways by which the Liskeard community publicly represents itself and its environment. In a town which can claim many historic tags including medieval and Stuart history it is clear that the more recent industrial past also strongly informs modern town identity. Within each set of murals designs of engine houses had been carefully rendered alongside ancient quoits, railways, Christian symbols and boats.

Together, the engine house and St Piran's Flag provide a constant reminder that you are in mining country, and that you are in Cornwall. The banner of St Piran (as Cornwall's 'national flag') is more likely to be connected to political ideology (the belief in a separate Cornish nation) than the engine house. However, I would not go so far as to suggest that the prevalent use of either necessarily denotes commonplace or strongly felt Cornish nationalism. It is important not to conflate a sense of pride in Cornwall's history and industrial heritage with a particular ideological position; as Iain Rowe explained during interview:

I'm not a Cornish nationalist but I'm very proud to be Cornish – the presence it had in the world in the past. I can equate it to Silicon Valley today, where you've got Microsoft and Apple leading the world with cutting edge technology. In the 1840s, 1850s and 1860s there was the same thing happening here – that was the technology of today.

One way of evaluating the strength of nationalist sentiment in the county is through political party membership and voting patterns. Membership of *Mebyon Kernow* is relatively low when compared to the resident population in Cornwall. For example, in the 2009 Cornwall Council elections *Mebyon Kernow* received four percent of the total vote, with the majority of votes going to Conservative and Liberal Democrat seats (Cornwall Council 2009a). According to one (anonymous) informant [REDACTED]

Furthermore, in terms of fighting for political and administrative change, material culture is in many ways secondary. [REDACTED]

[REDACTED] The activism [REDACTED] mentions may refer to the Cornish Stannary Parliament (*Seneth an Stenegow Kernow*) some of whose members have been active in opposing English Heritage operations on 'Cornish heritage' sites. In 2000 members of the parliament confiscated English Heritage signage from archaeological sites including Tintagel Castle and the Hurlers stone circle (BBC 2002). The English Heritage logo on the brown sign pointing towards the site has also been painted over (Figure 10.6).

Aside from such overtly political actions the broader use of the Celtic cross or St Piran's Flag can be analogised with commonly found symbols of the capital such as the Union Jack, 'I love London' t-shirts, Big Ben and double-decker buses. As mentioned above, as a form of branding the engine house also has a clear economic purpose. As another example of instrumental use, although I am not Cornish I have

a sticker of St Piran’s Flag on the back of my car – it supposedly helps in the summer months, when tempers can become frayed on congested Cornish roads, to visibly demonstrate that you are a ‘local’. I would, however, apply a caveat - whilst the use of Cornish symbolism may at times be more immediately instrumental or economic than political, their geographical distribution, whether it is in Cornwall or Diasporic communities overseas, can still, of course, be used to map boundaries of cultural difference including any associated political agendas.

### **10.3. The granite kingdom**

Qualitative data also revealed a different kind of connection between the materiality of Cornish mine sites and identity. Several informants commented on the ‘rightness’ of the mines in the landscape, for example, Janet Quinton said that “the waste and the buildings ‘belong to be here’ as the Cornish would say because they’re made from the very rock that surrounds them.”

This sense of material “belong(ing) to be here” indeed mattered to the townspeople of St Just when the town centre was undergoing regeneration in 2005-2006 (Elaine Baker, St Just Town Council, pers. comm., 9 November 2011). In the following extract- [REDACTED] narrates the reaction of local residents when imported Chinese granite paving slabs were laid in the town centre:

[REDACTED]

Despite attempts to import 'foreign' stone, St Just remains a 'Cornish' granite-built town. Cornwall is also known as the 'Granite Kingdom' and the continued use of local stone connects archaeological sites of all periods. On Minions Moor Mike Habbeshaw commented on the synchronicity between the prehistoric sites and the industrial remains stating that there is "this feeling of agelessness when you get up there because funnily enough the Hurlers and the chimney stacks don't look out of place with each other. They are somehow part of the same series, part of the same thing up there, and its all very Cornish." They are made of local granite, the granite makes them part of the "same series" and the granite is perceived to be timeless.

#### **10.4. The 'Cornish' miners?**

If the mines and mine buildings 'belong', as intrinsic and timeless elements within the landscape then, by comparison, the mining workforce was mobile. In a interview held within Geevor Mine's Oral History archive, former miner Michael May commented: "we've moved all over the world, all over the world mining and they always say that wherever there's a shaft if you look down the bottom there's a Cornishman in it." He thereby indicates the global presence of Cornish miners abroad, known as '*Cousin Jacks*', in mines extending from Chile to South Australia, and from North America to Spain. Indeed, within the same archive two former miners discuss where the workforce went after Geevor closed. Dave Harvey recalled that "skilled miners went abroad as they often did" including Saudi Arabia (which has diamond and gold mines) whilst Ian Davey remembered others staying in the UK to work on the Channel Tunnel Project.

Miners were also an imported commodity. The term 'sojourner', meaning temporary resident, has gone out of common usage but was once a term applied to itinerant workers in Cornwall, including miners (see [redacted] interview). As a training school of international standing Camborne School of Mines also fed graduates into the local industry (see Pete Joseph interview). Indeed, the interviews and oral history archives reveal that the industrial workforce in Cornwall during the 20th century was diverse. Claude Jasper was born in 1899 in Treovis, a village a few miles from the Caradon mines. He recalled "they (the miners) come from all over the place", arriving when work was available and leaving "when the mine packed up" (Minions Survey). Jimmy Wild (born in

Derbyshire in 1910) worked initially on the surface in ‘Silver Valley’, near Minions (in all probability at New Phoenix Mine) before going underground. Jimmy remembered “people from every walk of life up there, Irishmen, different people, you know” (Minions Survey). Within the Dry (or changing rooms) of Geevor Mine are interpretation panels which describe a ‘Day in the Life of a (insert job title here)’. Alongside Cornish names are Italian and Polish names – a reminder that POWs of axis nationality were conscripted into the mines during the Second World War and, in some cases, stayed on as miners after the war had ended (Chapter Two, Section 2.4.5.1).

However, the strength of the notion of tin mining as a traditional Cornish industry lends itself towards stereotyping miners as being Cornish born, and thus has the potential to submerge the biographies of miners of other nationalities who worked in Cornish mines. Furthermore, mining narratives are commonly formed around concepts of masculinity and underground work. The roles which women and children played within Cornish mining and the roles of surface workers (including women in the 20th century) are again submerged under themes of underground endeavour, danger and heroism (Chapter Two, Section 2.4.4.1. and Chapter Three, Section 3.4.2.).

However, it is clear that the physical and potentially high-risk environment of underground work led to the formation of a solid bond between miners - a fraternity akin to that experienced by soldiers, for example, or by fishermen. Oral histories and interviews carried out for this research reveal that this bond was formed through employment and not through perceptions of ‘localness’ or Cornish identity. As a Welshman Geoff Treseder had no problem fitting in - his experience of working underground was with people who “were a mixture of local and not local [...] perhaps it was an underground thing was a stronger tie if you did the work got on with it that was more important than where you came from” (Geevor Mine Oral History archive). Likewise Pete Joseph, an Englishman from London, felt “part of that (Cornish mining) tradition” being trained at Camborne School of Mines.

## **10.5. Forms of connection to the Cornish mining industry**

The relationship between identity and Cornish mining heritage can also be considered in terms of differing forms of connection to the mining industries. Here, qualitative data provides insight into the varied ways that residents have connections to mining.

Respondents who stated that they had a connection to the mining industries could be largely categorised into three groups – those who were in employment, working, for example, as mine engineers or mine guides; those who were formerly employed within the industry; and those who had relatives/ancestors who had worked in mines. The biographies of informants provide additional insight: only two informants stated that they had “no personal connection” to mining (having worked in the Royal Navy or having come from families who were shipbuilders and seafarers). Informants who had been born in Cornwall described their connection to mining in a number of different ways. Some had worked underground as engineers and miners; others had family backgrounds in mining and tin streaming; many had grown up on and around tin mines and relict mine sites, or had lived amongst the china clay pits in Clay Country. In the post-industrial period some had become involved in the redevelopment of mine buildings, had been reemployed as mine museum guides.

However, informants who hadn't been born in Cornwall described similar connections. One London-born informant had a grandfather who had been a Cornish miner; other informants had moved to Cornwall from London and Wales to become trained in mining and subsequently worked underground in the county. An informant from Scotland and another from the West Midlands had a shared history having been brought up in coal mining communities. Another informant from the Midlands had worked as a coal miner and mine surveyor. Others had become involved in archaeology, local history and industrial societies, mine exploration and heritage projects.

Although I have anonymised the above summary one informant's biography was particularly interesting. Janet Quinton moved to Cornwall and through self-education and the mentorship of a former miner became employed as a guide at

Geevor Mine. The following extract narrates the story of how she developed an enthusiasm for Cornish mining history:

JQ: When I first lived here I met this old man when I was walking my dogs who sort of merged out of the hedgerows the way only the locals do and said 'unew' and I didn't quite catch what he said. 'Unew?' 'Yes, I'm new.' 'Fortso' and I was dismissed. It took months to build up a relationship with this man and I found out that his name was Dick Thomas, and he was famous for haunting the cliffs and talking to anyone who would listen about his mining days when he worked at Geevor Mine.

HO: Ah, so he was an ex-miner?

JQ: Yes, he was. He'd become too infirm to walk all the way to Geevor and there was one day when I was here with my dogs and by then we were on slightly better speaking terms and he came along and merged again and said 'do you know what you're looking at?' And I said 'mine buildings' and he said 'but do you know what they are?' 'Well those are the Crowns' I said, pointing at the engine houses and he said 'Yeah, but which one was for winding and which one's for pumping?' 'I dunno' I said and he said 'you should do', and I said 'you're right Dick I should.' So off I went to the library and got the book *Botallack* by Cyril Noall and waded through it, and it took some wading. But there's this very handy map in the middle, certainly in the old edition, which folds out and I stood here with Dick going through all the different locations and he started to tell me that, where we are now, was the electric house, and that the gas turbines were situated in there, that the coal was tipped down and generated the electricity there, and so on, and what the buddles were for and the calciners. And I began to acquire the knowledge and fortunately Dick lived long enough to see me get my job as a guide at Geevor. I had another strange conversation with him then actually just about three days before he died. His wife Eileen would sometimes like a break to go to WI or something and I would go round and sit with him in winter. So I was there to make the fire up for him, he

suffered badly in winter with his lungs, and each year we thought he was going to die and each year he survived and he said 'do you know what makes me cross about you?' And I said 'no Dick, what?' And he said 'you know more about mining than I do.' This was Geevor where he worked and I said 'how's that then Dick?' And he said 'I was an underground man wasn't I. I know nothing about the surface.' I said 'no I suppose you don't' and I said 'tell you what, they do a nice flow chart there and I'll pick up a copy from work and I'll bring it round and we'll go through it next week'. Sadly he died three days later, before I got the chance.

HO: But that must have been such a huge compliment at the time though.

JQ: Oh it was, it was. A terrific compliment and of course he'd been mining back in the 1930s and 40s and retired in the 50s from it, he was 85, nearly 86 when he died.

Janet was therefore able to overcome a number of identity barriers – an outsider and a female (mine guides are typically male, as it is considered desirable to have worked underground) – to eventually gain employment as a mine guide. This extract demonstrates the way in which an 'outsider' becomes 'local' through the acquisition of knowledge and skills. In so doing, it reflects the social environment of communities of miners in the past.

Qualitative data also indicates the existence of a sense of shared empathy between tin and coal mining communities – an extension of the camaraderie between miners, discussed above (Section 10.4.) towards those who live within coal fields. This bond between communities is discussed by David Wright, who worked as an assayer at Geevor Mine (Geevor Mine Oral History archive):

[...] I suppose the nature of the work as well as the fact that particularly if you were underground is very hard work and there is always that element of risk and I suppose you shared in that camaraderie so there was a bond between not only with Geevor but with mining communities as a whole tend to share a bond, you would find this in the coal mining

districts of the UK and other mines around the world so there is a bond between people who work in slightly perhaps unusual and risky jobs.

This network is therefore extensive; indeed, Fiona Young described during interview a “living memory thing of mining and Britain of course was a huge mining island if you like and everywhere there was some form of mining and people have memories of it.” Bill Lakin likewise mused that the British mining industry:

[...]touches something deep [...] for a lot of people because there’s so many people, there must be some statistic about it, so many people that have family connections with some sort of mining, mostly coal mining but it was such a huge industry there was coal mining all over the place and other sorts of mining. When people come to a former mining area they are tapping into something which is perhaps quite deep almost in their subconscious memories.

Therefore, ‘incomers’ moving to Cornwall may bring with them ‘coal memories’. Indeed, Bill Lakin described being brought up near the South Staffordshire mining coal area and he recalled “seeing miners walking back home before the days of pit-head baths and they would be covered in grime walking back home.” Further north, Fiona Young grew up in a mining community in Scotland and “saw over time the mines just close one by one.” These memories echo David James’ recollections of the post-industrial scene in St Just when “men of working age who had an honourable profession were desperately sad, desperately lost – walking their dog whilst their wives went out to work on poorly paid jobs.” The geographic and cultural context may be different; Scotland, the West Midlands and Cornwall, however, the experience of deindustrialisation will bear many similarities.

## **10.6. Different perspectives on localness**

As discussed within the previous results chapters questionnaire data revealed different perceptions and definitions of ‘localness’, with the majority of comments relating to how the mining areas had changed (Sections 7.2.1., 8.2.1. and 9.2.1.). Some distinctions appear clearer than others. Locals are native born; some have links to traditional industries, for instance, the Commoners who farm Cheesewring

Moor (Chapter Eight, Section 8.2.2.1). Then there are incomers, who some respondents claim lack an understanding of local ways of life and are responsible for high house prices (Chapter Eight, Section 8.2.2.1. and Chapter Nine, Sections 9.2.1. and 9.3.3.). Then there are outsiders, a group which includes external authority and visitors to the county (Chapter Eight, Section 8.3.3.).

Opinions on differing attitudes towards mining heritage were mixed and conflicting. The demographic variables suggested for difference in attitude included: the young/old, locals/tourists, Cornish born/non-Cornish born and those who had worked in mining as opposed to those that hadn't (Chapter Seven, Eight and Nine, Sections 7.2., 8.2.1. and 9.2.1.).

Several informants also commented on the reasons why attitudes to heritage may differ. John Bennett (Treasurer of the Cornwall Archaeological Society and Deputy Mayor of Hayle) considered income levels a potential factor. John suggested that there were some local residents who "don't give a damn, they are very close to the breadline and surviving and don't care." In comparison, he added, the more affluent incomer is "probably comfortable, perhaps retired, and thinks that everything should be preserved." [REDACTED]

Several respondents also suggested that perspectives change as time moves forward; as memories fade and those with first-hand experience die (Chapter Seven, Section 7.2.). Indeed, Fiona Young reflected during interview that "what happens when that memory is (completely) gone still remains to be seen, there is still that contact there, we haven't reached that stage yet." Pete Joseph also spoke of widening gap as people move "further away from their ancestors who worked there (in the mines)."

Others presented less pessimistic views; which reflect on a process of place becoming familiar – becoming home. In the following extract Adam Sharpe comments on his experience of moving to Botallack:

It's odd really. I've only lived here for ten years or so. I thought it was amazing when I first came here – but all I could see were the obvious things. Over the years I realise that I feel differently about it. It's become home I suppose. But because of my profession I'm very much aware of its history, it's time depth and that I'm an incomer. It's made me conscious that I have a responsibility to respect it for what it is, not what I'd like it to be and whilst it matters that the key things about it are cherished and conserved if needed, that process has to be sensitive.

I would argue that by looking at forms of connection (for instance, growing familiarity, the acquisition of historical and technical knowledge or memories of coal-mining areas) boundaries around concepts of localness begin to collapse. This approach is pertinent given that the Cornish mining industry operated on a global scale with a mobile and mixed workforce. A retired 'incomer' from Lancashire might arguably have more understanding of the work involved in a Cornish tin mine (having worked in a colliery) and more understanding of the effects of deindustrialisation on an area than someone born in the area who has no direct or familial relationship to the industry. In order to move from the hypothetical to the inferential the second section of this chapter will present the results of statistical analysis of demographic data from the questionnaire survey in order to test the relationship between demographic profile and perspectives on Cornish mining sites.

## **10.7. Statistical analysis of demographic data from the survey**

### **10.7.1. The two sample chi-square test**

Two sample chi-square tests (see Chapter Four, Section 4.11.3) were used in order to assess the probability of significant relationships between perception (best description of mining area; physical and attitudinal change; importance of Cornish mining remains; knowledge and expectations of WHS and opinions on the future of

Cornish mining sites) and other categorical variables (for example, age range, gender and connection to mining industries) with the aim of inferring more general, yet tentative, conclusions concerning the wider population, in this case residents of the WHS. Tables of probability results are presented in Appendix H.

The critical value of significance follows common convention and was set at 0.05 where the probability value or asymptotic significance (henceforth Assymp. Sig.) is normally no higher than 0.054. However, values which fall within a 'grey area' of probability (between 0.055 and 0.094) are suggestive of possible statistical relationship and will be flagged up as requiring further research with larger sample sizes. Values are presented to three decimal places and therefore values given as 0.000 should not be taken as zero.

In order to generate reliable test results (where the proportion of expected values should not be greater than 20 percent) data sets were combined to create tables of no more than two or three rows and columns. This is standard procedure as long as the combination of data categories still produces 'meaningful' data (Brown and Saunders 2008: 80). In addition extraneous data categories (other, multiple and 'don't know' responses) were re-coded as missing responses and thereby deleted from data-sets. To examine the test results in more the detail the following section examines the statistical relationship between data categories.

## **10.7.2. Chi-square statistical test results**

### **10.7.2.1. Best descriptor of Cornish mining areas**

(Chapters Seven, Eight and Nine, Sections 7.2.3, 8.2.3 and 9.2.3)

There is a statistically significant relationship between the way that residents' best describe their mining area and occupation. The difference between the observed and expected counts (Table H9) indicates a pattern which suggests that residents with 'skilled' occupations (skilled trades, administration and secretarial, and personal services) are more likely to describe their mining area as 'industrial' or 'mining' whereas residents with 'elementary' occupations (sales; process, plant and machine; and elementary) are more likely to perceive their area in more general terms as 'cultural', 'heritage' or 'archaeology' (.036 Assymp. Sig., Table

H10). However, there is no clear patterning of expected and observed counts for residents from managerial, professional and associate professional occupations.

#### **10.7.2.2. Physical change**

(Chapters Seven, Eight and Nine, Sections 7.3, 8.3 and 9.3)

A statistically significant relationship was also found between residents' perceptions of physical change in the environment and demographic characteristics including the length of time lived in Cornwall, being born in Cornwall and economic activity. The difference between the observed and expected counts (Tables H29, H31 and H32) indicates a pattern which suggests that residents who have lived in Cornwall for more than ten years (.001 Assymp. Sig., Table H30), and/or have been born in Cornwall (.048 Assymp. Sig., Table H32) and/or are economically inactive (.052 Assymp. Sig., Table H34) are more likely to recall physical change in the mining areas than those who do not share one or more of these demographic characteristics.

On examination of data longevity of residence also has a statistically significant relationship to being born in Cornwall (.000 Assymp. Sig., Table H38), and economic activity (.000 Assymp. Sig., Table H40). This relationship can be explained by parameters set around research data - as respondents had to be over 16 years of age to take part in my research it is unsurprising that respondents who were Cornish born were more likely to have lived in the county for more than ten years. Patterns in expected and observed counts show that residents who have lived in Cornwall for more than forty years are more likely to be economically inactive. This relationship can probably be explained by retirement age. Therefore it can be concluded that the key statistical relationship in terms of perceptions of physical change is the time lived in the area, and residential longevity has a further relationship to residents' biographies in terms of birthplace and retirement.

#### **10.7.2.3. Importance of Cornish mining heritage**

(Chapters Seven, Eight and Nine, Sections 7.4.1., 8.4.1. and 9.4.1.)

Furthermore, there is a statistically significant relationship between the way that residents will perceive the importance of Cornish mining heritage and connection

to the mining industries and time lived in Cornwall. The difference between the observed and expected counts (Tables H1 and H5) indicates a pattern which suggests that residents who have lived in Cornwall for 10 years and more (.014 Assymp. Sig, Table H6) and/or have a connection to the mining industries (.021 Assymp. Sig, Table H2) are more likely to rank Cornish mining remains of high/very high importance than those who have lived in the county for less than ten years and/or don't have any connection to the industry.

Connection to mining industries and longevity of residence also has a statistically significant relationship. Those who have lived in Cornwall for 40 years and more are more likely to have a connection to the industry (.000 Assymp. Sig., Tables H7 and H8).

#### **10.7.2.4. Knowledge of World Heritage Site Status**

(Chapters Seven, Eight and Nine, Sections 7.42, 8.42 and 9.42)

Finally, there is a statistically significant relationship between knowledge of WHS and age, and economic activity. The difference between the observed and expected counts (Tables H13 and H17) indicates a pattern that suggests that those aged over 60 (.000 Assymp. Sig., Table H14), and/or those who are economically inactive (.007 Assymp. Sig., Table H18) are more likely to know that the area is WHS.

There is a statistically significant relationship between age and economic activity (.000 Assymp. Sig., Table H20) which again can be interpreted as reflecting retirees within the inactive subset. Therefore, age is taken as the primary determinant behind significance, and economic inactivity is a reflection of an older age group.

#### **10.7.2.5. Grey area statistics**

In addition Chi-square tests have indicated a number of 'grey areas' ((between 0.055 and 0.094) which are suggestive of possible statistical relationships, however, larger sample sizes are needed. There are potentially indicative relationships between: sex and knowledge of WHS (.056 Assymp. Sig.); connection to the mining industry and knowledge of WHS (.074 Assymp. Sig.); sex and best description of the mining landscape (.080 Assymp. Sig.); and occupation and perception of attitudinal change towards the mining areas (.092 Assymp. Sig.).

#### **10.7.2.6. No relationship**

Two sample chi-square tests support the suggestion (or null hypothesis) that there is no relationship between demographic variables and residents' opinions on the future of mining sites, residents' expectations of WHS and their perceptions of attitudinal change.

#### **10.7.2.7. Summary of Chi-square tests**

These tests demonstrate that, on the basis of probability, the alternate hypothesis, that there is a statistically significant relationship between the way that residents will perceive mining remains and demographics, is supported in terms of the following demographic characteristics: occupation, time lived in Cornwall, age and connection to the mining industry.

On analysis it was found that perceptions of mining sites do not have a significant statistical relationship to the following demographic characteristics: place of birth, level of qualification and sex. However, the latter demographic variable 'sex' demonstrates an indicative tendency within the test results and I therefore recommend that the relationship between sex and perception is re-examined with a larger sample.

### **10.8. Chapter summary**

Chapter Ten has examined the relationship between Cornish mining sites and identity through a wide range of qualitative and quantitative data. In the first section of the chapter I have dealt with a number of inter-connected themes including material culture, the 'insider' and the 'outsider' and forms of connection to the mining industry.

I have demonstrated the varied ways in which the material culture of mining manifests itself and plays an economic, cultural or political role within each case study area. A consideration of differing perspectives on localness has identified a number of definitions relating to the 'real local', the 'incomer' and the 'outsider'. In addition, I have deconstructed the stereotype of the Cornish miner and, in so doing; I have argued that the mining workforce was mobile and multinational. The

biographies of respondents and informants have then formed the basis of a discussion on differing forms of connection to the mining industry, including continuing associations. A number of hypotheses regarding demographic factors which might influence public perceptions of Cornish mining landscape have therefore emerged.

In the second section of this chapter, I moved from the hypothetical to the inferential in order to statistically test the presence or absence of an 'insiders' and 'outsiders' perspective. Chi-square tests have demonstrated that on the basis of probability, the alternate hypothesis (that there is a significant statistical relationship between demographic variables and perceptions of the mining landscape) is supported. The key demographic variables which appear to influence perception are: occupation, connection to the mining industry, age, and the length of residence. This data therefore challenges any assumption that perceptions of Cornish mining sites might relate to place of birth (or Cornish identity/ 'nationality').

# CHAPTER ELEVEN: DISCUSSION

## 11.1. Introduction

The previous chapters have set out the background context and presented the results of my project. I have examined the different ways that mining sites are perceived and experienced through a number of themes including descriptions of sites, roads, paths and signage, and the naming of significant features. The creation of graphic and textual timelines of change has highlighted key phases and interventions as well enabling the identification of key agents of change. Discussion of contestation in the transformation of the mining landscape has brought to light a number of competing values, some historic and some ongoing. Public awareness of World Heritage Site status has also been considered along with perceived costs and benefits of the inscription and the impact of WHS within each locale. Data on public opinion regarding the future use and management of Cornish mining sites has been presented and the relationships between mining heritage and identity discussed. Whilst concepts of localness, and different types of connection to the industry, formed emergent themes within qualitative data, statistical analysis of demographic variables has demonstrated that longevity of residence, rather than place of birth, is a significant factor which influences public perceptions of Cornish mining landscape.

This project has consciously focused on “perceptions of the past that find expression in the discriminations of everyday life” (Samuel 1994: 17, Section 3.3.1.). Such an approach has been influenced by the Faro Convention, the European Landscape Convention and by HLC (Sections 1.1. and 3.3.2.1.). It is about noting ephemera and small detail as well as the monumental aspects of place (Buchli and Lucas 2001; May *et al.* forthcoming; Section 1.2.2.): the one bus a day to Minions village and the townsfolk arriving in the evenings for a quick walk and a drink in the pub (Section 8.1.4.); the views of engine houses and mine waste from a bungalow window in St Agnes (Section 9.1.5.); and the relative quietness of the winter months in Botallack when the tourists have all gone home.

In Chapter Three my theoretical framework set out a number of big themes including: heritage values; the visual; ideas of landscape; public relationships with

industrial archaeology; time; insiderness and outsiderness; space and place. As different perceptions, perspectives, associations, opinions and memories have (metaphorically) surfaced out of my research data these themes have been redefined, in light of my research findings as: preservation; authority; authenticity; land as use; the death of industry; the 'local'; and the industrial sublime. In this chapter I will draw together different aspects of my research, including historical context, approaches, data, theory and results in order to present a summative discussion of my findings.

## **11.2. Some comments on data and methods**

The combination of documentary, ethnographic and statistical research methods including questionnaire survey, interviews, observation and historical/archive data (Chapters Four and Six) created a large amount of information, which was challenging to manage, but a stimulating challenge nonetheless. I was fortunate that excellent archaeological surveys, mining histories and walking guides were published for each case study area (Section 2.3). Creating historical overviews and gazetteers of information on significant surviving features (from an archaeological perspective) was straightforward if time consuming (as presented in Sections 5.1.7; 5.2.7; 5.3.7. and accompanying gazetteers Tables 5.1, 5.2 and 5.3, Appendix A). The abridged versions presented within this research, by necessity, skip over much detail which might alarm local experts. I therefore acknowledge any oversights and errors as my own.

### **11.2.1. The post-war gap**

If creating abridged versions of mining histories/gazetteers was time-consuming due to a wealth of published information, conversely I found a notable deficit in published syntheses for the post-war period. The reasons for this are clear: mining history focuses on live mining and details on the post-closure 'lives' of mining sites are often tangential elements. Usefully, Sharpe's hefty archaeological surveys of St Just (1992a; 1992b) and Minions (1989a; 1989b) contain reflections on the contemporary relationship between the community and the mine sites but again these reflections form a relatively small component. Details of sites (and revisions) within Brown and Acton's series of walking guides proved valuable in tracking

contemporary change in the landscape (Acton 2005a; 2005b; Brown and Acton 1994a; 1994b; 1997; 1999; 2002) and finally Buckley's (2005) publication *The Story of Mining in Cornwall* was also useful in providing recent insights.

However, generally speaking there is a gap between history and characterisation (HLC). One example can be found in the Cornwall Industrial Settlements Initiative reports (Cahill and Partnership 2002a; 2002b; 2002c) which aim to provide "an overview of the history, present character and importance of Cornwall's industrial settlements". For instance, the 43-page report on St Agnes (2002) contains three sections relevant to the post-war period. The 'History' section (pages 8-11) contains two short post-war paragraphs which discuss tourism and the village's role as a dormitory village. The section 'Physical Development' (pages 12-15) contains two post-war bullet points which note housing development, and the section 'Current Character' (pages 15-22) then focuses on architecture, streetscapes, materials and paving. Taking this on face value all that seems to have happened in St Agnes from the end of the war until 2002 is housing development.

### **11.2.3. The importance of ethnography**

Such a lack of published data highlights the originality and importance of this project and the reasons (or rather necessity) for conducting ethnography. Out of all the research methods employed, walking interviews were key in gaining a relatively quick yet deep understanding of each locale (Section 4.7.1.). However, even 'expert' informants were sometimes unsure as to whether something happened in, for example, the late 1980s or the early 1990s. Certain vagueness around dates was a pattern reflected within transcripts contained within existing oral history archives. Therefore, interviews and oral histories provided the 'big picture' but details, such as when a particular car park was built or when a mural was painted on a supermarket wall, had to be tracked down through secondary sources such as council minutes and newspapers (Section 4.7.4.).

Walking into shops and businesses with handfuls of questionnaires also proved very useful (Section 4.6.2.) not only for the subsequent data collected but for ad-hoc conversations. I have learnt that the people to talk to are: police officers, vicars, the owners of general stores and cafes, parish councillors, veterinary surgeons and

publicans, as they have broad, insider knowledge of issues within their communities. My decision to delay interviews with ‘experts’ (Council officers, archaeologists, wardens and heritage managers) until relatively late on in the research proved fruitful in two ways. Firstly, I had a good understanding of each area and could be more informed and directive within the interviews, and secondly I gained acceptance within the community through introductions at a community level, rather than through ‘authority’ figures.

#### **11.2.4. Triangulation, sample sizes and research bias**

The triangulation of research methods was therefore essential (see Chapter Four) and also helped in comparing, corroborating and contesting different data sets, for example, checking the results of data from the questionnaire survey (particularly where sample sizes were small) (Sections 4.6.2. and 4.7.2.1.). It was an expectation that perceptions, and therefore findings, would be contradictory and one of the difficulties in ‘writing-up’ this project has been how to deal with loss of resolution. Data reduction is a necessary part of analysis, interpretation and communication (Section 4.11.). Respondents and informants do ‘think differently’ and ‘experience’ mining sites differently and it is has not been my aim to present the ‘public’ as a cohesive group.

Some inherent bias remains (Section 6.7.). I could not collect data from those who chose not to reply or talk to me. Concerted efforts to talk to Commoners on Minions Moor proved fruitless. Ultimately, I have to accept my position as an outsider within these communities and respect respondents’ choices. The demographic profile of the survey shows bias towards older and better qualified respondents employed within managerial and professional positions (Section 6.2.4.8.). I have to acknowledge that some groups were harder to reach and again bias highlights the importance of triangulating research methods.

### **11.3. Site descriptions**

The backgrounds to each case study area presented in Chapter Five are important in providing context and time-depth. They also provide counterpoint to the respondents’ descriptions of ‘their place’ which begin each result chapter (Sections

7.1., 8.1. and 9.1.). These short descriptions and multiple choice responses represent, in theoretical terms, the phenomenology of the 'other' (rather than my own observations) (Sections 3.5.3. and 4.2.). Importantly, they allow local voices to speak; the language is everyday and at times emotional.

### **11.3.1. These Cornish mining areas are...**

Taking the sites collectively (Sections 7.1.1.; 8.1.1. and 9.1.1.) there is a general inclination for respondents to describe the mining areas in terms of positive attributes. There are relatively few negative comments and these are largely reflective of loss, not just of fabric but also the loss of a particular way of life (the theme of loss and trauma is discussed below in Sections 11.4 and 11.7.).

There are some differences between the three locales. Botallack is a collection of ruined clifftop mines and is best known for the Crowns engine houses which hug the base of the cliffs. The Crowns are described as being awesome, beautiful and rugged but also poor, wild and potentially dangerous (Section 7.1.1). In comparison Minions Moor is a place to relax, walk or climb and experience a sense of freedom (Section 8.1.1.). St Agnes (or 'Aggy') comes across as the most welcoming site. It's a large, pleasant and friendly village with attractive walks and interesting views. Its industrial remains are woven into, overlay and underscore more recent development (Section 9.1.1.).

### **11.3.2. Top six keywords**

Content analysis of write-in descriptions for all three sites (Sections 7.1.2., 8.1.2. and 9.1.2.) reveals that the top six keywords (including derivatives) are:

Beauty/beautiful  
History/historic/historical  
Industry/industrial  
Interesting  
Mine/mining/mineworks  
Rugged

These top-six keywords for Cornish mining heritage demonstrate strongly felt informational (historic), and aesthetic and architectural (beauty) values (Sections 3.2.2.1. and 4.5.). A perceptive tension between the pastness and presentness of

place is also alluded to. There once was mining, Cornish mining sites are historical but the views are beautiful and the places are interesting.

### **11.3.3. A mining, a natural and a heritage landscape**

Data on best descriptions of the mining landscape reveals interesting differences between sites (Sections 7.1.3.; 8.1.3. and 9.1.3.). Botallack is best described as a 'mining landscape', St Agnes as a 'heritage landscape' and Minions as a 'natural landscape'. Again, the 'pastness' and 'presentness' of place can also be reflected on here; if Botallack is a mining landscape then this perception reflects a sense of pastness (Section 7.1.3.). If Minions is a natural landscape (Section 8.1.3.) the descriptor demonstrates that heavy industry is no longer evident on the moor. If St Agnes is a heritage landscape (Section 9.1.3.) the descriptor signifies an acceptance that the area's industrial remains are now part of the village's tourism industry. My interpretation of this data is that Minions and St Agnes have both in a sense 'moved on' whilst Botallack remains close to the industry (albeit in industrial ruination). The cliffs have not been subject to subsequent redevelopment or industry – hence a sense of the past lingers.

Taking the data collectively (Figure 11.1, Appendix A) the overall mode is 'mining landscape' (30 percent) followed by 'heritage landscape' (26 percent) and 'natural landscape' (24 percent). The term industrial only achieved 6 percent; I would argue that this is because it was Cornish *mining* industry, not just any *industry*. The preference for 'heritage' suggests a familiarity with the term which I surmise may have been gained from English *Heritage* sites and recent marketing of the World *Heritage* Site. Taking an archaeological perspective I was surprised that a significant number of respondents see these areas as best described in terms of their natural assets. Of course, this highlights the fact that the mining industry in Cornwall was set within a rural, rather than an urban context, and furthermore, sites have revegetated since closure. Former mining areas do provide important wildlife habitats and respondents may be indicating an interest in fauna and flora (Spalding 1995; Section 2.4.5.). This finding supports some of the expressions of wildness and beauty as discussed above (Sections 11.3.1 and 11.3.2.).

Along with the word 'industrial' it is clear that the words 'cultural' (3 percent) and 'archaeological' (3 percent) do not best represent the ways in which the majority of respondents describe Cornish mining sites. Therefore, the term 'cultural landscape' (as used by UNESCO within WHS categorisation, Section 3.2.2.2.) may not fit public understanding of such sites. Looking at each site individually 'archaeological landscape' receives the highest count at Minions, which has a predominance of very visible and well-known prehistoric monuments. Data therefore supports Symonds' assertion (2005: 34-36; Section 3.4.1.) that industrial remains might be too young to be considered truly archaeological.

#### **11.4. The Demonic, the Heroic and the Romantic**

Descriptions of sites do support Alfrey and Putnam's assertion that public perception tends towards mythologising industrial culture through a romantic, and/or demonic and/or heroic lens (1992: 40; Section 3.4.2.). The presence of the hero (or the heroic) also establishes a link between public and 'official' narratives of WHS (the heroic, the grand and the powerful were emergent themes within Labadi's research of WHS nomination dossiers [2007; Section 3.3.2.2.]). The miner is commonly narrated as a hero (battling against rock and the elements) within the setting of the demonic mine (a place of danger, accident and death) whose architectural and engineering elements demonstrate his technological skill. The boundaries between landscape metaphors can blur, for instance, [REDACTED] 'heroic' description of mining at Levant also combines elements of horror and romance (Section 7.1.5.); these sentiments are also echoed by a respondent who advocated that the sites be left to decay. "These remains are the skeletons of a dead industry. Like a battlefield nature, the elements should be left to soften and blur. The harsh ruins – leaving man's imagination to gaze and wonder" (Section 7.4.3).

The industrial sublime (wonder, romance and a touch of horror) (Section 11.3.1.) is most strongly evoked in descriptions of the view of the Crowns engine houses at Botallack (Sections 7.1.1 and 7.1.5.) perhaps mimicking Janowitz's notion of the ruin as a form of modern Gothic which exhibits a close relationship between romance and horror. Adam Sharpe described a common reaction to the sight/site "how on earth did they get those down there?" And how awesome it was that men were working out under the sea." Such 'romantic' perceptions of Cornish mining

'landscape' can also be compared to critiques of landscape as explored in Chapter Three (Cresswell 2004: 11; Johnson 2007: 17; Olwig 1993: 318-319; Section 3.5.1.), which explore conceptions of landscape aesthetics and the picturesque.

Whilst romanticism provides a blanketing metaphor across the three case studies a further broadly-used metaphorical device concerns the anthropomorphism of the mine/mining industry in relation to 'life' and 'death'. This is apparent foremost in the expression of 'live' mining or the 'living' industry (Section 7.2.1.) a notion also reflected in the idea that Minions is a 'living (still working) landscape" (Section 8.2.2.2.). Several respondents reflected on the 'dead past' or a 'life that had gone' (Section 7.2.1). Indeed, ██████████ evoked the embodied mine when he described the open mine shafts as breathing (Section 9.2.2.). Again, metaphorically the capping of the shafts denotes death through suffocation.

Overall, however, Botallack emerged as the most heavily mythologised site and the site most strongly connected with metaphors of the hero and death, the existence of the latter supporting Alfrey and Putnam's argument (1992: 40; Section 3.4.2.). Informants at Botallack walked around the site peopling the landscape with ghosts of the past. These were not necessarily anonymous ghosts; there are names that can be placed on the landscape and some 'ghosts' are still 'buried' irretrievably within flooded levels (Section 7.1.5.). The lasting impact of the mining accidents at Wheal Owles, Boscawen Incline and neighbouring Levant mine (Section 5.1.5.) has been the memorialisation of miners and the mining industry at Botallack, and for some the cliffs are a sacred landscape.

Data from Botallack therefore echoes Lavolette's conclusion that an over-arching metaphor of the Cornish landscape was death (Section 3.4.2.). However, the themes of death and the hero were not so strongly emergent at Minions and St Agnes. I suggest that the reason for this difference is due to the fact that mining at Botallack is still within living memory (as Geevor Mine closed in the early 1990s) and no new 'working' use for the site has been found. These factors, in combination with the site's commemorative role, has led to a kind of temporal 'stickiness' which relates to my discussion above on a stronger sense of 'pastness' at Botallack (Section 11.3.3.). St Agnes has business, commerce, surfing and tourism. Minions has tourism and farming. The only clearly commercial operation in Botallack

hamlet is the pub. Therefore its industrial associations persist, associations which are imbued with the demonic, and these narratives in some sense serve to 'fill the gap' and make the space meaningful, however, in this instance the public is not necessarily filling the gap with 'positive' meanings (Edensor 2005: 8; Van der Hoorn 2003: 2003: 191, 194; Section 3.4.3.). Its lack of present industry therefore allows for the development and nurturing of metaphor.

## **11.5. Invisible roads and a lack of signage**

In Chapter Three I reviewed thoughts on the phenomenology of landscape including the importance of movement, sight and experience and hence sought to consider the significance of roads, paths and networks within each mining area. Although walking around sites (on my own and with informants) was a key element within my research methodology (Section 4.7.1.) I have concluded that the car (its technology and environment) has been poorly-considered as a significant factor which mediates users' experiences of Cornish mining sites. Indeed, if landscape phenomenology (relating to prehistory) has focused on walking, then landscape phenomenology (of the modern era) should I believe also consider the ways in which people arrive on site and behave on site, including staying close to or indeed inside their cars (Sections 3.5.3., 4.5., 7.1.3 and 7.1.4).

In terms of wayfinding (Reeves 2007; Seamon 1979; Section 3.5.2.) the general lack of WHS signage (or in some cases any 'heritage' signage) towards sites was one surprising finding during fieldwork. St Agnes displayed the most representations of mining, including the use of the engine house symbol, within signage and marketing visible walking down the village's streets (Section 10.2.). This provided a marked contrast to Liskeard town centre (Section 8.1.4.). Again connecting to its tourism role, St Agnes also boasted the most car parks when compared to the other sites; its mining sites are more spread out along the coastpath and the car parks provide access to beauty spots for those who prefer to drive rather than walk (Section 9.1.4.). Poor public transport to Minions, and hence reliance on vehicles, has led to a concentration of signage around the village's two car parks. Whilst the signage and representations of mines and mining in St Agnes is mostly pictorial, signs on the moor are either educational or instructive revealing the tensions and issues on the moorland (Section 8.1.4.). As an example, one

recently installed sign requests that visitors “Respect, Protect and Enjoy” the moorland and contains information on Open Access. It is worth noting that the signs on the moor are not explicitly linked to WHS (Section 8.1.4.).

In terms of signage I have sympathy for the National Trust who are faced with the pressure to interpret and present mining sites to the public (and the St Agnes case study provides one example of how tricky getting signage right can be [Section 9.1.4.]) and trying to preserve the ‘wildness’ of coastal areas. The notion of ‘wild paths’ and their connection to safety and sense of discovery was an enchanting research finding (Sections 7.1.4. and 9.1.4.). From observation, most visitors stick to paths, particularly well-worn paths and areas closer to the car parks and are therefore not in any real danger.

### **11.6. Simple shapes elevated in the landscape**

In terms of the naming of significant features, roads, paths and car parks appear to have acquired a peculiar invisibility – they are almost, but not quite, part of the site; perhaps in archaeological terms they represent a liminal zone between personal ‘home-like’ space and the public realm (Section 7.1.6.). When respondents were asked to list significant features of each site a number of broad categories emerged including: industrial, natural, communications, transport, prehistoric and commercial features. Industrial remains figured prominently at Botallack (Section 7.1.6.) and St Agnes (Section 8.1.6.) whereas at Minions industrial, natural and prehistoric features formed substantive categories (Section 8.1.6.) reflecting findings in section 11.3.3. above. By collating significant feature data from all three sites (Table 11.1, Appendix A) the following picture emerges (only features with counts of ten and more are given).

It is apparent that perceptions of significant features are largely governed by sight - for features seen rather than known to exist. Although mines and mine workings make the list, the majority of features listed in Table 11.1 are on the surface. The sub-surface warren of shafts, inclines, levels and adits appears to be out of sight, and therefore, out of mind. It can be concluded that, for the majority of respondents, the ‘mine’ is a collection of buildings.

The few references to mine shafts make this point. I would argue that mine shafts are important features as they provide an interface between the surface and sub-surface worlds. The only conclusion that can be drawn from data on significant features is that mine shafts are not obvious holes and their invisibility is the result of works to collar, grill and cap these features (Section 9.2.2.). In consequence the mine has effectively been closed at surface level.

Instead significance is awarded to surface features which (literally) 'stand out' – elevated features with strong simple shapes which are clearly seen because they are framed against the sky (or sea) - a factor which negates background 'noise'. Indeed, perception seems to reflect Tuan's assertion that the eye searches for points on which to focus. Certain phenomena are clearly registered whilst others recede or are blocked out entirely (1974: 4; Section 3.5.1.). John Negus' comment during interview echoes Tuan's point and is, I would argue, important. Features need to be "accessible in a glance" (Section 7.1.6.) The Crowns engine houses are accessible 'at a glance' from the cliffs where most photographs of the structures are taken (Section 7.1.5.). Up close they are messier and fragmented but nonetheless allow for physical exploration.

These strong, simple structures do not need to be archaeological; data demonstrates that they can also be natural/geological (Section 8.1.5.). The cliffs at St Agnes and Botallack are one form of 'cleanly' demarcated elevation whilst the horizontality of the moor emphasizes the seemingly perilous, stacked granite slabs of Cheesewring tor. Conversely surface features blur more messily into the background - the streamworks, tramways, filled-in shafts and waste tips are, it would appear, more easily overlooked. It is notable that only one respondent listed the Witheybrooke streamworks on Minions Moor, a large and deep gash in the moor. In the same way that a couple of visitors had problems finding Stowe's Pound, this could be a matter of scale as the boundary between the inside and outside of a feature may be indistinct at ground level (Section 8.1.5.).

There are some anomalies which have fall outside my hypothesis. The tallest structure at Botallack, the steel headgear of Allen's shaft, was not listed once as a key feature within my survey (Section 7.1.6.). The Caradon Hill TV mast at Minions (228.9 m in height, Section 8.1.5. and 8.3.4) was only listed by three respondents.

Meanwhile, St Agnes Beacon (192 m above sea level) was only listed by two respondents, thereby challenging Preston-Jones' assertion that the granite batholith "dominates the landscape" (1997: 28; Section 5.3.3.). I remain mystified as to why St Agnes Beacon did not appear to 'stand-out' when it is an obvious landmark from miles around. However, I can speculate on the other two features. Standing on the track that runs past Allen's shaft the base of the headframe is partly hidden by a bank – there are no clear sightlines to the structure which enable it to be seen in its entirety. The same may be true of St Agnes Beacon. The modernity and/or materiality of the headframe and TV mast might also be factors. It is notable that all of the features listed in Table 11.1 share granite-built characteristics. If steel is the 'wrong' type of material, this may also explain why concrete built structures such as 20th century dressing floors fail to attract significance.

Data above supports the notion that the engine house is an icon of Cornish mining (Sections 2.4.5 and 10.2). Their simple, yet striking, design and relatively high survival rate has led to wide representation within visual culture, and their use as a logo for the 'Made in Cornwall' campaign and WHS (Section 10.2). I would argue that the engine house is a metonym for the mine. The structure in the landscape acts as a marker for the mine workings, it indicates to the public more powerfully than any other structure where mines are and metaphorically acts as a headstone. In turn the coastal engine houses of Crowns Mine and Wheal Coates are the super-icons of Cornish mining. However I would apply a caveat here: the super-icon of Cornish mining is the *view* of the Crowns engine houses from the cliffs. The structures against the rock and sea are the power of the image and the image most reproduced. The engine house is therefore a highly 'attractive' monument, however this attractiveness and its recent iconisation may present a challenge in terms of the development of a public understanding of a complex industrial landscape (Alfrey and Putnam 1992: 182; Section 3.4.4).

### **11.6.1. The names we give to things**

Language is an intrinsic part of identifying, imagining and communicating features seen in the landscape. As Tuan put it, "naming creates landscape" (1991: 668; Section 3.5.1.), and naming also provides one way of re-creating landscape away

from the sight/site. An extensive and specialised vocabulary exists for Cornish mining sites (see Glossary, Appendix A) and I have found that many Cornish words and phrases used by miners in the past have been retained within common parlance and are used in adjunct to mining terminology. Taking the arsenic complex at Botallack as a case in point, without the words 'arsenic', 'calciner'/roaster', 'labyrinth' (or the Cornish '*lambreth*') this inter-related set of structures may be described as 'mine buildings' or 'ruined buildings' (see Gazetteer, [Table 5.1, Appendix A]). Therefore knowledge of function and language work in synchronicity in enabling the description of constituent mining features as well as connected relationships between features on site. Some features have a number of variations. The spoil heap, for example, can also be called a waste tip or mine burrow, a dump or a heap.

There are some specific points that can be made about the different ways that significant features have been named (Sections 7.1.6.1., 8.1.6.1. and 9.1.6.1.). Again, following on from the discussion above (Section 11.6.) it is clear that many respondents' conceptualised the site as a group of surface buildings or ruins with no clearer resolution offered. Technical language is retained across all three sites, however many respondents listed features in vague/generic terms such as 'ruins' and 'mine buildings'. St Agnes respondents named more mine setts - Wheal Kitty, Wheal Coates/Towanroath, Wheal Charlotte, Blue Hills and Wheal Friendly (Section 9.1.6.1.) perhaps indicating retention of mines as place-names within the locale as a consequence of the intertwining of the mines and the village. At Botallack and Minions the names of numerous mine setts appear to have died with previous generations where everyday language is concerned.

## **11.7. Change and stasis**

### **11.7.1. When everything stays the same**

Across all three sites a significant proportion of respondents had witnessed 'no change' either physically, or in terms of a change in attitude towards the mining areas they lived in (Sections 7.2., 8.2. and 9.2.). Therefore, two timelines of change, according to public perception, run concurrently: one, an unbroken continuum of

stasis, and a second annotated with phases of change and moments of transformation.

Through inferential statistics a significant relationship between longevity of residence and perceptions of physical change (Section 10.12.2.) has been found, showing that respondents who have lived in their areas for ten years and more are more likely to have witnessed physical change. Data, however, also demonstrated that some respondents who had lived in the case study areas for a relatively long time (for example, for forty years) (see Table H.27, Appendix H) had experienced stasis and conversely some residents who had lived in an area for a relatively short time (nine years and less) had witnessed physical and/attitudinal change.

Perceived change and stasis differed across the three sites. Perceived stasis was more strongly evident at St Agnes (Section 9.2.) than at Botallack and Minions (Sections 7.2. and 8.2.). I would argue the difference in perceived stasis/change is due to differing levels of stress on the communities. Much of the change discussed by respondents and informants relates to loss and threat (also see Section 11.3. above) and reveal a sense of nostalgia for the pre- “late-modern” or “super-modern” (González -Ruibal 2008; Harrison and Schofield 2010: 1-2; Section 3.2.5.). Indeed, some of the characteristics which define the late-modern period (media, globalisation, migration and production) (Harrison and Schofield 2010: 2) are found within the following write-in comment from a respondent in Minions. It is such aspects which González-Ruibal argues lead to collective trauma (2008) (Section 3.2.5.):

The sense of community has been eroded by the motor car, commuting lifestyle, suburbanisation of surrounding villages like St Cleer, Lewannick, Pensilva. The world in general is less ‘localised’. All this diminishes local focus and a sense of place. Mass media and communication (60 year old male, artist - M126).

Indeed, data from the Index of Mass Deprivation data (IMD) (Sections 5.1.6.2., 5.2.6.2. and 5.3.6.2) supports my supposition that perceptions of change/stasis are linked to community stress. St Agnes is the least deprived of the three case study areas (St Just, 42.73 percent, Minions 49.96 percent and St Agnes 52.83 percent,

where 1.00 percent is most deprived). The moorland is a sensitive area, where the community is trying to protect its traditional industry of grazing. Residents who live in the Botallack area are still recovering from the closure of Geevor mine. It would appear that change in the St Agnes area over the last fifty years hasn't been as traumatic or threatening.

It would be easy to dismiss perceived stasis as 'inaccurate'; however, I cannot overwrite the lived experience of my respondents. The problem therefore remains as to how to acknowledge data on stasis and give it appropriate weight within my thesis. More broadly this question (to which at present I don't have an answer) raises interesting questions regarding archaeological approaches to stasis. The 'drama' of archaeological narrative is often structured around moments of disjuncture, whilst, from a phenomenological perspective, it is clear that things also 'stay the same'. Therefore this research has led me to question what an archaeology of stasis would look like and how it could be written.

### **11.7.2. When things change**

Of course, the textual and graphic timelines (Figures 7.7, 8.8 and 9.7, Appendix A, Sections 7.2.1., 8.2.1. and 9.2.1.) reveal that these mining areas have been anything but static. Data on change demonstrates the wide range of actors involved in the transformation of mine sites, including the public, Geevor Mine, the National Trust, the weather and forces of decay. Alongside human and climatic interventions, the honeycomb of hollows beneath the surface make mining landscape shifting and unstable and shafts do suddenly collapse. The timelines reflect the ELC's view on landscape as constantly evolving (Section 3.3.2.1.) and Ingold's treatise on "taskscape" (1993) in terms of the performative role of humans within landscape and other anima such as animals and geology (Section 3.5.2.).

The timelines also highlight significant social, cultural and economic trends to have taken place in each mining area over the last fifty years. Generally the tendency moves from decay towards conservation and valorisation. National Trust acquisitions, works by local societies, district councils and private landowners form pivotal points, and certainly by the late 1980s the mining sites started to become the focus of accelerating conservation, health and safety, and access

programmes. As noted in Chapter Three, conservation comes with “concomitant ideas about order, tidiness and the appearance of things” (Palmer and Neaverson 1998: 162) and some respondents clearly agree with Alfrey and Putnam’s observation that conservation can ‘prettify’ industrial sites (1992: 8). Concomitantly, an attitudinal shift occurred and Cornish mining sites became important in new and different ways: awareness of their potential economic value for tourism increased; they became the focus of cultural products and events; and by the late 1980s/early 1990s they were increasingly labeled as Cornish ‘heritage’.

Aside from conservation initiatives I would argue that two of the most significant factors to have impacted physically on the mining areas are increased car ownership (from the 1960s onwards) and the emergence of a health and safety culture (from the 1980s). Cars (and holidaymakers and daytrippers) have brought badly needed income to the region but traffic congestion, road development and car parking are all physical outcomes on-site. As noted above (Section 11.4), the road and the car park are somehow ‘invisible’ whilst the people and the cars are very visible (based on the number of comments by respondents and informants) (Sections 7.1.6., 8.1.6., 9.1.6. and 11.6.).

The emergence of a health and safety culture (including associated awareness of the threat of third party litigation) has also led to the problematisation of the mining sites as potentially dangerous – a perspective which many informants, for example, those who narrated their experiences of playing on mine sites consider to be overblown (Sections 8.2.2.2. and 9.2.2.). The 1980s marked an important transitional period for mining landscape in Cornwall: not only through health and safety initiatives, but also through the first in-depth archaeological surveys of mining areas (CAU 1986; Sharpe 1989a, 1989b) and, as noted above, a number of conservation initiatives took place. Whilst this spotlight on the county’s industrial heritage focus attention on surface remains, the consequence of the capping, blocking and collaring has been noted above – the sub-surface world was closed (Section 11.5.).

Comparing the timelines some observations can be made. Botallack’s timeline is demarcated by sharp period of change between 1990 and 1995 which creates ‘before’ and ‘after’ divisions – for example, before Geevor closed and after the

National Trust moved here (Figure 7.7, Appendix A). In comparison, St Agnes' timeline has greater time-depth particularly in terms of conservation initiatives. The National Trust acquired Wheal Coates in the 1950s and carried out repair works to Towanroath engine house in 1970. Thereafter followed a thirty years period of further conservation works and importantly by the point that Wheal Jane mine closed in 1992 the village had successfully recovered from the closure of its own mines (in the 1940s) and was comfortably established as a commercial and tourist centre serving parishioners and holidaymakers (Sections 5.3.6.1. and 9.2.1 ). The timeline for Minions, on the other hand illustrates an acceleration of heritage 'interest' in the moor from the 1980s onwards; a period which begins with the district council run Minions Area Heritage Project in 1985. The building of the village's two car parks (1990 and 1995) coincides with the wider social changes, as described by informants (Section 8.2.1). The timeline for Minions also clearly shows the simultaneous introduction of Open Access and WHS which lead to a re-emergence of historic tensions on the moor regarding access (Section 8.2.2.).

It is against these timelines that differing public perspectives, from locale to locale, can be contextualised. A desire to hold on to the past at Botallack is, I would argue, related to a continuing sense of communal trauma in regards to deindustrialisation (see Section 11.4 above). Meanwhile, at Minions 'heritage' has brought conservation and car parks (the latter for visitors, not the locals), whilst recent designations have reintroduced the 'threat' of the outsider (Section 8.2.2.). St Agnes, however, has moved on from its industrial past. The village has undergone a smooth transition from industry to a tourist-based economy local residents are more accommodating towards heritage initiatives as part of that process.

## **11.8. Contention in the landscape**

The broad trends outlined within the timelines also help to contextualise the examples of contention in the mining landscape that I have presented: mine capping in St Agnes (Section 9.2.2.); mine dump removal at Botallack (Section 7.2.2.); and Open Access/WHS on the moor (Section 8.2.2.2.) revolve around the manifestation of authority and power in the landscape. Different values highlighted within these narratives are variously economic, informational, wildlife, recreational, scientific and aesthetic. The figure of 'external authority' looms

largest on the moor (Section 8.2.2.1.) and is evident within the layering of designation which the moor has acquired. Singularly these all attempt to protect certain values; however, heritage designations draw public attention to moorland assets and thereby wittingly or unwittingly threaten current industry on the moor, an economy which pre-dates the relatively short period of mining. A common debate in public archaeology is ‘who owns the past?’ (ref) whereas from a landowner’s perspective it can be put more simply as ‘look, who owns this?’ There is a sense that as an area the moor has only just passed through the pre-modern into the modern – if one talks of sticky or heavy heritage, then there are ways of life that also persist. Minions is, I would argue, one such place. I am uncomfortable with the suggestion that it is in some sense backward; it has rather continued a particular way of life. But it is a fragile environment, and one walker and one dog is noticed and noted (Section 8.2.2.3).

In St Agnes, resentment towards authority { [REDACTED] } [REDACTED] making decisions to pave and bench sections of the St Agnes coastpath was pronounced— [REDACTED] (Section 9.1.4.), while authority (in tandem with an emergent health and safety culture) also capped the mine shafts and stopped the children’s fun. The example of contention at Botallack (the removal of mine dumps by Geevor Mine) has altered my prior assumption that the mine (and mining) would automatically garner widespread public support. This example demonstrates that contrary viewpoints, here advocating nature not industry, existed during the period of live mining. The effective letter-writing and petitioning of wildlife conservationists (Section 7.2.1.), the delays caused to CHAHP by the Commoners Associations’ and local landowners (Sections 8.2.2.1. and 8.2.2.3), and the confiscation of English Heritage signs by members of the Cornish Stannary Parliament (Section 10.2.) all demonstrate local power. Other voices are heard and listened to. It is not necessarily always the case that unofficial values and perceptions are always submerged under the AHD (Smith 2006; Sections 1.2.2. and 3.3.1.).

### **11.9. Play and “alternate public life”**

As the examples of contention in the landscape illustrate, these are not just ‘heritage’ sites; for the people that live in these mining areas they are also, to quote

Johnson, 'home' (1996: 150-151; Section 2.4.5.3.) and my project has also been concerned with the everydayness of place (see Section 3.3., Chapter Three). Following Edensor (2005) all three mining areas were, for some, places to 'play'. Based on my own observations present public use of mining areas ranges from dog-walking, bird-watching, climbing, walking, picnicking and exploring. Therefore Edensor's descriptions of the social use of industrial ruins in the north of England and central Scotland in terms of places where unregulated performance and "alternate public life" occurred is supported by my research in terms of types of activity. As with Edensor's case studies, leisure adventure, acquisition, shelter and creativity all take place on Cornish mine sites too (Section 3.4.5).

However, from interviews and observation, mining sites are now more regulated and some types of activity are no longer widely performed. Within living memory rubbish was recycled as part of childhood games, shafts and adits were explored, mineral collectors scoured mine dumps, people fly-tipped, barbeques were lit and graffiti painted (Sections 7.2.2. and 9.2.2.). Cornish mining sites are now relatively tame (and certainly tamed) spaces. The skateboarding, graffiti and squatting at Wheal Kitty, St Agnes (Section 9.1.4.) is perhaps illustrative of what the mine sites used to look like and be like. From interviews it seems that they were more surreal, uncanny areas in the past and there was certainly more freedom 'to make things happen'. However, I have gained no strong sense that public activity, as listed above, was generally frowned-upon and the extent to which mining sites in Cornwall were in Edensor's terms 'alternate' places of public life is debateable. From my research they do not come across as being a particular focus of "transgressive" or "illicit and frowned upon activities" in the past (Edensor 2005: 4, 21; Section 3.4.5.). Whilst Sharpe noted that fly-tipping at Minions "enhances the view that no-one cares about these sites and encourages vandalism and other damage" (Sharpe 1989a:78-82) I heard no complaints from informants regarding the aesthetics of mining areas, in terms of rubbish, vandalism or graffiti. Therefore I cannot unequivocally assert that in these particular cases the dumping of rubbish served to "uglify the environment" (Joseph 1998: 7; Section 3.4.5.). It is for this reason that across all three sites the demonic metaphor does not connect to concepts of aesthetic or environmental waste and dereliction, indeed notions of industrial eyesores (from an aesthetic viewpoint) did not emerge as a dominant

theme within qualitative data (Palmer 1993:49-50; Section 3.4.4.). Instead, present day anti-social behaviour (from a public perspective) is largely confined to the moor and concerns driving vehicles too fast and walking dogs off leads (Section 8.2.2.1.).

### **11.10. The interval of less regulated use?**

In the section above I have outlined some of the ways in which local residents continued to use Cornish mining sites in an everyday sense and I have questioned concepts of dereliction in specific regards to aesthetics. I will now go on to consider the ‘interval of neglect’ model which I reviewed in Chapter Three (Section 3.4.2). This rests on a number of interrelated premises: firstly, that following industrial decline the public perceived former industrial sites as highly problematic and painful spaces (Cooper 205: 167; Trinder 2000: 37-41); secondly, that dereliction is equated with “danger, delinquency, ugliness and disorder” (Grunenberg 1997: 8); and thirdly, that over time disdain towards derelict industrial spaces turns to acceptance and interest (Trinder 2000:41-45). This is a progressive model through which derelict structures are transformed into ‘icons’ of an innovative industrial past (Alfrey and Putnam 1992:41; Section 3.3.). Although the ‘interval of neglect’ model seemingly fits the timelines presented above in terms of closure → decay → preservation → WORLD HERITAGE!, I have some reticence in accepting it as a transitional model for the Cornish mining sites for the following reasons.

A characteristic of mining in Cornwall (and mining more generally) was the rapidity with which mines closed, re-opened, amalgamated or were left abandoned (Sections 2.4.3.3., 2.4.4.3., 5.1.5., 5.2.5., 5.3.5. and 9.2.2.). On closure a functional attitude towards surface remains resulted in engineering components being removed and moved, and mine buildings being stripped down and recycled. The surface remains were secondary to the actual workings so the abandonment and recycling/removal of surface remains was a pragmatic response and part of routine industrial procedures. Therefore ruined buildings and abandonment were an existing part of industrial life and were not necessarily indicative of decline. Following on from the aesthetics of rubbish and graffiti commented on above (Section 11.7.), informants agreed that fly-tipping on Cornish mining sites in recent

history was socially acceptable, a continuation of a particular type of Cornish pragmatism that sees land as function (Sections 2.4.4.3., 3.4.2., 5.1.7., 5.2.7. and 5.3.7.). An attitude of pragmatism seems to continue (to some extent) for instance, the graffiti at Botallack was accommodated for around thirty years before some of it was painted over (presumably by the National Trust) (Sections 7.2.1. and 10.2.).

I am therefore not entirely convinced that derelict surface remains or rubbish in the landscape connect, in the case of Cornish mining landscapes, to concepts of neglect and disdain. Whilst further research is perhaps necessary to firm up my initial findings my inclination is at present to view actions, such as fly-tipping, in terms of a continuation of a functional attitude towards land. Once concepts of neglect and disdain are removed from the interval of neglect model the subsequent positioning of preservation and subsequently heritage, as a form of progressive 'redemption', is unbalanced. As I have discussed above, the sites were being used in many different ways (Section 11.4.1.). At the moment therefore, I am reframing the model and instead of 'neglect' this transitory stage is relabelled 'the interval of less regulated use'. It is from this position (the interval of less regulated use) that the emergence of mining 'heritage' can be reconceptualised as exemplifying a shift in 'ownership' of Cornish mining sites from primarily everyday, functional and 'local' use (and associated values) towards stronger hegemonic investment and ownership (as reflected within the 'heritage debate' outlined in Chapter Three [Section 3.3.1.]). However, I would apply a caveat: Cornish mining landscapes continue to be 'local' places and local perspectives and values operate alongside the AHD (Section 3.3.1.) or indeed, notions of universal value (Section 3.3.2.2.). As I will discuss in the next section there is much local support for World Heritage Site status.

### **11.11. World Heritage Site status**

Cornish mining areas are of high importance (see Figure 11.2, Appendix A); looking at data from the sites collectively, 83.2 percent of respondents chose either 4 or 5 (on a scale where 5=high and 1=low importance) whilst only 5.2 percent chose 1 or 2 (Sections 7.3.1., 8.3.1. and 9.3.1.). Unlike Hunt's case study which found that locals and visitors to the Giant's Causeway, Co. Antrim had a low awareness of the site's WHS status (1996: 212, Section 1.5.3 and 3.3.3), my project

has found that the vast majority of respondents knew that the Cornish mining areas were WHS (Sections 7.3.2., 8.3.2. and 9.3.2.). Botallack residents demonstrated the highest awareness (86.4 percent), closely followed by St Agnes (85.7 percent). Just under a quarter of respondents were unaware that Minions was within the WHS area (23.4 percent). I surmise that this is a reflection of the lack of publicity in the local area (Sections 8.1.4 and 8.2.2.3.). Indeed, it would seem that Iain Rowe was correct (Section 8.2.2.3.) when he said that WHS was more firmly fixed in West Cornwall. The Caradon area could indeed trumpet its heritage assets more loudly as a fair proportion of respondents had not heard this particular message.

The vast majority of respondents did consider WHS to be a 'good thing' (overall 83.6 percent; Section 7.3.3., 8.3.3. and 9.3.3.). St Agnes respondents showed slightly higher support for the designation than at the other two sites. The data from Minions (showing 82.6 percent support for the designation) (Section 8.3.3.) contradicts qualitative data which suggests that the designation may be unwelcome. These data could be biased; those opposed to heritage may have chosen not to complete the questionnaires. There were also attempts to sabotage my data collection on site (Section 6.2.1.).

Whilst the sample size for the quantitative data just described is robust, write-in responses commenting on perceived costs and benefits are quite small and therefore the following findings are tentative. The perceived benefits of WHS (across all three sites) focus on architectural and aesthetic, (preservation of the physical remains) and informational values (history) (Sections 7.3.3., 8.3.3. and 9.3.3.). Respondents from Botallack and Minions were more strongly preservation-oriented than those from St Agnes; in the latter case values were focused more towards economics (wealth generation and tourism). The main perceived cost of WHS (across all three sites) is also linked to architectural and aesthetic value – the fear that too much preservation will lead to a loss of integrity or authenticity – a notion that connects to fear of theme-parking. Future research will hopefully support or contest these findings.

Findings on impact are also tentative due to the youth of the designation. Impact data was found to be small and in some ways surprising. Intangible impact in

terms of increased community pride was broadly commented on. However, the use of designation within all three case study areas to deter or mitigate against inappropriate development demonstrates that WHS was being used in the same way as other conservation designations such as AONB and SSSI (Sections 7.3.4., 8.3.4. and 9.3.4.). Paradoxically WHS has been useful on the moor (Section 8.3.4.) having helped a local heritage project (CHAHP). At St Agnes it has also been useful in attracting funding for the local museum (Section 9.3.4.). WHS does not appear to have led to a noticeable increase in visitors (Section 7.3.4., 8.3.4. and 9.3.4.). WHS impact is an area that future research could come back to, however, my tentative conclusion is that apart from a feel-good factor and its use within planning WHS has had little impact in terms of everyday life within these mining areas.

### **11.12. The future is conservation oriented**

Data on opinions on future use and management of the mining areas (see Figure 11.3, Appendix A; Sections 7.3.4., 8.3.4. and 9.3.4.) shows that the vast majority of residents have bought into a preservation ethic (72.4 percent across all three sites). There is a strong desire to preserve the remains of the industry, but also to preserve authenticity (the rough and ready wildness of mine sites), however, unfortunately a trade off is inevitable. Indeed, a certain resistance to urbanisation (or neatness) can be seen within the St Agnes case study (Section 9.1.4.). The current generation, however, is clearly invested in performing a guardianship role and enabling future generations to learn from mine sites. However, there are some who understandably resent that the money now spent on WHS and conservation was not available when the mines were fighting for survival.

Whilst preservation is clearly favoured by the majority, some however, felt that re-use or decay were alternative and viable options. Many respondents demonstrated an ability to think through the complexities of management issues including scale, cost and consequential effect and were able to logically argue against a particular approach that they felt was unrealistic or problematic. Indeed, in some ways counter-arguments or those that argued for combined approaches were the most insightful and revealed a sophisticated grasp of heritage management issues.

### **11.13. Identity**

Notions of identity form a narrative theme throughout this project, not only in terms of the demographics of respondents and the biographical narratives of informants but also in terms of place identity, the connections between mining and material culture (as used to symbolise Cornwall) and perspectives on the insider and the outsider.

Mining is literally embedded within the region's geology (Section 10.3). Indeed, the surface remains could be razed, however, the workings would remain. It is therefore a type of heritage which is an intrinsic part of the local landscape. However, the mobile 'components' – the engines, the miners, knowledge and technical skill - have created global connections to the local. Cornish communities are now located in all four hemispheres.

Place identity has contours: the further inland and the further west one goes (away from England), the more Cornish Cornwall is said to become (Section 2.4.5.2.). Botallack in the far west is seen by some as being part of 'real Cornwall' whilst the places most connected with tourism, for instance, St Ives are not considered Cornish towns but English ones (Laviolette 2011). It is therefore perhaps not surprising that Liskeard, situated in the east of the county close to the Devon border, displays strong markers of Cornish identity within its public buildings and shop windows. I would suggest that such visual representations are compensatory to its borderland location. However, material (or visual) culture associated with mining can take many forms (Section 10.2): it can be politically motivated 'nationalist' graffiti, it can also be a kitsch postcard of an engine house bought in a beachside cafe and it can be large public artworks which proudly narrate a town's history.

I have argued that mining defines and strongly informs a sense of modern regional identity. An industrial identity, and mentality, is connected to the notions of hard, physical work, productivity and land as function. Tourism and the service industries, are seen in contrast as soft jobs; they are low paid, unsustainable and seasonal. The 'what if?' scenario lingers in the background: What if we wanted to mine here again? Would the National Trust allow it? Would the World Heritage people allow it? Across these case studies views on the resumption of mining are

small and mixed and rather dismissive of the possibility of mining in these particular case study areas (Sections 7.4., 8.4., 9.4.). I am convinced that the majority of people in Cornwall would want to see the resumption of mining and I would suggest that this data doesn't necessarily demonstrate a lack of support for mining but instead reflects county-wide focus on the current development works at South Crofty, near Camborne (Section 2.4.6.). The strong support for preservation of mining heritage (as discussed above) reflects a second-best mentality. If there isn't 'real' mining there can be (real?) mining heritage.

The use of the label 'local' frequently occurs within qualitative data discussed within the previous results chapters (Chapters Seven, Eight and Nine). Respondents have indicated different political dimensions and boundaries around concepts of localness. For instance, tourists and holidaymakers are outsiders, immigrants are incomers, English Heritage is not Cornish Heritage and second home owners are not 'real' locals as they live elsewhere (Sections 7.2.1., 8.2.1., 9.2.1. and 10.6.). There are therefore varying degrees and shades of localness some of which relate place of birth and others to particular understandings of ways of life and issues affecting the host community and Cornwall more broadly.

Whilst acknowledging these different viewpoints it is important to differentiate between my own use and definition of the word 'local' where it appears in this thesis. Discussion, for example, of local residents or local respondents relates specifically to the parameters which I set for sampling respondents based on geographical residence within the electoral ward/wards which encompassed each case study area. This parameter therefore has encompassed those who were born in Cornwall and incomers who have taken up residence (Section 4.6.2.).

In Chapter Ten (Section 10.4) my consideration of the 'local' began with a deconstruction and remodelling of the image of the Cornish miner (commonly viewed and narrated as being 'Cornish', 'male' and 'working underground'). Using interview and oral history data I have reconceptualised the mine-worker in Cornwall as gender unspecific and multi-national. Furthermore, those who 'work/worked' in Cornwall's traditional industries whether they are miners, engineers, or in the case of Minions moor, graziers are awarded an honorary 'local' identity.

I have also demonstrated the many different ways that people have connections to the mining industry – through work, family ties, special interests, education and training – the extent of such connections, and again the ways that they cross geographical borders and boundaries of identity has been surprising (Sections 10.5. and 10.6.). Inferential statistics (Section 10.7.) have ultimately contested concepts of the ‘local’ and the ‘other’ as based on place of birth or notion of Cornish identity. The strongest statistical relationships within the data related to longevity of residence. One of the most important findings in this research is the way in which a person becomes ‘local’ through daily experience and a developing understanding of the place they call home – irrespective of where they were born, or who they are labelled as being.

## CHAPTER TWELVE: CONCLUSION

### 12.1. Conclusions to the discussion

My project has sought to examine the public's perceptions of Cornish mining landscapes. In so doing, my aim has been to consider the ways in which mining sites, and public perspectives towards those sites, have changed during the last fifty years – the period of lived and living memory. In this final chapter I will present my research conclusions and comment on their wider significance. I will also set out possible way forwards in terms of future research directions.

In considering the social archaeology of industry, in terms of the post-industrial phases of mine sites, I have brought an overlooked area of research to the surface. The deficit in research on post-industrial landscapes and the gap between mining history and characterisation has been noted. This area of research provides ample opportunity for archaeologists (irrespective of whether they position themselves within contemporary, industrial or historical archaeology). Nevertheless, any research on post-industrial communities needs to be timely; in the case of Cornish mining sites it was important to do this project whilst the mining industry was still part of living memory.

Generally speaking, local residents perceive Cornish mining landscapes in positive terms and romanticism and aesthetics strongly inform this perspective. However, a constant dialectic shuttle occurs between the 'pastness' and the 'presentness' of place which can serve to create seemingly paradoxical site descriptions. The use of mining metaphors exemplifies this: Cornish mining landscapes are demonic, heroic, beautiful, historic and interesting. These metaphors collide most strongly at Botallack through a sensory experience of the 'industrial sublime'. This research therefore supports Laviolette's conclusion regarding (a prevailing metaphor of) death in the Cornish landscape (2003; 2011) and also relates to broader theories regarding landscape and aesthetics (Edmunds 2004: 13; Cosgrove 1984; Berger 1973). Indeed, one research conclusion is, to paraphrase Johnson, that romanticism forms a backdrop to *public* thinking on landscape (2007: 17). In addition, these (once) heavily industrialised sites are now viewed as 'natural': furthermore, industrial archaeology does appear to be too young to be considered

truly archaeological. Instead Cornish mining landscape are viewed as mining history.

Public descriptions of Cornish mining landscape also have a potential use in providing archaeological and heritage professionals in the county with indicators of types of words and language which the public use to describe the WHS. Such language could therefore be used within interpretation and marketing of the WHS. One point to make here is that respondents showed no reticence in using the adjective 'beautiful' and whilst archaeologists may baulk at evoking the romantic, I would henceforth feel some reticence not using the word 'beautiful', alongside 'historic' or 'natural,' to describe Cornish mining sites.

Most users of mining sites stick to well-worn paths when they are walking around the landscape. A mine is commonly viewed as a group of buildings (on the surface) and mine features are generally named in vague and generic terms. However, technical language survives within the broader community. It is clear that the most significant features are engine houses, chimney stacks and mine buildings are those that have the most elevation. They are elevated and clearly set apart from the background noise of archaeological features. These conclusions support Tuan's theories on the centrality of vision within environmental perception (1974: 6). Above all, it can be firmly concluded that the Cornish engine house is a super-icon and acts as a metonym for the mine.

For a significant number of local residents the landscape had remained unchanged. However, mining sites did change rapidly and radically from the 1980s onwards and the trend across all three case study sites has been a movement towards conservation, cleaning-up, valorisation and increasing public interest which have all lead to the reconceptualisation of Cornish mine sites as 'heritage'. It was during the 1980s that regional agencies began to consider Cornwall's derelict land; sites were reviewed in terms of public health and safety, and concomitantly archaeological surveys and conservation programmes shone a spotlight on the mines. Aside from health and safety legislation, a significant (yet overlooked) factor changed these landscapes was the motor car. Whilst car parks appear to achieve a degree of invisibility in terms of public perception the cars, and the people in them, do not. The other significant change has been the

capping/collaring/grilling of mine shafts. The connection to the underground world of shafts, caverns, levels and inclines has been broken. This has resulted, metaphorically speaking, in the second 'death' of the mines, and hence perception is now focused on the surface.

It is clear that public perception is influenced by each locale's particular historical and topographical context as well as contemporary socio-economic issues. Recent, and in one case, ongoing contentions have highlighted different heritage values including: the economic, informational, archaeological, recreational, natural (including wildlife conservation) scientific and aesthetic. Cornish mining sites are certainly more regulated now, and 'authority' has become a more dominant figure. However, Cornish mining sites continue to be 'home' for local people and they continue to have public and private uses. For this reason, and by placing the sites within an 'industrial' mind-set which pragmatically sees land in terms of function, I have reframed the 'interval of neglect' model as 'an interval of less regulated use.'

'Heritage' and 'the everyday' co-exist on these sites. Indeed, there is much support for World Heritage Site status. Cornish mining heritage is considered to be of high importance, there is good general awareness of the inscription and the perceived benefits of the status far outweigh perceived costs. Local residents are keen to see mining sites and buildings preserved but they also want to preserve the 'integrity' of the sites, meaning their 'wild' rough and ready nature. Findings on impact of WHS are tentative; however, it appears that WHS has had considerable intangible impact (community pride) but has not lead to a noticeable increase in visitors. Mining in the future in these particular locales does not appear to be considered a viable option.

There are different cultural, economic and political dimensions to the materiality of mining, some of which connect to concepts of identity, and indeed Cornish nationalism, whilst others are more instrumental in nature. There are also political boundaries around the concept of the 'local' and within this research I have identified several distinctions between the 'local', the 'incomer' and the 'outsider'. The mining workforce established global connections and bonds between mining communities still persist today. In many ways Cornish mining is not strictly 'dead'

and I have demonstrated the diverse forms of connection to the industry that local residents have. One of the most significant conclusions from my project is the way that 'local' identity can be formed through inhabitation. Individuals can arrive as 'outsiders' and become 'experts' in mining history and archaeology. Local people will continue to be connected to these landscapes, even perhaps after the deaths of those who have first-hand experience of mining. They are not, however, likely to experience the underground world. To gain a sense of the subterranean world beneath their houses and streets they may need to watch uncanny images on their TV screens of miners in other parts of the world.

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# **APPENDIX A: ILLUSTRATIONS, TABLES, MAPS AND GAZETEERS**

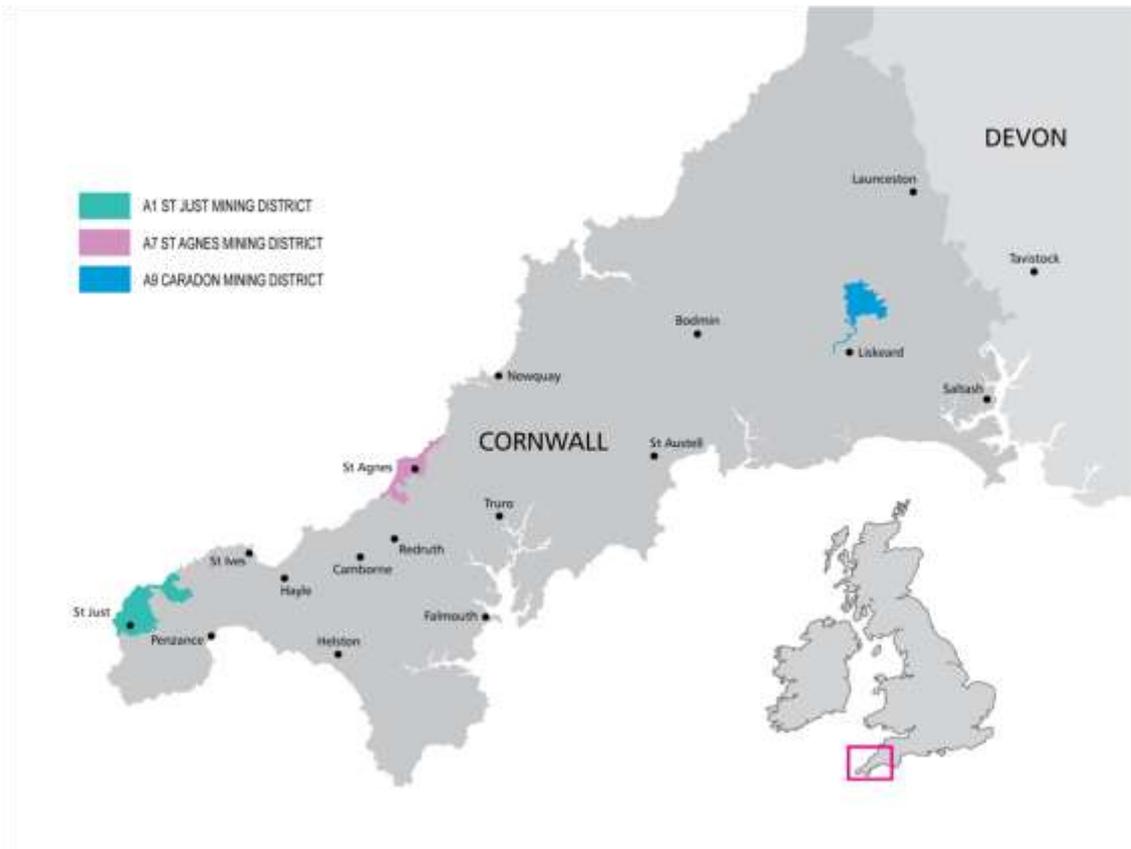
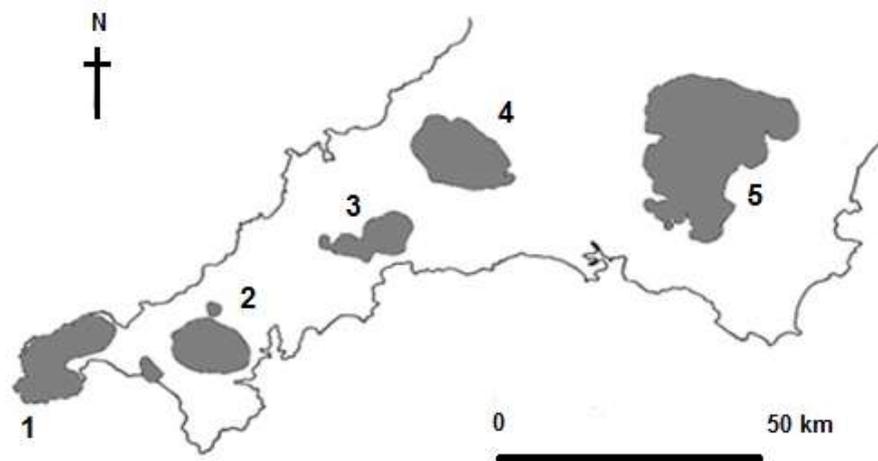


Figure 1.1 Map of Cornwall showing WHS case studies. Image courtesy of Historic Environment Service, Cornwall Council (HESCC)



- Legend**
- 1 Land's End
  - 2 Carnmenellis
  - 3 St Austell Moor
  - 4 Bodmin Moor
  - 5 Dartmoor

Figure 2.1 The granite uplands of southwest England. Adapted from Shell, 1978



Figure 2.2 Medieval tin streaming, Woodcut from Georgius Agricolas "De re metallica libri XII (1556).

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[http://commons.wikimedia.org/wiki/File:Georgius\\_Agricola\\_Erzsucher.jpg](http://commons.wikimedia.org/wiki/File:Georgius_Agricola_Erzsucher.jpg)



Figure 2.3 Heavily disturbed openworkings to the north of Minions village. Houseman's pumping house (now converted into the Minions Heritage Centre) is centre left.

Photograph courtesy of the HESCC (HES F33/208)

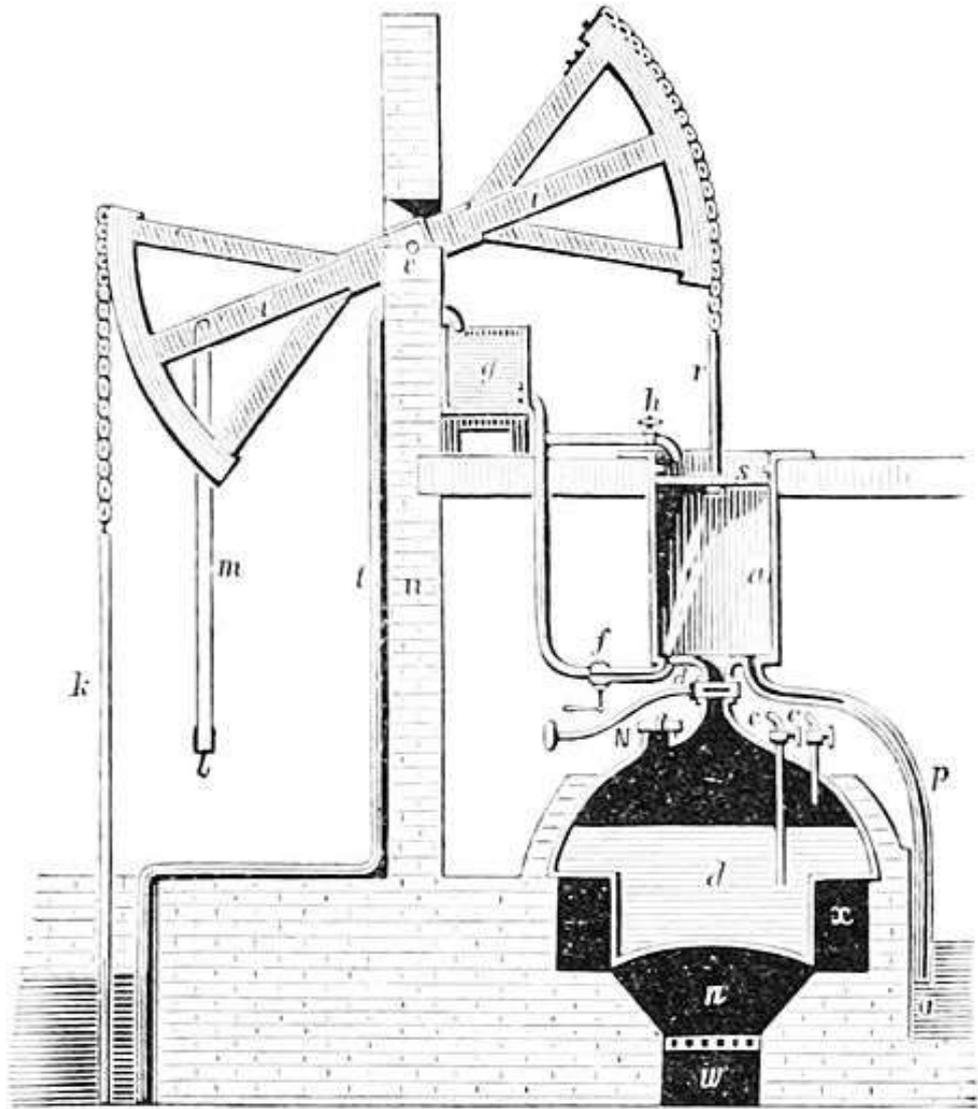


Figure 2.4 Newcomen Engine. In the public domain via Wikimedia Commons.  
[http://commons.wikimedia.org/wiki/File%3APSM\\_V12\\_D143\\_Newcomen\\_engine\\_1705.jpg](http://commons.wikimedia.org/wiki/File%3APSM_V12_D143_Newcomen_engine_1705.jpg)



Figure 2.5 Man-engine at Dolcoath Mine c. 1893 by J.C. Burrow. Image in the public domain via  
Wikimedia Commons  
[http://commons.wikimedia.org/wiki/File%3ADolcoath\\_mine\\_man\\_engine.jpg](http://commons.wikimedia.org/wiki/File%3ADolcoath_mine_man_engine.jpg)

IMAGE REMOVED

Figure 2.6 Poster designed by Frank Sherwin c. 1935, from Peters 2005

IMAGE REMOVED

Figure 2.7 Harold Harvey. 'St Just Tin Miners' 1935. Collections of the Royal Institute of Cornwall

IMAGE REMOVED

Figure 2.8 Tinnners' march on London. Collections of Geevor Tin Mine



Figure 2.9 Aerial view of Perran Sands, Photograph courtesy of the HESCC 2011, Flight 93003

<b>Riegl (1996)</b>	<b>Venice Charter (1979)</b>	<b>Lipe (1984)</b>	<b>ICOMOS (Burra Charter) 1979</b>
Age Historical Commemorative Use Newness	Cultural Historic Aesthetic	Economic Aesthetic Associative/ Symbolic Informational	Aesthetic Historic Scientific Social Spiritual
<b>Darvill (1995)</b>	<b>Carver (1996)</b>	<b>English Heritage (1997)</b>	<b>Deeben <i>et al.</i> (1999)</b>
Use value Option value Existence value	Market values Community values Human values	Cultural Educational Economic Resource Recreational Aesthetic	Perception Physical quality Intrinsic quality
<b>Getty Institute, Mason (2002)</b>	<b>English Heritage (2008)</b>		
Socio-cultural values Economic values	Evidential Historical Aesthetic Communal		

Table 3.1 Values-based typologies. Adapted from Labadi 2007, 150-151

IMAGE REMOVED

Figure 4.1 Taff Merthyr Colliery. Source Badcock and Malaws 2004

IMAGE REMOVED

Figure 4.2 Wheal Jane Mine, Cornwall. Source NMR, English Heritage

IMAGE REMOVED

Figure 4.3 Raster grids superimposed with HLC types outlined (OS 1: 2500 base mapping) RG: Rough Ground, ID: Industrial Disused, FP: Farmland Prehistoric, FPM: Farmland Post Medieval, and S: Settlement. Note Botallack in bottom left corner

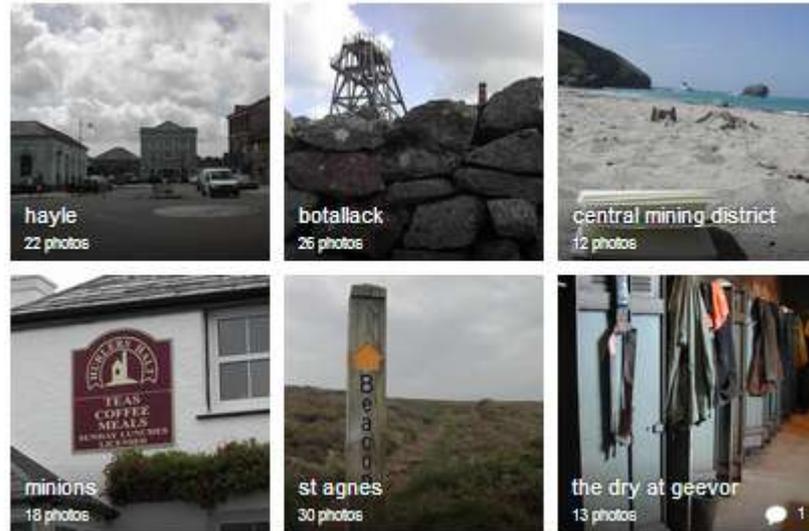


Figure 4.4 Flickr sets

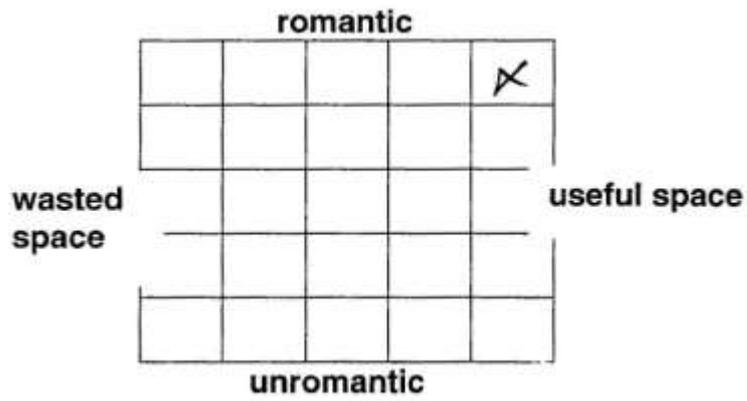


Figure 4.5 Affective grid

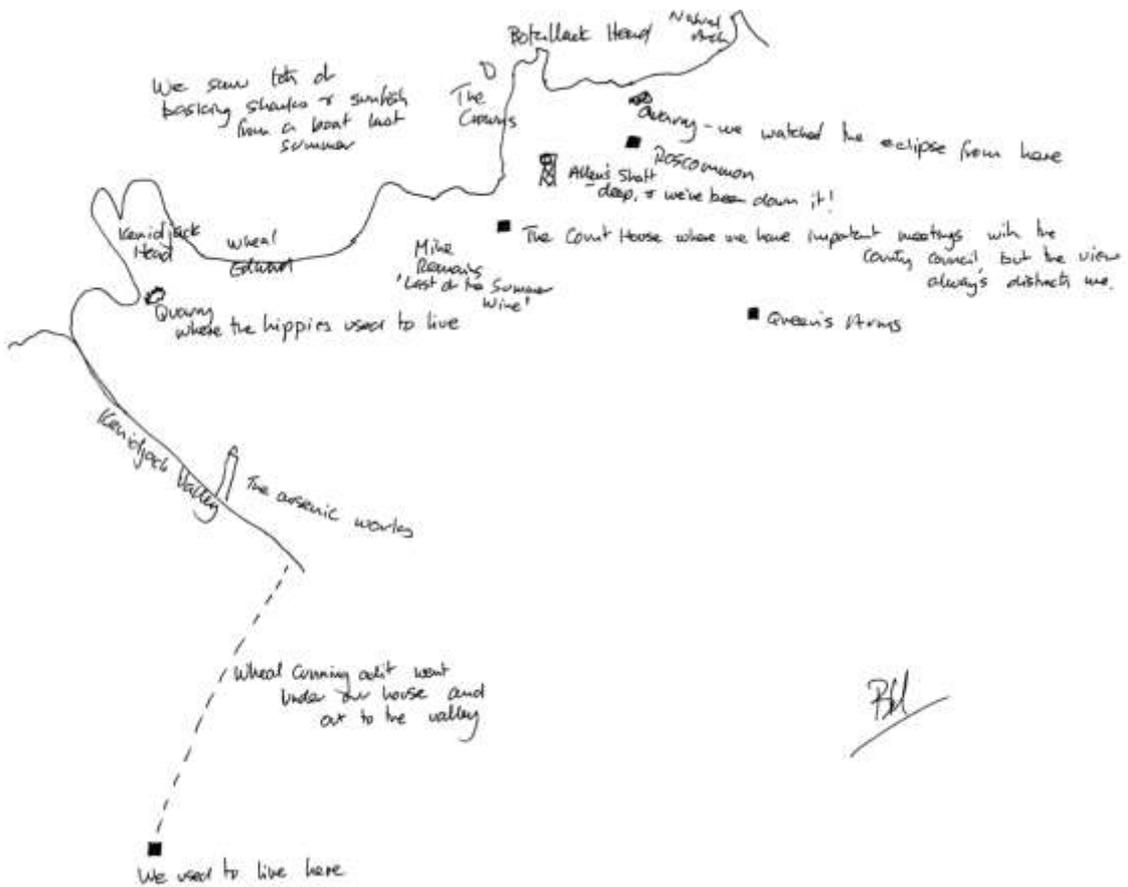


Figure 4.6 Memory map of Botallack

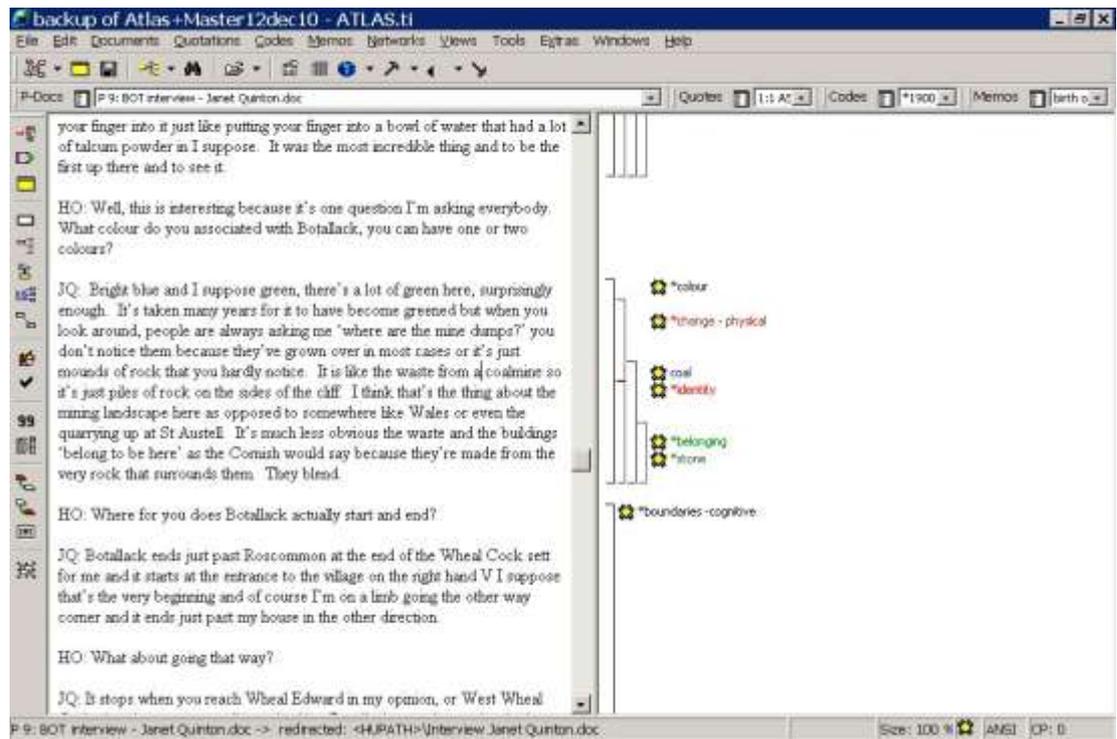


Figure 4.7 The coding of interview transcripts using *Atlas.ti*

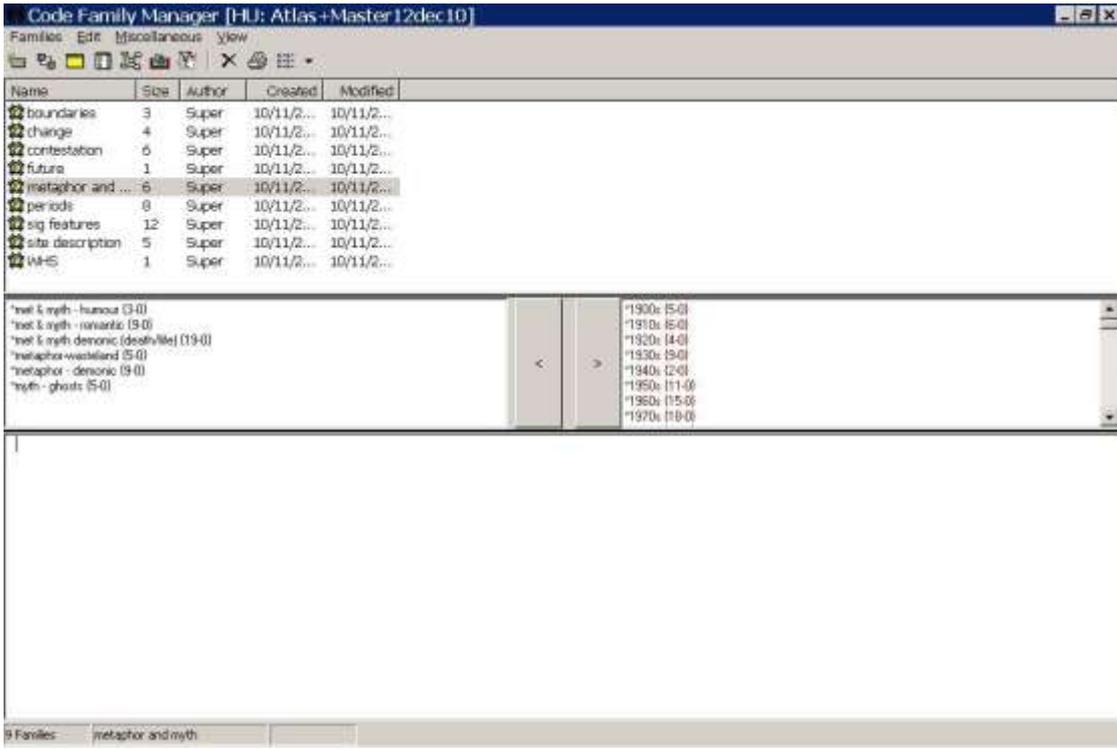


Figure 4.8 The creation of family groups using *Atlas.ti*. The metaphor and myth field is highlighted revealing associated coding in the centre right field

Type of data	Sources
<b>Documentary</b>	Archaeological surveys and environmental assessments; archives, visitor books, newspaper reports, oral history collections, town council minutes
<b>People</b>	Sample from population
<b>Organisations</b>	Public and private institutions such as the National Trust, Cornwall museums service.
<b>Environment</b>	Mines
<b>Material Culture</b>	Objects, signs and souvenirs
<b>Events</b>	Festivals, art events, theatre

Table 4.1 Types of available sources of data

	Research question	Method of data collection	Method of data analysis
1.5.1.(a)	Descriptions of place	Questionnaires Interviews	Content analysis Descriptive statistics (SPSS) Coding (CAQDAS)
1.5.1.(b)	Paths and networks	Observation Interviews	Coding (CAQDAS)
1.5.1.(c)	Significant features	Questionnaires Interviews Observation	Content analysis Descriptive statistics (SPSS) Coding (CAQDAS)
1.5.2.	Physical and attitudinal change	Questionnaires Interviews Archival data	Content analysis Descriptive statistics (SPSS) Coding (CAQDAS)
1.5.3.(a)	Awareness of WHS	Questionnaires	SPSS
1.5.3.(b)	Expectations of WHS	Questionnaires	SPSS
1.5.3.(c)	Impact of WHS	Interviews Council minutes	Coding (CAQDAS) Coding (CAQDAS)
1.5.4.	Future	Questionnaires	Content analysis Descriptive statistics (SPSS)
1.5.5.(a)	Material culture	Observation Interviews	Coding (CAQDAS)
1.5.5.(b)	Mining connections	Questionnaires Interviews Archival data	Coding (CAQDAS)
1.5.5.(c)	Perspectives on the insider/outsider	Questionnaires Interviews Archival data	Coding (CAQDAS)
1.5.5.(d)	Testing of demographic variables	Questionnaires	Inferential statistics (SPSS)

Table 4.2 Research aims and methodological design

Site	Dates of fieldwork	Number of days
<b>Botallack (Trial)</b>	31 March - 13 April 2008	14 days
<b>Botallack</b>	6 May - 18 May 2008	13 days
<b>St Agnes</b>	18 May - 1 June 2008	14 days
<b>St Agnes</b>	24 July - 3 August 2008	11 days
<b>Minions</b>	4 August - 19 August 2008	16 days
<b>Botallack</b>	10 July - 15 July 2009	6 days
<b>Total</b>		74 days

Table 4.3 Phases of fieldwork

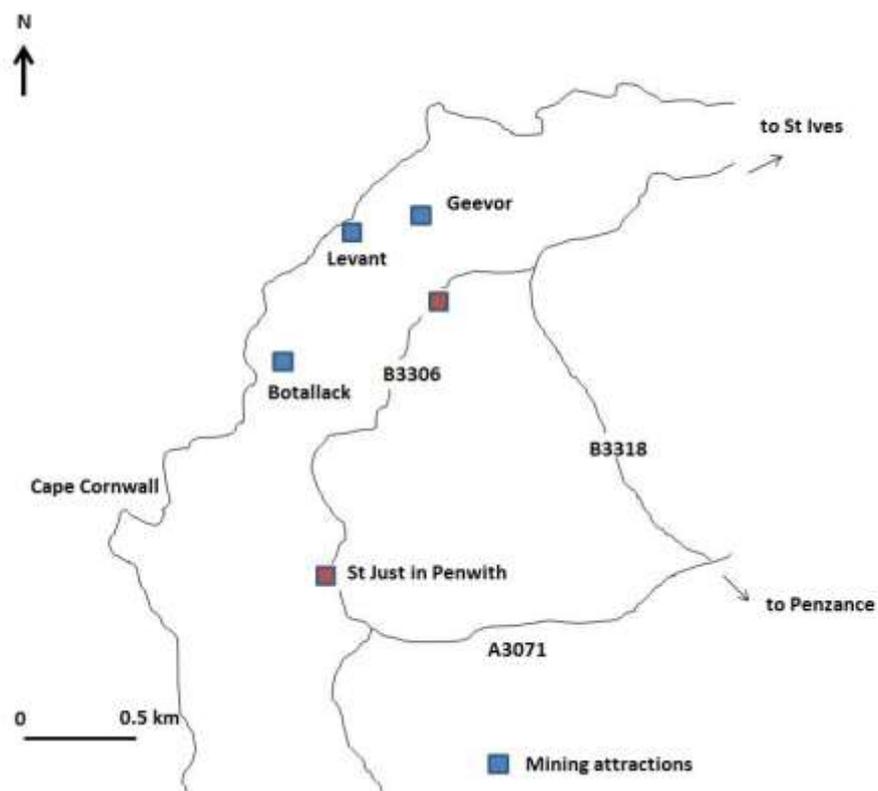


Figure 5.1 Map of the Botallack area. Adapted from OS Landranger 203 1:50,000

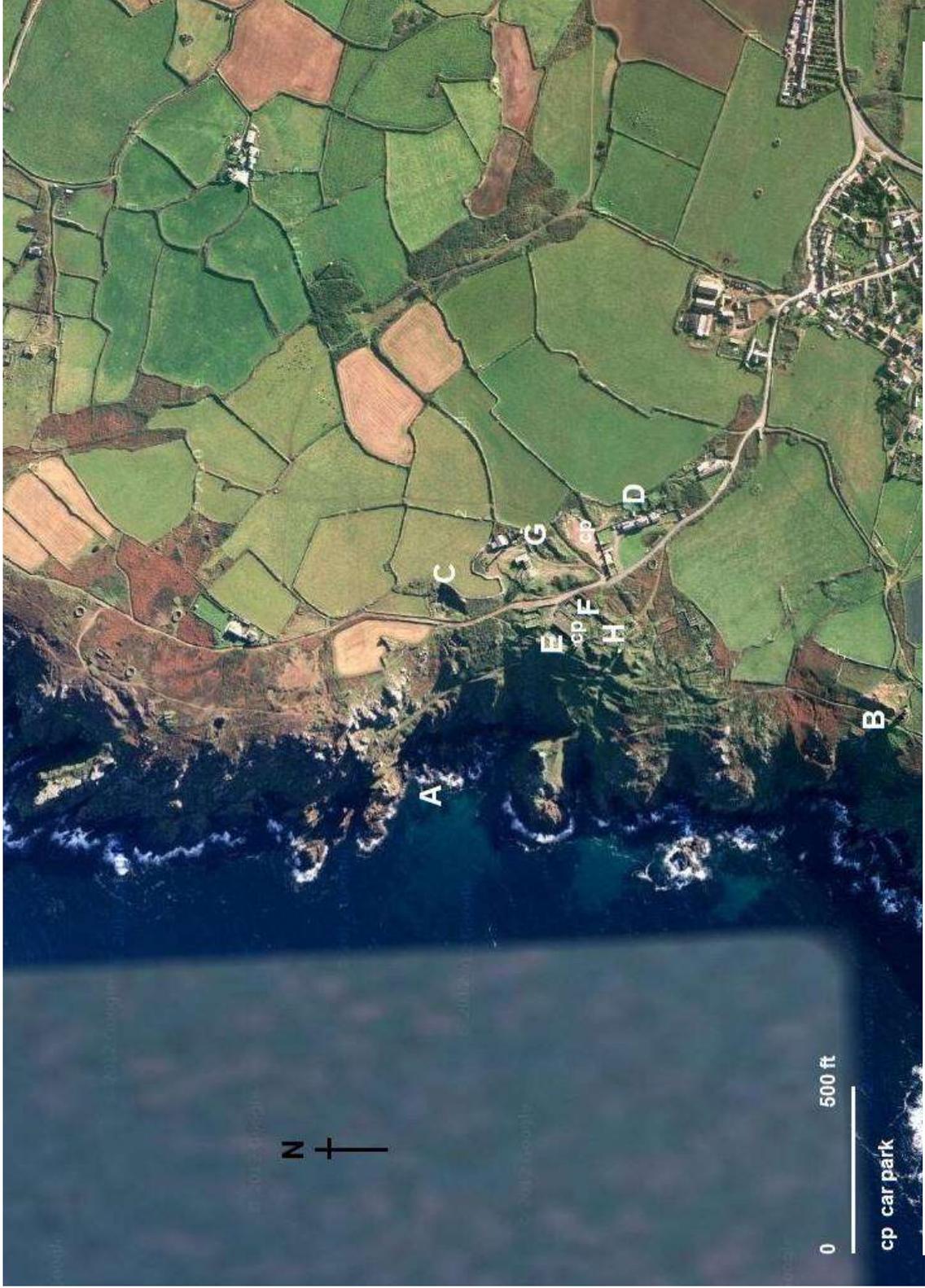


Figure 5.2 Aerial view of Botallack (see Table 5.1). Imagery ©2012 DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, Map data ©2012 Google

IMAGE REMOVED

Figure 5.3 HLC map of the Botallack area.

IMAGE REMOVED

Figure 5.4 Plan of mine setts in the St Just area. Source St Just in Penwith Town Council (no date)



Figure 5.5 Crowns engine houses c. 1890. In the public domain via Noall (1972 (1999))

IMAGE REMOVED

Figure 5.6 'From Under the Sea' by James Clarke Hook, 1864. Collections of Manchester Art Gallery

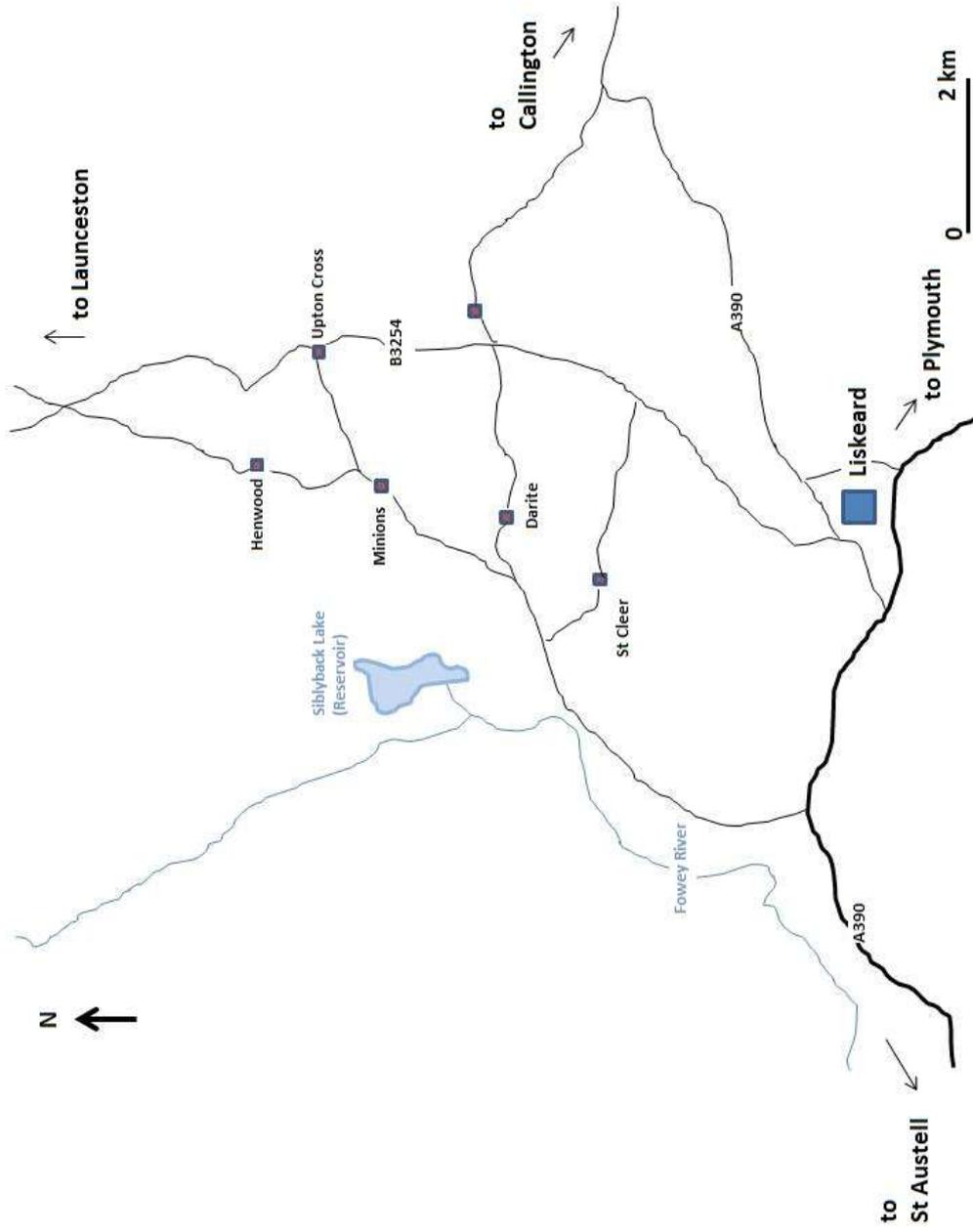


Figure 5.7 General map of the Minions area. Adapted from OS Explorer map 109 1: 25,000



Figure 5.8 Aerial view of Minions (see Table 5.2). Imagery ©2012 DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, Landsat, Map data ©2012 Google

IMAGE REMOVED

Figure 5.9 HLC map of the Minions area. Image courtesy of HESCC

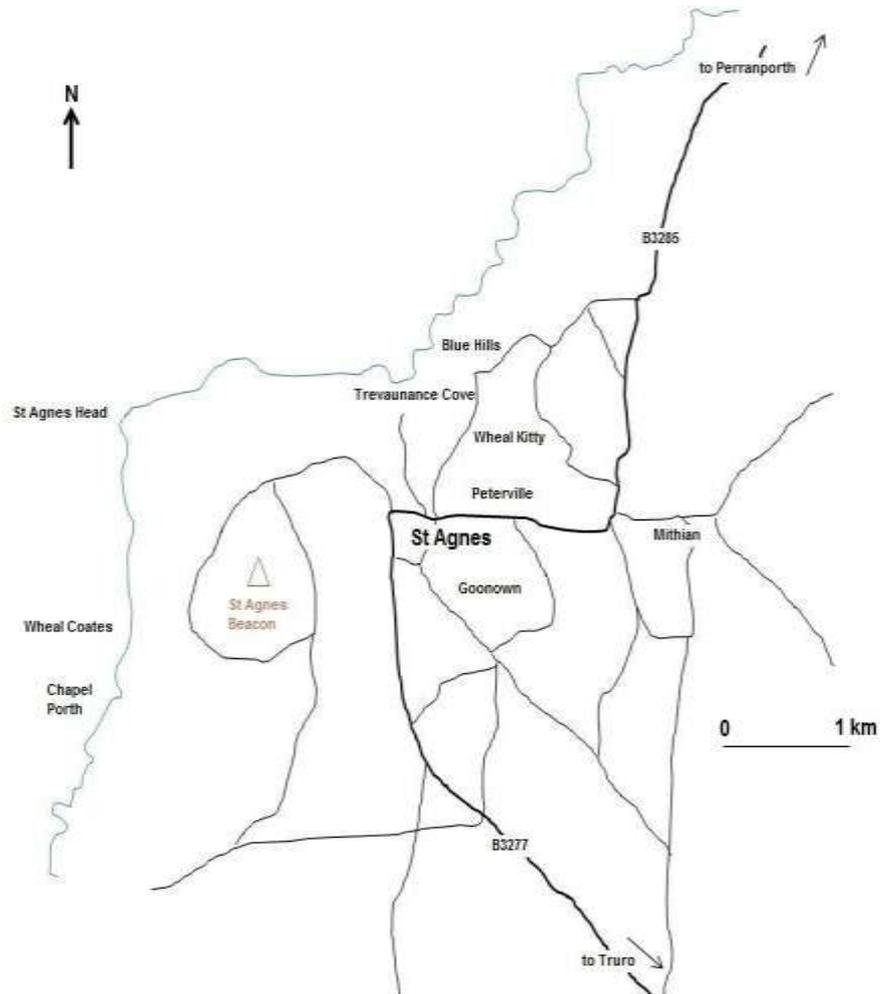


Figure 5.10 General map of the St Agnes area. Adapted from OS Explorer map 104 1: 25,000



Figure 5.11 Aerial view of St Agnes (see Table 5.3). Imagery ©2014 DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, Map data ©2014 Google

IMAGE REMOVED

Figure 5.12 Mines in the St Agnes area. Legend: 1 Thomas' Engine House; 2 Wheal Friendly; 3 Turnavore; 4 Wheal Kitty; 5 Gooninnis; 6 Blue Hills; 7 Trevaunance; 8 Wheal Coates; 9 Towanroath; and 10 Wheal Coates. Source Cornwall Cafe

IMAGE REMOVED

Figure 3.13 HLC map of St Agnes. Image courtesy of HESCC



Figure 5.14 St Agnes c. 1906 West Kitty Mine visible from Vicarage Road.  
Image in the public domain via St Agnes Heritage Trail 2006



Figure 5.15 Trevaunance Cove with Wheal Friendly in the background 1910. In the public domain  
via Buckley (1990)

Ref	Site name	Type	NGR (SW)	Description
A	Crowns	Engine houses	362 335	Built in 1835 and 1862, for pumping and winding power for the Boscawen Diagonal Shaft. The upper house (Pearce's whim) hauled from the incline shaft whilst the lower house provided accommodation for the 36" pumping engine which drained the mine. Remains of the boiler house for Pearce's whim now provide a platform and viewing area.
B	Wheal Owles	Engine houses	365 325	The Wheal Owles group (including West Wheal Owles and Wheal Edward) contains a high surviving rate of engine houses for the district. From documentary evidence mines are recorded as being at work in this area by 1725. Wheal Owles engine house was erected in 1810 to probably house a 22" Boulton and Watt pumping engine. There were extensive dumps and shafts in this area; however, these have been disturbed by mine removal and shaft capping. Wheal Owles closed in 1893 following an accident and death of a number of miners.
C	Gryll's Bunny'	Gunnise	365 335	A gunnise located just to the north of Allen's shaft. It consists of a hollow about 30 m in diameter and up to 8m deep part-infilled on its south western side by mine waste from Allen's shaft. On its north eastern side is a 'quarry' face which is pierced by a warren of small irregular tunnels which lead to chambers.
D	Count House	Administrative building	354 332	Built in 1861-1862 as a residence for the captain and staff of Botallack mine and the place where miners would receive their pay.
E	Dressing floors	Dressing floors	364332, 364333 and 364332	A number of dressing floors laid out in terraces were constructed to process tin and were built from the early 1800s to 1906 (the latter constructed in concrete). Including

				foundations for stamps and numerous circular ' <i>buddles</i> ' (which were used to separate heavy tin particles from the lighter waste).
F	Dressing floor	Dressing floor	364 332	A dressing area dating to the latest phase of the site which would have been partially covered by a large mill building. This includes concrete bases for a battery of 40 heads of Californian stamps and below this a large level concreted area which would have housed sizing and secondary crushing plant, areas of tanks and pits.
G	Allen's shaft	Headframe	364 333	Steel headframe of Allen's shaft built by Geevor Mine in 1985.
H	Arsenic works	Calciner, labyrinth	363 332	Arsenic works built in 1906. Consists of a calciner (in photo), extant flues and a double-bayed labyrinth with an enclosed yard and chimney stack. Black tin was roasted in the calciner to release arsenic in the form of a gas which was then led through a stone flue into the brick-built arched condensing chambers (the labyrinth) where it could be scraped off the walls and collected. Stripped of its machinery on the closure of the mine stonework in good condition it remains probably the best surviving example in Britain. Set in a U shape there are fifteen interconnecting chambers.

Table 5.1 Gazetteer of industrial features at Botallack (Brown and Acton 1994; Sharpe 1992a; Sharpe 1992b)

Ref	Site name	Type	NGR SX)	Description
A	Witheybrook streamworks ( c. 1513)	Eluvial tin works	256 717	Extensive and early tin works. A deep gully 500 m long and averaging 40m in width, deepening from 3 m at its lower end to 10 m at its summit. Curved dams form four main reservoirs, used to collect washing-water. Extensions of the streamworks can be found to the south (Witheybrook merges into the Trewalla streamworks) whilst the Witheybrook northwest extension is demarcated by the gully crossing a watershed (SX256718).
B	Liskeard and Caradon Railway (1846-1917)	Railway		Well preserved granite sleeper blocks can be seen south of Cheesewring quarry and near the village is the overgrown platform of the depot.
C	Stowe's mine	Mine shaft and other features	260 721	A 220 m deep shaft and the concrete footings of a small winding plant form the most visible remains of Stowe's mine. An earlier shaft lies 30 m to the southeast covered in dump material. To the south are the remains of a smithy and a possible wheelpit. To the east are the remains of a mine cottage and paddock.
D	Phoenix United Mine (1843-1898, 1907-1914)	Mine	266 723	An extensive site once, covering 193,000 m <sup>2</sup> , which formerly consisted of two dressing floors, eight engine houses for pumping, winding and stamping, shafts, four further engines and an incline to the west. The site can be accessed via the bed of the former tramway and railway. Little remains of the 19th century mine, the engine houses of which are now mostly fragments of walling mostly overgrown or covered by rubble. The prominent engine house on site (The Prince of Wales) and associated buildings date to 1907-1914 when a new shaft was sunk to a depth of 364m. It has a distinct square-based and tapered brick topped chimney stack. Internally, massive granite bedstones (for securing the 80 inch pumping engine) can be seen. Boiler, winding and compressor houses stand nearby (but roofless). The concrete

				<p>loadings of the stamps can also be seen outside the building.</p> <p>Extensive dressing floors can still be seen however the sites of shafts are no longer visible. Extensive stores and accommodation have gone, but the foundations of miners' barracks still survive at Burning House nearby (SX263723). Some ponds and leats survive; however, the banks of the former have been damaged (used as horse exercise area and obstacle course for off-road motorcycles). Many of the office and ancillary buildings have survived having been converted into domestic buildings, including the former Count House (SX 276721).</p>
E	South Phoenix Mine (1830s as Wheal Prosper; 1906-8, 1920 as South Phoenix)	Mine	261 715	<p>Prominent Houseman's Engine House (pumping, built in 1881) (Brown and Acton 1997: 29) displays evidence in its upper windows, blocked bob wall and domestic chimney of its conversion into offices and a dwelling after the pumping engine was removed (estimated 1970s (Stanier 2007: 79)).</p> <p>The 20th century concrete foundations for winding gear and ancillary buildings can be seen at Prosper Shaft (1906-8 working). A large generator building remained roofless for many years but was converted into dwellings c. 1970. The former count house and dry are also converted into to domestic use (SX 262714). At Parson's incline shaft all that remains are grassed over buddles and the fenced concrete collar of the shaft (sunk 1872). Nearby are traces of a stamps engine house, a cobbled floor, a large reservoir and a fenced (in 2007) whim round with a centre stone.</p>

Table 5.2 Gazetteer of industrial features at Minions (Herring *et al.* 2008; Sharpe 1989a; Sharpe 1989b; Sharpe 2007)

Ref	Site name	Type	NGR SW)	Description
A	West Kitty (1863-1916)	Engine house	719 505	Only one of West Kitty's three engine houses is still standing, Thomas Shaft engine house which is roofless but was repaired and made safe by Carrick District Council in 1990 and now stands in the corner of a garden off Vicarage Road. The structure is in substantially good condition and its 1895 stack for the winding engine serving Thomas' shaft is also in good condition. The remainder of the mine has been demolished and built over.
B	Polbreen Mine	Mine	719 504	Only Polbreen Lane survives as a lane with walls built of slag. The rest of the mine now forms part of the grounds of Langley Cottage and provides a backdrop to the car park near Vicarage Road.
C	Gooninnis mine (1873-1907).	Mine	725 506	The castellated chimney of Gooninnis mine was restored by the Duchy following a lightning strike. The pumping engine house stands in one corner of a farmyard its boiler house was demolished (recently) to make way for silage bales. The whim house is almost completely destroyed. Its stack, boiler house and wall footings remain but the interior has been modified for use as a calves' house. Other buildings to the south are probably offices and stores, rare examples of ancillary buildings.
D	Wheal Kitty (1834-1930)	Mine	726 510	Aside from the Grade II listed Sara's engine house there also exist considerable dressing floors from the 19th and 20th centuries and waste heaps. These include the concrete bases of the mill's Californian stamps which date to the turn of the century Just north of the stamps reduced masonry walls mark the site of a calciner battery dating from the 1870s. In 1905 the stamps engine shaft which stood among the older dressing floors to the south-west was burnt down, probably as a result of arson by a sacked official.

E	Wheal Friendly (pre 1879)	Engine House	720 512	The engine house (built in 1902 for 60" pumping engine) has been converted into a private residence and is now on private land but can be clearly viewed from the roadside. The surroundings of the house have been partially landscaped as part of a garden and are in generally sound condition. There is also a small hip-roofed building a probable forge/smithy. There are substantial ruins of its twentieth century dressing floors scattered down the hill slope hidden amid the trees and undergrowth alongside a steep footpath that goes down to the Coombe.
F	Newdowns Head	Mine shafts	708 519	As you approach St Agnes Head there are a number of capped mine-shafts including one with a very large Big Clwyd cap over a deep shaft by the cliff edge.
G	Polberro Mine (1837-1895, 1937-1941)	Engine House	719 518	The only engine house to survive at Polberro is the one over Turnavore shaft which stands at the eastern edge of the sett. The mine buildings at Turnavore can only be accessed down a private track; the engine house (1885) has a corrugated/asbestos roof and there is also an extant chimney stack and dressing floors with several convex buddles.
H	Wheal Coates	Mine	698 502	Many of the buildings that can be seen today were 1870s buildings which were extensively modified by an attempt to rework the mine between 1910 and 1914. On the surface there are two distinct areas of interest, in the northern part of the site there is a remarkable complex of narrow, open gunnisses and south of these openworks is a cluster of buildings including a number of engine houses and associated features in the care of the National Trust. The lower house on Towanroath Shaft (erected 1872) was stabilised by the National Trust in 1973 and the stamps engine above

				in 1986-1988. The upper buildings include the three-storied stamps engine house with a smaller building behind it that housed the whim. Just south of the buildings is a well-preserved mine pond and on the seaward side are the remains of dressing floors, including a ruined burning house or calciner. Below the engine house is Towanroath shaft and boiler house. Other surviving mining features include an early and well preserved open-working and unusual double-bayed reverberatory calciner.
I	Trevellas Coombe (Jericho Valley)  Blue Hill Mine worked intermittently between 1813 and 1898.  Jericho stamps (West Kitty Mine)		728 518	There are extensive streamworks in the bottom of this steep sided valley, large waste tips and the remains of Cornish stamps. Blue Hills pumping (SW728517) house is not in very good condition with cracks in the rear wall and the offside wing wall is starting to lean forward.  Once large-scale dressing floors at the upstream end of Trevellas Coombe include the floors for West Kitty as well as calciners, pneumatic stamps and Frue vanners. These are in relatively poor condition, mostly covered in dense scrub and surviving as mostly foundations.

Table 5.3 Gazetteer of industrial features at St Agnes (Acton 1989, 2005a, 2005b; Brown and Acton 1994, 1997, 1999; Cahill Partnership and CAU 2002; CAU 1986a, 1986b; Cornwall Council 2011a; Tanner and Luck 2000)

Site	Sample	Uncompleted	Spoilt	Total
<b>Botallack</b>	82	1	1	84
<b>Minions</b>	71	1	28	100
<b>St Agnes</b>	70	1	0	71
<b>Total</b>	223	3	29	255

Table 6.1 Count of questionnaires by site (including spoilt and uncompleted)

Distribution method		Site			Total
		Botallack	Minions	St Agnes	
Postal survey	Count	30	23	28	81
	% data collected	36.6	32.4	40.0	36.3
	% return rate	30.0	23.0	28.0	20.2
Public places	Count	38	6	30	77
	% data collected	45.2	8.5	42.9	33.2
	% return rate	48.1	15.0	54.5	44.3
Shops	Count	9	23	11	44
	% data collected	11.0	32.4	15.7	19.2
	% return rate	45.0	54.8	57.8	54.3
Car parks (universal questionnaire)	Count	4	16	1	21
	% data collected	4.9	22.5	1.4	9.4
	% return rate	-	-	-	26.0 <sup>a</sup>
Electronic	Count	1	3	0	4
	% data collected	1.2	4.2	.0	1.7
	% return rate	-	-	-	-
Total	Count	82	71	70	223
	% data collected	98.9	100.0	100.0	99.8

Table 6.2 Collection method and return rates, <sup>a</sup> response rate includes county and out-of-county responses

Demographic question	Site			Total
	Botallack	Minions	St Agnes	
Are you male or female?	93.9	95.8	94.3	94.6
What is your age?	93.9	95.8	95.7	95.1
What is your occupation?	91.5	94.4	88.6	91.5
What is your highest qualification?	74.4	80.3	78.6	77.6
Were you born in Cornwall?	93.9	74.6	94.3	87.9
Do you have a connection to the mining industries?	100.0	100.0	97.1	99.1
How long have you lived in Cornwall?	96.3	73.2	95.7	88.8

Table 6.3 Response rates to demographic questions

Site-based question	Site			Total
	Botallack	Minions	St Agnes	
Please pick one term to best describe the area.	100.0	100.0	98.6	99.6
Do you feel that Cornish mining heritage is important?	95.1	91.5	97.1	94.6
Has the mining area physically changed during the time that you've lived here?	100.0	94.6	95.6	96.4
How have people's attitudes towards the mining area in the time that you've lived in the area?	96.2	92.9	97.1	95.6
Did you know that this area has now been made a WHS?	100.0	94.0	100.0	97.8
Do you think that WHS is a good thing or a bad thing?	87.3	82.1	91.2	87.2
Should mining remains be preserved, re-used or left to decay?	97.6	95.8	98.6	97.3

Table 6.4 Response rate to site-based questions

	<b>Bias</b>	<b>Mitigated by</b>
1.	Local questionnaire distributed in public places may mask potential bias, for example, age, physical health or gender.	Varied distribution methods including random postal survey.
2.	Use of Census to ascertain population data. This is ten years out of date.	This is still the best available demographic information.
3.	Sample restricted to those aged 16 and over.	Necessary in order to ensure informed consent and ethical compliance.
4.	The use of convenience sampling.	Necessary in order to gain on-site phenomenological data.
5.	Questionnaires and interviews conducted in English.	Necessary as the researcher only speaks English.
6.	Self-completed questionnaires biasing responses to those with higher literacy skills/higher qualifications.	
7.	Sampling on site of those who have arrived by car.	Necessary in order to collect a larger quantity of data.
8.	Sampling of potential interviewees by snowball method.	Necessary in order to acquire names and to vet potential informants.
9.	Bias of time of year, daylight hours and weather conditions.	Unavoidable due to time constraints.
10.	Non-response – those who did not return questionnaires.	Unavoidable.
11.	Decisions on which socio-economic factors to choose to verify representativeness of sample.	Governed by census structure.
12.	'Reactivity' – the bias of the presence of the researcher which in itself changes things.	Unavoidable.

Table 6.5 Research bias

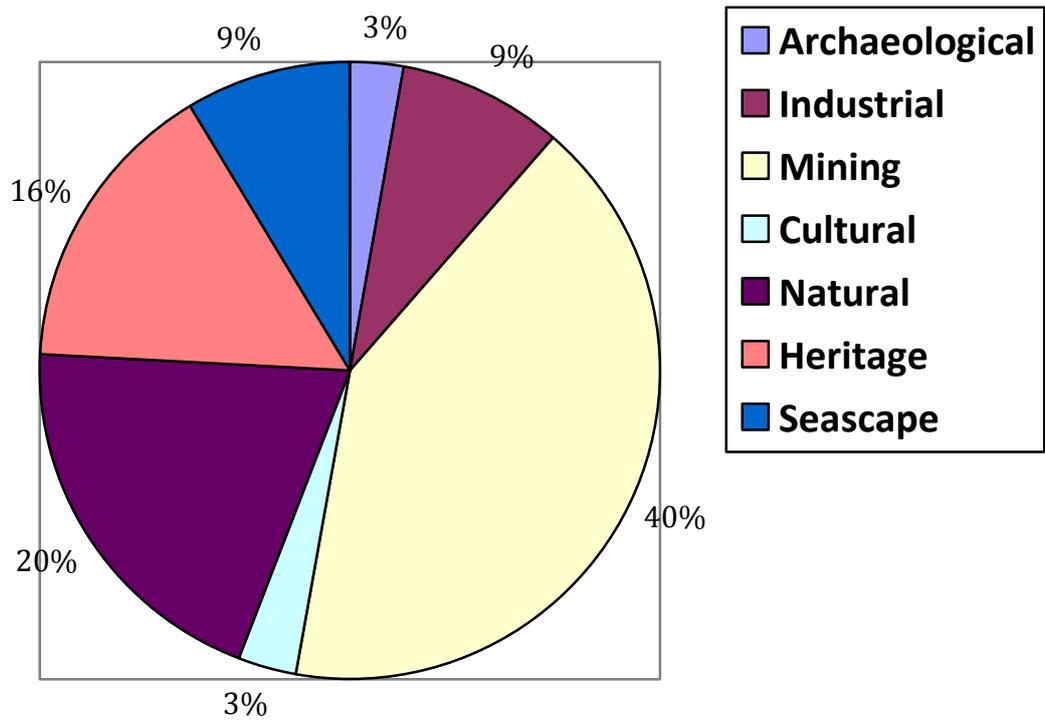


Figure 7.1 Best descriptor of the Botallack mining area



Figure 7.2 Dressing floors at Botallack, a popular place to park on site. Photo © Hilary Orange



Figure 7.3 Granite steps to the buddle yard. Photo © Hilary Orange

IMAGE REMOVED

Figure 7.4 Crowns engine houses postcard. Photo Philip Fenton, published by John Hinde Ltd, Redruth



Figure 7.5 Arsenic labyrinth with headframe of Allen's shaft in the background. Photo © Hilary Orange

What would you say are the key features of the Botallack mining area? These awful  
BUILDINGS SHAPED  
[Hand-drawn sketches of buildings] etc

Figure 7.6 'Awful' engine houses (30-59 year old male, retired - T21)

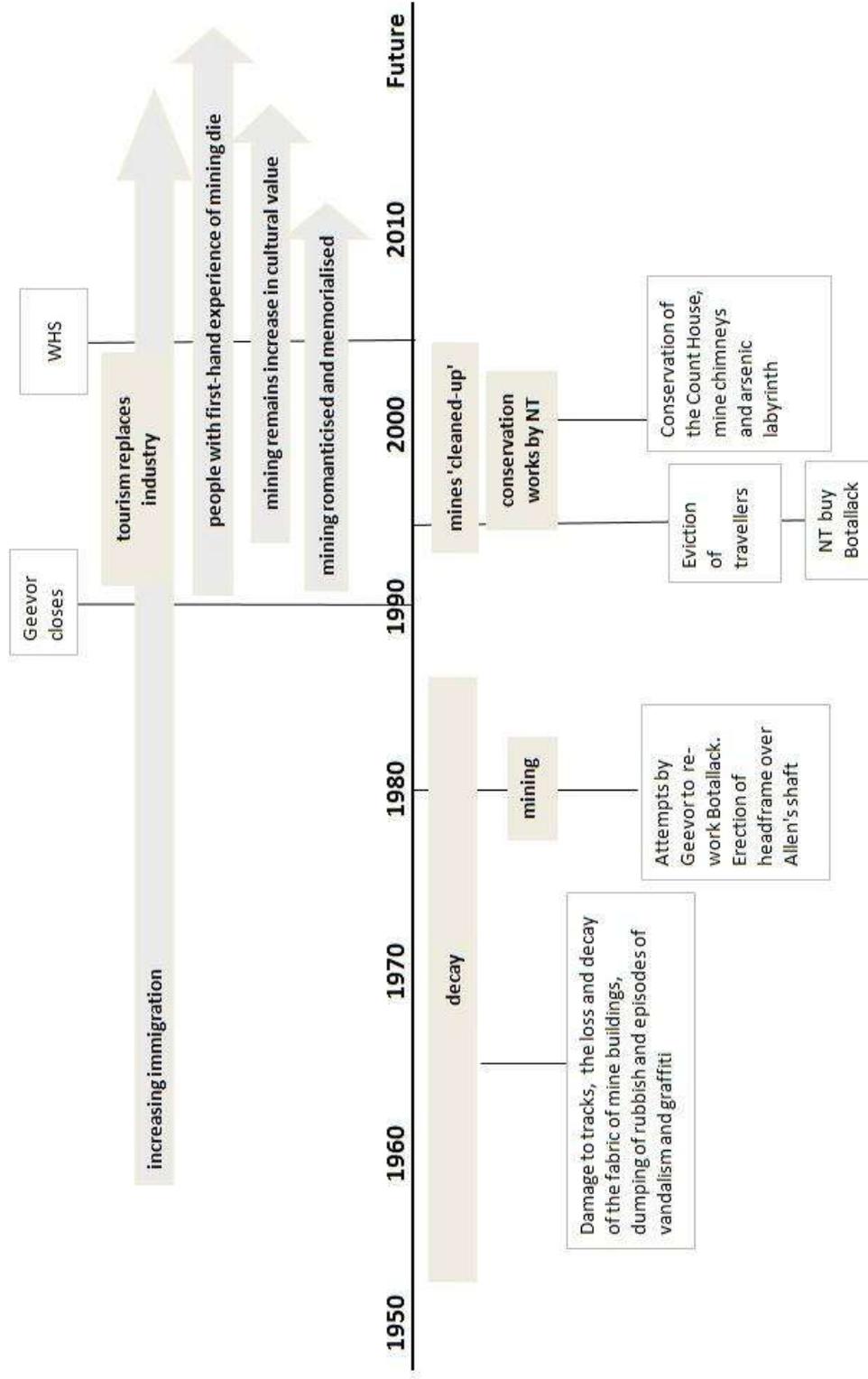


Figure 7.7 Timeline of change at Botallack.



Figure 7.8 Botallack c. 1975 with mine dumps in the background (A). Photo by Trevor Rickard, reproduced under the Creative Commons Attribution-ShareAlike 2.0 license. Source [http://commons.wikimedia.org/wiki/File:Engine\\_house\\_chimneys\\_at\\_Botallack\\_-\\_geograph.org.uk\\_-\\_712272](http://commons.wikimedia.org/wiki/File:Engine_house_chimneys_at_Botallack_-_geograph.org.uk_-_712272)



Figure 7.9 Mine dumps visible (A, B and C) in aerial photograph of Botallack 1973 (Potato Marketing Board). Photo courtesy of HESCC

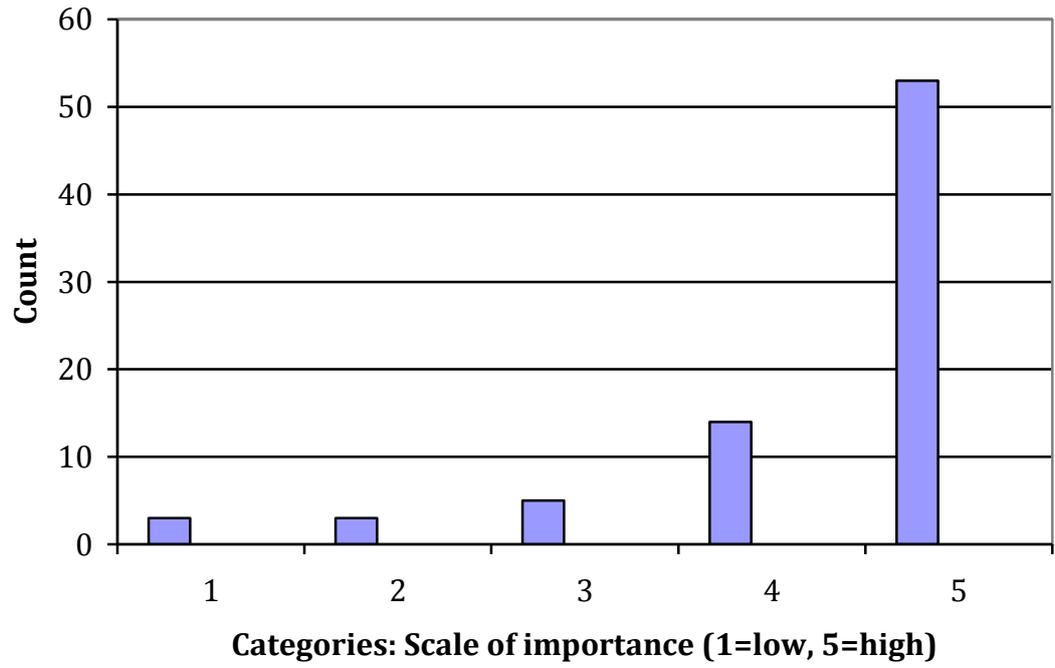


Figure 7.10 Importance of the Botallack mining area

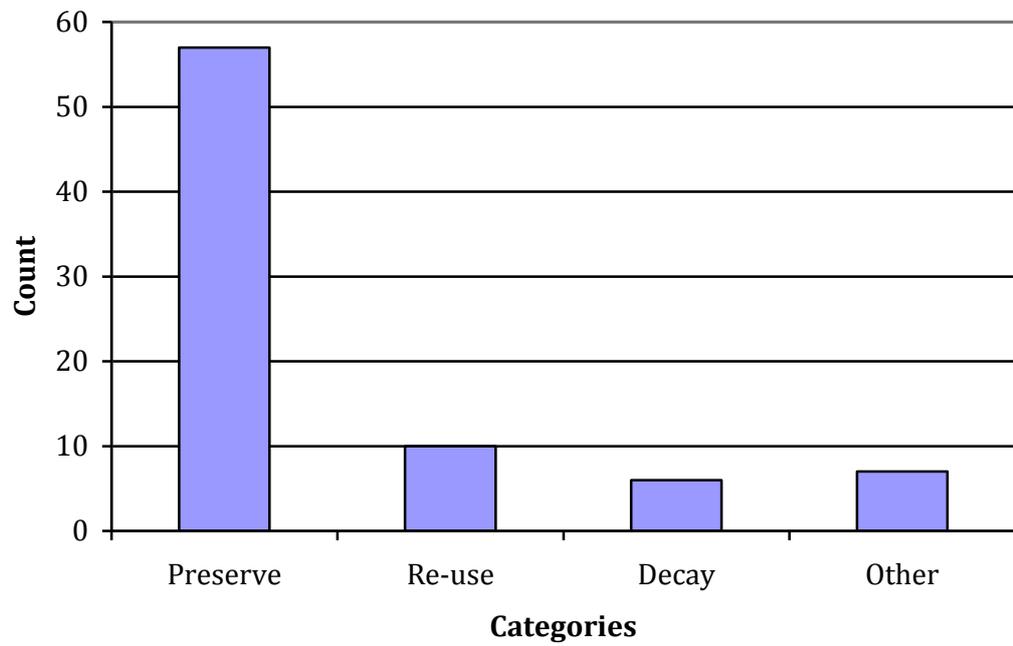


Figure 7.11 Future of the Botallack mining area

Engine house – Crowns	16
Engine house	14
Chimney stacks	11
Mine buildings	11
Cliffs /coastline	8
Sea	7
Mine/workings – Crowns	7
Arsenic works	5
Count House	5
Flora	3
Mine/workings	3
Engine house - Wheal Owles	2
Coastpath	2
Mine shaft	2
Mine dumps	2
Dressing floors	2
Tramway	1
Gryll's bunny	1
Engine house - Wheal Edward	1
-----	
Total	103

Table 7.1 Significant features at Botallack

<b>Key features mentioned in National Trust leaflet</b>	<b>Significance count according to sample</b>
1906 arsenic works	5
1906 dressing floors	2
Allen's shaft	0
Botallack Vean (manor in hamlet)	0
Count House	5
Crowns engine houses	16
West Wheal Owles	2
Wheal Cock	0

Table 7.2 A comparison of public versus expert significance

Perceived costs	Loss of Integrity (5)	ARCHITECTURAL AND AESTHETIC VALUE
	Incorrect nomination (3)	
	Prevent development (2)	ECONOMIC VALUE
	More visitors (1)	SOCIAL VALUE
	Equal	
Perceived benefits	More visitors (1)	ECONOMIC VALUE
	Remembrance (2)	SOCIAL VALUE
	Local pride (3)	SOCIAL VALUE
	More wealth (7)	ECONOMIC VALUE
	Historical information (7)	INFORMATIONAL VALUE
	Preservation (11)	ARCHITECTURAL AND AESTHETIC VALUE

Table 7.3 Perceived costs and benefits of WHS at Botallack

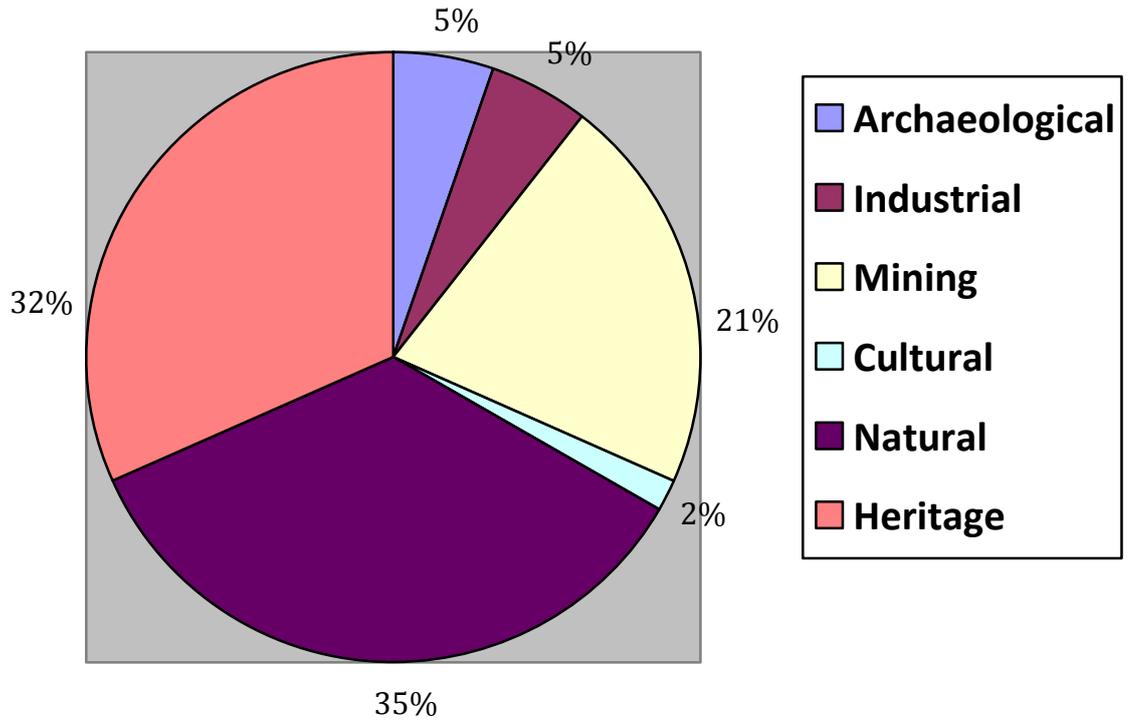


Figure 8.1 Best descriptor of Minions mining area



Figure 8.2 Mural on facade of Co-op supermarket in Barras Street, Liskeard. Made by Julian George in 1996. Photo © Hilary Orange



Figure 8.3. Mural in Pigmeadow Lane, Liskeard, painted in 1998 by David Whittley.  
Photo © Hilary Orange



Figure 8.4 *Trompe l'oeil* mural in the stairwell of Liskeard Library, artist and date unknown. Photo © Hilary Orange

IMAGE REMOVED

Figure 8.5. Stanier's walk around Cheesewring Moor. Source Stanier 2007

Legend: 1 Hurlers; 2 standing stones; 3 granite obelisks; 4 Witheybrook tin works; 5 Rillaton Barrow; 6 Cheesewring Quarry; 7 Liskeard & Caradon Railway; 8 powder magazine; 9 granite cutting; 10 Daniel Gumb's Cave; 11 Cheesewring; 12 Stowe's Hill; 13 Stowe's Pound; 14 Quarrymen's cottages; 15 Stowe's Shaft; 16 Phoenix United Mine; 17 Bronze Age hut circle; and 18 South Phoenix Mine



Figure 8.6 Caradon TV mast. Photo © Hilary Orange



Figure 8.7. Stowe's Pound. Note dogs off leads. Photo © Hilary Orange

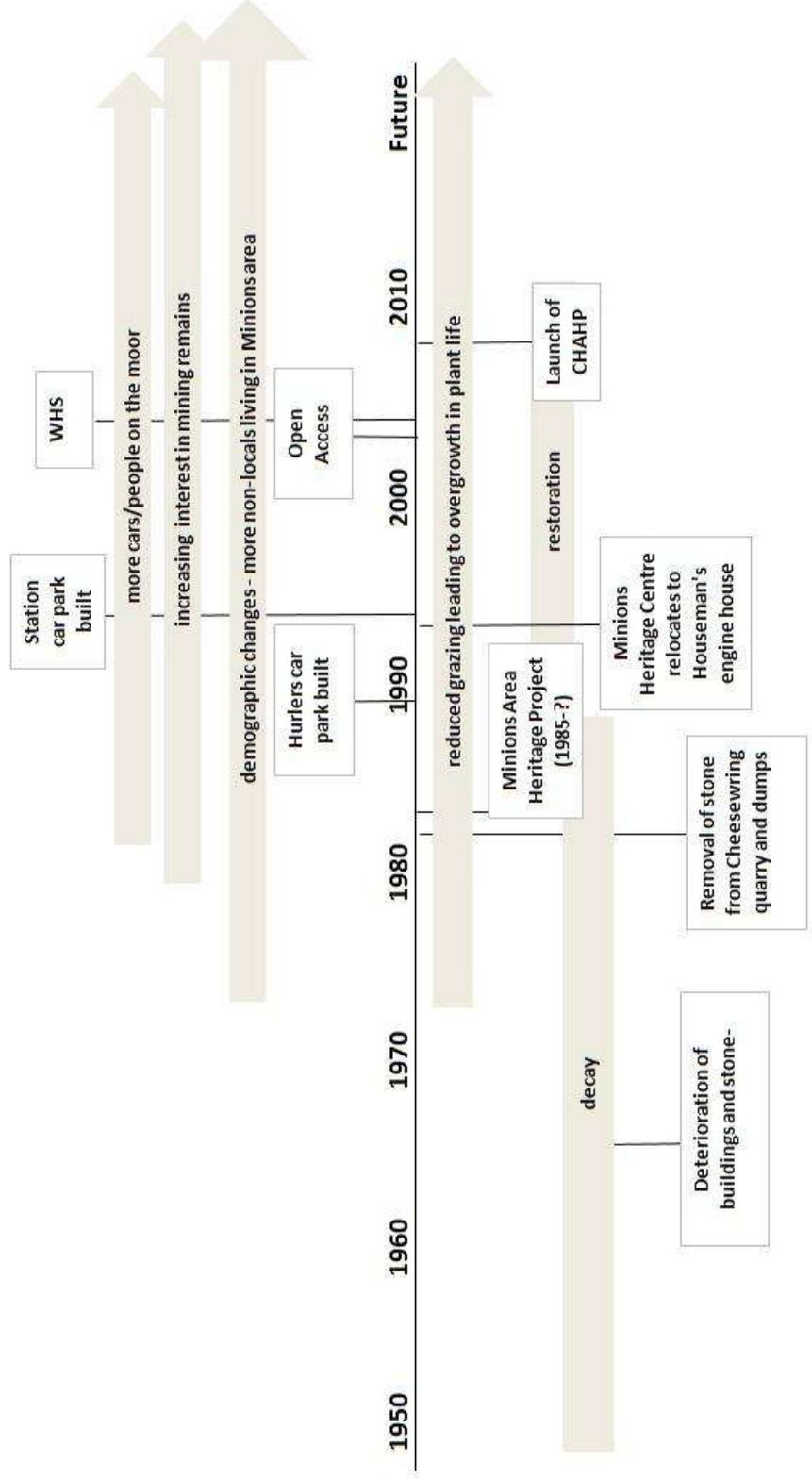


Figure 8.8 Timeline of change at Minions



Figure 8.9 Open Access and the law. Photo © Hilary Orange.

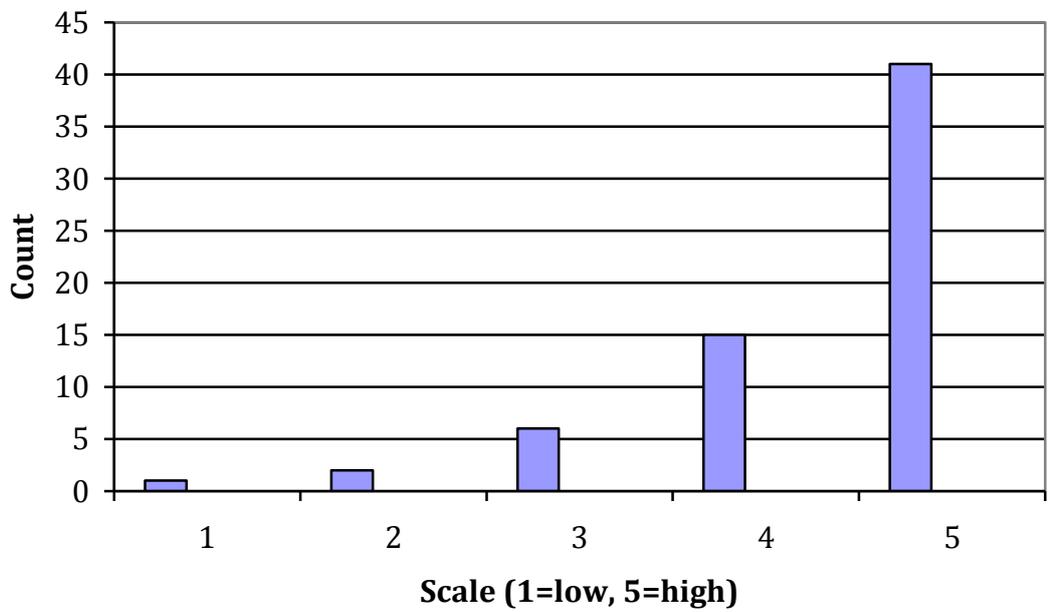


Figure 8.10 Importance of the Minions mining area

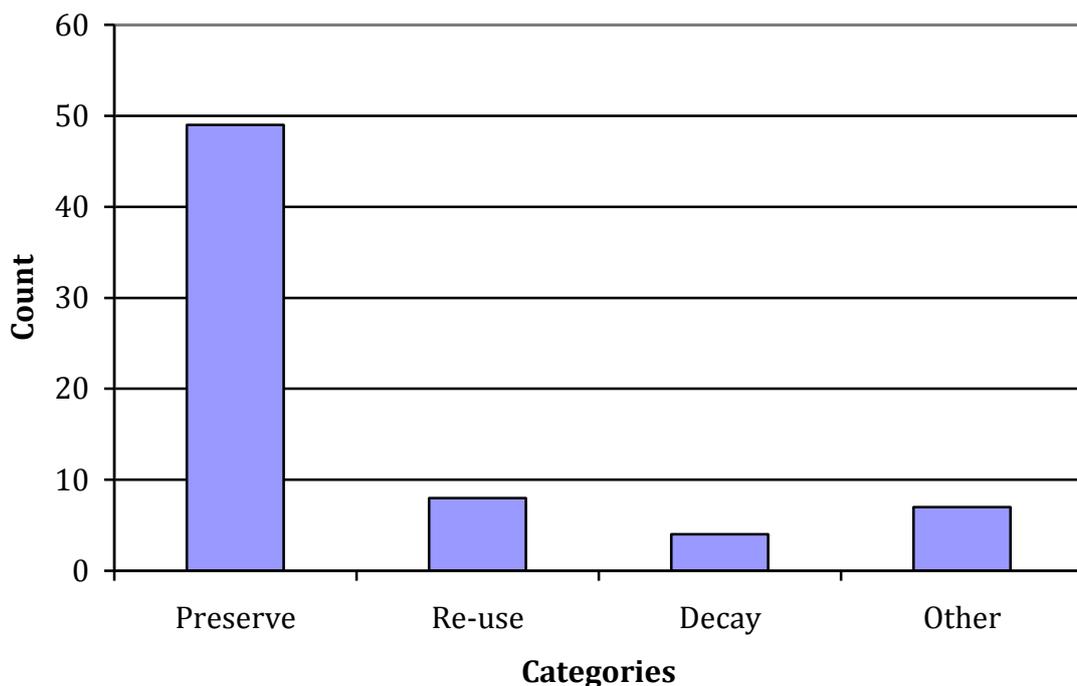


Figure 8.11 Future of the Minions mining area

Feature	Count	Feature	Count
Engine house	21	Geology – tors	2
Hurlers	12	Granite stone	2
Cheesewring tor	12	Hut circles	1
Chimney stack	10	Lode pits	1
Mine/workings	9	Tin streaming waste	1
Mine buildings	9	Stowe’s Hill	1
Moorland	8	Prehistoric sites	1
Caradon Hill	6	Weather (fog/mist)	1
Mine dump	6	Trethevy Quoit processional route	1
Liskeard & Caradon railway	5	Shops	1
Minions Heritage Centre	5	Rillaton Barrow	1
Quarry	4	Pubs	1
Cheesewring quarry	3	South Caradon Mine	1
TV mast	3		
Fauna (cattle/horse/sheep)	3		
Mine shafts	2		
		-----	
		Total	133

Table 8.1 Significant features at Minions

<b>Stanier's guided walk across Cheeswring Moor</b>	<b>Count according to sample</b>
Cheeswring Quarry	7
Cheeswring Tor	12
Chimney stack (Prince of Wales)	10
Daniel Gumb's cave	0
Dressing floors (Phoenix United)	0
Engine house (Prince of Wales; Houseman's)	27
Hurlers	12
Hut circle	1
Liskeard and Caradon Railway	5
Mine buildings (Phoenix United)	9
Mine shaft (Stowe's shaft; Parson's shaft)	2
Powder magazine	0
Reservoir (South Phoenix)	0
Rillaton Barrow	1
Standing stones/moorstone	2
Stowe's Hill/Pound	1
Witheybrook streamworks	1
Quarrymen's cottages	0

Table 8.2 A comparison of public versus expert significance on Cheeswring Moor

Perceived costs	More visitors (2)	SOCIAL VALUE
	Authority (1)	SOCIAL VALUE
	Loss of integrity (1)	ARCHITECTURAL AND AESTHETIC VALUE
	Equal	
Perceived benefits	Remembrance (1)	SOCIAL VALUE
	More tourism (2)	ECONOMIC VALUE
	Local pride (3)	SOCIAL VALUE
	More wealth (3)	ECONOMIC VALUE
	Historical information (5)	INFORMATIONAL VALUE
	Preservation (14)	ARCHITECTURAL AND AESTHETIC VALUE

Table 8.3 Perceived costs and benefits of WHS at Minions

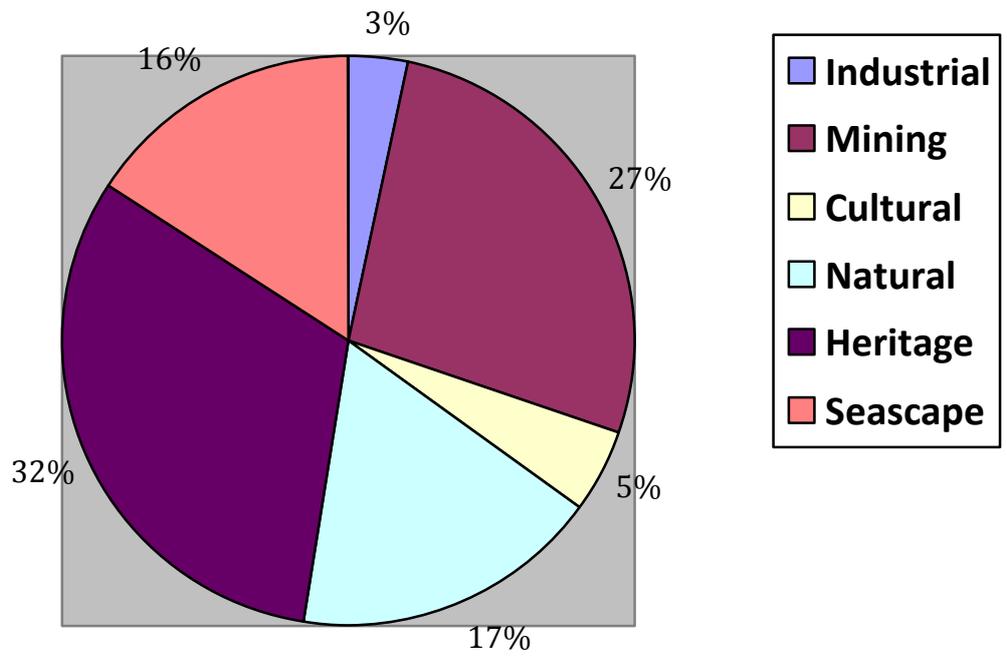


Figure 9.1: Best descriptor of the St Agnes mining area



Figure 9.2 Mine dumps above the beach. Photo © Hilary Orange



Figure 9.3 Wheal Kitty caravan. Photo © Hilary Orange



Figure 9.4 Benches at Wheal Kitty. Photo © Hilary Orange



Figure 9.5 St Agnes Surf Life Saving Club. Photo © Hilary Orange



Figure 9.6 Engine house within the village. Photo © Hilary Orange

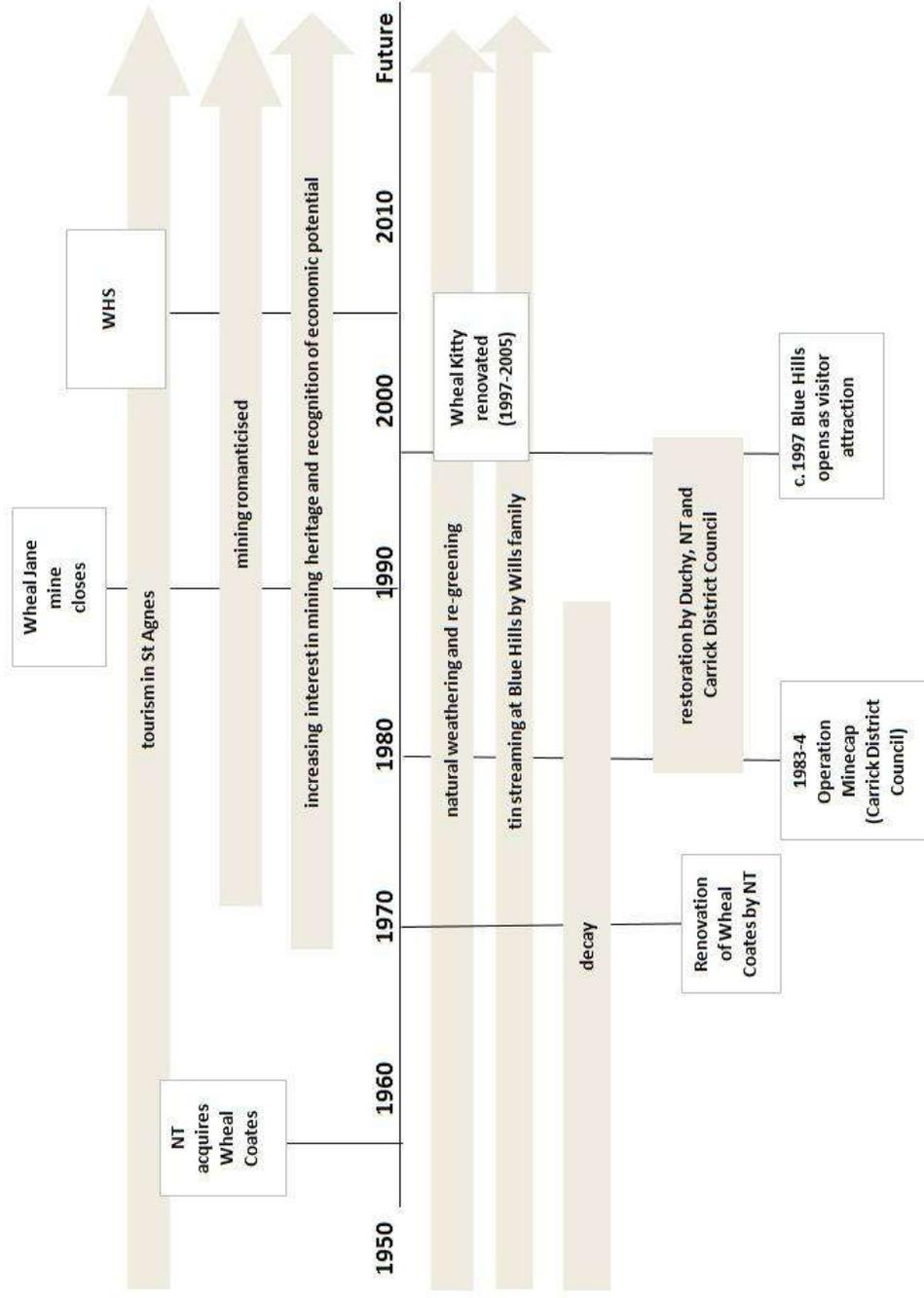


Figure 9.7 Timeline of change at St Agnes



Figure 9.8 Mine capping near St Agnes Head. Photo © Hilary Orange

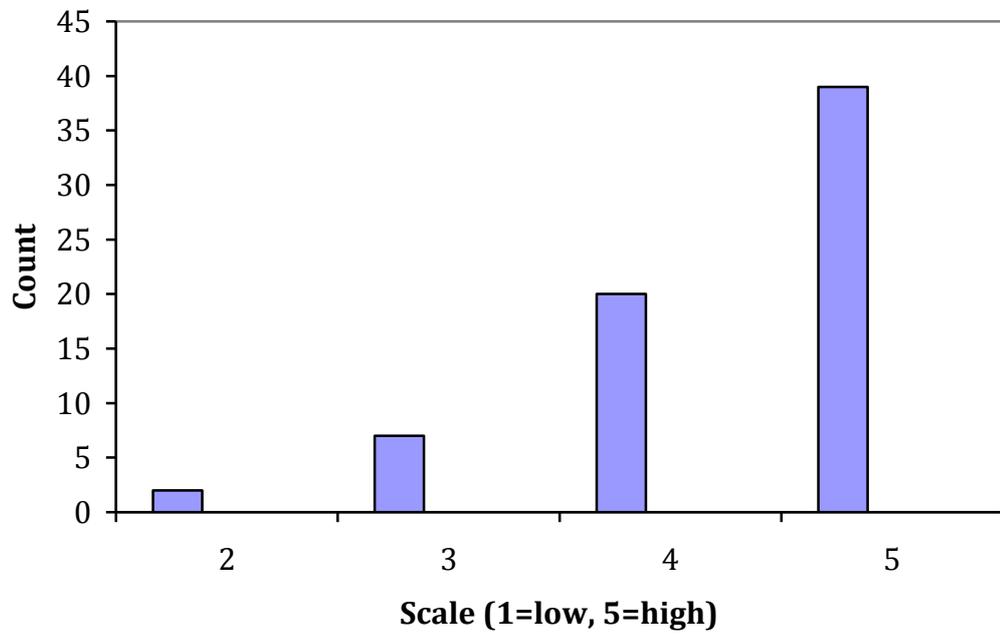


Figure 9.9 Importance of mining remains at St Agnes

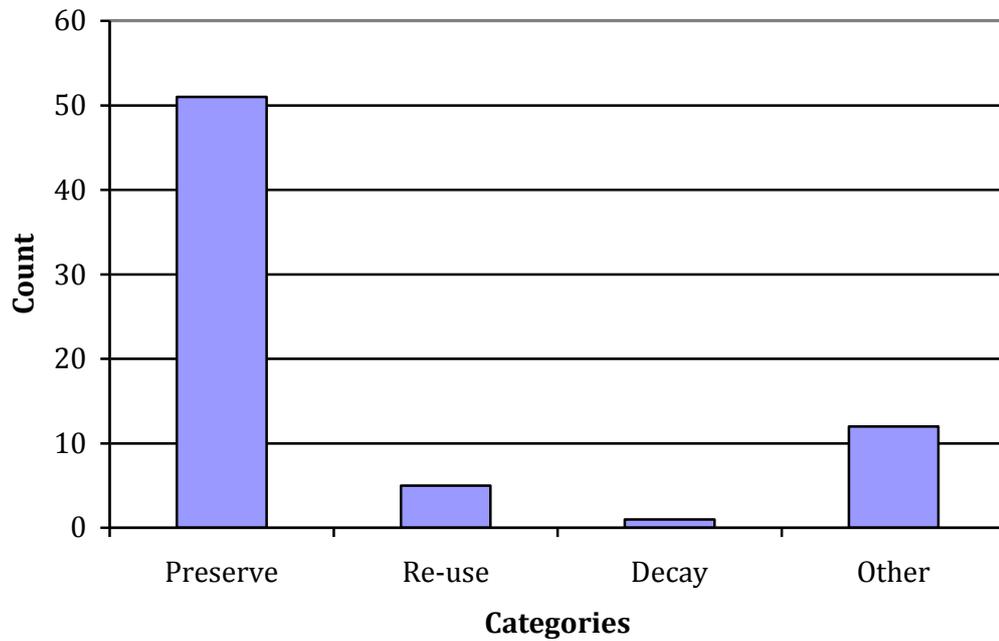


Figure 9.10 Future of the St Agnes mining area

Feature	Count		Count
Engine house	30	Sea	1
Chimney stacks	11	St Agnes Museum	1
Mine buildings	10	Trevaunance Cove	1
Engine house - Wheal Coates	10	Miners' cottage	1
Mine/workings	5	Upper/middle-class houses	1
Cliffs/coastline	5	Mine Captains' houses	1
Engine house - Wheal Kitty	3	Flora	1
St Agnes Beacon	2	Harbour	1
Mine/workings - Blue Hills	2	Mine shaft	1
Dressing floor	1	Beach	1
Coastpath	1		
Engine house - Wheal Charlotte	1	-----	
Engine house - Wheal Friendly	1		
		Total	92

Table 9.1 Significant features at St Agnes

<b>Heritage Trails</b>	<b>Count according to sample</b>
Bronze Age barrows (St Agnes Beacon)	0
Coastguard hut (St Agnes Head)	0
Engine House (Wheal Coates, Wheal Kitty, Wheal Friendly)	30
Flora and fauna	1
Quarry	0
Mine buildings (Wheal Friendly)	10
Mine shaft	1
Reservoir (Wheal Friendly)	0
St Agnes Beacon	2
St Agnes Head	0
St Agnes Museum	1
Spoil heaps (Wheal Kitty; Wheal Friendly)	0
Surface working (Wheal Coates)	0
Trevaunance Cove (harbour; beach)	3
Wheal Coates	10
Wheal Friendly	1
Wheal Kitty	3

Table 9.2 A comparison of public versus expert significance

Perceived costs	Authority (1)	SOCIAL VALUE
	Equal	
Perceived benefits	Local pride (4)	SOCIAL VALUE
	Stop inappropriate development (5)	ARCHITECTURAL AND AESTHETIC VALUE
	Preservation (6)	ARCHITECTURAL AND AESTHETIC VALUE
	More tourism (6)	ECONOMIC VALUE
	Historical information (7)	INFORMATIONAL VALUE
	More wealth (8)	ECONOMIC VALUE

Table 9.3 Perceived costs and benefits of WHS at St Agnes



Figure 10.1 St Agnes Hotel pub sign. Photo © Hilary Orange



Figure 10.2 Graffiti at Botallack, St Piran's Flag. Photo © Hilary Orange



Figure 10.3 Graffiti at Botallack, engine house design. Photo © Hilary Orange



Figure 10.4 *Kernow bys Vyken* (Cornwall Forever). Photo © Hilary Orange



Figure 10.5 Graffiti painted over at Botallack. Photo © Hilary Orange



Figure 10.6 Brown heritage sign to the Hurlers Stone Circle. Photo © Hilary Orange

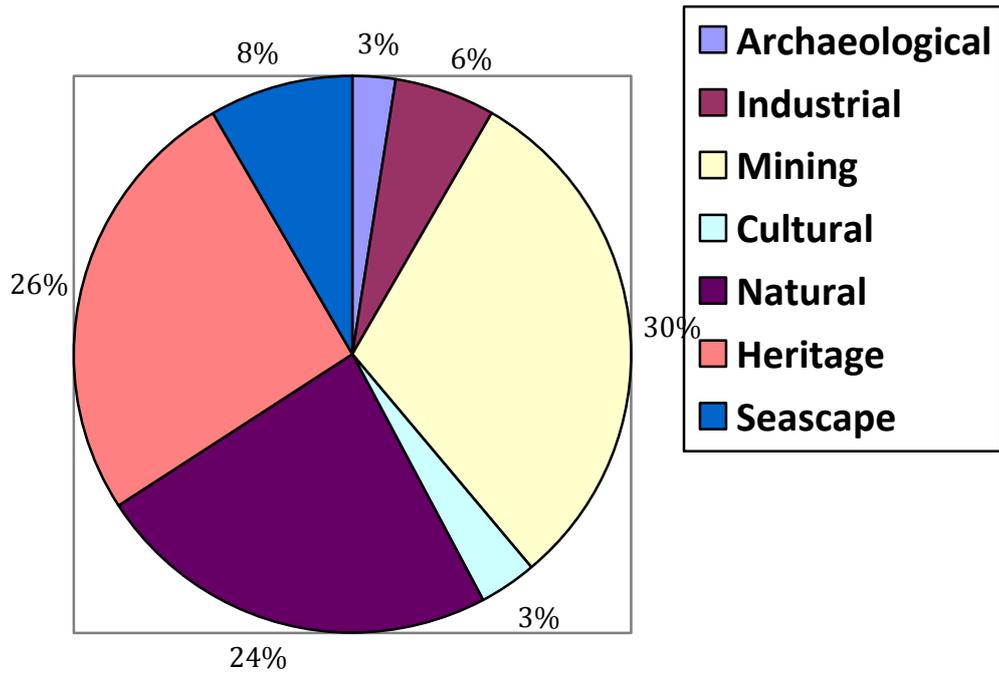


Figure 11.1 Best descriptor of Cornish mining landscape

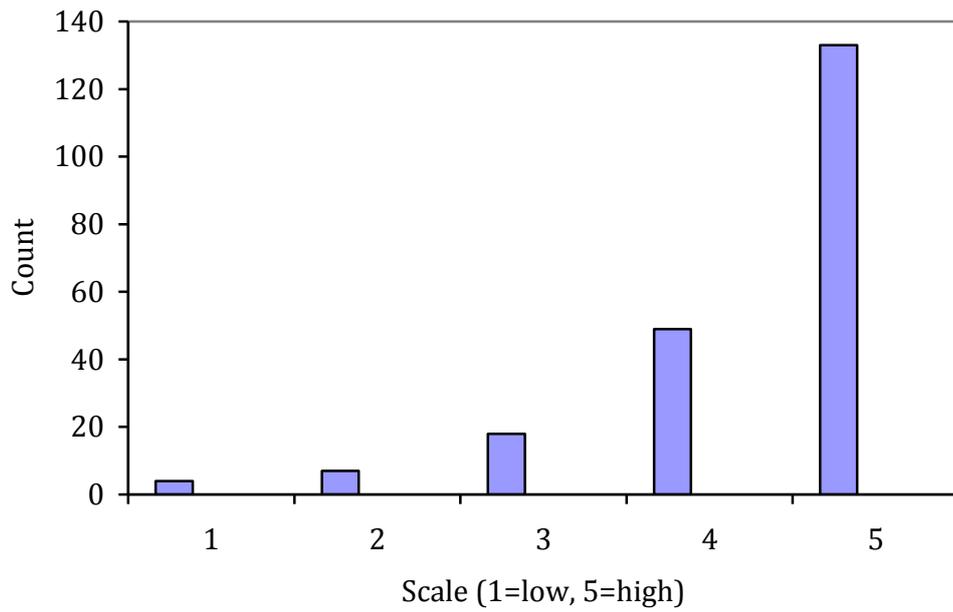


Figure 11.2 Importance of Cornish mining sites

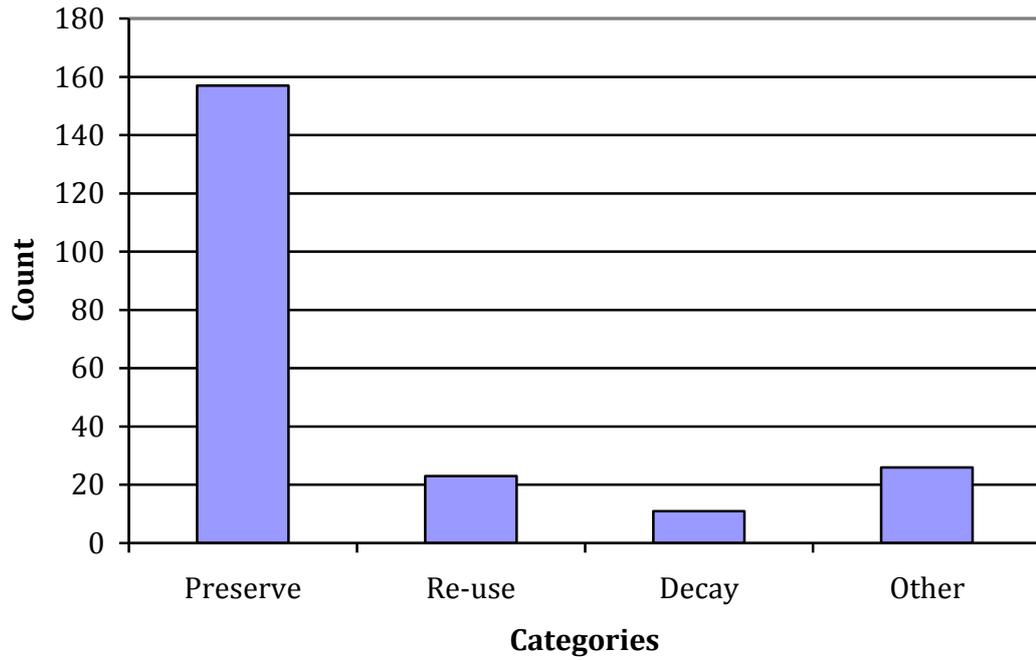


Figure 11.3 Future of Cornish Mining Sites

Feature	Count
Engine houses	73
Chimney stack	32
Mine/mine workings	31
Mine building	30
Crowns engine houses (Botallack)	16
Cliffs/coastline (St Agnes/Botallack)	13
Cheeswring tor (Minions)	12
Hurlers stone circles (Minions)	12
Wheal Coates engine houses (St Agnes)	10

Table 11.1 Significant features in the landscape

## APPENDIX B: GLOSSARY OF MINING TERMS AND CORNISH WORDS/PHRASES

n. noun

vb. Verb

Cn. Cornish word or phrase

This glossary has been compiled from two sources: Herring *et al.* 2008 and <http://www.cornish-mining.org.uk/delving-deeper/glossary>.

**ADIT** n. A tunnel (usually driven horizontally into a hillside) giving access to a mine and used for drainage or the hauling of broken ore.

**ALLUVIAL** n. Tin ore which has been eroded and transported from the originating mineral lode by water action and re-deposited in the beds of water courses. This was then worked by TIN STREAMING.

**ARSENIC** n. A highly toxic chemical element usually found with sulphur or metals and used within industry and agriculture.

**ASSAY** n./vb. The process of identifying the chemical constituents of minerals.

**BEAM ENGINE** n. A type of steam engine used in Cornwall for pumping, winding and providing the power to crush ores ready for DRESSING. The power from a large cylinder set vertically in an ENGINE HOUSE was transferred via a massive rocking beam or BOB to the pumps in the shaft outside. For winding and crushing, the BOB was instead attached to a flywheel and crank on a loading next to the bob-wall. In most cases, the ENGINE HOUSE formed an integral part of the framing of the engine.

**BOB** n. Cn. Cornish term for BEAM ENGINE.

**BOILER HOUSE** n. A structure attached to an engine house and designed to contain the boilers for a steam engine. The associated chimney stack could be attached to this structure, or built into one corner of the engine house.

**BOUNDING** vb. The process by which the agreed limits of an area within which a miner was entitled to work, known as **BOUND LAND**, were established and marked on the ground.

**BUDDLE** n. A device for concentrating tin ore. In the mid 19th century these usually took the form of a circular pit with rotating brushes. The tin from the **STAMPS** was fed into the pit and graded by water and gravity.

**BURROW** n. A pile of **WASTE** material, also known as **SPOIL**. Could contain primary waste (where this could not be disposed of underground) or waste from various stages in the dressing process. Also known as **HEAP**, **TIP** or **DUMP**.

**CALCINER** n. A furnace in which ores were roasted to drive off impurities such as sulphur and arsenic. The Brunton calciner, introduced in the mid 19th century, was mechanically powered and operated on a continuous basis (unlike earlier designs).

**CASSITERITE** n. The native tin dioxide  $\text{SnO}_2$ .

**CHIMNEY** n. Also known as **STACK**. Used to carry away smoke or fumes from boilers, furnaces and **CALCINERS**. Often situated at the end of a flue.

**COUSIN JACK** n. Cn. The name given to Cornish miners who migrated around the world.

**COUNT HOUSE** n. A commonly used shortened version of the proper name Account House, which was the mine office.

CRUSHING vb. Part of the ore dressing process. Ore was crushed, either by hand or using a mechanical crusher to break it up.

DRESSING FLOORS n. An area at the surface of a mine where the various processes of concentration of ore took place. These consisted of crushing or stamping to attain a uniform size range; sizing (particularly on later mines); separation of waste rock; concentration (generally mechanically and hydraulically on tin mines, manually on copper mines); the removal of contaminant minerals (by calcination, flotation, magnetic separation); and finally drying and bagging for transportation to the smelter. Tin floors in particular were generally laid out down a slope to reduce mechanical or manual handling between stages in the process.

DRY n. The building in which miners changed their clothes before and after going underground. Some were heated by steam pipes connected to the engine boilers. Where there were large numbers of women or children employed on a mine, there might be two dries – one for men, the other for women and children. The pithead baths or showers found in collieries were rarely found in Cornwall.

DUMP n. See BURROW.

ELLUVIAL n. Material detached from the parent rock by weathering and transported by geliflucation before redistribution.

ENGINE HOUSE n. A building designed to contain steam, gas, oil or electric engines on a mine or other works. When forming part of the framework of a beam engine these were particularly strongly constructed.

FINGER DUMP n. A linear dump of waste material from a mine or quarry; flat-topped to allow material to be barrowed or trammed along it and often equipped with a temporary tramway track.

FLUE n. A stone tunnel or conduit connecting a furnace to a chimney stack.

FRUE VANNER n. A mechanically-driven, laterally vibrated, inclined rotating belt on which fine tin-containing material in suspension in water was treated by relative density.

*GORSETH KERNOW* n. The Cornish Gorsedd.

HUSHING vb. A method of exposing ORE by removing surface soil by means of a torrent of water usually accumulated behind a dam at the head of a gulley.

INCLINE n. An earthwork which enables a tramway to ascend a steep rise; laid with rails, and usually powered by water and stream.

*KERNOW* n. Cn. The Cornish word for Cornwall.

*KILLAS* n. Cn. A Cornish dialect term for slaty sedimentary rock.

*KNACKED BAL* n. Cn. The Cornish term for an abandoned mine.

LABYRINTH n. (Cornish variation *Lambreth*) A line of interconnected stone chambers, on whose walls the arsenic vapourised after roasting in a CALCINER. The gas followed a zig-zag path through the chambers, and one end of each chamber would be closed off with a door through which the condensed arsenic could be collected.

LEAT n. An artificial water-course, built to carry a supply of water to a mine.

LEVEL n. A term used to refer to a horizontal tunnel underground.

LODE n. A linear area of mineralisation underground. Known in other parts of Britain as a vein or seam.

LODEBACK WORKING n. (variation Openworking) A mineral extraction site open to the surface – similar to a quarry but usually distinguished by its elongated shape and steep sides.

*MEBYON KERNOW* n. Cn. A political party in Cornwall.

*SENETH AN STENEGOW KERNOW* n. Cn. The Cornish Stannary Parliament, the original governing body of tin mining in Cornwall.

SETT n. The legal boundary within which a mine could extract minerals.

SHAFT n. A vertical or near-vertical tunnel sunk to give access to the extractive areas of a mine.

SPOIL n. (variations WASTE) see BURROW.

*SPRIGGAN* n. Cn. An elf-like creature of Cornish folklore which were said to be found at old ruins where they would guard treasure.

STACK n. see CHIMNEY.

STAMPS n. A mechanical device for crushing ore-bearing rock to a fine sand. Heavy vertically-mounted beams (or later iron rods) carrying cast or forged iron heads were lifted and dropped onto the prepared ore beneath them by a series of cams mounted on a rotating drum. This was usually driven by a water-wheel or rotative steam engine

*STANNARY* n. Cn. See *SENETH AN STENEGOW KERNOW*.

TIN STREAMING vb. An area worked for ALLUVIAL tin deposits by shallow excavation; often characterised by linear dumps, river diversion, and evidence for LEATS.

*TO GRASS* vb. Cn. A Cornish mining expression meaning to come back to surface.

*TRIBUTE* n. Cn. A system of payment in which groups of miners bid against each other for contracts to work sections of the mine for a percentage of the value of the ore raised from that area.

*TUTWORK* n. Cn. A system of payment where groups of miners contracted to work on a "payment by results" system at previously-agreed rates, usually for shaft sinking or driving levels.

*UP-COUNTRY* n. Vb. Cn. A Cornish expression meaning outside Cornwall, usually refers to England.

*WHEAL* n. Cn. Cornish expression for a mine.

*WHIM* *n.* The winding gear used for hauling from a shaft; consists of a power source and a winding drum.

# APPENDIX C: QUESTIONNAIRE

## Demographic questions

1. Are you male or female? (please tick or circle)
2. What is your age (at last birthday)?
3. What is your occupation?
4. What is your highest qualification?
5. Were you born in Cornwall? YES/NO
6. Do you have a connection to the mining industries?
7. How long have you lived in Cornwall?

## Descriptions

8. How would you describe the (Botallack/Minions/St Agnes) mining area?
9. Please pick ONE of the following terms which best describes this area for you. Please tick or circle your choice.

- Archaeological landscape
- Cultural landscape
- Heritage landscape
- Industrial landscape
- Mining landscape
- Natural landscape
- Seascape

## Significant features

10. What would you say are the most significant features within this area?

## Importance of mining remains

11. Do you feel that Cornish mining heritage is important? Please circle to indicate the strength of your feeling.

Very strongly      5    4    3    2    1    0      Not at all

### **Time and change**

12. Has the (Botallack/Minions/St Agnes) mining area changed physically in the time that you've known the area? Please circle YES/ NO/ DON'T KNOW

If yes, how have the remains changed?

13. Do you feel that people's attitudes towards mining remains have changed during the time that you've known the area? Please circle YES/ NO/ DON'T KNOW

If yes, how have they changed?

### **World Heritage Site**

14. Did you know that (Botallack/Minions/St Agnes) is now a World Heritage Site? Please circle YES/NO

15. Do you think that World Heritage Status is a good or a bad thing? Please circle GOOD/BAD/ DON'T KNOW and use this space to make any comments

### **Future of Cornish mining remains**

16. Should mining remains be (please tick or circle your choice)?

- preserved
- re-used
- left to decay

(Please explain why you chose a, b, c or d)