



Our mining culture  
shaped your world

## Delve Deeper

# St Agnes: A diamond in Cornwall's mining crown

St Agnes  
Mining  
District

If you wish to delve deeper into the history of St Agnes' links with Cornish Mining then this short guide will provide you with more information.

### 'Steansan Agnes an gweall stean in Kernow'

The old Cornish language saying above means 'St Agnes tin is the finest tin in Cornwall'. In fact, the area produced some of the best tin ore in the world, including 'diamond' tin which needed little processing. The historic mining landscape here is included as one of the ten areas of the Cornish Mining World Heritage Site.

Centuries of mining in and around St Agnes have shaped the landscape, economy and society of the village. This is still evident today in the remains of the mines themselves, the ruined harbour where ore was shipped, the tiny miners' cottages, and the magnificent houses of the mine owners. The cliffs are pitted with caves, mine tunnels, humps and hollows, and the valley bottoms scarred with tracks and the remains of industry.

You'll explore this fascinating area on the audio trail and discover how to 'read' the story of mining that's etched in the landscape.

### Centuries of mining

Mining in St Agnes dates back to prehistory, but the boom came in the 18th and 19th centuries. This is when St Agnes grew as a major mining community.

St Agnes was particularly good for mining because of its steep valley sides and cliffs which made it easier to prospect and dig for minerals, and to drain the workings of ground water. The distinctive high quality crystalline ore was formed from slowly-cooling mineral fluids which circulated in the fissures in the granite.

### Innovation and investment

The peak period of development in St Agnes came in the 1830s, when many of the principal local mines came into full production (Wheal Coates, 1815; West Kitty, 1834; Wheal Luna, 1838).

Although Polberro Mine (audio track 6) reached its height in the 1800s, it had long been operating as one of the largest and richest tin mines in Cornwall. So much tin ore was produced there in 1750 that there were insufficient pack horses locally to transport it to the smelters.

As the shafts around the coastline grew ever deeper, the St Agnes mine workers, like elsewhere in the World Heritage Site, employed mechanised pumps and winders to deliver fresh air to the miners and to remove water and ore from the lower levels. Horses and water powered pumps and adits handled the winding and drainage, and leats were cut across the landscape to carry waste water. The audio trail follows part of the extensive Turnavore leat, which took water from the mine to the sea.

Other technical improvements included the early use of gunpowder for mining, an important breakthrough.



These innovations to the mines owed much to the initiative and investment of the Tonkin family of Trevaunance.

## Decline of St Agnes' mines

After the 1874 crash in tin prices, there was a gradual decline in the scale and output of the mines in St Agnes.

In 1896, Herbert Thomas in his 'Cornish Mining Interviews' said:

*'I can remember about 14 or 15 mines at work. But after tin fell seriously in 1874 the number began to diminish. Now the only mines at work are West Kitty, Wheal Kitty, Polberro and Blue Hills. Wheal Friendly cannot battle with hard times any longer and is about to be wound up...'*

By the 1920s, only Wheal Kitty, West Kitty, Polberro and Wheal Friendly survived, because they were operating as a single concern. The Wheal Kitty Co. recommenced at Turnavore in 1937 and continued there until 1941. In the 1980s there was a trial carried out at Wheal Concord in the south of St. Agnes parish.

## Loss of mining jobs leads to mass migration

The population of St Agnes reached its peak in 1841 at 7,757 people, although it continued at relatively high levels until the 1870s tin slump. The decline of mining led to mass migration and the abandonment of many outlying smallholdings and cottages. The whole parish population fell from over 6,000 in the 1870s to 4,292 in 1901.

A School Board letter to Education Department 1871 said:

*'...the population has decreased since 1871 and emigration is going on and likely to go on to a considerable extent in consequence of the great depression in mining which is the principal service of employment for the inhabitants of St Agnes'*



Cornish Miner. Photo: Cornwall Centre Collection

Cornish miners had been migrating since the early 1800s to find better paid work or higher positions, leading them worldwide. But it was the slump in copper and tin mining from the late 1860s that took miners out of Cornwall in increased numbers. The prospect of higher pay and better conditions in South African gold mines in the late 1800s also led to thousands of Cornish miners migrating south.

## RELATED INDUSTRIES IN ST AGNES

### St Agnes harbour – a battle against the sea

From ancient times, the Tonkin family exploited the mining wealth of the area enabling them to develop the Manor of Trevaunance.

As their mining empire grew, so did the need for trade with Ireland and Wales. Trevaunance Cove was the ideal place for a harbour, but beaching ships on the open shore was a risky business. So the Tonkin family set out to build a harbour. The first three efforts were in 1632, 1684 and 1699, but all were quickly washed away. By 1710, a harbour was successfully built – but it had left the family deep in debt. They were forced to relinquish their estate in 1719.

The Tonkin's harbour survived until 1730 when it was again lost to the crashing Atlantic waves.

Sixty years later, the copper mining boom led to the building of a new harbour in 1798. It was mainly used for shipping copper ore to south Wales, and importing coal for the mine engines. It also provided shelter for a small pilchard fishing fleet.

The harbour survived for 118 years, until being destroyed in the winter storms of 1915/16. The huge granite blocks of the harbour still remain strewn at the base of the cliff (audio tracks 8 and 9) – and the eagle eyed can spot some of the quay foundations still in place.

You can see a scale model of the harbour at St Agnes Museum.

## Shipbuilding on the beach

Between 1873 and 1877, there was a significant shipbuilding business on the beach at Trevaunance. Four schooners were built there: the St. Agnes (58 tons), the Goonlaze (85 tons), the Trevellas (128 tons) and the Lady Agnes (91 tons).

## Tin processing in Trevellas Coombe

On the audio trail, you'll look down on the peaceful Trevellas Coombe (audio track 11). This steep sided valley was for centuries a noisy industrial zone where copper, lead and tin were mined and processed. Today, the valley bottom retains much evidence of trackways, spoil heaps, leats and shafts, and the remains of ore processing buddles.

The stream in the valley provided the power for tin processing from the 1690s onwards. By the late 1800s, almost the entire coombe was buried beneath huge sheds and ore dressing machinery.

During the process of crushing, washing and separating, some tin ore escaped from the mines into the stream. To recover these last remnants, independent tin streamers set up further downstream to extract the precious ore.

Since 1974, the nearby Blue Hills Tin Streams has gathered ore from the beach at Trevellas Porth, then dressed and smelted it using traditional methods at its works in the coombe.

## ST AGNES' MINES

This is a list of the key mines in St Agnes which you'll see on the audio trail.

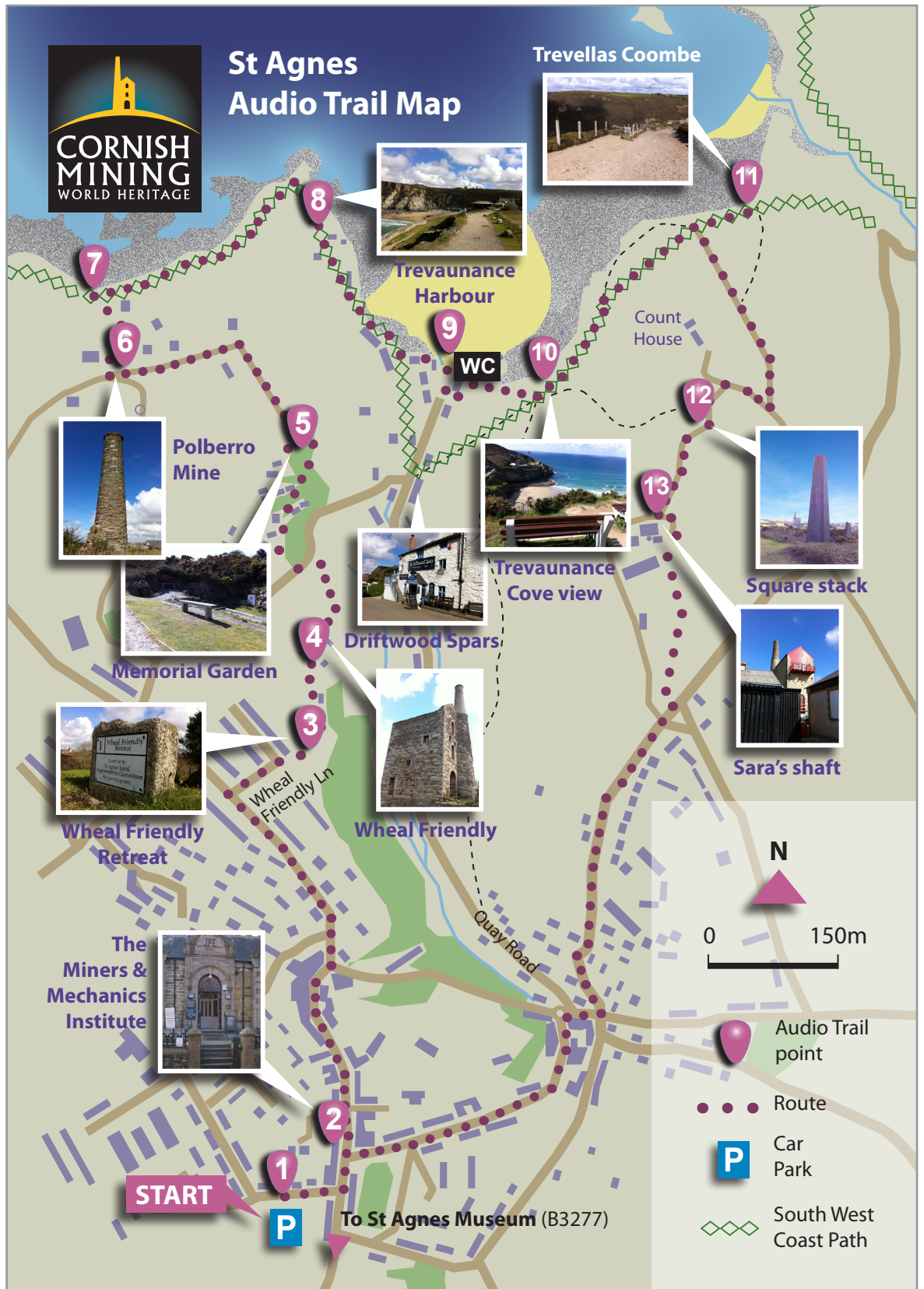
### West Wheal Kitty (audio track 2)

West Wheal Kitty, an amalgamation of several earlier mines, was one of the principal mines in St Agnes. From 1882 to closure in 1913, it produced 10,000 tons of black tin plus a little copper, second only to Wheal Kitty. A few remains of the mine can still be seen amongst the houses, including the engine house of the Thomas' shaft engine house. The engine itself is now held by the Science Museum in storage.

The engine house was built in 1892 to house a 40 inch pumping engine. Engines were used for three main purposes: the winding or whim engine was for raising ore from the shaft, the stamps engine was for crushing ore and the pumping engine was for clearing water from the mine.



Scale model of harbour. Photo St Agnes Museum



### Wheal Friendly (audio track 4)

You can still see the engine house, miners' dry (changing and drying room) and remains of the reservoir of Wheal Friendly. The word 'friendly' in this context means rich or profitable.

Despite its name, Wheal Friendly was not a very successful mine, only producing about 450 tons of copper and the same amount of tin over 50 years.

In 1907, a dressing floor was built at Wheal Friendly to save on the costs of transporting ore to the Jericho Stamps in the Trevellas Valley. The dressing floor was used for crushing, washing and separating the ore. However, there were various difficulties in the new dressing floor, including the fact that the pneumatic stamps were so powerful that they cracked the foundations!



Miners at Wheal Friendly. Photo: Cornwall Centre Collection

### Polberro Mine (audio track 6)

The legendary Polberro Mine was said to produce the finest tin ore in Cornwall, including 'diamond' tin which needed little processing.

The mine was operating as one of the largest and richest tin mines in Cornwall as far back as 1750. In the early 1800s, it employed around 450 people and was producing 30 tons of tin ore a month. The sheer physical scale of the operation was described by a local newspaper, the West Briton, on 24 February 1843:

*'...a surface of upwards of 200 acres, and contains 24 shafts, 9 of which are now in full working, with 3,000 fathoms of levels...'*

The shaft at Polberro was by far the deepest in the district, 1,200 feet below the surface. When the mine closed in 1941, it marked the end of deep mining in St Agnes. Buildings that are still visible are the Turnavore engine house and chimney stack, and part of the calciner which removed contaminating arsenic from the ore.

### Wheal Luna (audio track 8)

Wheal Luna is an example of early open cast tin mining, when miners chipped away at the outcropping ore bearing rock using only hand tools. Its tin workings are documented in 1528 but are believed to be significantly earlier. The site is recorded as still being worked as late as 1838.

### Penhalls Mine (audio track 10)

In the early 19th century, there were lots of small mining operations on this side of St Agnes, but these amalgamated into the larger Penhalls Mine which operated until 1884. In 1904, Wheal Kitty and Penhalls joined forces to become Penhalls United, but the site was last worked as Wheal Kitty (audio track 13).



Wheal Kitty. Photo: Cornwall Centre Collection

Amidst the gorse and spoil heaps, you can still see the remains of Penhalls Mine the dressing floors where the rock was crushed, and the circular buddles where the ore was washed to separate it from the rock.

### Wheal Kitty (audio track 13)

Wheal Kitty was the most productive mine in St Agnes. Between 1834 and 1930, it produced over 13,000 tons of tin ore. Carrick District Council bought Wheal Kitty in 1987, and sold to private businesses shortly afterwards, to be converted into offices and workshops. The building with the distinctive red top is the renovated engine house for Sarah's Shaft, the last to be built at Wheal Kitty. Constructed shortly after 1907, it contained a 65 inch steam beam engine which was obtained second hand from Tindene Mine, near Relubbus. The building with three pitched roofs was the boiler and compressor house.



## PLACES TO VISIT

### St Agnes Museum

The recently refurbished St Agnes Museum has a fascinating collection of memorabilia from the local area. It is free to visit and is open from Easter to the end of October.

[www.stagnesmuseum.org.uk/](http://www.stagnesmuseum.org.uk/)

### Blue Hills Tin Streams

Experience traditional tin streaming and smelting in operation at the engaging Blue Hills Tin Streams site in the Trevellas Valley, near St Agnes.

[www.bluehillstin.com](http://www.bluehillstin.com)

### King Edward Mine Museum

In Troon, near Camborne, the museum specialises in the history of Cornish mining, telling the remarkable story of how the mine has survived for 100 years. In the tin processing mill, machinery can be seen in action just as it would have been in the early 1900s.

[www.kingedwardmine.co.uk](http://www.kingedwardmine.co.uk)



Wheal Coates: Photo: Tony Atkin

### Wheal Coates

Wheal Coates isn't on the audio trail but it's well worth a visit as one of the most iconic Cornish engine houses. At high tide you can hear the waves crashing against the rocks through a grille over the Towanroath Shaft, in front of the house. This mine shaft is accessible through a large cave at the far end of Chapel Porth beach at low tide but is quickly cut off once the tide has turned. The earliest records of Wheal Coates date from 1692, but the surviving buildings date from the 1870s when deep underground mining was last pursued at the site.

[www.nationaltrust.org.uk/st-agnes-and-chapel-porth](http://www.nationaltrust.org.uk/st-agnes-and-chapel-porth)

### South West Coast Path

The trail follows a small section of the South West Coast Path, Britain's longest waymarked long-distance footpath and a National Trail. It stretches for 630 miles (1,014 km), running from Minehead in Somerset, along the coasts of Devon and Cornwall, to Poole Harbour in Dorset.

[www.southwestcoastpath.com](http://www.southwestcoastpath.com)

### Driftwood Spars

Stop here for a drink or a bite to eat. It is ideally located on Trevaunance Cove.

[www.driftwoodspars.com/](http://www.driftwoodspars.com/)

## FOR FURTHER INFORMATION

'Take a Step Through Time, Ten Walks in & Around St Agnes', St Agnes Regeneration Forum, 2000

'St Agnes Head and Chapel Porth (Coast of Cornwall No.8)', National Trust walk leaflet

'Exploring Cornish Mines Vol. 4', K. Brown & B. Acton, Landfall Publications, 1999

'Exploring Cornish Mines Vol. 3', K. Brown & B. Acton, Landfall Publications, 1997

[www.st-agnes.com/aboutstagnes.php](http://www.st-agnes.com/aboutstagnes.php)

For more information on Cornish Mining visit [www.cornishmining.org.uk](http://www.cornishmining.org.uk)

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