

DISCOVERING BRITAIN

A rail runs *through it*

This month, the Royal Geographical Society (with IBG)'s Discovering Britain walk takes **Chris Fitch** along a sea-battered stretch of South Devon

It's a deceptively peaceful scene. Taking a deep breath, my lungs fill with air heavy with the scent of salt and drying seaweed. A gentle breeze has the grasses on the cliff slopes performing a slow, rhythmic dance. Along the coastline, enormous headlands emerge from a distant haze, their misty shrouding giving them a mysterious, almost ethereal, quality.

The train line this coast is famous for sits empty, tracks snaking gently around the seafront before disappearing into a distant tunnel. The only audible sound is the sea gently lapping on the beach, accompanied by occasional seagull cries far overhead. Silhouetted against the morning sunshine, the battered remnants of wooden groynes rise out of the beach, like the stumps of an ancient forest. Stretching along the coastline, they are a poignant reminder of the strong forces of nature operating in this part of the world, day after day, year after year.

STORMY WEATHER

'See the houses about to topple over?' asks Pat Wilson, creator of the *Crumbling Cliffs and Crashing Waves* walk, pointing towards rooftops perched undeniably precariously above a slope a short distance from our position on Sprey Point. 'You couldn't see them before February 2014.'

It's the date which has come to define this South Devon region. Over the course of several nights in February 2014, giant waves tore into the coastline,

whipped up by exceptionally powerful winds. Weak spots in the cliffs were exposed, and huge fragments of the headlands were sent crashing into the sea. As beaches were hit by the full force of the storms, the seawall in Dawlish was breached and its foundations washed away - leaving 80m of historic railway track dramatically suspended in mid-air. Morning light revealed damages which would require extensive repairs before the line could reopen, leaving Devon and Cornwall cut off from the rest of the country.

Some 18 months have passed since those dramatic events. But, despite a triumphant reopening only two months after the first storm occurred, it's still anybody's guess as to what the long-term future holds for this famous coastline.

ROCK AND RAIL

'The whole walk is about the train line.' This is how Wilson had kicked off our day's outing an hour earlier at Teignmouth train station, a classic 1890s Devonian limestone, French Pavilion-style building.

It would be hard to argue with her. This whole landscape has been sculpted by the railway - the only line connecting Exeter and Plymouth - as it winds its way down from the Exe estuary, past Dawlish Warren and along the sea, before turning west at Teignmouth and continuing up the River Teign towards Newton Abbot. Railway and coastline are completely entwined. It's hard to think about one without considering the other.



LEFT: the line between Dawlish and Dawlish Warren was extensively damaged by a storm in February 2014

However, despite the spectacular scenery, it has not been an easy relationship between the unforgiving landscape and the people living and working here. 'It's the conflict between man and nature,' explains Wilson. And it's a long-running one. Structural issues date back as far as Isambard Kingdom Brunel's initial construction and the 1846 opening of the line. The 1850s saw failing seawalls and collapsing cliffs following a pummeling by multiple seasonal gales, while Sprey Point - itself the result of Brunel flattening an early landslip in 1839 - saw a major landslide occur in 1931. In 1986, strong waves carried away the seawall at Dawlish, again leaving the rails hanging. The events of 2014 were nothing out of the ordinary.

A gentle hum fills the air. The train tracks jump into life, buzzing as though suddenly electrified. Moments later, a two-carriage train charges past. This section of the Teignmouth-Dawlish South Devon railway line is well-known for its picturesque qualities, as evident by the rush for seats on the seaward-facing side of carriages traversing the route. It's arguably the highlight of train journeys into and out of the West Country.



The loose mishmash of rocks within the breccia didn't stand a chance against last year's 90mph gales

ABOVE: the sea wall between Dawlish and Dawlish Warren is battered by a large wave

And yet the threat it faces is clear for all to see. Walking on towards Dawlish, we pause at the base of one cliff which has noticeably slipped towards the tracks. An immense assortment of metal fencing, thick cables, and rock bolts are fixed to the ground to prevent any loose earth from suddenly cascading onto the tracks themselves. Above, the cliff top houses have been presented with considerably more of a sea view than their owners could ever have envisaged.

Wilson gestures towards the fences and cables. 'This landslip is moving all the time,' she says. 'It was started by this spring here on the left - you can see how it's cutting into the cliff. If it hadn't got all this lot in front of it,' she points again at the unsightly collection of structural enhancements before us, 'it would go "Whoosh!"' She sweeps both arms down towards the sea for emphasis.

A substantial reason why this line has been such a tough engineering challenge comes down to the underlying geology. Towards the Teignmouth end of the line the cliffs consist primarily of a crumbly Permian-aged breccia; an assortment of multiple rock fragments formed by flash flooding events in ancient desert environments. This loose mishmash of rocks within the breccia makes it unstable, and highly susceptible to erosion. It didn't stand a chance against last year's 90mph gales.

Further along the seafront, we reach Parson's, at 513 yards the longest of the five tunnels along this stretch. 'You see the amount of rock armour they've got there?' asks Wilson, pointing towards a substantial collection of large rocks piled on the beach below the tunnel entrance. 'Between the wars the same thing happened there as happened

at Dawlish - the ballast got sucked out from underneath the tracks and the rails were left hanging. From then on, they've kept that corner and the tunnel protected by massive rock armour.'

TRACKING CHANGES

Our route takes us beneath the tracks - inaccessible when the tide is in - before leading up Smugglers Lane (named, predictably, after bands of smugglers who used this passageway to get their loot ashore in the early 1800s) and above Hole Head, the large headland which Parson's tunnels through.

A well-positioned bench in the dappled sunshine provides a peaceful respite from the sounds of the sea - as well as possibly one of the best views in South Devon. What looks to us like a toy train departs the distant Dawlish station and glides silently along the beach in the shadow of the Dawlish Cliffs. Wilson follows my gaze and points towards a rock at the end of the cliffs, isolated from the mainland by intervening train tracks. 'Langstone Rock was originally a headland that protruded right out to sea,' she explains, 'Brunel cut right across it to bring the railway through.'

It's becoming increasingly clear why maintenance of this line is such a challenge. Would it really be so difficult to build an alternative route, given all the ongoing engineering challenges required to keep the line running as it is?

'I've read all the reports that came out post-February 2014,' says Wilson, confidently. 'There's no doubt about it - it's cheaper to maintain this line than to attempt to build another one.' Nevertheless, a new report, due to be published imminently, will detail the exact options available for potential train routes through the region.

MUTUAL ACCEPTANCE

At Dawlish, the geology turns almost entirely into Dawlish Sands, a soft sedimentary rock which has repeatedly weathered strong storms better than the earlier unstable breccia. The steep cliffs which have lined our route flatten out as we reach the end of the beach, past the unfortunate Langstone Rock, and round the corner towards Dawlish Warren, a large sandy spit which has grown out across the mouth of the River Exe.

Dawlish Warren station is the only part of the line where the railway was successfully doubled-up during the attempted expansion in 1937, before World War II put a halt to the project. Despite the best efforts of nearly two centuries of engineers - including Brunel himself - this is arguably the only part of the coastal route where the land is truly under any semblance of control.

This landscape has experienced a complete transformation thanks to the railway, which is, in turn, entirely at the mercy of the geological characteristics of the landscape it travels through. But here, at least, the 'conflict between man and nature', as Wilson described it, has finally lulled into a calm, mutual acceptance.