

**Location & Access:**

Westward Ho! is located on the north Devon coast, 2 miles from Bideford and 8 miles from Barnstaple—accessible via the A39 road.

The closest car park for this visit is located at the slipway (SS 433 294), but there are other car parks in the village (see map).

The 21A Stagecoach bus service links Westward Ho! to Barnstaple and Bideford.

There is a railway station at Barnstaple, linking to Exeter.



Westward Ho! Beach and pebble ridge —photo: Paul Berry

**Key Geography:** Spectacular wide sandy beach, pebble ridge spit, sand dunes, Northam Burrows Country Park, and coastal management. Development of a tourist resort.

**Description:**

Westward Ho! is a north Devon seaside resort made fashionable in Victorian times. It is the only UK resort to be developed as a result of a novel (Charles Kingsley's book of the same name), and the only UK place name boasting an exclamation mark. It continues to be a thriving holiday centre today, and boasts some special coastal geography, notably the famous pebble ridge.

A number of car parks are located close to the pebble ridge (see map at the end of this article), and one of the most convenient is the slipway car park (grid reference: SS433 294). From this car park, head towards the slipway that offers access to the beach. From the bottom of the slipway you can see the sea wall stretching away to the south. There have been several generations of the sea wall built to protect the promenade from storm waves. The early version, built in 1928, was a vertical construction (the least efficient energy absorber), but it was rebuilt in 1965 with an outward curved face in order to send waves back out to sea and collide with incoming waves to reduce energy.

On the left-hand side of the slipway you can see some giant grey elvan metamorphic granite boulders that were placed here in 1982 as rip-rap (or sea armour) to protect the slipway from the sea. Some of the boulders weigh up to 15 tons.



Storm beach pebbles in front of sea wall and sea armour —photo: Paul Berry

Beyond the sea wall you should be able to pick out the high ridge of Kipling Tor that forms a backdrop **(continued overleaf)**

**Curiosity Questions:**

- # Part of this walking route follows the South West Coast Path. How long is this footpath in total?
- # Westward Ho! Is located within the UK's first UNESCO World Biosphere Reserve. In what year was the North Devon Biosphere designated?
- # In what year was the Royal North Devon Golf Club on Northam Burrows said to have been formed?

**Further information:**

- # <https://devongeography.wordpress.com/2022/06/06/the-westward-ho-pebble-ridge/>
- # [www.northdevon-aonb.org.uk/resources/biosphere-reserves](http://www.northdevon-aonb.org.uk/resources/biosphere-reserves)

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to the village. Kipling Tor is owned by the National Trust, and named after the author and poet Rudyard Kipling who attended the United Services College in Westward Ho! from 1878. His notable works include 'The Jungle Book', 'Kim', and the poem 'If'. This ridge is an abandoned cliff that was cut by the sea around 125,000 years ago in the warmer Ipswichian inter-glacial, when sea level was much higher than today - a relic landscape from a very different past. The cold spell that followed (our last 'ice age', the Devensian) reached its peak around 18,000 years ago, and at that time temperatures were some 15 degrees cooler than today. Although most of Britain was buried beneath 2 kilometres of ice in this glacial period, North Devon did not have an ice cover. If you stood on Kipling Tor during this cold spell you would see that the sea level was much lower (sea levels fall in glacial periods as water is held in solid ice), and you would be able to look across the treeless plain of tundra-like marsh and bog of Bideford Bay that stretched all the way to the ice-capped mountains of the Welsh coast. You could even walk to Wales if you had the energy.

It's worth pausing by the foot of the slipway to consider the wonderful expanse of sand that makes up the Westward Ho! beach - its scale especially impressive at low tide. Despite its appearance of permanence, this beach is a shifting environment, and its depth changes regularly. The sand was completely scoured away in 1984, exposing the thick bed of clay and glacial 'head'



Old groynes —photo: Paul Berry

material that spread out from the old cliffs. Amazingly, the sand soon returned (in a matter of just a few days), and the tourism industry breathed a sigh of relief.

At very low tides it is possible to identify a section of submerged forest. Here, a layer of dark peat is sandwiched between two layers of blue-grey clay. The lower clay layer was deposited under water in a sheltered estuarine environment, but the peat layer shows that around 6,000 years ago, the sea level was some four metres lower and this area was land. The area would have been like a freshwater fen carr with frequent stagnant pools.

Before the estuary water returned to cover the peat with another layer of clay, tree trunks and roots of oak, willow and hazel were preserved. When the remains of this ancient forest were first described in 1863, some forty trees stood proud. Since then, these have been worn down to low stumps, and exposed at the surface only at extremely low spring tides. Scientists have discovered a Mesolithic kitchen midden between the peat and underlying clay, where hunter-gatherers deposited shells of limpets, mussels and oysters – along with fragments of charcoal, burnt animal bones, and flint tools. A bone harpoon from this location can be seen on display in the Barnstaple Museum. Very low tides also expose the remains of a number of ships wrecked on this shore in the eighteenth century.

It is time now to focus on the jewel in the crown, the Westward Ho! pebble ridge. As you head towards the pebble ridge, you can just about pick out the remains of old wooden groynes that once added to the coastal defences on this beach. In the past, large metal cages filled with rocks (called gabions) were also used in the area by the slipway to try to stabilise the pebble ridge, however, they were soon exposed by the retreat of the ridge and corroded by salt water, and never replaced.



Groynes in front of the pebble ridge  
—photo: Paul Berry

Many people have been fooled into thinking that the pebble ridge is a man-made feature – but this is not the case. This wonder of nature is usually described as a spit, although technically, it is only a spit where it enters the estuary. This spit is unlike any other similar feature in the UK, consisting of hard sandstone pebbles rather than shingle or sand. If you pick up a single pebble, it has a geo-story to tell. The pebble ridge has been built up by the process of longshore drift, where the prevailing south westerly winds have driven strong currents which have shifted sandstone rock as if on a conveyor belt along the coast from the Hartland Point area towards the mouth of the Taw-Torridge estuary. The roundness of your pebble sample tells you of its history, as on its journey, it has been reduced to its

(continued overleaf)

smooth shape by the process of attrition – ‘stone-washed’ sandstone. Pebbles on the ridge have been sorted by the sea, with larger/rougher pebbles found at the proximal (point of attachment) end of the spit, and smaller/smoother pebbles found at the distal (far) end towards the north.

The date the pebble ridge came into existence is uncertain, but it is a comparatively recent feature in our geological history. How it was initially formed is open to conjecture. One theory suggests that it was formed by a one-off event in the distant past, such as a significant cliff collapse, or perhaps a seventeenth century tsunami, where thousands of tons of pebbles trapped at cliff height due to eustatic change were suddenly released into the coastal system and drifted eastwards by the sea. What is certain is that the pebble ridge is a dynamic feature, and has been subject to considerable modification over the past 150 years or so.



*Pebble art —photo: Paul Berry*

The pebble ridge has been fairly stable for the last 50 years, but there is a general trend of landward migration. In the mid-1700s, the pebble ridge was located approximately 300 metres out in the bay, and since the 1870s, the spit has pushed inland by 150 metres. The average retreat over the past 150 years or so has been 1 to 1.5 metres a year. Recent studies have predicted that by 2055-2105, the pebble ridge will retreat inland by a further 200 to 300 metres. A major breach took place in 1962, with others recorded in the 1970s and as recently as 2011. The pebble ridge is maintained by a fresh supply of pebbles from the west, but it is believed that this source has been depleting in recent years. Consequently, the height of the pebble ridge has decreased and it has become flatter in shape. Further breaches and overtopping are expected in the future.

The pebbles on the spit have in the recent past been replenished by the local council in times of need, moving rocks from the north end of the spit to the area near the slipway. However, this management technique was brought to a close in 2008 by Natural England, who decreed there should be no artificial interference with the pebble ridge due to its location within an SSSI.

A tradition of ‘pot walloping’ has been carried out by local residents in the past. The term ‘pot walloper’ has been in existence since 1725 – an alteration of the word ‘potwaller’ (a man who qualified for a parliamentary vote as a householder), the test being to have a fireplace on which food was cooked for a family. In the ancient manor of Northam, a pot-walloper also had rights to graze animals on the Burrows (rights of common to graze 1200 sheep and 100 horses), plus rights to ‘air and exercise’ there. In return, the pot-walloper had to help maintain the pebble ridge by annually (at Whitsun) helping to return pebbles thrown by storms onto the Burrows back onto the slope of the ridge. The ceremony disappeared, was revived in 1922 for a few years, but ceased again at the end of the twentieth century. It continues today only as an occasional small-scale fund-raising event.

If you want to continue northwards along the line of the pebble ridge (following the line of the South West Coast Path), you will soon come to Sandymere, an ephemeral lake in a wind-scoured depression behind the spit. This fills with salt water when the sea overtops the ridge at high tides. Before 1855, this is as far as the pebble ridge extended. There is a large car park and excellent new visitor centre next to the lake providing toilets, a café, guided walks and volunteer events - well worth a visit.

From the top of the spit you get a great view of the open, flat expanse of the 650 acre Northam Burrows Country Park on the land side, protected by the pebble ridge. This area was designated as a SSSI in 1988, boasting not only the unique pebble ridge, but also other specialities such as the Great Sea Rush (*Juncus acutus*) and the Water Germander plant, found only at this location and Braunton Burrows across the river estuary. The area today is one of unimproved grassland, salt marsh and sand dunes drained by a pill stream. The Burrows provides the location for the Royal North Devon Golf Club, reputedly the oldest club in England, and believed to be the first to include women members. *(continued overleaf)*

It is possible to follow the pebble ridge right to the mouth of the Taw-Torridge estuary, and look across the river to the sands of Saunton, Braunton Burrows and Crow Point on the north side. The Taw gets its name from Old Saxon meaning 'silent' or 'still', while the Torridge translates as 'violent' or 'rough'. The Taw has its source on Dartmoor, and runs for some 82 miles in total, while the Torridge begins life near Hartland, with a length of 59 miles.

You will have noticed that there is an absence of vegetation on the pebble ridge itself. This is due to the daily disturbance to the ridge and the fact that the smooth pebbles drain quickly and do not retain much moisture within the structure. However, there is a small sand dune system behind the ridge at its distal end, although it is nothing in scale compared to that found across the river at Braunton Burrows. Changes to the river mouth sand and shingle banks have focused incoming waves onto the 'corner' of the pebble ridge at this point, and granite rock armour has been placed here as a protection. A rubbish dump dating to the 1950s beneath the dunes has been exposed in places, and like a part of the golf course, is currently threatened by wave erosion. In recent times, some gaps have appeared in the pebble ridge at its northern end, although so far, these have been naturally refilled. However, this part of the spit remains an area of concern.

You can follow the banks of the estuary eastwards to the horseshoe shaped bay of salt marsh and mud flats known as the Skern. This area is a popular spot for birdwatching, particularly of autumn and winter migratory species.

On your way back to the slipway car park, you might want to reflect on what the future holds for this area. A recent study commissioned by Torridge District Council and the Environment Agency (2012) outlined a number of predictions for the pebble ridge and the surrounding area:

- Short term (2010-2025): retreat of pebble ridge by 40-60 metres by 2025 at southern (slipway) end, great risk of overtopping/breaching but with self-heal.
- Medium term (2025-2055): retreat by 100-150 metres by 2055 at southern end. Risk of breaching. No self-heal. Flooding of Northam Burrows.
- Long term (2055-2105): retreat by 200-300 metres. Number of tidal inlets form on Northam Burrows.

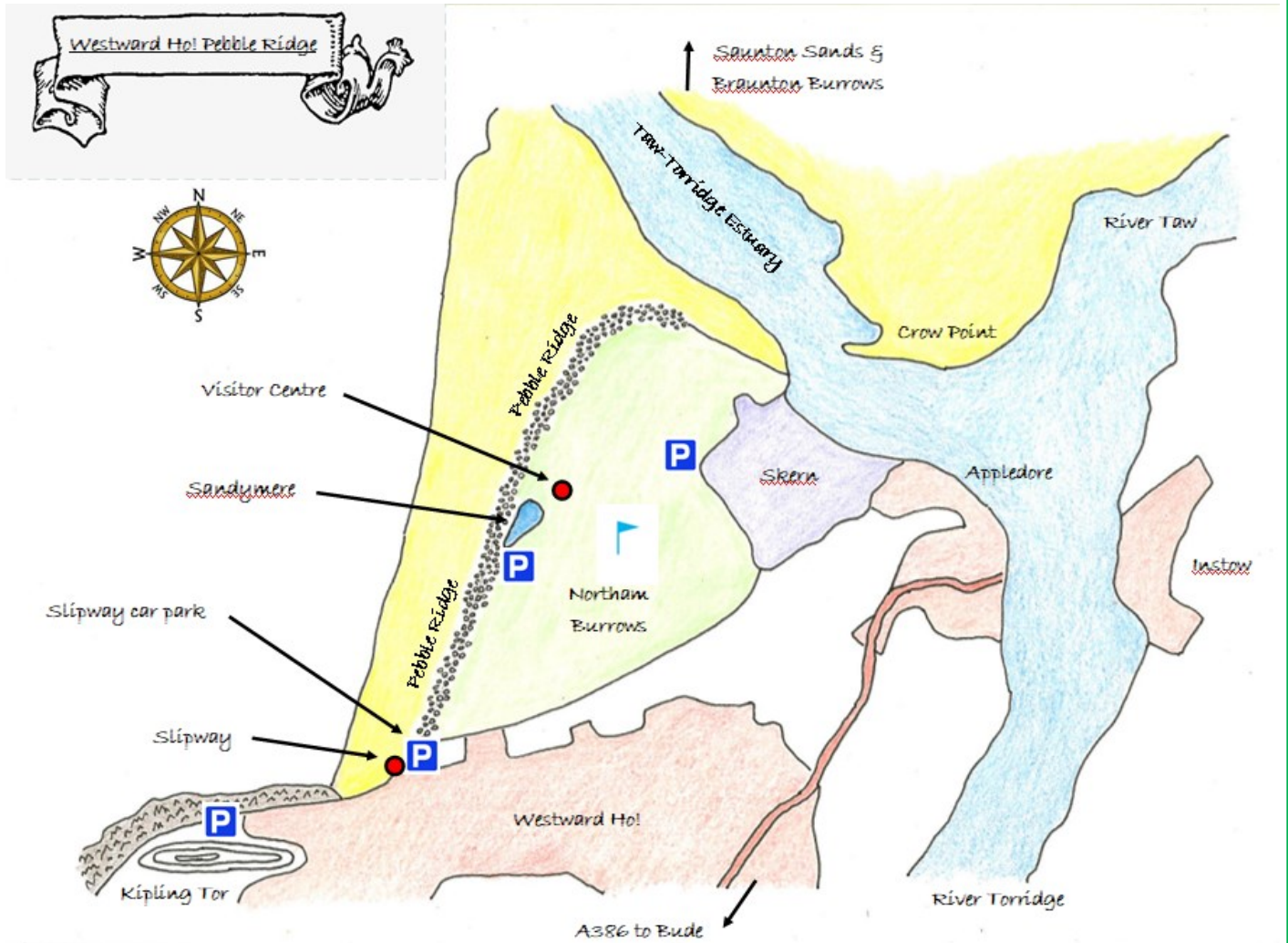


*The Skern —photo: Paul Berry*

It seems that the most vulnerable areas at present are the south (slipway) end of the ridge, and the part of the north end before the existing rock armour begins. One management proposal involves the return to replenishment using material from the north end of the ridge, but backfilling on the back face of the ridge instead of the seaward face, thus encouraging the spit to migrate and become 'swash aligned' – but would this cause greater risk to the landfill site?

If the pebble ridge continues to migrate inland, what will be the most appropriate management techniques for this location? Should there be further investment in 'hold the line' methods like sea armour and other linear defences, or some form of 'managed retreat' that abandons existing defences? In an age of rapidly rising sea levels, Northam Burrows may prove to be very expensive to defend. It is possible that at some stage, nature may be allowed to take its course, and the area will be flooded. How will this impact on the current land uses?

A gentle stroll around Westward Ho! village will reveal the full story of its fascinating coastal geomorphology, and a detailed walk exploring this is featured elsewhere on this site, in the 'Places to Walk' section. In just a few miles, it is possible to stand on an old abandoned cliff, walk across a raised beach, and view caves, wave erosion, and a wave cut platform. In addition, the walk examines aspects of the growth of this settlement as a Victorian seaside resort.



**Answers to Curiosity Questions:**

- # Part of this walking route follows the South West Coast Path. How long is this footpath in total? (630 miles)
- # Westward Ho! is located within the UK's first UNESCO World Biosphere Reserve. In what year was the North Devon Biosphere designated? (2002)
- # In what year was the Royal North Devon Golf Club on Northam Burrows said to have been formed? (1864)