

► Crow Point Trail

This walk of approximately three miles takes you through the sand dunes and around the southern tip of Braunton Burrows – which is at the core of North Devon’s Biosphere Reserve. The vast dune system of Braunton Burrows is one of the largest in Britain and covers over 2,000 acres (more than 800 hectares). Some of the dunes are over 100 feet (30 metres) high. Its plant and animal life are of international scientific interest and over four hundred different species of flowering plant have been recorded here. Some are very rare elsewhere in Britain but grow in amazing profusion here. Botanists, lured by the rare and local plants, have been visiting the Burrows since the days of John Ray, a well-known 17th century naturalist. The Burrows remain a haven for a rich variety of flora and fauna today and are spectacular for different reasons at different times of the year.



Crow Point Trail

From Broadsands Car Park, continue into the Burrows along the main track and you will soon reach a crossroads. If you turned left here you would emerge on the shore of the estuary. If you turned right, you would join the end of the American Road – named after the American troops who trained on the Burrows for the D-Day landings. We are going to continue straight ahead today, onto what we call the Boardwalk, which you will see ahead of you.

STOP 1

Look closely at the dry dune pasture here. It is composed mainly of low growing plants such as restharrow, thyme, dune storksbill, eyebright and centaury. The rosettes of prickly leaves belonging to the vipers bugloss give rise to spikes of spectacular blue flowers during mid and late summer. It grows abundantly throughout the Burrows and its name is derived from the resemblance of its calyxes, after flowering, to a vipers head with its tongue protruding. Some people used to believe that the plant would cure a vipers bite. Evening primroses are abundant on the dune on your right, flowering in late summer. They were first introduced to Britain as a garden flower from North America and have now become naturalised. The fragrant flowers are pollinated by night-flying moths. It is not actually related to the usual primrose, but to the rosebay willow herb.

Rabbits have played a vital role in the maintenance of this herb-rich turf, by eating down the grasses and scrub seedlings to leave a carpet of mosses interspersed with the attractive dune herbs. Patches of privet, sallow and

bramble scrub have developed in places since rabbit numbers were reduced by myxomatosis. Stonechats can often be seen perched from the top of a privet or bramble bush uttering their distinct, harsh call. Continue now, along the boardwalk.

STOP 2

This section of boardwalk crosses an area that is waterlogged in winter. On your left is a community of plants that are typical of the damp dune 'slacks'. Creeping willow, a naturally dwarf 'tree', is the dominant plant here and grows alongside pennywort, marsh orchid, marsh helleborine, water mint and round leaved wintergreen. The round leaved wintergreen was first discovered on the Burrows in 1958 and has since spread across the whole area. Look for the red poplar leaf beetles (they look like large ladybirds with no spots) among the foliage of the dwarf willow in summer. Clumps of sharp sea rush can be seen growing here throughout the year – you can feel how sharp the tips of the leaves really are.

The common lizard favours this lush, damp habitat, which provides them with food in the form of invertebrates, shelter and warmth. On sunny days in summer, insect life abounds here; tiger beetles fly readily when disturbed, sand wasps make their tunnels in the sand and the numerous butterflies include common blue, small heath, gatekeeper, meadow brown, grayling, dark green fritillary, small tortoiseshell and the migratory painted lady and red admiral. Some years the clouded yellow joins them, many of which are attracted to the massed pink flowers of the wild thyme.

Meadow pipits and skylarks are common among the sand dunes during the summer. The

meadow pipit feeds on insects, spiders, caterpillars and seeds and makes its nest in the tufts of marram grass. Wheatears pass through regularly in April and May and again in late August. In autumn, twittering goldfinches, greenfinches and linnets can often be seen feeding on the plants that are rich in seeds. Continue now, along the boardwalk.

STOP 3

As the boardwalk climbs over the dunes, marram grass increases along with area of bare sand. Marram grass, whose ability to grow up through layers of deposited sand enables it to survive burying, builds up a system of rhizomes and roots that bind the loose sand. Its leaves roll up in hot dry weather to protect the stomata, or water pores, on the inner surface and reduce water loss from the plant. Sand sedge is abundant here too – it is recognised by having long straight lines of plants, which are attached to a common underground stem or rhizome. If this is exposed, it is interesting to observe that only every third bud along the stem develops into a new plant.

A lime loving plant, the carline thistle, is usually associated with chalk and limestone downland but occurs here. Seedling plants survive in a dried state, like everlasting flowers. The large number of lime-loving plants on the dunes are indicative of the calcareous (or chalky) nature of the sand, which is composed largely of sea shells that have been ground into small fragments. Look for piles of snail shells scattered around. Each pile marks the site of a thrush's 'anvil' – a stone or other hard object on which the bird breaks open the shells on order to eat the soft snails inside. Sea shells scattered about in the

sand dunes have been carried inland by birds and dropped.

Sea spurge is an attractive plant, widely occurring over the dry dunes and flowering in August. Like all spurges, the stem and leaves bleed white latex when they are damaged. The dune screw moss forms dense carpets on the well stabilised dunes. When dry it lies flat and is dull brown but when wet it uncurls and turns bright green in just a few seconds. In this dry pasture grows the sand or French toadflax, a small plant with pale yellow flowers. It was introduced from western France in the 1890s and grows only on Braunton Burrows – nowhere else in Britain. The sand dune pansy can be found in abundance on the gentle slopes of the fixed dunes.

STOP 4

You are standing on the highest point of the boardwalk. Behind you, there is a good view across Braunton Marsh and the Taw estuary to Yelland and Heanton in the distance. Descending towards the sea, foredune plants such as sea holly, sea bindweed, sea spurge and the more rare sea stock become prominent.

Sea holly, characteristic of mobile dunes, has tough leathery, bluish-green leaves that are attractively veined with a waxy cuticle over their surface, to reduce loss of moisture. The leaf surface is reduced by having spiny points like a holly leaf, hence the name. The flowers are a handsome suffused blue. It has a long tap root, often over a metre long. Sea bindweed, a creeping perennial, has fleshy kidney-shaped leaves and very large pink trumpet-shaped flowers from June to September. These are visited often by bumble bees, hawk moths and some very small bee flies. Sea stock has fine

hairy greyish green stems and leaves with sweet scented pale mauve flowers. It is a rare plant, confined to the dunes on the south-west. Braunton is one of the best localities in which to find sea stock. The concrete ruins emerging from the ground on your right are relics from the intense army presence during World War II.

STOP 5

Standing at the end of the boardwalk, you are now looking towards Appledore and Westward Ho!. Hartland lighthouse can be seen on a good day at the end of the distant headland. The sand dunes and beach across the estuary are those of Northam Burrows. On your extreme right the granite island of Lundy stands out clearly on the horizon on fine days. This island, which is the country's first National Marine Reserve, has towering cliffs that are a favourite place for sea birds including puffins. Seals also find sanctuary in the island's clean waters.

The beach you have emerged on forms a four mile continuous stretch from the south end (where you are) to the landmark of Saunton Sands Hotel, which looks down from the cliffs at the north end. At the top of the beach, above the strandline, plants such as orache, prickly saltwort, sea beet and sea rocket grow. These plants are able to tolerate a high degree of salinity and are highly adapted to the very dry, exposed, humus deficient sand. Their adaptations to this arid habitat include a deep and extensive root system that can tap moisture, fleshy leaves that contain large amounts of water and, with prickly saltwort, a narrow spine-like leaf that has a small surface area to control moisture loss.

Large numbers of gulls and waders can be seen feeding and resting here, particularly at low tide

and during the winter months. Oystercatchers can often be seen, numbering around 1800 – 2000, along with smaller numbers of curlew, ringed plover, dunlin, godwits, sanderling and turnstone. It is very important that you do not disturb birds here at Crow Point. It is an important resting and feeding ground that is invaluable to the birds that use it. It is best to avoid the area altogether at high tide, when it is near impossible to avoid disturbing the birds, but even at low tide please take care and keep dogs under very close control.

STOP 6

At low tide a rocky shore is exposed, which is an old wave cut platform. This environment with its relatively fixed surfaces, sheltered crevices and rock pools is rich in marine life and a rewarding place to explore. Remember though, if you turn over any rocks while looking for animals, be sure to replace them. The dominant sea weed covering the innermost rocks is bladder wrack, while the saw wrack becomes more plentiful further out. The attractive seaweeds *corallina officinalis* and *chondrus crispus* grow attached to the small rocks. Gobies, small fish, also inhabit these pools. On the rocks live barnacles and limpets. Limpets cling very tightly to the rock by a sucker-foot. Each lives in its own 'home', which is ground out by circular muscular pressure to fit the shell precisely to the rock. This prevents the limpet from drying out when the tide is out. When the tide covers them, limpets move about and graze on the thin film of algae that coats the rocks. Barnacles have six external plates fixed together and two more within, which slide open to allow the filter feeding organs to emerge. They extract oxygen and plankton from the sea water and their main predator is the dogwhelk. The dogwhelk forces its tongue

against the thinner internal plates of the barnacle and screws an entrance by twisting its tongue before sucking out the barnacle meat.

Winkles are to be found on both the rocks and the wrack here. Notice the round leathery disc that covers the entrance when the animal pulls itself into its shell. The operculum holds in moisture and is also an effective barrier against hungry predators. Many empty shells, particularly those of the bivalves, cockles, mussels and razor shells are found scattered over the rocks. White tubes of the tube worm can often be seen on the small flat stones. The tubes are of almost pure calcium carbonate and triangular in cross-section. At the end of the tube, a tiny needle growth point indicates that an animal is alive within.

Cormorants, rather prehistoric-like birds in appearance, can frequently be seen flying, past just off the shore. The Appledore lifeboat can also be spotted from here.

STOP 7

Walk up the beach, towards the dunes. Notice the steep, cliff-like front of the dunes. As well as bringing sand to form the dunes, winds and tides can destroy them. Here the high tides have cut into them and brought down great quantities of sand, exposing the roots of the marram grass. Wind then erodes the exposed surface and may cause a 'blow out'.

Under pieces of driftwood you will find sandhoppers. These creatures are aptly named. They may jump for distances of several feet simply by straightening their normally bent bodies very suddenly. If the weed on which they are feeding is disturbed, their jumping bodies

rise like a cloud above it. They are nocturnal, emerging at night to feed on the plant and animal debris (jetsam) at or above high tide level.

STOP 8

The dune cliffs end abruptly next to a low ridge of bare sand. This is known as Crow Neck and separates Crow Point from the remainder of the Burrows. Until 1840, Crow Point did not exist at all. A shingle ridge formed in about 1840, which gradually grew in size and by 1900 sandhills had developed at the tip. In 1921 a breach occurred in the promontory, through which it is said a boat was able to pass at high tide, so making an island out of Crow Point. During the next twenty five years, there was a gradual build-up and by 1946 Crow Point was completely covered by sand dunes, which were well stabilised by marram grass. Crow Neck, where the breach had once occurred, was now about 200 feet (60 metres) wide.

What was responsible for these changes to Crow Point and such rapid development in less than a hundred years? During the mid nineteenth century, fish weirs were placed in the intertidal areas around Crow. These probably obstructed the tides, causing changes in the deposition of sand and shingle. Furthermore, Horsey Island was enclosed in 1857. Before enclosure, Horsey Island was a salt marsh with a branch of the River Caen flowing along its northern side. On the outflowing tide, this area of foreshore may have provided enough water to keep the Crow area free of excess sand. The cycle of destruction and repair at Crow Point continues, however, to this day. From the late 1960s, there was a gradual eroding away of sand from Crow Neck by human pressures and very high tides. Attempts to stabilise the bare ridge of sand failed

and during a high tide in 1984 the sea broke through Crow Neck again, once more making the tip of the land into an island. It is possible that it will one day breach again – putting areas further up the estuary at risk of greater wave action, if the buffer here at Crow is lost.

Walk towards the point. At low Spring tides, sand barges could once be seen here, loading gravel from the bed of the estuary. They transported it to Braunton's port at Velator or further up the estuary to Rolle Quay in Barnstaple, where it was used in the building industry. Sometimes you can see amphibious craft or boats in the water or on the beaches on the opposite side of the estuary. These come from Fremington Camp, a military training base.

STOP 9

The lighthouse here on the point operates in conjunction with the two flashing lights that stand at Instow, across the River Taw. These are navigational leading lights for the Taw and Torridge estuary, to aid ships around the hazardous Bideford bar. They have replaced the old lighthouse that used to stand near the end of the boardwalk. It is likely that the name Crow Point derived from the lookout (or crow's nest) on a ship, rather than the bird. It is an important promontory in relation to the treacherous bar, which has over the years claimed a great many lives.

On the dunes above the beach is a thriving patch of ragwort, upon which the black and yellow banded caterpillars of the cinnabar moth feed. The moth itself is scarlet and black and rather a weak flyer. Both the caterpillar and the moth are distasteful to birds, hence the bright warning colouration. Ragwort, scarlet pimpernel and biting stonecrop grow well inland on bare

patches of ground as field and garden weeds. They thrive here too, where the open environment and lack of competition suit them perfectly. In early history, when land was generally clothed in dense forest and other vegetation, dunes must have been one of the few naturally disturbed habitats (before the arrival of man with his axes and ploughs). Here then is probably one of the original habitats of these weed species.

STOP 10

On your right, a large area of salt marsh vegetation has colonised this sheltered intertidal expanse known as Broadsands. Please remember not to disturb birds here. This salt marsh has developed as a result of the infilling of Crow Neck and the sheltering influence of the Crow Point 'spit' itself. Glasswort is the first plant to colonise the bare sand, where it quickly creates suitable conditions for sea blite to flourish. On the banks of the creeks the lush bushy growth of sea blite and sea purslane have replaced the glasswort.

A bright green patch of tough spiny-looking grass is that of the cord grass spartina, originally introduced last century to reclaim cast areas of bare mud flats around our coasts. It accretes thick layers of silt around its base, this eventually converting estuarine mud to a terrestrial habitat of use to man. The salt marsh grass puccinellia maritime, highly palatable to grazing animals, is now increasing in the well established parts of the marsh. The creeks and salt marsh pools contain a multitude of small molluscs, crustacean and protozoans (or single-celled organisms). These attract large numbers of mallard, shelduck and many wading birds.

Returning to the beach, notice the increase in pebbles here. On top of the dune bank, clumps of stinking iris or roast beef plant grow. The flowers are as large as a garden iris but their colour is a rather pale purple. Later on the capsules open to expose lovely orange seeds, which persist all winter. If you break a leaf and rub it between your fingers, you will get an appetising smell of cold roast beef!

Look for the track that emerges onto the beach and turn here, into the dunes. This is the end of the American Road, that we saw earlier. Walk ahead until you reach the crossroads in the track and then turn right to return to the car park. Note the contrast between the fragile dunes, through which you have just walked, and the enduring hills inland, around Braunton. The sand dunes have only been here for a few thousand years at most, in contrast to the rocks inland that date from the Devonian Age hundreds of millions of years ago. The dunes could disappear much more rapidly than they were formed if they are not treated with care. Braunton Burrows forms the centre of the country's first newly designated Biosphere Reserve – a world class designation that puts it alongside Ayer's Rock, the Danube Delta and Yellowstone National Park.



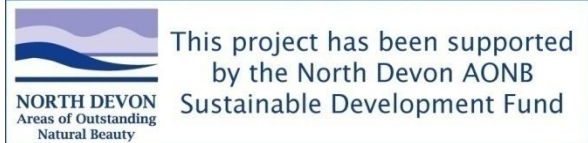
We hope you have enjoyed this walk and that it has inspired you to find out more about this part of the North Devon Coast Areas Outstanding Natural Beauty. For more information please

visit www.explorebraunton.org or go to Braunton Countryside Centre or Braunton Museum.

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The Countryside Code

- Be safe, plan ahead and follow any signs
- Leave gates and property as you find them
- Protect plants and animals and take your litter home
- Keep dogs under close control
- Consider other people