



Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper,¹ Biodiversity 2020² and the European Landscape Convention,³ we are revising profiles for England's 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

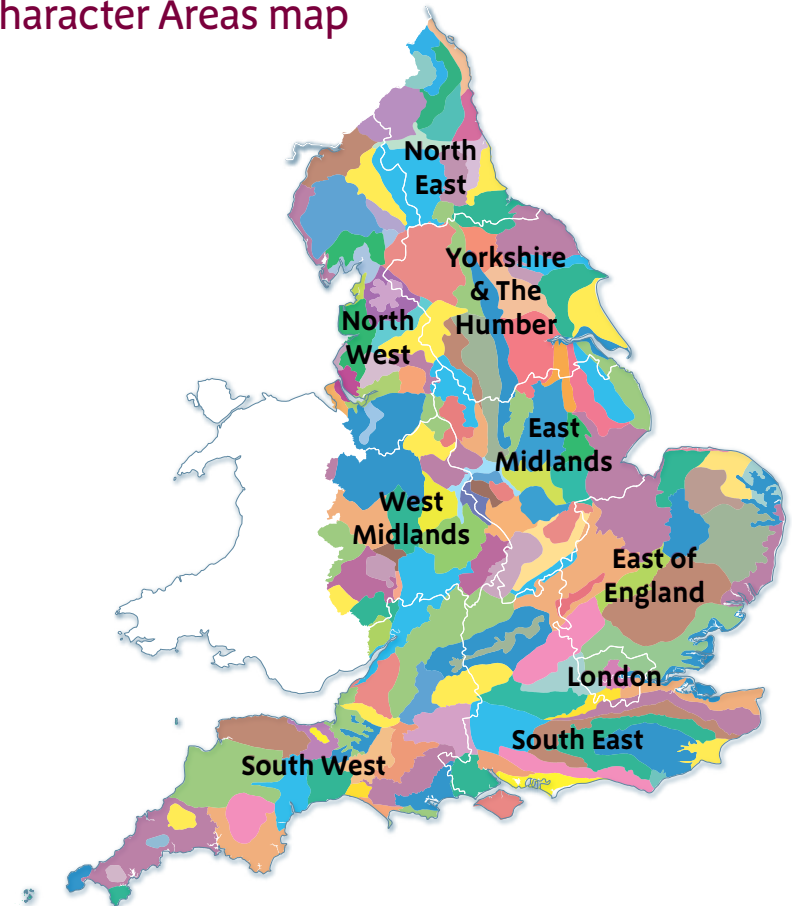
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Each profile includes a description of the natural and cultural features that shape our landscapes, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area's characteristics and ecosystem services. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

NCA profiles are working documents which draw on current evidence and knowledge. We will aim to refresh and update them periodically as new information becomes available to us.

We would like to hear how useful the NCA profiles are to you. You can contact the NCA team by emailing ncaprofiles@naturalengland.org.uk

National Character Areas map



¹ The Natural Choice: Securing the Value of Nature, Defra (2011; URL: www.official-documents.gov.uk/document/cm80/8082/8082.pdf)

² Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf)

³ European Landscape Convention, Council of Europe (2000; URL: <http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm>)

Summary

The Isle of Portland, the southernmost part of Dorset, is a tied island and is connected to the mainland, the Weymouth Lowlands National Character Area (NCA), by a shingle spit between the island and Chesil Beach; the latter can – although rarely – be overtopped by waves. The habitats of the west side of the Isle, extending into Chesil Beach and the Fleet, are of international importance and designated a Special Area of Conservation (SAC). Portland provides a barrier sheltering the sea and coast of Portland Harbour and Weymouth Bay to the east from storm waves coming from the west. In the north there are steep, rugged cliffs with immense fallen blocks of rock at their base. The cliff habitats of the east side of the Isle are also of international importance and form part of the Isle of Portland to Studland Cliffs SAC. The plateau land slopes southwards, finally dipping into the sea at Portland Bill, where its presence creates the famous tidal race.

There are wide views from Portland to Portland Harbour, to Chesil Beach and the Fleet (a tombolo, or beach barrier bar, that was pushed northwards as sea levels rose at the end of the last ice age and a saline lagoon shoreward of it), to Weymouth and to the Purbeck Coast. The Dorset Downs can be seen in the distance from the top of the island.

The Isle of Portland is best known for its limestone geology. It is part of the Jurassic Coast (Dorset and East Devon Coast) World Heritage Site, which extends from Orcombe Point in Devon to Old Harry Rocks at Swanage in Dorset. The island is characterised by working and disused quarries; Portland stone is a world-famous building material. The geology of the area gives Portland a sense of connection to the mainland and has influence on national architecture, as Portland stone has been used across the country and in major buildings such as St Paul's Cathedral and many other notable buildings in London. British war

graves, both in the UK and overseas, are always made from Portland Stone. Portland is also famous for its military history and prisons and is dominated by the Verne Prison and the naval base. The historic naval base has been converted to a commercial port. It is now an important base for watersports: it was used for the yachting events at the 2012 Olympics and Paralympics, and will be the venue for the 2016 Vintage Yachting Games. The South West Coast Path National Trail, which extends from Minehead in Somerset to Poole Harbour in Dorset, runs around the island and is a popular recreation resource.

Portland Bill, a promontory at the southernmost tip of the island, has long been recognised as a nationally important landfall for migrating birds, with a bird observatory established in one of the disused lighthouses. The coastal ledges near the Bill support one of only two seabird colonies in Dorset, with nesting guillemot, razorbill and kittiwake. Almost the whole coast of the Isle features maritime cliffs and slopes, a rare and important habitat.

Portland's landscape is dominated by the quarries, industrial buildings, spoil heaps and poorly maintained drystone walls. They create a slightly neglected appearance in places, but its rugged and exhilarating cliffs and great historic interest give the Isle a unique atmosphere emphasised by wide vistas seawards and inland across the breakwaters of Portland Harbour and the naval base.

Click map to enlarge; click again to reduce

Statements of Environmental Opportunity:

- **SEO 1:** Conserve and manage the internationally important coastline, designated as a World Heritage Site and Special Areas of Conservation, for the important assemblages of fossils and for the valuable cliff habitats that support a diverse range of species.
- **SEO 2:** Conserve the important geological assets of the area and maintain the link between the geology, industry and people; and enhance areas left neglected as a result of quarrying to improve landscape character, strengthen habitats and improve the resource of exposed geodiversity.
- **SEO 3:** Conserve and promote the distinctive landscape character, the strong sense of history and the many recreational opportunities in the area, as well as the magnificent views over Weymouth Bay and the unique Chesil Beach, all part of the Jurassic Coast World Heritage Site.



Steep rugged cliffs and landslips expose an outstanding geology.

Description

Physical and functional links to other National Character Areas

The Isle of Portland National Character Area (NCA) (referred to as Portland) is physically connected to the Weymouth Lowlands NCA by a shingle spit between the island and Chesil Beach. The spit, which is vulnerable to wave overtopping, provides a barrier sheltering the land to the east from storm waves coming from the west. The road from Portland to Weymouth runs atop the shingle ridge.

There are wide views from Portland to its harbour, to Chesil Beach and the Fleet, to Weymouth and to the Purbeck Coast and further inland to the Dorset Downs.

The South West Coast Path National Trail, which extends from Minehead in Somerset to Poole Harbour in Dorset, runs around the island and locally links Chesil Beach with Weymouth Bay.

The geology of the area gives Portland a sense of connection to the mainland. The geology of Portland has a major influence on national architecture – Portland stone has been used across the country and in major buildings such as St Paul's Cathedral and many other notable buildings in London, creating visual, historic and industrial links between Portland and the mainland.

Water to the Isle of Portland comes from the adjacent mainland. The supply is limited: the Catchment Abstraction Management Strategy indicates that there is no water available for further abstraction licences. Irrigation activity from public water

supplies for horticulture would not be appropriate, so any new development on the Isle would need to source water from a more sustainable supply.

The two Special Areas of Conservation (SAC) that run around Portland's coast, Chesil and The Fleet to the west and Isle of Portland to Studland Cliffs to the east, meet at the start of West Weare near Fortuneswell.



Chesil beach linking the Isle of Portland to the mainland with Fortuneswell in the foreground.

Key characteristics

- The area features a wedge-shaped Limestone plateau sloping north to south to the sea at Portland Bill.
- Portland's coast is part of the Jurassic Coast (Dorset and East Devon Coast) World Heritage Site, which was inscribed in 2001 for its outstanding geology that showcases 185 million years of geological history, from the Permian to the Cretaceous, in fewer than 100 miles.
- There is a major area of landslip (mass movement) at the north of the island; the town of Fortuneswell is built on this.
- The underlying geology gives rise to calcareous grassland, a priority habitat, with a distinctive associated flora. The grassland also supports important populations of butterflies and moths, notably silver-studded blue, small blue, Adonis blue, chalkhill blue, Lulworth skipper, dingy skipper, grayling and the chalk carpet moth. Springs at the top of the Kimmeridge Clay release rainfall that soaks into the ground, supporting important flora.
- The Bill, a promontory at the very south of the island, has long been recognised as a nationally important landfall for migrating birds, with a bird observatory established in one of the old lighthouses. The coastal ledges near the Bill support one of only two seabird colonies in Dorset, with nesting guillemot, razorbill and kittiwake.
- Almost the whole coast of the Isle supports maritime cliffs and slopes – a priority habitat.
- Active and disused quarries are a major part of the scenery. Many of the quarries form part of the Portland Quarries Nature Park, which includes the Tout Quarry Sculpture Park, King Barrow Quarries Nature Reserve and Verne Yeates Local Nature Reserve.
- Northern areas of the more sheltered east coast are dominated by extensive native and non-native scrub, scrubby trees and small patches of secondary woodland.
- Buildings in the towns are largely constructed from local stone, giving the island a distinctive sense of place.
- There is a strong sense of history due to the harbour, the castle and prison, historic quarries and the High Angle Battery.

The Isle of Portland today

The Isle of Portland, which is dominated by the Verne Prison and the naval base, is a distinctive feature jutting out into the English Channel. In the north there are steep, rugged cliffs with immense fallen blocks of rock at their base. The plateau land slopes southwards, finally standing only about 10 m above the sea. Much of this rugged landscape is deeply scarred by centuries of quarrying. Slabs of light grey Portland stone are strewn across the largely treeless landscape. Hedges are absent and the land is divided into small fields by drystone walls, which are often in a poor state of repair, obscured by mounds of brambles and partially replaced by post and wire. The skyline is low, and buildings, signs, pylons and quarries tend to dominate the landscape. The main settlements are villages lying around the more sheltered northern and central areas. They, too, are dominated by local stone. Locally, particularly near the villages, there are closely grazed horse paddocks but, elsewhere, piles of quarried stones lie in the fields and small abandoned quarries are a conspicuous feature.

The top of the island is a plateau that slopes from its highest point of 136 m at the northern end of the island down to Portland Bill at the southern tip, where the rock continues underwater to form reefs. Portland Bill, the lowest part of the island, with its three former and current lighthouses, is the site of a bird observatory housed in the Old Lower Lighthouse. Pulpit Rock, a stack of rock, is a prominent landmark here. The tidal race (Portland Race) around the headland reaches speeds of up to 4 m per second. The sea here can vary from a flat blue 'millpond' in calm, sunny conditions at the turn of the tide to a spectacular seascape during violent winter storms when the tidal race is opposed by strong winds whipping up powerful waves. The landscape and seascape combine to give a unique sense of place.

The coast of Portland is part of the Jurassic Coast World Heritage Site, which showcases 185 million years of geological and palaeontological history, from the Permian at its western extremity to the Cretaceous at its easternmost point, in fewer than 100 miles.

The east and west coastlines of the island are very different. West Weare is a very rugged landscape. There are huge gullies in the cliff face, which have been caused by the natural processes of erosion and landslides but also by human influences, as huge quantities of quarry waste have been pushed over the cliff. East Weare is a more sheltered and gentler landscape.

Portland features important coastal habitats and grassland. The Isle of Portland to Studland Cliffs SAC supports species-rich Limestone grassland with wild cabbage, early spider-orchid and Nottingham catchfly. Chesil and The Fleet SAC is very rich in wildlife, with communities of aquatic plants and fauna specially adapted to brackish conditions. Large numbers of waterbirds overwinter here, and the shingle is a very important breeding site for little tern. Portland has only a secondary woodland of sparse and scrubby trees, with very few of these on the plateau itself. The rocky coastline and associated habitats are important for a suite of scarce and threatened moths, including the UK endemic micro-moth Richardson's case-bearer (a priority species) – Portland being one of two known sites where it is present. Another invertebrate special to Portland is the silver-studded blue butterfly. This protected species is normally found on heathland but there is another form that occurs on limestone grasslands; in England this form occurs only on Portland.

Hydrologically, the island is decoupled from the mainland aquifers by the impermeable Kimmeridge Clay. There are springs at the top of the clays, where

water draining through the permeable rocks above helps to support vegetation for which areas of the island are notified as Sites of Special Scientific Interest (SSSI). There is not enough freshwater available on the Isle to supply the population, and therefore water, mainly sourced from the River Wey, is imported from the mainland.

There is some agriculture on the southern half of the island, with nationally important relict field systems. Their survival has been due mainly to the lack of fertility and productivity of the land here, which has resulted in continuing marginal coastal heathland/grassland farming. Portland sheep, a tough rare breed, traditionally grazed these areas. They are capable of enduring the exposed conditions and poor grasses while producing excellent meat and are able to lamb out of season. The breed is important for conservation grazing on heathland and for its potential adaptability to a changing climate.

Portland stone has been, and remains, of major importance. It was used by Sir Christopher Wren to build St Paul's Cathedral, and many of the major Whitehall buildings are constructed from it. British war graves are always made from Portland stone, as are many military monuments, including the recently constructed Bomber Command Memorial. Quarries are therefore a key landscape feature, covering more than 50 per cent of the island's surface. Many of these quarries are now worked out. Subsequent colonisation by scrub has ensued. Work to clear cotoneaster from the quarries and from the wider landscape is a major ongoing project; cotoneaster is an invasive shrub that thickly and widely covers the ground where it grows, displacing native fauna and obscuring the landscape and geological features. In addition to Portland's statutory designations, almost the entire island is a Local Geological Site.

The innovative Portland Quarries Nature Park includes a sculpture quarry,

featuring an Antony Gormley carving (The Falling Man), and opportunities for participating in sculpture workshops with the Portland Sculpture and Quarry Trust.

Portland is quite densely settled, with substantial stone villages at Fortuneswell, Weston, Easton and Southwell which dominate the open landscape. Use of local stone and a simple vernacular style of building results in uniformity in the settlements and a striking sense of place here. Urban influence thus rings the southern and northern sides of Portland Harbour, linked by the busy A354. Socio-economic status varies across the island – some of the settlements on Portland are high in Indices of Multiple Deprivation.

The adult prison, HMP Verne, opened on the highest point of Portland in 1949. Originally constructed as a prison camp in 1847, it became a Victorian fortress, armed with eight guns and other military features – for example the moat and gun emplacements, which are still present. The harbour, built between 1848 and 1905, is protected by a series of large concrete breakwaters. It is no longer used by the Royal Navy. It is very popular for recreation, including windsurfing and kitesurfing. Portland Harbour and Weymouth Bay were the venues for the yachting and windsurfing events at the 2012 Olympic and Paralympic Games and are the venues for the 2016 Vintage Yachting Games.



Anthony Gormley's 'Falling Man' sculpture.

The landscape through time

Portland is very much a product of its geological history, which records a gradual change from deep seas to coastal swamps with a fall in sea level at the end of the Jurassic Period.

The oldest rocks of the island are Upper Jurassic Kimmeridge Clay, which across its extent is economically important for its associated oilfields and which is very fossiliferous, having yielded – among other fossils – dinosaurs and marine reptiles. These sediments were followed by the Portland Beds – dolomitic Jurassic sands – as the seas shallowed and, as they shallowed further still, limestones laid down in clear, warm seawater. These limestones also contain the famous giant Titanites ammonites and many examples of the Portland screw, and have yielded rare reptile material.

The Purbeck Beds, above the Portland Beds, are a mix of terrestrial, lagoonal and marine sediments, marking a clear change in environment. They contain the remains of a prehistoric forest, dinosaur footprints and other fossil plants, such as the tree now placed outside the Portland Heights Hotel, and stromatolites (fossilised layers of blue-green algae trapped in sediment, forming mounds) around former tree trunks. This entire succession was laid down horizontally. The resulting plateau was tilted as part of an anticline folded during the Alpine Orogeny (mountain-building episode) some 25 million years ago.

Above the bedrock deposits lies the Quaternary geology. Chesil Beach, at the northern tip of the island, is a tombolo, or beach barrier bar, that was pushed northwards as sea levels rose at the end of the last ice age. At the southern tip of the island there are deposits of head (a mixture of sediments formed

in valleys under periglacial climatic conditions). Near to the head deposits are raised beach deposits, which record sea level changes resulting from previous climate change. One major Quaternary event has left a very clear mark on the landscape; a large area of landslip at the north of the island extends along its east and west coasts, thinning out as the plateau lowers.

In terms of human influence on the landscape, there are Mesolithic shell midden and flint-working remains on Portland. There was a remarkably high density of Roman occupation and activity, Portland stone being highly prized by Roman builders; Portland stone has been quarried continuously since the Roman period at least. The use of Portland stone, which has been much used in many major ecclesiastical and government buildings across the south of England, including the buildings of the great departments of state, increased in the 12th century. Christopher Wren was a Portland quarry owner, and he used stone from here to build St Paul's Cathedral. From the 17th century the stone was particularly favoured for its marble-like qualities, smooth finish and workability. Until the arrival of



Christopher Wren used Portland Stone for the construction of St Paul's Cathedral in London.

Merchant's Railway in 1826, a very early industrial railway that transported stone to Castletown, the stone was transported by coastal shipping direct from the cliff-face quarries; Portland Bill provided particularly good access for this.

The present predominant pattern of nucleated settlement was established by the 13th century, the main settlements being villages lying around the more sheltered northern and central eastern side of the Isle. These have been subject to considerable 20th-century expansion. Farmsteads and hamlets, many of the former being of 19th- and 20th-century origin, are dispersed across the landscape. A historic relict field system of baulks and strips dating back to the medieval period is still in use in the present day, a reflection of the low levels of productivity and suitability for agriculture common across the area.

The Isle of Portland commands an important strategic position on the coast, forming a sheltered harbour to the east and controlling long-shore movements. The importance of the island for national defence increased after construction of the coastal fort in the 1540s, but the biggest impact on the landscape was consequent to the development from the 1850s of the Royal Naval port (which was originally a coaling station) and its associated breakwaters, as a counterpoint to the French naval dock at Cherbourg. The harbour was used as one of the embarkation points for Allied forces for the D-Day landings, and later, for several years until 2005, as the berth for HMP Weare, the UK's only prison ship.

Other important military installations on Portland include the High Angle Battery, a short-lived installation designed to fire shells onto the decks, rather than at the sides, of enemy ships. The battery was built in 1892, only to be decommissioned in 1906, but remains a prominent feature. There was

also a ROTOR radar installation on Portland, a short-lived and experimental defensive system. Most of the installation was concealed underground, with only the entrance bunker and "cottage" above ground. The harbour was also the base for classified post-Second World War weapons research, which was at the centre of a notorious spy ring scandal that erupted in 1961.

The adult prison, HMP Verne, was originally constructed as a prison camp in 1847. It became a Victorian fortress, and military features such as the moat and gun emplacements are still present. There is also a Young Offender Institution on the island. Storage tanks at the northern end of the island have been removed, improving the vista across to Chesil Beach and the Fleet.

There is a current emphasis on nature reserve creation on Portland, and a quarry park and sculpture park have been created from former industrial landscapes.



A fossil stromatolite, originally formed around a tree.

Ecosystem services

The Isle of Portland NCA provides a wide range of benefits to society. Each is derived from the attributes and processes (both natural and cultural features) within the area. These benefits are known collectively as 'ecosystem services'. The predominant services are summarised below. Further information on ecosystem services provided in the Isle of Portland NCA is contained in the 'Analysis' section of this document.

The complexity of interactions across these ecosystem services and across adjoining NCAs means that the summary provided here requires further refinement and analysis of evidence at a more local scale.¹

Provisioning services (food, fibre and water supply)

- **Water availability:** Rainfall percolates through the Purbeck and Portland Bed limestones, forming an unconfined aquifer underlain by Kimmeridge Clay. The limestones are isolated to the island by erosion and thus the aquifer is also isolated to the island. Portland therefore does not supply adjacent NCAs with potable water, and there is insufficient groundwater to use domestically on the island. There are springs on Portland, which are important in that they support SAC vegetation assemblages.
- **Genetic diversity:** A rare breed of sheep originates from Portland, and a wild relative of the cabbage is found here.

Regulating services (water purification, air quality maintenance and climate regulation)

- **Climate regulation:** Biological carbon storage in this NCA is very limited because of the general lack of mature woodland and wetlands and because of the thin soils that cover this limestone plateau. The carbonate rocks of which Portland is composed locked up large quantities of carbon during their formation.
- **Regulating water quality:** The quality of Portland's groundwater is important as it feeds the internationally important habitats (vegetation), but it is not drawn on commercially.
- **Regulating coastal erosion and flooding:** Portland shelters Weymouth Bay and land to the east from westerly storms and waves. This is probably the most important service the NCA performs. Chesil Beach performs a natural flood defence against storm waves, protecting the low-lying village of Chiswell. This offers only a low standard of protection, with manmade defences providing some improvement.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** A sense of place is provided by rugged cliffs, which are designated as part of the Jurassic Coast; by active and disused quarries; by drystone walls; and by the vernacular building stone. There are inspiring views across to the mainland along the Jurassic Coast World Heritage Site and along the cliffs of the island and across Fortuneswell to Chesil Beach and the Fleet. Seascapes from the island can be imposing, especially during stormy weather, and the seascape of the Portland Race can be spectacular in high winds, as can the swell waves generated in the Atlantic running up Chesil Beach during a storm.

- **Sense of history:** Portland has a strong sense of history from the Mesolithic to the late 20th century. There are important Mesolithic sites near Portland Bill. The Romans occupied the island. The castle was commissioned by Henry VIII. Agricultural history is recorded in the relict field systems at the south of the island. The prison, an imposing presence on the island, was a Victorian fortress and presents a number of military features, for example the moat and gun emplacements. More recent history has seen the building of the harbour in the 1800s, and there are important military installations dating from that point onwards.
 - **Tranquillity:** Some of the relatively remote spots on the island, mainly in East and West Weares, can be tranquil in calm weather.
 - **Recreation:** More than 13 per cent of the island is classified as being publicly accessible, and the South West Coast Path National Trail extends around the perimeter. Visitors and residents benefit from the many rights of way. Access has recently been increased by the definition of coastal access. Watersports such as windsurfing and kitesurfing take place in the harbour. Portland is famous for its geology and is part of the Jurassic Coast World Heritage Site. Tout Sculpture Park includes The Falling Man rock carving by Antony Gormley. Birdwatching is popular, with Portland Bill being very important for migrant birds. Portland is a significant site for people interested in natural history, most notably for botanists and entomologists. There are opportunities to involve local people in access and wildlife management.
 - **Biodiversity:** International and national nature conservation designations currently cover the coastal cliffs and part of the inland area. One of the two SAC, most of the coast and part of the inland area are also designated as SSSI. There is a mosaic of local wildlife sites on the island.
 - **Geodiversity:** The steep, rugged cliffs and landslips expose an outstanding geology (including rich stratigraphy and fossil assemblages) and support important wildlife habitats (such as rare lichen communities and migrating birds). The area also features the South Coast's most important raised beach, which provides valuable information about past climates and sea-level change.
- Chesil Beach is vitally important in protecting communications and infrastructure connections to the island by shielding the lower part of the island on the north side from storm wave flooding, and in providing an internationally important nature conservation resource.
- The entire island is also part of the large structures, created during the Alpine Orogeny, that act as a dominant controlling factor in the landscape character of much of the Dorset Coast. Fossil flora include the tree now standing outside the Portland Heights Hotel and the stromatolites that formed around fossil tree trunks in what is now King Barrow Quarries. The 'roach stone' is rich in fossil fauna, including the Portland Screw. Portland is part of the Jurassic Coast World Heritage Site, and provides opportunities for study and research. Portland stone has been used for building many of the most important and best-known buildings in England, including St Paul's Cathedral and many of the government buildings in London. Many buildings on the Isle are also built from this material. Portland Museum holds an internationally important collection of fossil cycads found on Portland, as well as a rare freshwater turtle fossil from the Portland stone. It also holds a representative collection of fossils from Portland.

Statements of Environmental Opportunity

SEO 1: Conserve and manage the internationally important coastline, designated as a World Heritage Site and Special Areas of Conservation, for the important assemblages of fossils and for the valuable cliff habitats that support a diverse range of species.

For example, by:

- Conserving the Jurassic Coast World Heritage Site to ensure that the unique geodiversity, biodiversity, landscape and culture are protected and managed for their intrinsic value.
- Maintaining the steep, rugged cliffs and landslips exposing an outstanding geology (including rich stratigraphy and fossil assemblages) and supporting important wildlife habitats (such as rare lichen communities and migrating birds), as well as the South Coast's most important raised beach.
- Allowing natural coastal processes to operate unimpeded and realising opportunities to extend or create new coastal habitats and maintain geomorphology, geological exposures and access to fossils.
- Promoting the benefits of natural coastal erosion as a cost-effective form of coastal defence while protecting from severe flooding both the village of Chiswell on the north of Portland and the road that connects the island to the mainland. While defences should be minimised and be as natural as possible, they are vital in order to preserve other island characteristics. Investigation into appropriate compensatory habitat requirements should be anticipated and incorporated into plans at an early stage.
- Controlling scrub and particularly cotoneaster (and future land use) to reveal the distinctive limestone formation, often important for rare southern

- bryophytes and lichens, and to preserve long-distance coastal views.
- Maximising opportunities to manage and, where appropriate, expand areas of semi-natural habitat, including limestone grasslands and cliff vegetation.
- Restoring and significantly extending remnant calcareous grasslands while maintaining levels of calcareous scrub important for migrating birds.



The raised beach at Portland Bill demonstrates previous climates and sea levels.

SEO 2: Conserve the important geological assets of the area and maintain the link between the geology, industry and people; and enhance areas left neglected as a result of quarrying to improve landscape character, strengthen habitats and improve the resource of exposed geodiversity.

For example, by:

- Continuing to support the Portland Quarries Nature Park, which showcases Portland's geology, the history of extraction and the inspiring sculpture created by carving Portland stone.
- Ensuring that quarrying is managed sustainably to secure continued supplies of Portland stone, which is a nationally significant resource for heritage conservation both on the island and in many significant buildings on the mainland.
- Ensuring that the opportunities to research and study Portland stone, the geology and the palaeontology of this section of the Jurassic Coast, as well as coastal processes and coastal vegetation communities, are maximised through the restoration of the quarries.
- Maintaining and, where appropriate, restoring the numerous disused quarries (and natural inland exposures) of distinctive Portland stone, often re-colonised and important for rare mosses, liverworts, lichens, flowering plants and invertebrates.
- Ensuring that restoration of vernacular buildings is carried out using local styles and materials as appropriate.
- Continuing to clear invasive cotoneaster to stabilise and maintain exposures of rock and access to them.
- Managing and significantly enhancing the distinctive network of drystone walls, through maintaining and restoring field boundaries of Portland stone that enclose small, regular fields and through keeping them free from encroaching brambles to emphasise the strong, exposed patterns.

- Working with local business to promote and ensure good waste management.



Typical disused portland stone quarry with limestone grassland.

SEO 3: Conserve and promote the distinctive landscape character, the strong sense of history and the many recreational opportunities in the area, as well as the magnificent views over Weymouth Bay and the unique Chesil Beach, all part of the Jurassic Coast World Heritage Site.

For example by:

- Maintaining and promoting the South West Coast Path National Trail route around the island, which offers both an insight into the industrial and military history of Portland and long views over the surrounding sea and land.
- Improving opportunities for coastal activities and watersports around Portland and Weymouth Bay while further strengthening the maritime character associated with the area.
- Managing the pressure on footpaths and open access land, especially the South West Coast Path National Trail, identifying and realising opportunities to help to minimise the risk of erosion.
- Encouraging the further study of functioning natural coastal realignment, geology and coastal geomorphology across the area, promoting access and education along the Jurassic Coast World Heritage Site.
- Maintaining and enhancing interpretation and access along the South West Coast Path National Trail, improving educational and recreational opportunities while protecting the resource.
- Developing a holistic 'business plan' for the area which incorporates the aspirations of the community and land management, environment and business sectors, and using this as a blueprint for considering future proposals.
- Protecting and preserving the unique medieval field systems by ensuring that agriculture is practised in a suitable manner.
- Protecting and preserving the visible military history, including the military

- features of HMP Verne, the High Angle Battery, the harbour structures and the 'cottage' above the entrance to the former ROTOR radar installation.
- Managing the extensive archaeological evidence and historic sites, enhancing interpretation of the landscape and the surviving historic evidence from all periods.



The remains of the Victorian High Angle Battery.

Supporting document 1: Key facts and data

Total area: 1,124 ha

1. Landscape and nature conservation designations

The coast of the Isle of Portland is part of the West Dorset Heritage Coast covering 29 ha, 3 per cent of NCA. It is also part of the Dorset and East Devon Coast (Jurassic Coast) World Heritage Site.

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	Percentage of NCA
International	n/a	n/a	0	0
European	Special Protection Area (SPA)	n/a	0	0
	Special Area of Conservation (SAC)	Isle of Portland to Studland Cliffs SAC; Chesil and The Fleet SAC.	263	23
National	National Nature Reserve (NNR)	n/a	0	0
National	Site of Special Scientific Interest (SSSI)	A total of 4 sites wholly or partly within the NCA	392	35

Source: Natural England (2011)

Please note: (i) Designated areas may overlap (ii) all figures are cut to Mean High Water Line, designations that span coastal areas/views below this line will not be included.

The whole of the area designated as SAC is also designated as SSSIs.

There are 17 Local sites in the Isle of Portland NCA covering 62 ha, which is 6 per cent of the NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at: www.sssi.naturalengland.org.uk/Special/sssi/search.cfm
- Details of Local Nature Reserves (LNR) can be searched at: www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp
- Maps showing locations of Statutory sites can be found at: <http://magic.defra.gov.uk/website/magic/> – select 'Rural Designations Statutory'

1.1.1 Condition of designated sites

Condition category	Area (ha)	Percentage of SSSI land in category condition
Unfavourable declining	34	9
Favourable	178	46
Unfavourable no change	24	6
Unfavourable recovering	154	40

Source: Natural England (March 2011)

Details of SSSI condition can be searched at:

<http://www.sssi.naturalengland.org.uk/Special/sssi/reportIndex.cfm>

2. Landform, geology and soils

2.1 Elevation

The elevation ranges from sea level to a maximum of 136 m.

Source: Natural England 2010

2.2 Landform and process

Portland is a tilted plateau which slopes from the north down to the sea at Portland Bill at the south of the island. The tilt is the result of folding during the Alpine orogeny, or mountain-building episode. Mass movement – a large area of landslip – at the north of the island extends along its east and west coasts, thinning out as the plateau becomes lower. The remnants of previous landslips form part of the character of the island, particularly in the north-west.

Source: Isle of Portland and Purbeck Natural Area Profile, Isles of Portland/Weymouth Lowlands Countryside Character Area description

2.3 Bedrock geology

Late Jurassic and early Cretaceous limestones which are part of the Jurassic Coast World Heritage Site: The Portland Group of limestones are overlain by sandy limestones of the Lulworth Formation. Portland Stone - a limestone which is highly fossiliferous in parts - is a prized building stone used on the island and further afield including for instance to build St Paul's Cathedral, many of the Government buildings in London and cladding on the UN building in New York.

Source: Isle of Portland and Purbeck Natural Area Profile, Isles of Portland/Weymouth Lowlands Countryside Character Area description, British Geological Survey maps

2.4 Superficial deposits

Chesil Beach, at the northern tip of the island, is a storm beach. Head (clays, silts, sands and gravel) and raised beach deposits are found at the south of island.

Source: Isles of Portland and Purbeck Natural Area Profile, Isles of Portland/Weymouth Lowlands Countryside Character Area description, British Geological Survey maps

2.5 Designated geological sites

Tier	Designation	Number
National	Geological Site of Special Scientific Interest (SSSI)	0
National	Mixed interest SSSIs	1
Local	Local Geological Site	1

Source: Natural England 2011

- Details of individual Sites of Special Scientific Interest can be searched at: www.sssi.naturalengland.org.uk/Special/sssi/search.cfm

2.6 Soils and Agricultural Land Classification

Portland's soils consist of shallow clay over limestone.

Source: Isles of Portland and Purbeck Natural Area Profile
Isles of Portland/Weymouth Lowlands Countryside Character Area description

The main grades of agricultural land in the NCA are broken down as follows (as a proportion of total land area):

Agricultural Land Classification	Area	Percentage of NCA
Grade 1	0	0
Grade 2	0	0
Grade 3	345	31
Grade 4	0	0
Grade 5	0	0
Non-agricultural	675	60
Urban	0	0

Source: Natural England (2010)

Maps showing locations of sites can be found at: <http://magic.defra.gov.uk> – select 'Landscape' (shows ALC and 27 types of soils).

3. Key waterbodies and catchments

3.1 Major rivers/canals

There are no rivers draining the NCA.

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 0 ha, 0 per cent of the NCA.

Source: Natural England (2010)

3.3 Water Framework Directive

Maps are available from the Environment Agency showing current and projected future status of water bodies at: http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e

4. Trees and woodlands

4.1 Total woodland cover

The NCA contains 59 ha of woodland (5 per cent of the total area), none of which is ancient woodland.

Source: Natural England (2010) & Forestry Commission (2011)

4.2 Distribution and size of woodland and trees in the landscape

There are small areas of secondary woodland.

Source: Natural England 2010

4.3 Woodland types

A statistical breakdown of the area and type of woodland found across the NCA is detailed below.

Area and proportion of different woodland types in the NCA (over 2 ha).

Woodland type	Area (ha)	Percentage of NCA
Broadleaved	28	2
Coniferous	0	0
Mixed	0	0
Other	31	3

Source: Forestry Commission (2011)

Area and proportion of ancient woodland and planted ancient woodland sites within the NCA:

Woodland type	Area (ha)	Percentage of NCA
Ancient semi-natural woodland	0	0
Ancient re-planted woodland (PAWS)	0	0

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

Mostly dry stone boundary walls with hedges more common in the south of the island.

Source: Isles of Portland/Weymouth Lowlands Countryside Character Area description;
Countryside Quality Counts (2003)

5.2 Field patterns

Open fields on Portland comprise one of a small number of nationally-important open-field sites still in operation with strips or “lawns” separated by “balks” or “lawns” of unploughed turf.

Source: Isles of Portland/Weymouth Lowlands Countryside Character Area description;
Countryside Quality Counts (2003)

6. Agriculture

The following data has been taken from the Agricultural Census linked to this NCA.

6.1 Farm type

Due to the small size of this NCA extrapolated Agricultural Census figures are not judged to be reliable.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

Due to the small size of this NCA extrapolated Agricultural Census figures are

not judged to be reliable.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

Due to the small size of this NCA extrapolated Agricultural Census figures are not judged to be reliable.

Source: Agricultural Census, Defra (2010)

6.4 Land use

Due to the small size of this NCA extrapolated Agricultural Census figures are not judged to be reliable.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

Due to the small size of this NCA extrapolated Agricultural Census figures are not judged to be reliable.

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

Due to the small size of this NCA extrapolated Agricultural Census figures are not judged to be reliable.

Source: Agricultural Census, Defra (2010)

Please note: (i) Some of the Census data are estimated by Defra so may not present a precise assessment of agriculture within this area (ii) Data refers to Commercial Holdings only (iii) Data includes land outside of the NCA where it belongs to holdings whose centre point is recorded as being within the NCA.

7. Key habitats and species

7.1 Habitat distribution/coverage

The vast majority of the coast of Portland, save at Fortuneswell, is classified as maritime cliff and slope. There are areas of lowland calcareous grassland on the plateau and on the landslip at Fortuneswell. Chesil Beach and the Fleet are coastal vegetated shingle with reedbeds.

Source: Isle of Portland and Purbeck Natural Area Profile



Pyramidal orchid in limestone grassland within a disused Portland limestone quarry.

7.2 Priority habitats

The Government's new strategy for biodiversity in England, Biodiversity 2020, replaces the previous Biodiversity Action Plan (BAP) led approach. Priority habitats and species are identified in Biodiversity 2020, but references to BAP priority habitats and species, and previous national targets have been removed. Biodiversity action plans remain a useful source of guidance and information. More information about Biodiversity 2020 can be found at; www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/englandsbiodiversitystrategy2011.aspx

The NCA contains the following areas of mapped priority habitats (as mapped by National Inventories). Footnotes denote local/expert interpretation. This will be used to inform future national inventory updates.

Priority habitat	Area (ha)	Percentage of NCA
Maritime cliff & slope	221	20
Lowland calcareous grassland	88	8
Coastal vegetated shingle	34	3
Reedbeds	30	3
Broadleaved mixed and yew woodland (Broad habitat)	0	0

Source: Natural England (2011)

- Maps showing locations of priority habitats are available at: <http://magic.defra.gov.uk> - Select 'Habitats and Species/Habitats'

7.3 Key species and assemblages of species

- Maps showing locations of some key species are available at: <http://magic.defra.gov.uk> - Select 'Habitats and Species/Habitats'
- Maps showing locations of S41 species are available at: <http://data.nbn.org.uk/>

8. Settlement and development patterns

8.1 Settlement pattern

Portland is quite densely settled, with substantial stone villages dominating the open landscape. The socio-economic status of the settlements varies – some areas are high in Indices of Multiple Deprivation.

Source: **Isles of Portland/Weymouth Lowlands Countryside Character Area description; Countryside Quality Counts (2003)**

8.2 Main settlements

There are substantial stone villages at Fortuneswell, Weston, Easton and Southwell, which dominate the open landscape. The total estimated population for this NCA (derived from ONS 2001 census data) is: 12,618.

Source: **Isles of Portland/Weymouth Lowlands Countryside Character Area description; Natural England (2012)**

8.3 Local vernacular and building materials

Many local buildings are constructed from the famous Portland Limestone.

Source: **Isles of Portland/Weymouth Lowlands Countryside Character Area description; Countryside Quality Counts (2003)**

9. Key historic sites and features

9.1 Origin of historic features

There are Mesolithic sites near Culver Well. The massive Verne Prison opened in 1947 on the site of former military buildings. The Naval Base was built in the 1860s. The high angle battery dates back to the end of the 1800s. The cliff workings and quarrying that have taken place extensively across the island and now form a key part of its character. More recent historic features originate from the island's more recent military history. RAF Portland was the site of part of the cold war Rotor early warning radar system.

Source: **Draft Historic Profile, Isle of Portland/Weymouth Countryside Character Area description**

9.2 Designated historic assets

This NCA has the following historic designations:

- 0 Registered Parks and Gardens covering 0 ha.
- 0 Registered Battlefield/s covering 0 ha.
- 9 Scheduled Monuments.
- 191 Listed Buildings.

Source: **Natural England (2010)**

- More information is available at the following address:
www.english-heritage.org.uk/caring/heritage-at-risk/
- www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/

10. Recreation and access

10.1 Public access

- 23 per cent of the NCA, 257 ha is classified as being publically accessible.
- The South West Coast Path National Trail loops around Portland; a section of the England Coast Path National Trail running from Easton on Portland to Lulworth in Dorset was opened in time for the 2012 Olympic and Paralympic Games.

Sources: Natural England (2010)



Jogging on the cliff path.

The following table shows the breakdown of land which is publically accessible in perpetuity:

Access designation	Area (ha)	Percentage of NCA
National Trust (Accessible all year)	0	0
Common Land	37	3
Country Parks	0	0
CROW Access Land (Section 4 and 16)	140	12
CROW Section 15	79	7
Village Greens	0	0
Doorstep Greens	<1	0
Forestry Commission Walkers Welcome Grants	0	0
Local Nature Reserves (LNR)	0	0
Millennium Greens	0	0
Accessible National Nature Reserves (NNR)	0	0
Agri-environment Scheme Access	0	0
Woods for People	0	0

Sources: Natural England (2011)

Please note: Common Land refers to land included in the 1965 commons register; CROW = Countryside and Rights of Way Act 2000; OC and RCL = Open Country and Registered Common Land.

11. Experiential qualities

11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) the coasts of the island are more tranquil than inland areas.

A breakdown of tranquillity values for this NCA are detailed in the table below:

Tranquillity	Score
Highest value within NCA	8
Lowest value within NCA	-47
Mean value within NCA	-16

Sources: CPRE (2006)

- More information is available at the following address:
www.cpre.org.uk/resources/countryside/tranquil-places

11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that by 2007, none of the island was classified as being undisturbed; only a small area was classed as undisturbed in 1990. A breakdown of intrusion values for this NCA is detailed in the table below.

Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	42	66	71	29
Undisturbed	n/a	11	n/a	n/a
Urban	n/a	n/a	<29	n/a

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are that there are data now for effectively the whole of the island and that there has been an increase of 29 per cent in the area classified as disturbed.

- More information is available at the following address:
www.cpre.org.uk/resources/countryside/tranquil-places



The fossil tree outside the Portland Heights Hotel demonstrates the former terrestrial flora of the island.

12. Data sources

- British Geological Survey (2006)
- Natural Area Profiles, Natural England (published by English Nature 1993-1998)
- Countryside Character Descriptions, Natural England (regional volumes published by Countryside Commission/Countryside Agency 1998/1999)
- Joint Character Area GIS boundaries, Natural England (data created 2001)
- National Parks and AONBs GIS boundaries, Natural England (2006)
- Heritage Coast Boundaries, Natural England (2006)
- Agricultural Census June Survey, Defra (2000,2009)
- National Forest Inventory, Forestry Commission (2011)
- Countryside Quality Counts Draft Historic Profiles, English Heritage (2004)*
- Ancient Woodland Inventory, Natural England (2003)
- BAP Priority Habitats GIS data, Natural England (March 2011)
- Special Areas of Conservation data, Natural England (data accessed in March 2011)
- Special Protection Areas data, Natural England (data accessed in March 2011)
- Ramsar sites data, Natural England (data accessed in March 2011)
- Sites of Special Scientific Interest, Natural England (data accessed in March 2011)
- Detailed River Network, Environment Agency (2008)
- Source protection zones, Environment Agency (2005)
- Registered Common Land GIS data, Natural England (2004)
- Open Country GIS data, Natural England (2004)
- Public Rights of Way Density, Defra (2011)
- National Trails, Natural England (2006)
- National Tranquillity Mapping data, CPRE (2007)
- Intrusion map data, CPRE (2007)
- Registered Battlefields, English Heritage (2005)
- Record of Scheduled Monuments, English Heritage (2006)
- Registered Parks and Gardens, English Heritage (2006)
- World Heritage Sites, English Heritage (2006)
- Incorporates Historic Landscape Characterisation and work for preliminary Historic Farmstead Character Statements (English Heritage/Countryside Agency 2006)

Please note all figures contained within the report have been rounded to the nearest unit. For this reason proportion figures will not (in all) cases add up to 100 per cent. The convention <1 has been used to denote values less than a whole unit.



Pulpit Rock, a famous feature of the modern landscape.

Supporting document 2: Landscape change

Recent changes and trends

Trees and woodlands

- Portland has little woodland, only a few small patches of secondary woodland, although these are important features for migrant birds; a notable feature of Portland. There has been a degree of scrubbing-up over last 25 to 30 years, particularly in now-closed quarry areas and industrial sites.

Boundary features

- Some traditional drystone walls have become neglected and have been replaced by wire fencing which is inconsistent with the historic character of the area; some lengths of wall have become overgrown by brambles and scrub.

Agriculture

- There is only a small amount of agriculture on Portland, currently being undertaken by one farmer. There has been no change in agriculture during recent times.

Settlement and development

- Portland is quite densely settled, with substantial stone villages at Fortuneswell, Weston, Easton and Southwell, which dominate the open landscape. The area near Portland Harbour has been redeveloped since the naval base closed, most recently as an Olympic Village; the yachting events for the 2012 Olympics and Paralympics were held here. Parts of the island –for example the Fortuneswell area, have high Indices of Multiple Deprivation.

- Storage tanks at the northern end of the Isle have been removed, improving the vista across to Chesil Beach and the Fleet.

Semi-natural habitat

- There are large areas of SSSI, roughly half of which are in favourable condition and half of which are recovering. Many of these areas are also designated as SAC.
- Limestone grassland has become severely overgrown in places by cotoneaster and, in places, scrub. There is a major project to remove this to restore the grasslands and to refresh geological exposures.
- As with the limestone grassland, the maritime cliffs and slopes have become severely overgrown in places by cotoneaster and scrub.

Historic features

- The quarries and quarry infrastructure relate the industrial history of Portland; quarrying has been taking place here since Roman times. Quarrying is still a major industry here, and an innovative Quarry Park has recently been established.
- Portland Castle, important in terms of the history of the island and its interpretation, was commissioned by Henry VIII; it is now in the ownership of English Heritage and open to visitors.
- The harbour was decommissioned as a naval port in 1995; it is now a civilian port and popular recreation area. The former barracks were renovated as part of the 2012 Olympic Village.

- The adult Prison, HMP Verne, is a former Victorian fortress whose military origin is clear in the preserved features such as the “moat” and gun emplacements. The High Angle Battery dates back to the Napoleonic Wars. It was designed to fire shells onto the decks, rather than at the sides, of enemy ships. The battery was decommissioned in 1906. In both cases the lack of change to these heritage assets results in their significance and importance remaining clearly legible.
- There are three lighthouses at Portland Bill. The currently functioning, distinctive red and white one, built in 1906, became remotely controlled when it was refurbished in 1996. The Lower Lighthouse is now a bird observatory and the Higher Lighthouse is now lived in and used as holiday accommodation.

Coast

- The hard rock geology results in a generally unchanging coastline, with only occasional, localised landslips and rock falls.

Minerals

- As quarries have become disused, the landscape has become increasingly neglected. An innovative Quarry Park, with a sculpture park and paths joining disused quarries together, has recently been established.
- Quarrying has been and remains a major industry on Portland. Remaining resources of Portland stone are important for building conservation and used, for example, in London for, inter alia, the Banqueting House, the Tower of London, the British Museum, Somerset House and St Paul’s Cathedral. The recent restoration of St Paul’s has been important for Portland’s industry over the last 10 years.

Drivers of change

Climate change

- Potential sea level rise may affect the internationally important Chesil Beach and the Fleet and low-lying areas such as the raised beach at Portland Bill; this feature provides evidence of previous climates and their resulting changes in sea level.
- Increased storminess may also affect coastal features and protected species and habitats including the little terns that nest on Chesil Beach. It also increases the rate of erosion of landscape features such as the maritime cliffs and slopes, which support habitats of international importance and a major priority habitat on the island. These landscape features are a valuable geological resource in their own right – the crenulated cliff tops of the West Weare are highly distinctive.
- Increased winter and summer temperatures could see changes in vegetation structure as seen with the increase in cotoneaster.
- Portland is a landfall for non-native invasive species, returning formerly native species and species extending their range in response to changing climate. Opportunities to monitor change and movement of species are provided by the daily moth-trapping and other recording at Portland Bird Observatory.
- It is recognised that climate change may have an effect on the movement and distribution of species and habitats, and on Britain’s biosecurity, and there is an opportunity to monitor and assess these on Portland.
- Climate change will also lead to increased erosion of vulnerable areas due to increased extremes of weather conditions (wetting and drying).

Other key drivers

- The changed use of Portland Harbour is having a significant effect on the surrounding landscape; older buildings nearby have been rebuilt or refurbished and an Olympic village has been built. Further regeneration may be possible where it contributes to recreation resources and enhances the character of the area.
- For the near future, Portland has obvious wind-energy potential; however, any wind farm proposals need to respond to the importance of the locality for migrant birds, the distinctive character of the landscape and the landward and seaward views. Tidal speed and range, and wave action suggests there may be potential for both tidal stream and wave energy production. Plans for renewable energy production on or around the Isle have yet to be proposed.
- The present low level of commercial agriculture and corresponding abundance of fallow land may provide opportunities for both new wildlife and community-supported agriculture initiatives and for increased public access and recreation.
- Reserves of the Portland stone, essential for the restoration of historic buildings constructed from it, are finite. There are opportunities to plan to use this resource wisely so that supplies remain available many years hence.
- The geodiversity and biodiversity of Portland provide future opportunities to research and study Portland stone, the geology and palaeontology of this section of the Jurassic Coast, coastal processes and coastal vegetation communities and species migration in response to climate change. The evolution of the coast through natural erosion is a process accepted as

necessary for maintaining the integrity of the World Heritage Site and to maintain the natural landforms and rock and fossil exposures. The ongoing processes and natural evolution are part of the designation of the coast as a World Heritage Site.



Regeneration leading up to the 2012 Olympics.

Supporting document 3: Analysis supporting Statements of Environmental Opportunity

The following analysis section focuses on a selection of the key provisioning, regulating and cultural ecosystem goods and services for this NCA. These are underpinned by supporting services such as photosynthesis, nutrient cycling, soil formation and evapo-transpiration. Supporting services perform an essential role in ensuring the availability of all ecosystem services.

Biodiversity and geodiversity are crucial in supporting the full range of ecosystem services provided by this landscape. Wildlife and geologically-rich landscapes are also of cultural value and are included in this section of the analysis. This analysis shows the projected impact of Statements of Environmental Opportunity on the value of nominated ecosystem services within this landscape.



Portland stone needs to be used wisely so that supplies remain available for many years.

Statement of Environmental Opportunity	Ecosystem Service																		
	Food provision	Timber provision	Biomass provision	Water availability	Genetic diversity	Regulating climate change	Regulating soil erosion	Regulating soil quality	Regulating water quality	Regulating water flow	Pollination	Pest regulation	Regulating coastal erosion	Sense of place/inspiration	Sense of history	Tranquility	Recreation	Biodiversity	Geodiversity
SEO 1: Conserve and manage the internationally important coastline, designated as a World Heritage Site and Special Areas of Conservation, for the important assemblages of fossils and for the valuable cliff habitats that support a diverse range of species.	↔ ***	↔ ***	↔ ***	↗ *	↔ ***	↔ ***	↔ **	↔ **	↔ **	N/A	↗ **	↔ *	↗ **	↗ ***	↗ **	↔ **	↘ *	↗ ***	↗ ***
SEO 2: Conserve the important geological assets of the area and maintain the link between the geology, industry and people; and enhance areas left neglected as a result of quarrying to improve landscape character, strengthen habitats and improve the resource of exposed geodiversity.	↔ **	↔ **	↔ ***	↗ *	↔ ***	↔ **	↔ **	↔ *	↔ **	N/A	↗ *	↔ *	↗ **	↗ ***	↗ ***	↗ **	↗ **	↗ ***	↗ ***
SEO 3: Conserve and promote the distinctive landscape character, the strong sense of history and the many recreational opportunities in the area, as well as the magnificent views over Weymouth Bay the unique Chesil Beach, all part of the Jurassic Coast World Heritage Site.	↗ *	↔ **	↔ ***	↗ *	↔ ***	↔ **	↔ **	↔ **	↔ **	N/A	↔ ***	↔ ***	↗ ***	↗ ***	↗ ***	↗ **	↗ ***	↗ **	↗ ***

Note: Arrows shown in the table above indicate anticipated impact on service delivery: ↑ = Increase ↗ = Slight Increase ↔ = No change ↘ = Slight Decrease ↓ = Decrease. Asterisks denote confidence in projection (*low **medium***high) ° symbol denotes where insufficient information on the likely impact is available.

National Importance;
 Regional Importance;
 Local Importance

Landscape attributes

Landscape Attribute	Justification for selection
Wedge-shaped peninsula with long panoramic views out to sea and to the Dorset coast, especially from elevated locations.	<ul style="list-style-type: none"> ■ Views both east and west across to the mainland Jurassic Coast, Chesil Beach and The Fleet. ■ Views of the tidal race (Portland race) and the wider English Channel, which can be spectacular in stormy conditions or tranquil and still in flat calms. ■ Views to the Isle of Wight.
Views along the Weares.	<ul style="list-style-type: none"> ■ Views along the West Weare reveal cliff-falls and dumping of huge quantities of quarry waste. ■ The East Weare is gentler in appearance, with more cliff vegetation and shallower slopes. ■ Nesting and roosting seabirds, including guillemot, razorbill and kittiwakes, can be observed along both cliff faces.
Clear and evident connections between underlying geology and subsequent historic development and land uses.	<ul style="list-style-type: none"> ■ Geodiversity is revealed through both natural features and quarries - Portland stone is prized as a building stone. ■ Building using local stone has given a strong sense of visual continuity. ■ Fields divided by a distinctive network of drystone walls of local stone, creating strong visual character as well as evidence of past enclosure. ■ The history of pastoral land use, relating to the low-fertility shallow soils, is visible in the surviving field patterns and earthworks ('lawns' defined by balks and 'lawnsheds').
Valuable semi-natural habitats.	<ul style="list-style-type: none"> ■ Limestone grasslands, which are currently being restored, with their profusions of wildflowers and associated invertebrates including many butterfly and moth species. ■ Cliff vegetation and habitats, particularly along the East Weare.
Rich-time depth, with historic evidence from the Mesolithic onward.	<ul style="list-style-type: none"> ■ Mesolithic shell middens and the remains of flint workings have been discovered. ■ Roman remains and evidence of quarrying from this period to the present. ■ Historic buildings and structures include the Castle, the adult prison, the Harbour (which was originally built as a coaling depot), and the High Angle Battery which dates back to the 1890s.

Landscape opportunities

- Realise opportunities to protect the open landscape and extensive views to land and sea.
- Conserve the local distinctiveness of the landscape by maintaining the strong links between the dominant geology of the area and the subsequent land use and through the use of locally sourced building materials.
- Support development that seeks to protect the current settlement pattern of villages and small towns.
- Protect the island's rich quarrying heritage from damage and manage it appropriately through positive management of the Quarry Park and leisure activities.
- Protect the clear links between land use and underlying geology as well as the unity of building materials and styles.
- Maximise opportunities to manage and, where appropriate, expand areas of semi-natural habitat including limestone grasslands and cliff vegetation.
- Plan and manage sympathetically, any works required that affect the World Heritage Site, and its Outstanding Universal Value, to ensure the geodiversity, biodiversity, landscape, culture and economic prosperity that the designation brings are fully realised.
- Restore the distinctive local drystone walling for its historic landscape value.
- Carefully manage and interpret the extensive archaeological evidence and historic sites within the landscape and the surviving below and above ground evidence from all periods.
- Maximise the access and recreation activities within the area to provide opportunities to observe wildlife; nesting birds, migrating birds, invertebrates and botany.

Ecosystem service analysis

The following section shows the analysis used to determine key ecosystem service opportunities within the area. These opportunities have been combined with the analysis of landscape opportunities to create Statements of Environmental Opportunity.

Please note that the following analysis is based upon available data and current understanding of ecosystem services. It does not represent a comprehensive local assessment. Quality and quantity of data for each service is variable locally and many of the services listed are not yet fully researched or understood. Therefore the analysis and opportunities may change upon publication of further evidence and better understanding of the inter-relationship between services at a local level.

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision	There is currently little agriculture on Portland, with only one active farmer.	The majority of the land surface on Portland has been used for quarrying rather than agriculture. A long tradition of pastoral farming persists on a small scale.	Local	There is little agriculture on Portland. A number of the fields that do exist have medieval origins that are historically important. There is little or no scope for increasing the amount of land available for food production or outputs from the existing resource.	<p>Agriculture should be managed sustainably and for the benefit of associated habitats, species and heritage assets. Local produce should seek to benefit from association with conservation measures and locally distinctive branding. This will in turn bring benefits to agricultural land and assist the long-term future of food production.</p> <p>There is opportunity to protect and preserve the medieval field systems.</p> <p>The present extent of fallow land provides an opportunity to develop locally-focused community-based food which is both locally relevant and sensitive to the local distinctiveness of this place.</p>	<p>Food provision</p> <p>Regulating soil erosion</p> <p>Regulating water quality</p> <p>Sense of history</p> <p>Sense of place/inspiration</p>
Timber provision	Small areas of scrub and secondary woodland	Portland has 5 per cent tree cover consisting of small areas of scrub and secondary woodland.	Local	Existing woodland cover is 5 per cent, made up of shrubs and young trees limiting the opportunities for timber production from the existing woodland resource. The area of secondary woodland is primarily the result of termination of previous land management and use, for example quarrying and agricultural activity. Encroachment of woodland into valuable grassland habitats should be avoided.	There is currently very little potential for timber on Portland but the existing areas of trees and scrub provide important cover for migrant birds which sometimes use Portland in large numbers. Managing secondary woodland will release a small volume of timber for local wood fuel.	<p>Timber provision</p> <p>Biodiversity</p> <p>Sense of history</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biomass energy	Small areas of scrub and secondary woodland	There is currently no biomass produced commercially on the Isle of Portland.	Local	Given the size of the area, the existing land uses, habitats and heritage assets there would appear to be no opportunity for commercial biomass production on the Isle of Portland. Existing woodland cover is 5 per cent of the area, made up of shrubs and young trees, having some potentially to yield a small volume of local wood fuel. Conditions for establishing both miscanthus and short rotation coppice do not appear to exist.	Potential yields and use of both miscanthus and short rotation coppice are low throughout the area. For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables on the Natural England website. www.naturalengland.org.uk/ourwork/farming/funding/ecs/sitings/areas/default.aspx Managing secondary woodland will release a small volume of timber for local wood fuel	Biomass energy Biodiversity
Water availability	Rainfall and groundwater	The groundwater on Portland lies within the aquifers above the Kimmeridge Clay. There is insufficient water for public supply.	Local	There is little existing data on the availability of water for abstraction. The Isle of Portland is a limestone plateau with no rivers or reservoirs. Currently water is provided to the Isle of Portland via abstraction from the River Wey on the mainland. Portland's groundwater percolates through the Purbeck and Portland Beds but cannot penetrate the Kimmeridge clays which underlie these. Portland's freshwater is therefore decoupled from the mainland's water table. There are springs at the base of the Portland Beds, which contribute to the important cliff habitats found across the area.	There is no opportunity to increase the availability of groundwater on the island. Rainwater collection, grey-water recycling and sourcing local water supplies from the existing aquifer should be considered as part of any future developments to limit dependency on water supply from the mainland. Any future development should include water-efficient systems and fittings.	Water availability Biodiversity Regulating water quality
Genetic diversity	Portland sheep Wild cabbage	Reintroduced onto the Isle of Portland in 1977 the Portland sheep breed is currently classed as "at risk" by the Rare Breeds Survival Trust. Wild cabbage, a crop relative exists in the coastal vegetation of the area.	Local	Portland sheep are an ancient breed that nearly became extinct in the 1970s and is still considered to be at risk. The breed is recognised as a 'primitive' breed, particularly well-suited to the conditions on Portland and for conservation grazing. Wild cabbage and other maritime cliff species provide a restricted and location-specific pool of genetic material.	There is opportunity to contribute to the recovery of the Portland sheep rare breed, reconnecting the breed to the area and promoting it for conservation grazing.	Genetic diversity Biodiversity Sense of history

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Regulating water quality	Groundwater	Due to the small size of Portland, the aquifer and the water therein are very limited resources. Evidence as to the existing quality of water within the aquifer appears very limited. Coastal cliff vegetation is supported in places by seepage and springs from the aquifer.	Local	Lack of detailed evidence as to the past and current quality of water limits understanding of trends and changes in water quality. It is necessary to maintain the quality of ground water to ensure the condition of internationally important assemblages of cliff vegetation are not affected.	Ensure water quality is maintained particularly where it influences the condition of cliff vegetation. There is little opportunity to influence/affect the regulation of water quality on Portland other than ensuring pollutants do not enter groundwater as a result of inappropriate development, industrial activity or accident.	Regulating water quality Biodiversity
Climate regulation	Carbon storage in limestones, woodlands, wetlands or coastal muds	Much carbon was locked into the carbonate rocks on their formation. There is limited carbon storage in woodlands, small areas of wetland and pockets of coastal mud.	Local	Carbon storage in this NCA is very limited because of the general lack of mature woodland or wetlands and because of the thin soils that cover this limestone plateau. Portland stone is not used for cement production so carbon stored in it is not released in the manufacturing process.	Ensure the limestone extracted from the area is used for the purposes intended and that all waste material is kept to a minimum.	Climate regulation Geodiversity
Regulating soil erosion	Permanent pasture Scrub	Most of the non-quarried, non-urban area is now covered with permanent vegetation, grassland or scrub, and the generally thin soils are largely stabilised.	Local	In an exposed coastal environment the thin soils found on the Isle of Portland would be susceptible to erosion if the land were cultivated. Given most of the area outside of quarries or settlements is now under permanent pasture or maturing scrub, the remaining areas of soil are generally stable. Soil erosion may be more pronounced around quarries and in areas with high visitor pressure.	There is some erosion resulting from extensive use of footpaths and open access, especially the South West Coast Path. There are opportunities to help minimise this; disbursing visitor activity, reinforcing existing paths, encouraging robust, native vegetative cover. Work with quarry operators to reduce erosion and capture and reuse any soil liberated by their operations.	Regulating soil erosion Biodiversity Recreation
Regulating soil quality	Thin, low fertility soils under permanent pasture	Much of the land not used for quarrying or within settlements supports thin soils of low fertility traditionally associated with pastoral agriculture. Most is now under permanent vegetation resulting in stability in soil quality, or increases in organic material and soil fauna.	Local	In the main, continuing pastoral land use will maintain the current condition of soils. Localised compaction and erosion may occur in areas with high levels of visitor access; on or around marked routes and in areas of open access. Current levels of grazing are unlikely to cause negative impacts in soil quality.	Encourage best practice grazing regimes are used to avoid localised areas of poaching and compaction. Manage areas with high levels of visitors and recreational use that result in localised soil compaction to avoid further impacts on soil quality or relieve current negative impacts Any increase in the area under cropping should aim to use soil friendly cultivation techniques. There may be opportunities for local composting to provide increased soil carbon at selected spots on the Isle.	Regulating soil quality Regulating soil erosion Regulating water quality

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Regulating water flow	There are no significant watercourses on Portland.	N/A	N/A	There are no significant watercourses on the Isle of Portland and therefore fluvial flooding is not an issue. This is expected to remain the same into the future. The porous rock means that rainfall soaks into the ground.	N/A	Regulating water flow
Regulating coastal flooding and erosion	The geology of the Isle of Portland Sea cliffs	<p>Along the north-west and north-east parts of the island, Kimmeridge clays outcrop along the lower cliff. These are capped by Portland Limestone and the junction between the clays and the Portland Beds facilitates landslide behaviour that dominates these sections of the frontage, with frequent landslides having been recorded along these cliffs over recent centuries.</p> <p>The Isle of Portland shelters the adjacent Weymouth Bay and affords protection to the coast from wave and storm action.</p> <p>The Isle of Portland is linked to the mainland by a spit linked to the shingle beach barrier bar, or tombola, of Chesil Beach; an important natural feature contributing to the natural processes and regulation of coastal erosion to the west of the Isle.</p> <p>Breakwaters form the harbour and dockyard at Portland.</p> <p>Principal land uses and settlement is located on the plateau, elevated well above any area susceptible to coastal flooding.</p>	Regional/ Local	<p>Due to the construction of the breakwaters and dockyard in the late 19th century, the cliffs around Portland Harbour frontage have been largely restricted in their retreat. In other areas landslips are allowed to continue with the most active erosion on the north-west shore. Falling material creates a 'soft edge', absorbing wave and storm energy, and is part of the natural processes that determine the rate of erosion of Portland.</p> <p>Portland shelters Weymouth Bay and land to the east from westerly storms and waves.</p> <p>The village of Chiswell has one of the highest flood risks in Dorset. Although flooding has only occurred approximately once every ten years, this is due to the presence of coastal defences reducing the risks faced. With climate change these risks are likely to increase dramatically, with the defences likely to require replacing in approximately 20 years.</p>	<p>Continue to allow the most active erosion on the north-west shore.</p> <p>Allow natural coastal processes to operate unimpeded realising opportunities to extend or create new habitats. Promote the benefits of natural coastal erosion as a cost effective form of coastal defence.</p> <p>Encourage the further study of functioning natural coastal realignment, geology and coastal geomorphology in this area.</p> <p>There is an opportunity for relevant agencies to work together to renew these flood defences.</p> <p>Ensure development or commercial land use at risk from flooding does not encroach into lower lying parts of the Isle that may experience impacts resulting from high tides or increased sea levels.</p>	<p>Regulating coastal flooding and erosion</p> <p>Biodiversity</p> <p>Geodiversity</p> <p>Sense of place/ inspiration</p>
Pollination	Semi-natural limestone grassland	There are 88 ha of semi-natural calcareous grassland; eight per cent of the land area	Local	Habitat for pollinating insects is limited to small areas of semi-natural limestone grassland; the product of long-standing and predominant agricultural land use on Portland.	There are opportunities to continue clearing invasive cotoneaster and therefore to restore the extent of semi-natural limestone grassland to benefit populations of pollinating insects.	<p>Pollination</p> <p>Biodiversity</p> <p>Sense of place/ inspiration</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of place/ inspiration	<p>Rugged cliffs.</p> <p>Coastal and maritime wildlife</p> <p>The tidal race</p> <p>Active and disused quarries, vernacular building stone</p> <p>Heritage assets</p>	<p>Being an island surrounded by cliffs, Portland has a unique and detached sense of place. Views to the mainland, the Jurassic Coast, Weymouth and Chesil Beach and the Fleet, also contribute to this sense of place.</p> <p>Some of the disused quarries have recently been linked and are currently used as an innovative sculpture park.</p> <p>The connection with the sea is strong; the sense of being on an island enhanced by the sometimes dramatic seascape, number of sea birds and the exposed character.</p> <p>Despite its sometimes harsh and industrial character, Portland has provided inspiration for a number of authors, most notably Thomas Hardy</p> <p>A very small area at the north of the island is within the West Dorset Heritage Coast.</p>	Regional	<p>Portland, a sloping plateau, has a strong and distinctive sense of place. The rugged cliffs of the East and West Weares are equally distinct in character. Many exposures both on the cliffs and inland are obscured by cotoneaster which is currently being cleared in a major project to reveal the underlying geology and to facilitate the restoration of calcareous grasslands.</p> <p>The tidal race can be spectacular, especially in stormy conditions when the wind and the current are in opposing directions.</p> <p>In more recent times, Portland and Weymouth Bay have become associated nationally with sailing and other maritime and coastal sporting activities.</p> <p>The proximity of and access to maritime and coastal wildlife attracts many visitors to the area. Similarly, the many heritage assets present on the Isle further contribute to the sense of the place.</p>	<p>Protect, manage and interpret the unique landscape of Portland, maintaining the link between the geology, industry and people. Continue to work with the planners and users of Portland Quarries Nature Park to ensure the geodiversity, habitats and public access are conserved and enhanced.</p>	<p>Sense of place/ inspiration</p> <p>Recreation</p> <p>Sense of history</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	<p>Relict field systems</p> <p>Industrial archaeology</p> <p>Historic military installations</p>	<p>Portland has a strong sense of both of military and industrial history, with major Victorian edifices including the harbour and the High Angle Battery. The adult prison, HMP Verne, was a Victorian fortress and military features are still in evidence today.</p> <p>More recent military history is evident in the post-Second World War ROTOR radar system – the underground facilities are no longer accessible but the “cottage” above the entrance is still in place.</p> <p>A strong heritage of quarrying is visible in terms both of active and disused quarries from which stone has been used to construct St Paul’s Cathedral and may other notable historic buildings. A group of the disused quarries are now an innovative sculpture park.</p> <p>There are nine Scheduled Monuments and 191 listed structures on the Isle</p>	National	<p>This area is well known for its many layers of visible history, resulting in a range of structures and features. The main emphasis is placed on protecting features. Interpretation of the range and diversity of heritage assets is also required to make them accessible by a wider public audience.</p>	<p>There are opportunities to protect, manage and interpret the layers of historic evidence.</p> <p>There are also opportunities to ensure that the restoration of vernacular buildings is carried out using local styles and appropriate materials, and that land management practices and developments do not damage archaeological evidence or historic features.</p> <p>There are many opportunities to use the network of paths to gain access to and to reveal Portland’s history.</p> <p>Specific opportunities presented by the redundant quarries – interpreting the history of quarrying and the national connections.</p>	<p>Sense of history</p> <p>Sense of place/ inspiration</p> <p>Recreation</p>
Tranquillity	<p>South West Coast Path</p> <p>East and West Weares.</p> <p>The disused quarries.</p>	<p>Most of Portland is disturbed by visual and noise pollution with a 29 per cent increase in intrusion since the 1960s from 42 per cent of the area intruded by noise and visual pollution to 71 per cent currently. More remote areas, such as the Weares, can be tranquil and feel remote in fine weather. The disused quarries can insulate visitors from everyday noise.</p>	Local	<p>Given the reduction in tranquil areas over time, the areas that remain tranquil are an important asset.</p> <p>The Isle, on the whole separated from the mainland, has an overall sense of isolation.</p>	<p>There are opportunities to retain the sense of remoteness and wildness on the island by protecting the least intruded areas from inappropriate development and activities.</p>	<p>Tranquillity</p> <p>Sense of place/ inspiration</p>

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Recreation	<p>South West Coast Path National Trail</p> <p>Watersports</p> <p>Rock-climbing</p> <p>Sculpture park</p> <p>Geo-tourism</p> <p>Birdwatching</p> <p>Botany</p>	<p>The South West Coast Path National Trail is a major recreational resource allowing access to spectacular scenery and historical structures and landscapes.</p> <p>There are 54 km of public rights of way at a density of 5 km per km². Nearly a quarter of Portland is classified as being publicly accessible.</p> <p>Portland harbour is an important venue for watersports and was a venue for the yachting events of the 2012 Olympic Games.</p> <p>A group of disused quarries are now an innovative sculpture park.</p> <p>Birdwatching is a popular pastime; the landfall for a range of migrating birds and the bird observatory in the old lighthouse further encourage this activity.</p>	National	Portland is accessible by rail and road via Weymouth and by road from there onward. Recreation maintains and/or reconnects mankind with the landscape and ecosystems that supports them and encourages a valuing of their surroundings	<p>Maintenance and enhancement of interpretative access along the South West Coast Path National Trail, improving educational and recreational opportunities while protecting the resource. Parts of Portland are high in Indices of Multiple Deprivation, so the high density of public rights of way leads to an opportunity to provide a service for these areas.</p> <p>There are opportunities to provide interpretation of the landscape and its many features, especially heritage assets, geology, habitats and resident and visiting species.</p>	<p>Recreation</p> <p>Sense of history</p>

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Biodiversity	International and National Designations	International and national nature conservation designations currently cover the coastal cliffs and part of the inland area. The two Special Areas of Conservation (SAC), most of the coast and part of the inland area are also designated as Sites of Special Scientific Interest (SSSI).	National	Important sites of natural and semi-natural habitat, particularly the internationally designated sites are can be challenged by invasive, non-native vegetation, principally cotoneaster. Good ecological condition will be achieved principally through management of non-native invasive vegetation, an increase in coverage of semi-natural habitat, restoration and maintenance of natural processes and hydrological systems, and sustainable grazing regimes. These in turn have the potential to help increase regulating services such as regulating water quality and soil erosion, while also contributing to the sense of place. Grasslands, both coastal and inland calcareous grasslands, are maintained by appropriate levels of grazing. Lack of grazing animals and active grazing regimes allows scrub encroachment into these areas. Portland is also an important area for migrating and nesting birds.	Improve, where necessary, the biological condition of the designated resource by, for example removing invasive cotoneaster to restore cliff vegetation and calcareous grassland. Manage the disused quarries to reinstate geological exposures that benefit rare mosses, liverworts, lichens, flowering plants and invertebrates supported by them. Maintaining pastoral habitats through appropriate grazing regimes, benefitting important plant and invertebrate communities, while creating new areas of grassland where appropriate to further extend the resource. Ensure the attractiveness of the coastal cliffs for nesting seabird colonies is maintained, avoiding intrusion and disturbance from development and unsympathetic activities.	Biodiversity Sense of place/ inspiration
Geodiversity	Jurassic Coast (Dorset and East Devon Coast) World Heritage Site Striking landform that clearly reveals geological processes Exposures in old quarries Local stone used for building	Most of the coast is part of the Jurassic Coast World Heritage Site The whole of the plateau is a Regionally Important Geological Site but the island's geology is of wider regional and national importance.	National	The coast of Portland forms part of the Jurassic Coast (Dorset and East Devon Coast) World Heritage Site, revealing processing taking place both at its formation and since then. Access to the disused quarries allows continued research into the geodiversity of the NCA. Exposure of these features also makes a positive contribution toward sense of place and sense of history. Portland stone continues to be a nationally important building resource.	Maintain views of and access to geological features and exposures where appropriate, improving access to cuttings, quarries and other exposures of geological features for increased understanding and enjoyment of geodiversity as well as for uncovering fossils and stratigraphy of major importance. Maintenance of the steep rugged cliffs and landslips exposing an outstanding geology (including rich stratigraphy and fossil assemblages) and supporting important wildlife habitats (such as rare lichen communities, vegetation of international importance and migrating and nesting birds), as well as the south coast's most important raised beach.	Geodiversity Sense of place/ inspiration Sense of history

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