



# Seascape Assessment for the South Marine Plan Areas

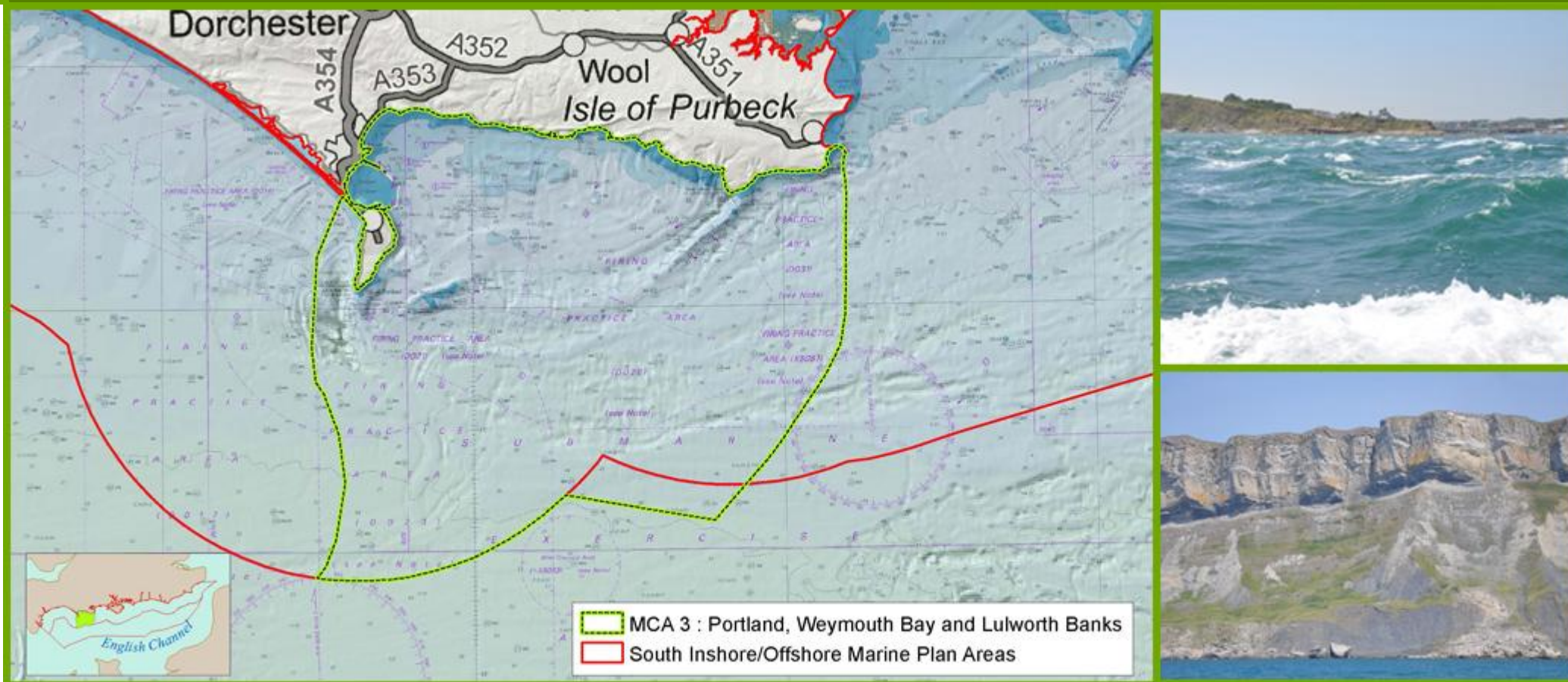
## MCA 3: Portland, Weymouth Bay and Lulworth Banks

Snapshot

Key Characteristics

Description

Visual Resource Mapping



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## Location and boundaries

This Marine Character Area (MCA) extends from the Isle of Portland in the west to Peveril Point, at the southern edge of Swanage Bay, in the east. The western boundary starts at the eastern extent of Chesil Beach, taking in the waters surrounding the Isle of Portland to account for the influence of the landform on local sea conditions. It also includes all of the Studland to Portland inshore cSAC. The MCA extends offshore to a maximum distance of approximately 35 kilometres (19 nautical miles) and maximum 50 metres depth, broadly consistent with the boundary of the South Inshore Marine Plan Area. It includes the offshore Firing Practice Areas associated with Lulworth Gunnery and all of Weymouth Bay, extending eastwards to the southern edge of Poole Bay at Peveril Point. This marks the transition to a seascape defined by greater human activity and coastal development (MCA 4). This eastern MCA boundary also takes into account the Seascape Character Type (SCT) boundaries of the Dorset Seascape Character Assessment (2010)<sup>1</sup>.

Please note that the MCA boundaries represent broad zones of transition (not immediate breaks in character). Natural, visual, cultural and socio-economic relationships between adjacent MCAs play a key role in shaping overall character. Therefore individual MCAs should not be considered in isolation.

## Overall character

The MCA is historically renowned for areas of dangerous seas owing to the presence of rocky ledges and sand banks and complex tidal currents, including the notorious Portland Race as tides clash around Portland Bill. These contrast with the sheltered deep-water Portland Harbour and calm waters of Weymouth Bay, which are a hub of social and economic activity linking coast and sea, including ports, shipping, fishing, transportation, recreation and tourism. This busy western part of the MCA contrasts markedly with the eastern part of the MCA, which is framed by the highly tranquil and sparsely settled Purbeck coast. The area is perhaps most famously associated with its varied and scenic coastline, with features such as Durdle Door and Lulworth Cove drawing tourists, artists and writers to the area over many centuries. Panoramic views along the coast and out to sea are a defining feature of the area, whilst views back to the land are defined by the white, golden and grey cliffs topped by rolling pastoral downland, the rising land of the Purbeck Ridge, and the wedge-shaped Isle of Portland. The Isle also forms a strong seascape feature in views from across Lyme Bay (MCAs 1 and 2). The varied underwater environment attracts a rich marine life, including the lobsters and crabs which are potted by local fishermen.

<sup>1</sup>LDA Design (2010). Dorset Coast Landscape and Seascape Character Assessment. Dorset Coast Forum and Coordinated Centre for Integrated Coastal Zone Management Belgium. Oxford.



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## Adjacent National Character Areas (NCAs)

The adjacent coastline includes the following NCAs as defined by Natural England<sup>2</sup>:

- 137: Isle of Portland
- 138: Weymouth Lowlands
- 136: South Purbeck

## Adjacent nationally protected landscapes

Land from Radcliff Point to the eastern landward extent of the MCA boundary falls within the Dorset Area of Outstanding Natural Beauty (AONB). This area, along with its surrounding coastal waters, also falls within the Purbeck Heritage Coast. The majority of the coast also lies within the Dorset and East Devon World Heritage Site ('Jurassic Coast').

<sup>2</sup> <http://www.naturalengland.org.uk/publications/nca/default.aspx>

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- Distinctive wedge-shaped tied island of the Isle of Portland in the west, connected to the mainland by a shingle causeway. Views to the Isle of Wight and Needles from the Purbeck Coast
- Dynamic coastal geology and geomorphology of world renown, from the grey cliffs of Portland Stone to the complex strata of ancient fossil-rich rocks defining the Dorset coast, displayed in sheer cliffs, stacks and sea arches such as Durdle Door.
- Varied geology extending offshore to form reefs, rocky ledges and canyons (e.g. Portland Deep), including the expansive Lulworth Banks, Worbarrow Bay Reefs and Saint Alban's Ledge.
- Strong currents and overfalls associated with St Alban's Ledge, as well as the notorious Portland Race. Here turbulence is created by clashes with the tides between the Bill and The Shambles sandbank.
- Contrasting calm, sheltered waters of the deep-water Portland Harbour and Weymouth Bay long providing safe anchorage for vessels from the Channel.
- Complex tidal currents with small tidal ranges, as well as unique areas of 'double low water' between Portland Harbour and Lulworth Cove.
- Internationally important submarine ledges and reefs, supporting rare benthic species. The seas contain important nursery grounds for fish, including flatfish, seabass and sand eel.
- Large tracts of nationally and internationally designated coastal habitats, including flower-rich unimproved calcareous grasslands, coastal heath and varied cliff-top and slope vegetation, home to important sea bird colonies.
- A concentration of historic ship wrecks reflecting the challenging conditions faced by sea farers over the centuries.
- A rich legacy of cultural associations, with artists and writers drawing inspiration from the scenic coastline and ever-changing maritime environment.
- Strong defence connections since the late medieval period, including the former Naval port of Portland Harbour (1845-1995) and Lulworth Gunnery Range, whose Danger Area extends up to six nautical miles offshore.
- Distinctive Portland Stone and Purbeck Marble, widely prized for their architectural qualities, historically quarried and transported by sea directly from their coastal outcrops.
- Commercial port of Portland providing a range of services in support of the maritime industry and military. The nearby Weymouth Harbour is a freight and passenger transport hub as well as an important fishing port.
- Automated lighthouses at Anvil Point and Portland Bill, with two former lighthouses and a 7 metre high white obelisk on the Bill also acting as navigation marks.
- Notable daymarks used for navigation include the Clavell Tower (Grade II listed) on top of Hen Cliff, built in the 1830s as a cliff-top observatory and folly.
- Portland Marina and National Sailing Academy (host of London 2012's Olympic sailing events) providing a centre of excellence for yachting, with associated buildings forming new local landmarks.
- Rich fishing grounds for lobster and crab potting, with bass fishing (rod and line) common off Portland Bill. Recreational fishing and scuba diving charters are valued economic activities.
- Much of the coastal edge crossed by the South West Coast Path, affording panoramic views out to sea and along the coast. The MCA is popular for a variety of recreational activities both on and off the water.
- White and golden cliffs of the Purbeck coast and distinctive form of the Isle of Portland forming recognisable features in views from the sea (including from ferries arriving/departing from Weymouth).
- Development focused around Portland, Weymouth and the fringes of Swanage, with long stretches of sparsely settled coastline in-between evoking high levels of tranquillity.





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For ease of reference, the following description text is arranged under three headings, considering the 'Natural', 'Cultural / social' and 'Aesthetic / perceptual' characteristics of the Marine Character Area. It should be noted, however, that all of these aspects combine and interact with each other to varying extents to shape character.

### Natural influences

This MCA is framed in the west by the distinctive tied island of the Isle of Portland, which is connected to the mainland by a shingle causeway marking the eastern extent of Chesil Beach (within MCA 2). The Isle is a conspicuous, wedge-shaped landform, with an elevated plateau reaching some 130 metres AOD affording panoramic views across the MCA, south towards the English Channel and west over Lyme Bay. It is in itself a landmark feature rising up from the sea – strongly recognisable in views from the surrounding waters.



*Durdle Door*

The Isle forms the southern-most point of an internationally renowned stretch of Dorset coast, the majority of which falls within the Dorset and East Devon Coast World Heritage Site. It is a dynamic coastline, displaying a complex strata of soft chalk, limestone, shale, siltstone and sandstone cliffs subject to frequent landslides and rock falls. The cliffs include fossil-rich sections, dating back 185 million years, attracting visitors and fossil-hunters from around the world. Prominent white and golden cliffs rise up from the sea to over 160 metres in parts, with St Alban's and Durlston Heads being the largest in a series of headlands interspersed between coves, shingle beaches and classic geomorphological features such as caves, sea stacks and arches – including the famous Durdle Door. Beyond the cliffs is elevated, rolling downland and, in the east, the dramatic Purbeck Ridge which affords long, interrupted views over the sea and Poole Bay (MCA 4). It also forms a distinctive backdrop itself to distant views from the sea.

The waters surrounding Portland Bill and Chesil Beach are the graveyard of many vessels that failed to reach Weymouth or Portland Roads, due to the notorious Portland Race. This is the most dangerous extended area of broken water in the English Channel, caused by the meeting of strong tidal streams flowing down either side of the Bill to clash at the Race, where submerged ledges, shoals and the nearby Shambles sandbank (marked by a red sector light) are also located. The currents break the sea so fiercely that from the shore a continuous disturbance and areas of white water can be seen from quite a distance.

Strong currents and overfalls are also associated with Saint Alban's Ledge – a rocky limestone ledge extending 10km offshore covered by waters as shallow as eight metres. The nearby lighthouse on Anvil Point and coastguard lookout station on the headland itself provide

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navigation markers to passing vessels. In contrast to these areas of rough and turbulent seas, Portland Harbour and Weymouth Bay are sheltered from the open seas and prevailing south-westerly's by the landform of the Isle of Portland. This location has formed an obvious location for the ports of Weymouth and Portland, and safe haven for vessels which frequently form large-scale features in the bay.



*Portland Bill*

The underwater ledges, reefs, sandbanks and subtidal sediments in general are highly valued both for their geological diversity and biodiversity, such as sea fans, sponges, coral, shellfish (including reef-forming mussels) and nursery grounds for fish, e.g. flatfish, seabass and sand eel. A large proportion of the MCA is within the Studland to Portland candidate SAC (cSAC), the South Dorset recommended Marine Conservation Zone (rMCZ) is located in the south, and the Chesil Beach and Stennis Ledges rMCZ to the west. Marine mammals also use the rich waters as feeding grounds, with annual sightings of bottlenose dolphins off Durlston Head and Portland Bill.

The coastline of the MCA is nationally and internationally designated for

its nature conservation interest, including the Isle of Portland to Studland Cliffs SAC, Chesil and The Fleet SAC, South Dorset Coast and Isle of Portland SSSIs. These reflect the diverse maritime habitats present, including floristically-rich calcareous grasslands, scrub, chalk heathland, vegetated shingle, saltmarsh, reedbeds and wetlands, supporting internationally important sea and wetland bird populations.

### **Cultural / social influences**

The rich coastal and marine resources of the area have been exploited for millennia, with evidence for early human occupation on the clifftops including ancient burial tumuli and medieval strip lynchets. Purbeck Stone has been quarried since the Roman period – with relict cliff-face quarries providing evidence of this past activity. Purbeck Marble in particular was quarried extensively in the medieval period, and the distinctive grey Portland Stone is displayed in landmark London buildings such as Buckingham Palace and St Paul's Cathedral, as well as many local buildings including the imposing HM Prisons on Portland, the Verne being a former military citadel.



*Portland Stone on a stretch of the South West Coast Path*

Other natural resources exploited in the area include oil derived from



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the Kimmeridge shales, The name 'Burning Cliff' is testament to the natural oil found in the shales, which have in the past spontaneously combusted to cause the cliffs to catch fire. Explorations around Kimmeridge began in the 1950s, and a single beam pump or 'nodding donkey' has been pumping continually since 1961, making it the oldest working oil pump in the UK. Oil is transported by tanker to Poole Harbour (MCA 4), from where it is piped to the storage tanks at Southampton Water before being shipped to Fawley Refinery. The 'nodding donkey' pump is a recognised local landmark visible from the sea around the Kimmeridge Ledges.

The rocky ledges, reefs and sediments that characterise the seabed provide rich nursery and feeding grounds for a range of fish species, as do the shipwrecks lying on the sea floor. The notorious Portland Race has strong historic associations with shipwrecks, including the HMS Golden Sunset – an Admiralty patrol vessel that foundered off The Shambles in 1918. A white stone obelisk and red and white banded lighthouse stand on the Bill to assist in navigation to current vessels travelling through the MCA.

Weymouth is one of the region's major fishing ports, and activities include lobster, crab and pink prawn potting, mussel dredging off Portland Bill (stored in Portland Harbour to meet winter demand), scalloping on Lulworth Banks and whelking. Rod and line fishing for seabass is also common off Portland Bill. Recreational fishing charters are a valuable economic activity – The Shambles is a particularly popular site for sole, bream and seabass fishing. The varied sea life, wrecks and reefs, also attracts scuba divers.

The area has a long-standing association with defence, with the natural shelter provided by Portland Bill creating a safe anchorage point for ships at Portland Harbour, exploited by Henry VIII who constructed Portland Castle and Sandsfoot Castle to defend this anchorage. The Navy also saw the potential, beginning the construction of the modern harbour in 1847, using stone from Portland (hand cut by convicts from the local prison) to construct the first two breakwaters, a coaling station and further defences, including a number of forts and batteries. A 10

metre high pillar of rock, Nicodemus Rock, stands on the cliff edge behind Waycroft Quarries on the Isle as a monument to mark the amount of stone that was used (six million tonnes in total). The second two breakwaters were built to defend against underwater torpedo attack in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, and were further strengthened during the World War I. The port also played a key role in the defence of Britain during World War II – being the main departure point for the D-Day landings, and research centre for underwater defence (e.g. sonar and torpedoes).

Further strengthening the area's military associations, the Lulworth Ranges cover more than 2,830 hectares from Lulworth to Wareham. Live firing practice from Lulworth Gunnery includes rounds fired offshore, resulting in a six-nautical mile Danger Area, with target buoys on St Albans Ledge. During live firing red flags are flown, in conjunction with flashing lights on Bindon Hill, Kimmeridge Bay and St. Albans Head. A range patrol boat is also present on the edge of the marine Danger Area to ensure compliance by boats with the access restrictions. Portland Port also continues to provide a home port, training and testing facilities to the MOD.

Portland Port, a former Naval facility<sup>3</sup>, is a hub of activity with significant shoreside facilities. The 'inner harbour' remains the largest man-made harbour in the world, whilst the 'outer harbour' and wider Weymouth Bay offer natural shelter to vessels. The port is continually expanding the range of deep-water and shoreline facilities it provides for vessels from small yachts to cruise liners. These include bunkering, pilotage, towage, crew and store transfers, maintenance and repairs, and cargo handling. The Harbour Authority has consented major development plans to further enhance Portland Port's international importance to the maritime industry, including for a ship repair yard and centre of excellence for offshore and marine renewables.

<sup>3</sup> Portland Port Limited and Portland Harbour Authority Limited, owned by Langham Industries Limited, now manage and regulate the harbour following the Portland Harbour Revision Order 1997.



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*MOD range boat (left) on duties*

The natural harbour of Weymouth also contributes to Marine activity in Weymouth Bay. It expanded significantly during the 18<sup>th</sup> and 19<sup>th</sup> centuries, establishing strong trade links with America (similar to Poole in MCA 4). Weymouth Port handles both freight and passenger ferries to the Channel Islands and St Malo, with large vessels frequently featuring in views from along the surrounding coastline and seas. People arriving by ferry to Weymouth and on cruise ships visiting Portland Port are greeted by the sight of the spectacular coastline with its dramatic white and golden cliffs rising up from the sea, often forming their first glimpse of England.

Recreation and tourism – both coastal and marine – are strongly associated with the area. The majority of the coast is crossed by the South West Coast Path, and there are Country Parks at Durlston and Lodmor. Lulworth Cove and Durdle Door are recognised as popular 'honeypot' sites along the Purbeck coast, with the local cliffs recognised internationally as rock climbing venues, receiving many thousands of climbers each year (including on Portland). The rich geological strata also attract student field courses and fossil collectors to the area. Bird

watching is another popular coastal activity, with an observatory on Portland Bill and an RSPB reserve at Lodmor.

Swanage and Weymouth are the main holiday resorts, with caravan and camping sites dispersed along its coastline. Weymouth's sheltered sandy beach and nearby tourist attractions such as its pleasure pier, pavilion and oceanarium are a particular draw in the holiday season.

### **Aesthetic and perceptual qualities**

This is an area that is close to the hearts of many British people, frequently associated with childhood holidays. Its high scenic qualities and internationally important natural heritage are reflected in the suite of landscape designations covering the majority of the coast: AONB, Heritage Coast and World Heritage Site, and large sections under the custodianship of the National Trust. It is an area that people visit to relax and unwind – including famously King George III, who made Weymouth his summer residence on a number of occasions in the late 18<sup>th</sup> and early 19<sup>th</sup> century. A mounted white horse representing the King is carved into the chalk hills of Osmington, notable in landward views from across Weymouth Bay (and marked on the navigation charts). The area evokes strong levels of tranquillity and an unspoilt quality – Durlston in particular is recognised nationally for its dark night skies, defined as a Dark Sky Discovery Site<sup>4</sup> with a telescope observatory.

The landscape is also home to a number of country estates and parklands, including Lulworth Castle and Encombe – both of which enjoy uninterrupted coastal vistas. Clavell Tower, built in 1830, is a Grade II listed folly and cliff-top observatory, built by Reverend John Richards Clavell of the nearby Smedmore Estate. It was here that Thomas Hardy courted his first love, and it also appeared in his Wessex poems; in addition it provided the inspiration for PD James's novel *The Black Tower*. Recently restored by the Landmark Trust and moved further back from the eroding cliff edge, the tower forms a prominent feature when viewed from the sea.

<sup>4</sup> <http://www.dorsetaonb.org.uk/our-work/tranquillity-dark-skies/138-dark-skies-over-dorset>



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*Clavell Tower viewed from the sea*

Other artists and writers have long drawn inspiration from the spectacular coastal scenery and ever-changing sea conditions, including the famous 19<sup>th</sup> century landscape painter John Constable, who spent his honeymoon in Osmington, near Weymouth. His painting from this period, *Weymouth Bay: Bowleaze Cove and Jordon Hill* (1816-1817) now hangs in the National Gallery in London. Augustus John (1878-1948) is another artist who was based in Purbeck, who in turn encouraged members of the Bloomsbury Group to use the area to fuel their creativity.

Levels of tranquillity along the coastline and surrounding seas from Swanage to the fringes of Weymouth are particularly high, owing to a general absence of modern development or settlement. The peacefulness of the Purbeck coast is broken by the sounds of live firing from the Lulworth Gunnery (both day and night), and pockets of activity in holiday periods relating to the popular tourism destinations of Lulworth Cove and Durdle Door. The Purbeck Coast is valued for its remote, wild qualities, expansive sea views including views to the Isle of Wight.



*Weymouth Bay: Bowleaze Cove and Jordon Hill* by John Constable, 1816–17.

This eastern part of the MCA contrasts strongly with the busy harbours and ports in the west, and their fringing urban development which features strongly in views across Weymouth Bay. Perceptual qualities offshore are highly dependent on sea and weather conditions, with a real sense of danger felt off Portland Bill in particular when a storm is in full force.



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Visual Resource Mapping

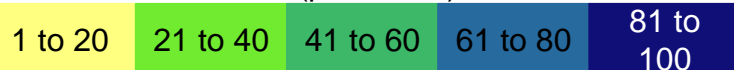
## Land with views of MCA 3



South Inshore/South Offshore marine plan areas

MCA 3: Portland, Weymouth Bay and Lulworth Banks

Land with sea views (percentile)



- Land with extensive sea views of the MCA includes the majority of the Isle of Portland including parts of the Dorset and East Devon World Heritage Site, broad stretches of the coastline between Durlston Head and Weymouth Bay, within the Purbeck Heritage Coast.
- Inland areas with extensive sea views are limited to between 5-10km and are restricted to ridges and high points along the Purbeck Ridge and between Abbotsbury and White Horse Hill within the Dorset AONB, including sections of the South Dorset Ridgeway, South West Coast Path.
- Land with low to moderate views of the MCA extend along the West Dorset Heritage Coast and land within the Tennyson Heritage Coast on the Isle of Wight.
- Inland views of the sea can be gained from Burley and elevated land around Bridport.
- Views of this MCA are generally restricted to within 5km of the coastline with large areas of the land with no views or restricted views of the sea.



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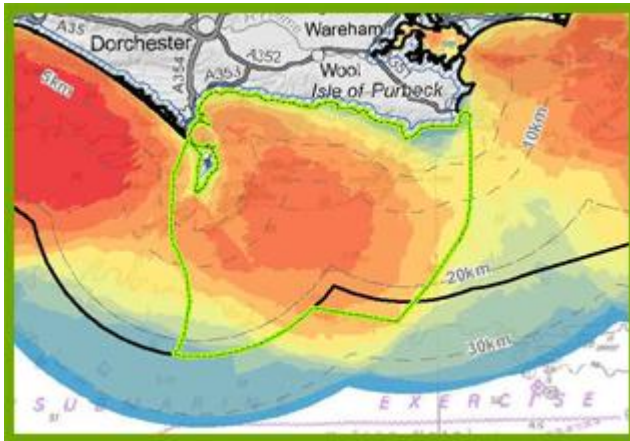
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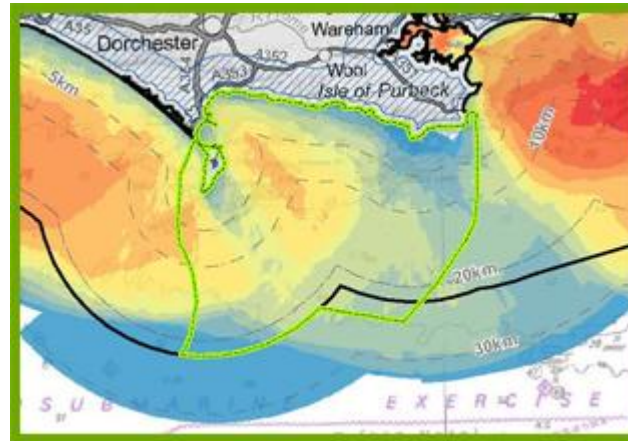
Visual Resource Mapping

## Visibility of sea from land

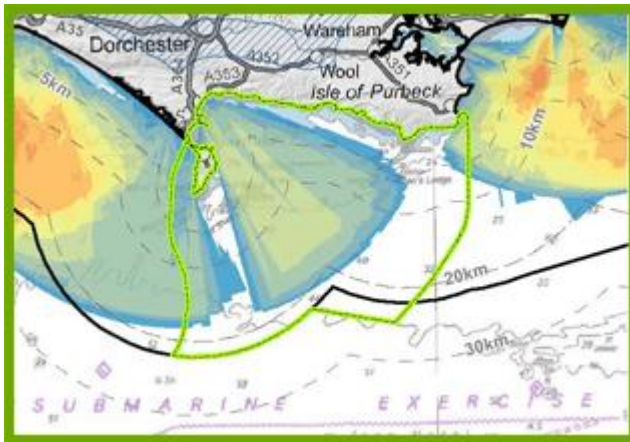
Relative visibility of the sea surface from viewers on land



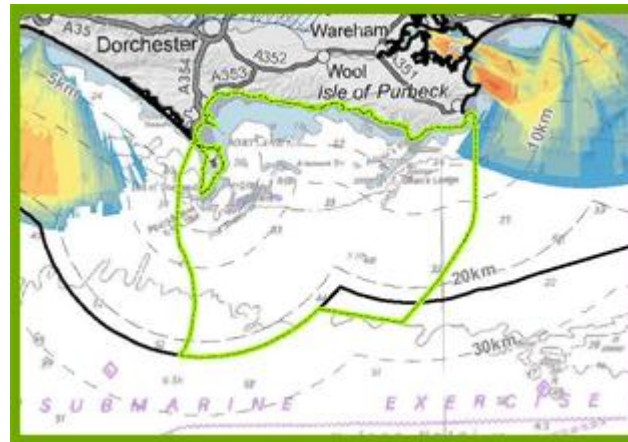
5-10km from the High Water Mark



0-1km from the High Water Mark



1-5km from the High Water Mark



10-20km from the High Water Mark

South Inshore/South Offshore marine plan areas

MCA 3: Portland, Weymouth Bay and Lulworth Banks

Location of viewers

Visibility of sea from land (percentile)

1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
51 to 60	61 to 70	71 to 80	81 to 90	91 to 100



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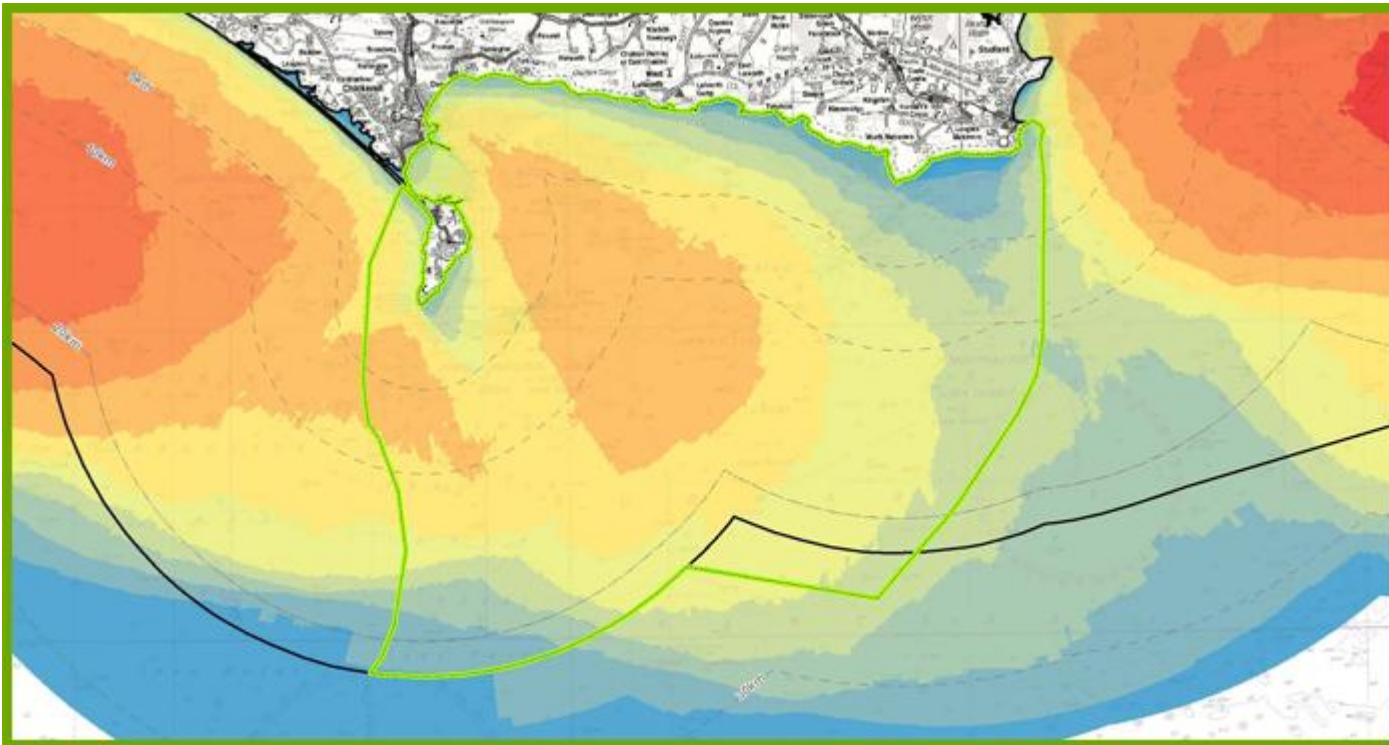
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## Visibility of sea from land

Relative visibility of the sea surface from viewers on land



Up to 20km from the High Water Mark

South Inshore/South Offshore marine plan areas

MCA 3: Portland, Weymouth Bay and Lulworth Banks

Visibility of sea from land (percentile)



- Within the MCA there are no areas with the highest visibility bands.
- The Isle of Portland breaks the visibility from the mainland creating a shadow effect extending from the eastern side of the isle between Portland Ledge and the Shambles.
- The areas of the MCA that are most visible from land are to the south of the Portland Ledge and a larger area extending seaward from Weymouth Bay to the middle of the MCA, crossing the Adamant Shoal and the eastern half of The Shambles sandbank.
- The southern boundary, east of the Isle of Portland and along the coastline between Lulworth Banks and offshore from Anvil Point is less visible from locations on land.
- Generally, visibility gradually increases offshore towards the middle of the MCA.
- The southernmost section of the MCA is more than 20km offshore and visibility of this section is likely to be affected by atmospheric conditions for much of the year.

