



# Seascape Assessment for the South Marine Plan Areas

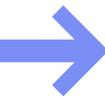
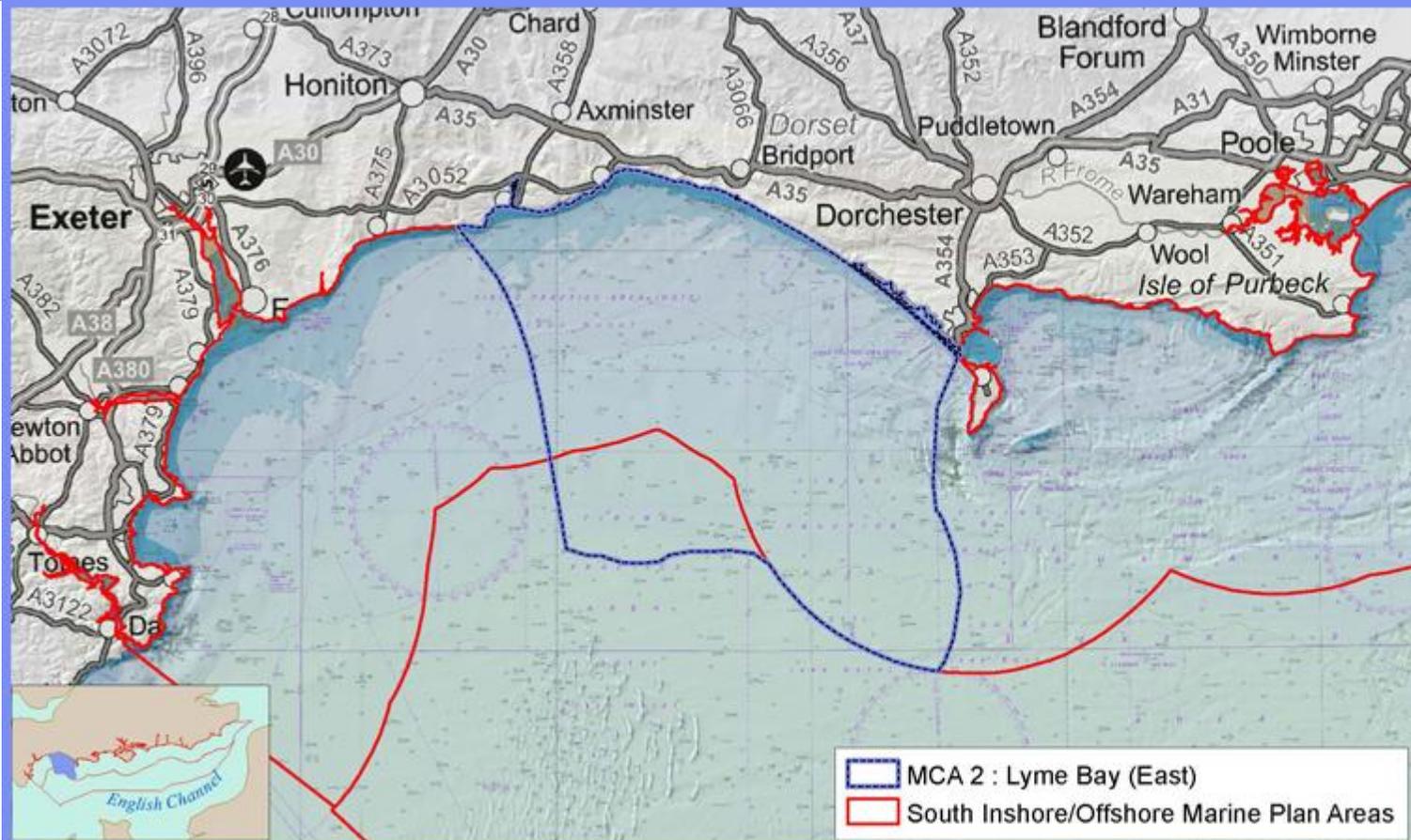
## MCA 2: Lyme Bay (East)

Snapshot

Key Characteristics

Description

Visual Resource Mapping



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## Location and boundaries

This Marine Character Area (MCA) stretches from Branscombe in the west to the beginning of the causeway linking Weymouth with the Isle of Portland to the south-east. The western boundary marks the transition from Cretaceous chalk and limestone (exposed at Beer Head) to the characteristic Triassic red sandstone associated with the coastline around Sidmouth (MCA 1). This transition is broadly followed offshore, extending to a maximum distance of approximately 36 kilometres (19 nautical miles) from the coast and bathymetry of 57 metres. The offshore boundary is largely consistent with the limits of the inshore marine plan area, also following the 50 metre contour line in parts (shown on the Admiralty Charts) to capture the full extent of waters associated with the Bay. The eastern MCA boundary marks the transition to seas influenced by the strong tides of the Portland Race (MCA 3).

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. This MCA is particularly related to MCA 1 (Lyme Bay (West)); together providing a description of the expansive bay as a whole.

## Overall character

This eastern part of Lyme Bay is world-renowned for its varied and highly scenic coastline, with its fossil rich, soft cliffs subject to frequent landslides. The long form of Chesil Beach forms a distinctive eastern edge to the MCA, and an internationally important habitat, combined with the adjacent saline lagoon of the fleet, particularly for birds. Offshore, the bay is exposed to prevailing south-westerlies, including storm surges sweeping into the Channel from the Atlantic. This has resulted in seas strongly associated with ship wrecks, set in the context of a location also of historic importance for trade (and smuggling). The waters of the area are rich in sea life, with rocky ledges and reefs providing valued habitats, including for commercially exploited shellfish and fish; and plankton-rich seas attracting marine mammals, including basking sharks. The area is steeped in famous literary and artistic associations, and today is a popular tourism destination for watersports, fishing, diving as well as coastal recreation and fossil hunting. Long views across the Bay are afforded from high points, as well as out to the Channel.



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## Adjacent National Character Areas (NCAs)

The adjacent coastline includes the following NCAs as defined by Natural England<sup>1</sup>:

- 138: Weymouth Lowlands
- 139: Marshwood & Powerstock Vales
- 147: Blackdowns

## Adjacent nationally protected landscapes

The coastline from Lyme Regis to the Fleet is within the Dorset Area of Outstanding Natural Beauty (AONB), with the western part (around Seaton) falling within the Blackdown Hills AONB. Apart from areas of coastal development at Seaton, Lyme Regis and Bridport, the whole coastline is designated as part of the Dorset and East Devon World Heritage Site ('Jurassic Coast'). The undeveloped sections of the coast and surrounding waters are also defined as Heritage Coast – East Devon in the west, and West Dorset in the east.

<sup>1</sup> <http://www.naturalengland.org.uk/publications/nca/default.aspx>

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- Large sweeping bay backed by a varied coastline, framed to the north-east by the long, narrow shingle spit of Chesil Beach, and to the east by the wedge-shaped Isle of Portland (MCA 3).
  - Includes the highest point of the English south coast at Golden Cap (187 metres), along with the prominent headland of Beer Head (130 metres); the latter marking the western extent of chalk cliffs in England.
  - Sheer eroding cliffs of varied geology, including sandstone, chalk, limestone, mudstone and siltstone, including fossil-rich sections. Majority is within the Dorset and East Devon World Heritage Site.
  - A dynamic and ever-changing coastline due to the soft cliffs, site of the largest active landslip in Europe at Black Venn.
  - Chesil Beach renowned as one of the longest shingle beaches in Europe. Along with the Fleet (the largest lagoon in the UK), the area is Ramsar, SPA and SAC designated.
  - Large expanses of Jurassic mudstone and bands of limestone extending offshore, frequently submerged under Holocene sand, mud and gravel sediments.
  - Seas exposed to prevailing south-westerly gales blowing in from the open sea, with some protection from easterly gales by the Isle of Portland. Wind exposure and tidal streams increase further offshore.
  - Drying harbours at Bridport, Lyme Regis and Axmouth, along with strong tidal streams at the entrance to Axmouth, can provide difficulties for boats seeking anchorage within this MCA.
  - Submerged sea caves, rare chalk exposures and rocky shores supporting diverse plant and animal life, including seaweeds, kelp beds, sponges, limpets and winkles.
  - Offshore and subtidal bedrock reefs with rare corals, sponges and seaweeds, colourful sea slugs, sea squirts and anemones. These reefs also provide hidden hazards to navigation.
  - Reefs and plankton-rich seas home to commercial fish species (e.g. mackerel, herring, bass), lobsters and crabs as well as marine mammals such as basking sharks and dolphins.
- Large number of shipwrecks dating back to the 13<sup>th</sup> century, often from foundering in gales. Wrecks of cargo ships, submarines and aircraft from both World Wars also present.
  - Lyme Bay as a whole has strong associations with World War 2, particularly D-Day landing practices under *Exercise Tiger*.
  - Strong historic associations with international trade and smuggling—including the ship building port of Lyme Regis and rope-making industry at Bridport.
  - Famous literary connections (e.g. Thomas Hardy, Jane Austen) and a strong role in the 19th century early development and public understanding of palaeontology. Fossil hunting remains a popular pastime.
  - Commercial fishing activity, including netting, potting and trawling, by vessels from Belgium, France and Spain.
  - A popular area for watersports as well as recreational fishing and diving charters, with trips to the reefs and wrecks of the area.
  - Coastal tourism and recreation (including beach angling), with the full length of the coastline crossed by the South West Coast Path.
  - A large-scale seascape with characteristically undeveloped coastal horizons defined by elevated ridgelines frequently marked by tree groups. A more remote and 'wild' seascape than MCA 1.
  - Strong intervisibility with the western part of Lyme Bay and the characteristic wedge-shaped feature of the Isle of Portland (MCA 3) to the east.
  - Uninterrupted views to the open seas of the Channel, often with distant views of cargo ships and tankers.

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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. This MCA is particularly linked to the adjacent MCA 1 (Lyme Bay (West)). The two descriptions therefore provide a collective reference point for the Bay as a whole.

### Natural influences

The character of this MCA is greatly influenced by its natural and physical assets, not least its stretch of extremely varied, World Heritage Site-designated coastline. The bay is framed in the east by the 18 mile long Chesil Beach – the largest shingle beach in the UK – and a well-studied example of the process of longshore drift. The flint and chert-dominated pebbles comprising the ridge are graded in size by wave action, and provide important breeding grounds for the little tern and support rare sea pea and sea kale. Along with the adjoining saline lagoon of the Fleet – the largest in the UK – the area is protected by a suite of international and national nature conservation designations (SAC, SPA, Ramsar and SSSI).

The coastline rises westwards to form a series of soft, vertical cliffs which display a continuous sequence of Triassic, Jurassic and Cretaceous rock formations spanning approximately 185 million years of the Earth's history. The classic Jurassic sediments exposed in the cliffs are considered to be the best in Europe, with fossil-rich clays and shales interbedded with limestone in parts. Fossils include vertebrates (famously dinosaurs) as well as invertebrates, including ammonites, corals and insects – which have been studied and collected since the 18<sup>th</sup> century. Cretaceous strata – limestone, chalk, clay and greensand

– also include fossiliferous sections, and form the 'capping' to the higher ground, including Golden Cap (187 metres – the highest point along the south coast). The prominent chalk headland of Beer Head, rising to 130 metres, marks the western extent of chalk in England, before the transition to the Devonian red sandstones which characterise the western part of Lyme Bay (MCA 1).



*Golden Cap*

The soft nature of the underlying geology results in a distinctive smooth, arcuate coastline which is rapidly eroding and dominated by coastal landslips and mass movements. It includes the largest active landslip in Europe at Black Venn, where new material, including fossils, is constantly moved to the base of the cliff and beach. Due to the dynamic nature of the coastline, large sections of the cliffs are sparsely vegetated, allowing their white, golden and ochre colours to stand out distinctively against the sea. Where landslips have occurred, a rich mosaic of calcareous grassland, scrub and self-sown woodland has

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developed, creating internationally important habitats within the Sidmouth to West Bay SAC. The cliffs between Axmouth and Lyme Regis are characteristically clothed by species-rich woodland with a diverse ground flora. This wooded section creates an area of distinct character, with the bright white chalk and limestone cliffs contracting at the base of the rich green treeline.

Offshore, the varied geology extends seaward, with the coastal waters defined by intertidal and submerged rocky reefs, including rare chalk exposures, rock pools and submerged sea cliffs. These are home to a diversity of sealife, including seaweeds, kelp beds, sponges, limpets and winkles. Bedrock reefs further offshore, exposed through the surrounding sand, mud and gravel sediments, are also havens for marine life. These include rare corals, sponges, seaweeds and colourful sea slugs, sea squirts and anenomes. The plankton-rich waters and the Bay's location at the eastern limit of a number of south-western marine species' range, also contribute to the area's rich marine resource. Commercial fish species such as mackerel, herring, bass, pollock, black bream and cod; as well as lobster and crab; are joined by four species of whales and dolphins. Harbour porpoises, bottlenose dolphins, common dolphins and long-finned pilot whales are known to visit the waters, as are basking sharks – using the area in the summer, filtering plankton from the surface waters.

The broad curving form of the Bay, with its south-westerly aspect, means that it is subject to Atlantic storm surges and gales coming off the Channel (which reaches its widest point in this vicinity). Conversely, the distinctive wedge-shaped form of the Isle of Portland, with its elevated plateau, provides shelter to the inshore waters from easterly weather. Exposure therefore increases significantly once the seas pass the end of Portland Bill in the south of the MCA.

The area's rocky reefs, strong tidal conditions (particularly in the east where the Portland Race has an influence) and quickly drying harbours also provide hazards to navigation. Narrow harbour entrances at West Bay (Bridport) and Lyme Regis can be particularly dangerous in periods of hard weather, but both are protected by protruding stone piers (known as The Cobb in Lyme Regis) against south-westerly and westerly weather. At Lyme Regis, a set of leading lights marks the transit into the harbour. A south cardinal buoy indicates the end of a submerged sewer outfall, providing an additional fairway buoy for incoming vessels from the east. At Bridport, the harbour entrance is marked by red and green beacons, along with a sectored fixed white, red and green light on top of the Harbour Master's office.

Entrance to Axmouth Harbour is via the end of a shingle spit where the river meets the sea. The shifting and drying entrance channel, which is also very narrow, is subject to strong tidal flows – six knots or more in spring ebb flows. A pile beacon provides navigation into the channel. Beer also provides open anchorage, but it is advised only in settled, offshore weather<sup>2</sup>.

The distinctive coastline itself, with its natural landmarks (e.g. the ochre-coloured cliffs immediately east of Bridport which are mentioned in the Coast Pilot) provides a guide to vessels navigating through Lyme Bay.

### **Cultural / social influences**

This is an area steeped in coastal and maritime heritage, which greatly shapes the character experienced today. The strategic importance of the area, with trade links to Europe and further afield via the English Channel, has had a particular influence in its development over the centuries.

<sup>2</sup> Cunliffe, T (2010) *The Shell Channel Pilot: Sixth Edition*. Imray, Cambridgeshire.

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The science of palaeontology in England began at Lyme Regis, with the first confirmed discovery of a fossil *ichthyosaur* by a young local girl, Mary Anning, in 1812. The East Devon and Dorset World Heritage Site designation recognises the part played by this region in the development of the science as well as its intrinsic value as a repository of fossils, as described in the 'Natural influences' section. Fossil hunting continues as a popular pastime along the coastline.

In Saxon times abbots from Sherborne Abbey were granted salt boiling rights by Cynewulf, King of the West Saxons, relating to land on the west bank of the river Lyme. The Abbey once owned part of the town, and salt production continued across the wider area into the medieval period. By the 13th century, Lyme had developed into one of the major British ports and a Royal Charter was granted by King Edward I in 1284, adding 'Regis' to the town's name.

Lyme Regis is well known for 'The Cobb', its harbour wall full of character and history, part of the Grade I listed harbour. The wall of the Cobb provided both a breakwater to protect the town from storms and an artificial harbour. The Cobb was of economic importance to the town and surrounding area, allowing it to develop as both a major port and a shipbuilding centre from the 13th century onwards. Shipbuilding was particularly significant between 1780 and 1850, with around 100 ships launched, including a 12-gun Royal Navy brig called *HMS Snap*. Well-sited for trade with France, the port's most prosperous period was from the 16th century until the end of the 18th century. The town's importance as a port declined in the 19th century because it was unable to handle the increase in ship sizes that other ports in the region (e.g. Southampton and Portsmouth) could.

West Bay, the port for Bridport, also developed through international

trade links. It dates back to the 1740s, when hemp and flax were imported to the area from Russia and timber from Scandinavia. Bridport is famously associated with rope manufacture in support of shipping, with one company remaining today from this 750-year old trade. Chalk quarrying around Beer Head also capitalised on the coastal location, with the weighty rock easily transported by sea. Shipwrecks scattered across the sea bed, with particular concentrations near to the area's ports and harbours, paint a picture of the area's long-standing importance in maritime trade. These include the wreck of a vessel stranded in Bridport Harbour in 1280, which subsequently saw the merchants' money and the ship's cargo stolen by locals. Another early wreck (1311) is of a Spanish cargo vessel which foundered near to Lyme Regis. Other ships had their cargo washed ashore, including wine, Spanish wool and flints.

The coastline is notoriously associated with smuggling, marked today by the Smugglers' Trail on the National Trust land at Golden Cap. This includes the famous 18<sup>th</sup> century smuggler Issac Gulliver, known as 'King of the Dorset Smugglers'. Hot spots for smugglers included Lyme Regis itself as well as Chesil Beach, where smugglers landed in darkness, but were able to judge their position owing to the size of the shingle pebbles graded by the sea. Tubs landed here were humped over the beach, and sunk in the quiet waters of the Fleet for collection by Weymouth-based smugglers at a more convenient time. Landing on the beach in stormy weather was a frequent challenge however; on one occasion a 500-ton ship was lifted clean over the beach and into the Fleet by a storm surge<sup>3</sup>.

The strong maritime character of the area, and its influence on the surrounding coastline, is evidenced by a number of famous landmarks used for navigation. The 22 metre high Hardy's Monument, standing on

<sup>3</sup> [http://www.smuggling.co.uk/gazetteer\\_s\\_15.html](http://www.smuggling.co.uk/gazetteer_s_15.html)

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Black Down near Potesham, is a particularly prominent feature. It was erected in 1884 by public subscription in memory of Vice Admiral Sir Thomas Hardy, a commander at the Battle of Trafalgar. The site for the monument was chosen because the Hardy family wanted a monument which could be used as a landmark for shipping. The monument has been shown on navigational charts since 1846, and is visible from a distance of up to 100 kilometres offshore. St Catherine's Chapel, on the aptly named Chapel Hill, Abbotsbury, is also a marker for navigation in the east of the MCA.

In more recent history, Lyme Bay played an important role in both World Wars, with ship and aeroplane wrecks on the seabed (including of German submarines and fighter planes) testament to this. It was the site of Exercise Tiger, a practice run for the D-Day invasion of France in 1944, using the beach at Slapton Sands in Devon as the practice landing area. Today, much of the MCA is defined as a Live Firing Area, retaining its associations with maritime defence.

Today the local economy of the MCA is strongly linked to recreation and tourism – both coastal and marine. The coastline is crossed by the South West Coast Path National Trail with large sections of coast managed by the National Trust. Beer, Seaton, Lyme Regis, Charmouth and Bridport are the main holiday resorts with access to shingle beaches (and an imported sandy beach at Lyme), with further visitor accommodation provided by prominent cliff-top caravan parks, particularly in the east.



*Caravan park near Burton Bradstock*

Anchoring for leisure boats is available at Lyme, Bridport, Axmouth and Beer – Lyme harbour is also popular for recreational sailing. The waters around the harbour are used for various watersports, including sea kayaking and paddle boarding, and are host to the British National Waterskiing Championships.



*Potting off Chesil Beach*

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Both commercial and leisure fishing are key economic activities, capitalising on the area's rich marine life. Inshore trawlers and pot boats (working on a day-trip basis) are based at both Lyme Regis and Bridport, with the waters also attracting trawlers from further afield, including France, Belgium and Spain. At low tide, fishing boats sometimes land their catches on the seaward wall at Bridport, for immediate transport to market. Leisure fishing charters also operate from both harbours, providing trips around the bay, sea angling and diving, including on the numerous wreck sites. Beach-based angling is also popular, particularly from Chesil Beach and the adjacent Cogden Beach.



Lyme Regis beach with views towards Golden Cap

### Aesthetic and perceptual qualities

The seas in this part of Lyme Bay are renowned for being rough and particularly wild during storm surges, with famous stories of ship wrecks adding to a sense of foreboding during these conditions. Poor weather can close in quickly, with low cloud and fog impeding visibility and high cliffs shrouded in mist, contributing to an eerie character and feelings of being at the mercy of nature. Conversely, in calm, clear conditions,

expansive scenic views across and within the Bay are afforded, with the sea taking on a millpond quality, dappled with changing light and evoking a strong sense of tranquillity. The high points surrounding the bay, including Golden Cap and the Isle of Portland (MCA 3) offer dramatic and long-reaching views across the Bay, with glimpses of Dartmoor sometimes possible from Golden Cap. Uninterrupted views out into the Channel are often marked by the shapes of cargo ships on the horizon as they travel through the English Channel's shipping lanes. The coastline itself is defined by expansive stretches that remain undeveloped, further enhancing the area's sense of remoteness and unspoilt qualities. Colourful beach huts, Victorian hotels and some modern developments are associated with the main coastal resorts (particularly Seaton), adding a human scale to the coastline. The area's dramatic coastline and dynamic seas have provided artistic, literary and scientific inspiration to many over the decades, including Dorset's most famous literary figure, Thomas Hardy. Hardy walked on Chesil Beach many times, observing the fishermen and bathers as he took the air. It is featured in *The Well-Beloved* (1897). More recently, Chesil Beach provided the name and inspiration for the acclaimed 2007 novel by Ian McEwan.

Lyme Regis town also has strong literary connections, including as the setting for John Fowles's *The French Lieutenant's Woman* (1969) and for part of Jane Austen's *Persuasion* (1818). Austen stayed in the town with her family in 1804, with letters to her sister Cassandra documenting time spent strolling along The Cobb. It also has connections to famous artists, including JMW Turner, who included a scene of Lyme Regis as part of his 1811 collection of watercolours entitled *Picturesque Views on the Southern coast of England*. The town remains a hub for artists, with many galleries showcasing their work which often has a maritime theme.



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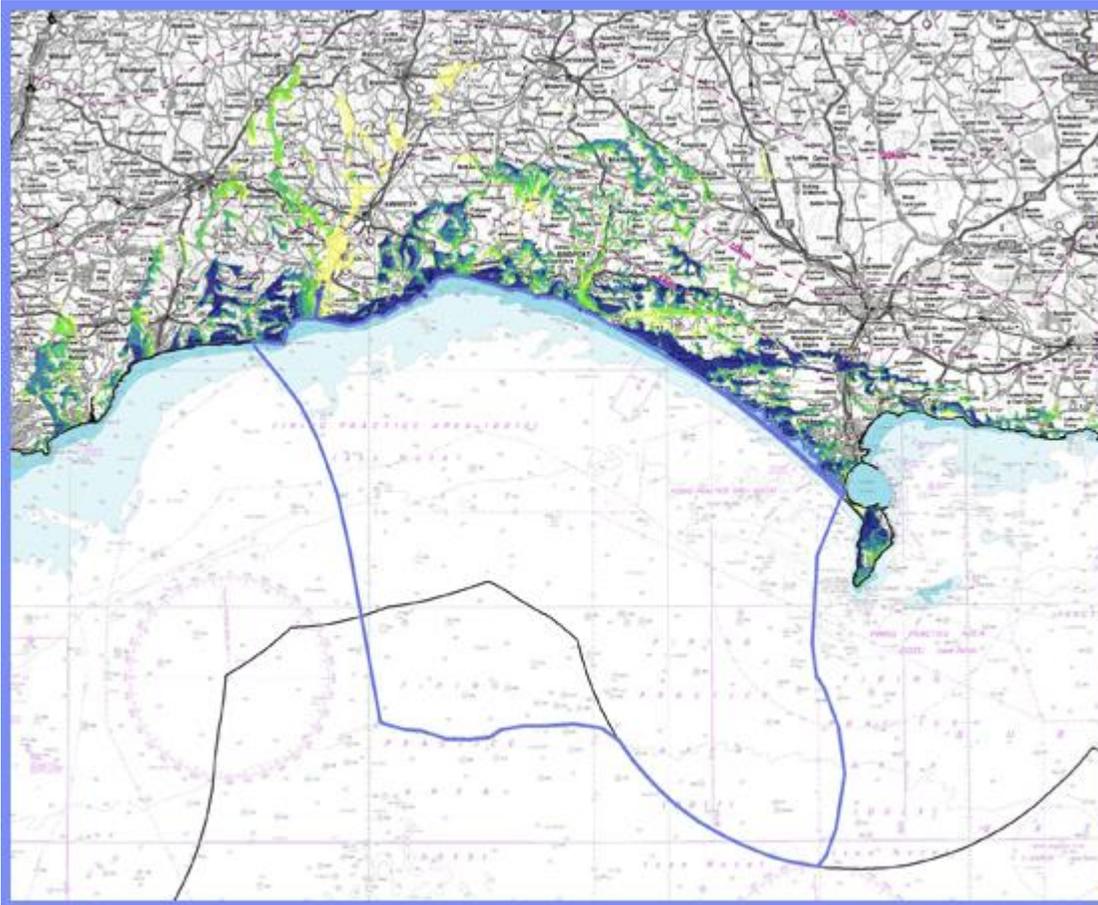
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## Land with views of MCA 2



South Inshore/South Offshore marine plan areas

MCA 2: Lyme Bay (East)

Land with sea views (percentile)

1 to 20

21 to 40

41 to 60

61 to 80

81 to  
100

- Views of MCA 2 extend from elevated land west of Hope's Nose to St Alban's Head and the Purbeck Ridge, situated within Dorset AONB and partly within Purbeck Heritage Coast.
- Extensive views can be gained from broad areas along the coastline, including sections of the South West Coast Path and 5-10km inland including at Osmington, Nottingham, Eggardon Hill, Fishpond Bottom, Broad Down, the western edge of the Isle of Portland and to the north east of Beaminster.
- Mapperton and North Poorton (more than 10km inland) have good views of the MCA. These areas are surrounded by areas with sea views that are not as extensive.
- Locations within the Dorset and East Devon Coast World Heritage Site and the East Devon and West Dorset Heritage Coasts have relatively high views of this MCA.
- Elevated land east of Exmouth, along East Hill, Wootton Fitzpaine, Bettiscombe and between Weymouth Bay and Lulworth Cove also has high views of the MCA.
- Infrequent views can be gained inland from Yarcombe (Blackdown Hills AONB), along the Exe Valley (including part within the East Devon AONB) to Chaffcombe and Chalmington in the Dorset AONB.

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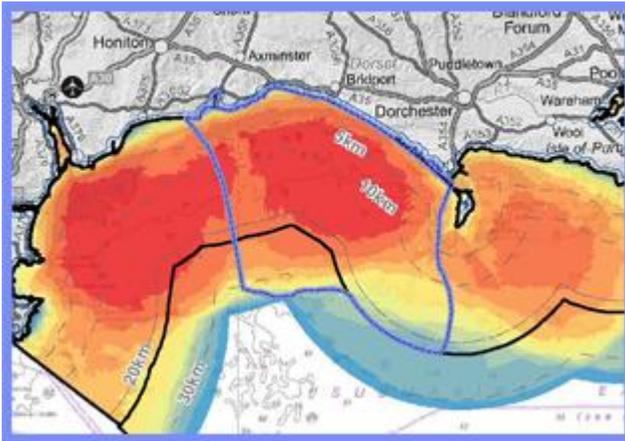
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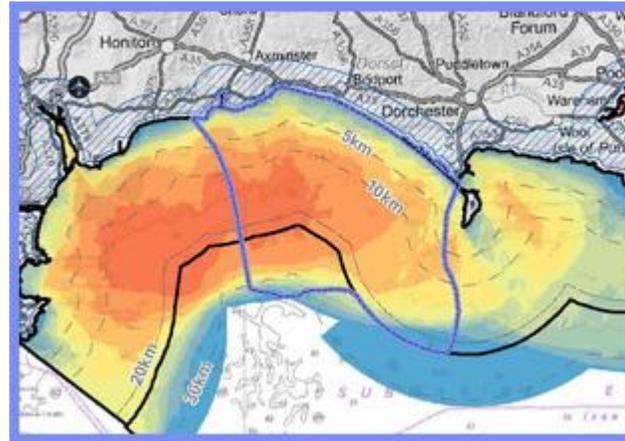
Visual Resource Mapping

## Visibility of sea from land

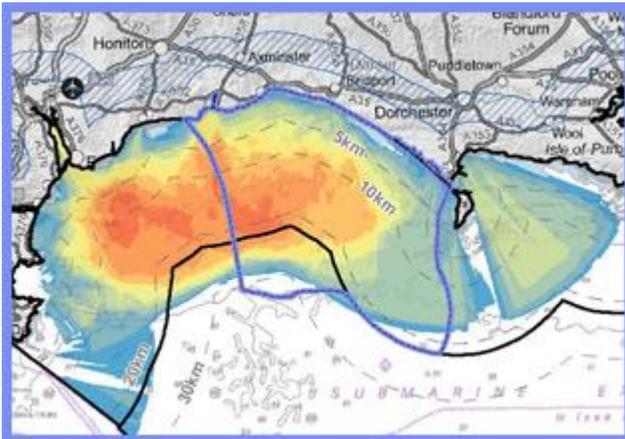
Relative visibility of the sea surface from viewers on land



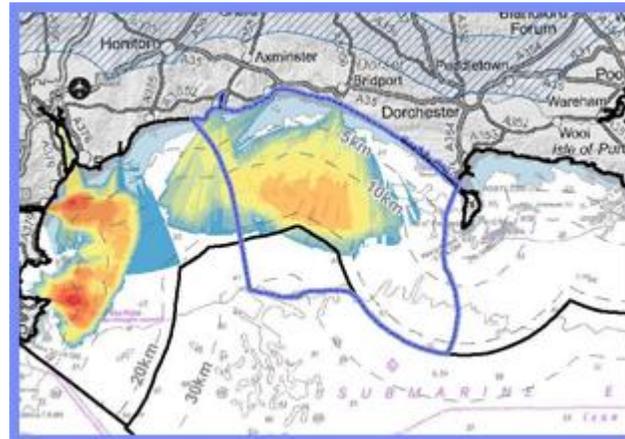
0-1km from the High Water Mark



1-5km from the High Water Mark



5-10km from the High Water Mark



10-20km from the High Water Mark

South Inshore/South Offshore marine plan areas

MCA 2: Lyme Bay (East)

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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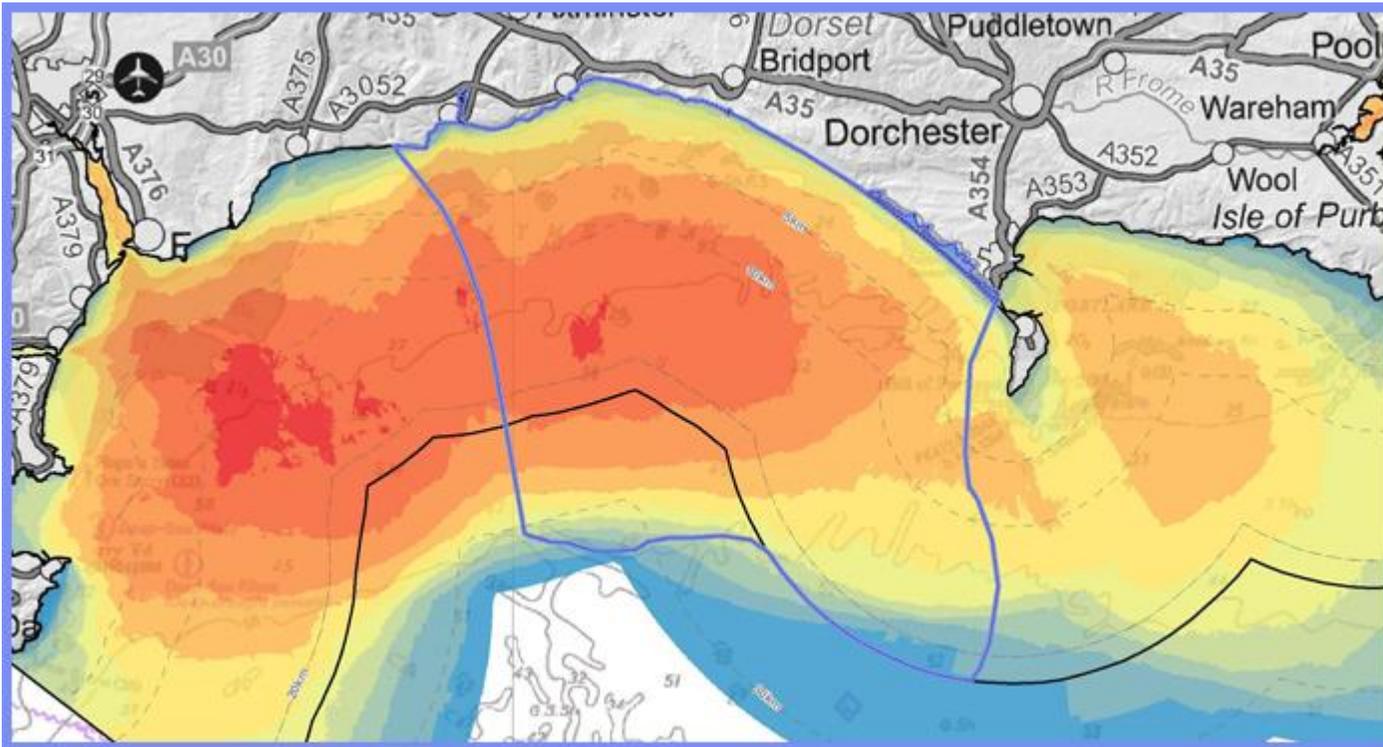
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## Visibility of sea from land

Relative visibility of the sea surface from viewers on land

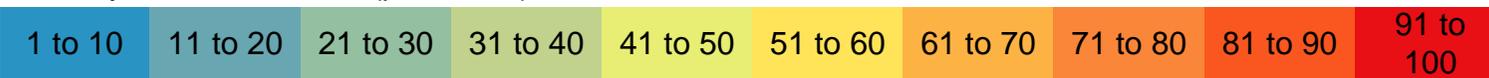


Up to 20km from the High Water Mark

South Inshore/South Offshore marine plan areas

MCA 2: Lyme Bay (East)

Visibility of sea from land (percentile)



- Areas of the MCA classified as being the most visible from the land include a zone at the 30m depth contour between 10-20km (5-11 nautical miles) south of Lyme Regis and west of Chickerell.
- Visibility of the MCA is generally relatively high with very few areas that are not able to be seen from many locations on land, apart from at Chesil Beach, Seaton and the Axe Estuary.
- Visibility of the MCA gradually increases offshore.
- Visibility of the eastern extent of the MCA is lower than in the west.
- Visibility of the sea from the land is lowest along the MCA's southern and south eastern boundaries.
- The south western corner 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.

