

Location and boundaries

This Marine Character Area (MCA) comprises the large-scale Carmarthen Bay and the major estuaries that flow into it: the Taf, Tywi, Gwendraeth and Loughor.

- The MCA reflects how ‘Carmarthen Bay’ is recognised from a marine navigation perspective (Imray, 2008).
- It includes all of Caldey Island and its surrounding waters, as well as the shallows, overfalls and area of high wave climate associated with the Offing Patches to the south.
- It includes all of the local Pembrokeshire Seascape Character Areas 38: Lydstep Haven Coastal Waters, 39: Tenby and Caldey Island, 40: Carmarthen Bay West, 41: Carmarthen Bay North to Pendine Sands and 42: Carmarthen Bay.
- The boundary with the Gower MCA is formed by the tidal island of Burry Holmes, and in the marine area – the Helwick Channel (strongly associated with navigating around the Gower peninsular).

Key Characteristics

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A large scale, open south facing tidal bay , fed by the major estuaries of the Taf, Tywi, Gwendraeth and Loughor.
Diverse shoreline with cliffs, rocky shores, a series of minor headlands and wide sandy beaches as well as dunes, marshes and estuarine mudflats.
Gently shelving, shallow sandy sea floor less than 30m deep along the outer edge of the bay.
Inner bay is sheltered by the adjacent land , with wave exposure increasing in the centre. The estuaries are associated with strong tidal streams and shifting sediments.
Large areas nationally and internationally designated for their nature conservation and geological interest.
The international designations combine to form the Carmarthen Bay & Estuaries European Marine Site , which also recognises the diversity of seabed habitats.
Rich historic and cultural heritage ranging from prehistoric occupation, early religious associations, industrial land uses and coastal trade, and long-standing military uses.
Concentration of wrecks at the difficult entrances to the estuaries, particularly Carmarthen Bar.
Lighthouses on Caldey Island (with a 13 nautical mile reach) and the rare wave-swept cast iron Whiteford Lighthouse form prominent navigational and maritime heritage features.
MOD training area and restricted zone at Pendine and Laugharne Burrows. The firing range and military exercises extend out into the bay.
Shallow, sheltered waters home to a rich fish and shellfish resource. Traditional cockle picking by hand is still practiced in Burry Inlet.
Western coastline includes the popular seaside resorts of Tenby and Saundersfoot, with nearby sandy beaches and sheltered waters popular for a range of watersports.
In contrast, the eastern half of the MCA is associated with higher levels of tranquillity and remoteness , especially when MOD Pendine and Penally are not operating.
Dylan Thomas made his home on the banks of the Taf – the dramatically located Boat House, now a visitor attraction.
Significant lengths of coastline within the Pembrokeshire Coast National Park and Gower AONB , as well as designated as Heritage Coast.
Wide unspoilt views out to sea from along the coast and the Coast Path , across to Gower AONB including Worms Head. Caldey Island forms a charismatic feature in views across to the west of the bay.
Dredgers and commercial vessels can be visible on the horizon within the Bristol Channel (MCA 6).

Natural Influences

This Marine Character Area encompasses the large-scale, south facing Carmarthen Bay, along with the major estuaries of the Taf, Tywi, Gwendraeth and Loughor that drain into the bay.

The rugged Carboniferous limestone cliffs framing the south-west of the MCA rise to between 30 and 50 metres as a spectacular gateway into the bay. A range of nationally important geomorphological features are present, created both by the action of the sea, as well as the melting of the Irish Sea icesheet at the end of the last Ice Age. These include caves, raised beaches and islets, such as at St Catherine's and Monkstone, as well as the larger Caldey Island, which would have originally formed part of the peninsula but was cut off by the processes of coastal erosion. A similar coastline of limestone cliffs and caves outcrops at the opposite side of the bay in north-west Gower, providing physical and visual unity across the water. Waterwynch and Saundersfoot Bays mark the western extent of the South Wales coalfield, with cliffs of soft shale, sandstone and millstone grit.



Loughor estuary

From Pendine eastwards the character of the coastline dramatically changes as a result of the natural processes and actions associated with the estuaries. It includes the largest expanse of saltmarsh in Wales, along with extensive areas of intertidal sand and mudflats supporting a rich diversity of flora and fauna, particularly birdlife. In the east of the MCA, Burry Inlet SPA, Ramsar, SSSI and Important Bird Area (IBA) supports tens of thousands of over-wintering wildfowl and waders such as oystercatcher, shoveler and pintail. The estuary and connected river systems also provide a migratory route for salmon, sea trout, lampreys and shad. Contributing greatly to character around the estuary mouths is the largest spit and sand dune system in West Wales, covering Pendine, Pembrey and Whiteford Sands. Designated as SAC, the dune habitats are of outstanding importance for their rare coastal plants. Large-scale coniferous planting on the dunes at Pembrey provides a distinctive forested edge to this eastern part of the bay.

Overall, the national and international significance of the area's natural assets is reflected in the widespread coverage of designated sites along the entire coast and marine area. The area is also important in gaining an understanding of past environmental conditions and landscapes – with low tide evidence of former woods and forests swamped by encroaching tides in the Middle Ages. The majority of the bay is defined as SPA, SAC and IBA, the separate European designations combining to form the Carmarthen Bay European Marine Site. The shallow nature of the bay and its variety of seabed types (predominantly sand, but including rock and mud) support a rich marine life and ideal conditions for the common scoter, which dive to feed on animals, especially molluscs, living on and within the sediments on the sea floor.

The orientation of the bay and protection afforded by the surrounding land means that it has long provided shelter and safe anchorage from the prevailing south-westerlies, although in strong easterly weather a swell can develop along the west coast. In general, the majority of the bay is clear of navigational dangers and is associated with generally weak tidal streams. However, the waters around Caldey Island include shoals and submerged rocks with associated overfalls and shallow water, including Lydstep Ledge, Sound Rock and Woolhouse Rocks. Similarly, submerged rocks present dangers around St Catherine's Island (Sker Rock) and off Monkstone Point. The main light from Caldey Island lighthouse has a 13 nautical mile range to guide vessels through these waters, along with multiple navigation marks associated with routes to Tenby and Saundersfoot harbours. Traditional sheltered anchorages en-route are available in the lee of Caldey Island and within the sheltered bay of Lydstep Haven.

Pilotage through the estuaries is a contrasting experience to the largely favourable navigational conditions associated with the inner bay. Conditions change rapidly according to the tides, with tidal streams particularly strong at springs (up to five knots). Fast-moving water combined with the physical hazards created by the numerous shifting sand banks and shoals can make navigation particularly challenging. Burry Inlet *'is often written off by yachtsmen as being bleak and inhospitable'* (Imray, 2008). The disused cast-iron Whiteford Lighthouse provides a conspicuous navigation mark within this estuary.

Cultural/social influences

The MCA has a rich cultural history, with past and present activities greatly shaping its character and evoking a strong sense of time depth. These influences range from prehistoric occupation, early religious associations, its industrial, military and maritime heritage, to its socio-economic value today as a major tourism and leisure destination.

Evidence for the earliest settlers in the area include Mesolithic flint workings in ancient peatland at Amroth, along with a range of nationally important prehistoric sites along the coastline, including Iron Age promontory forts on headlands (e.g. Top Castle and Napps Camp). The monastic settlement on Caldey Island has its origins in the 6th century and remains an important ecclesiastical centre and home to a Cistercian Order of monks. The Norman invasion saw the construction of a number of defensive structures along the coast, including castles with views across the bay to spot enemies approaching by sea. Tenby is a fine example of a fortified town – with its town walls, castle and the nearby Palmerston fort on St Catherine's Island, accessible at low tide via Castle Beach. The estuaries of the Taf and Tywi Rivers were also strategically important, with castles controlling the land and seascapes at Laugharne, Kidwelly and Llansteffan. All three are now managed by Cadw and open to the public as popular visitor attractions.

The medieval period saw the widespread reclamation of land surrounding the estuaries, with 17th century sea walls, drains and canals testament to this period. Diverse evidence of centuries of human activity is recognised by the estuaries' inclusion on the Register of Outstanding Historic Landscapes. The rich coal and iron reserves of the area were exploited in the medieval period, with a reference to mining in Saundersfoot (including direct from the soft cliffs) from as early as 1324. The 19th century saw the construction of the town's harbour and linking railway, with trading by sea of supreme importance. Coal mining and quarrying activity along the coastline stimulated the development of many small ports, quays and landing places, with historic infrastructure and relict workings remaining traceable today. Trade along the River Lougher was hindered by the shifting sands, which made the river treacherous all the way up to Lllangench Quay. In late 19th century, the Llanelli Port Authority installed a training wall to confine the river Lougher to the north side of the estuary. Unfortunately, this merely dissipated the currents, accelerating the silting-up of the river. It was abandoned in 1953 and has since been breached in several places.

Significant numbers of wrecks are reported within the bay, with the likelihood that most correspond with the difficult entrances to the estuaries (e.g. lost on the Carmarthen Bar or Pendine Sands). Carmarthen Bar was notorious for its shipwrecks, a number of which are prominently visible and accessible at low tide, while others are revealed periodically by the ever-shifting sands. Other key locations are the Woolhouse Rocks and Spaniel Shoal. Cefn Sidan features a concentration of wrecks, such as the iron-hulled barque *Teviotdale*, lost in 1886 whilst carrying coal from Cardiff to Bombay. Constructed to guide vessels through the dangerous waters of Burry Inlet, the Whiteford Lighthouse is Grade II* Listed and a Scheduled Monument. It is a rare survival of a wave-swept cast-iron lighthouse in Britain, and an important example of 19th century lighthouse design and construction.

Carmarthen Bay has a long history of military use, particularly associated with WWII when it was considered to be the most vulnerable area of Wales to German invasion. There remains a legacy of intensive coastal defences both on the coast and extending into inter-tidal area, as well as training relicts such as the nationally protected WWI practice trenches on Penally Range. The military retains a significant presence within the MCA, with ground, aerial and sea practice ranges at Llanrhidian, Pembrey and Pendine. Wartime military activity is also associated with aircraft downed at sea, such as *Miles Martinet HP380*.

The shallow, sheltered waters of the bay and estuaries are home to a rich fish and shellfish resource, which has been exploited for centuries. Saundersfoot and Burry Port are commercial fishing centres, with local fisherman landing varied catches from the surrounding waters. Whelk potting takes place within the bay, whilst shellfish gathering (for mussels, periwinkles and cockles) is an important economic activity in the estuaries. Burry Inlet is one of the few estuaries left in the UK where commercial hand gathering of cockles takes place using a rake and riddle, transported by donkey carts.



Tenby harbour © John Briggs

Both Tenby and Saundersfoot remain bustling harbours, but with a significant focus on coastal/marine leisure by both visitors and their respective popular sailing clubs. In the east, Burry Port also provides marina facilities and is home to a local yacht club. As well as sailing and pleasure boating (including trips to Caldey Island), a wide range of watersports take place within the bay. The coastline boasts a number of popular sandy beaches with safe bathing waters, including the long sweep of Pendine Sands – venue for multiple land speed record attempts and races since the 1900s. Walking along the coastline is afforded by both the Wales and Pembrokeshire Coast Paths, whilst Pembrey Country Park is a popular recreational destination for locals and visitors alike in the east of the bay.

Aesthetic and perceptual qualities

The MCA provides a strong marine setting for Pembrokeshire Coast National Park in the west and the Gower AONB to the east – contributing significantly to the special scenic qualities of these nationally protected landscapes. The outstanding landscape and natural heritage values of the south Pembrokeshire and north Gower sections of the coastline are also recognised in their further designation as Heritage Coast. These nationally important landscapes frame the outer bay, the distinctive shapes of Caldey Island and Worm's Head (MCA 4) characterising views from the northern shoreline.

The varied land uses and rich diversity of coastal habitats conveys an ever-changing scene of different colours and textures – particularly influenced by the status of the tides, the weather conditions, and the time of day/year (all also affecting levels of human activity and therefore perceptions of tranquillity and remoteness). Views to and within the estuaries are particularly dynamic – from open sweeps of sand at low tide, to turbulent, complicated tidal races mid-tide and then journeying to flatter waters at high tide. Many locations along and behind the coastline enjoy expansive views across the bay, with more distant glimpses of shipping and dredging activity in the Bristol Channel (MCA 6) reinforcing the maritime setting.

The western part of the MCA, with its popular seaside resorts and golden beaches, becomes a hive of activity in the spring and summer holiday periods and weekends – with people flocking to the sandy beaches and enjoying many water-based activities in the safe, sheltered waters. Coastal caravan parks (e.g. Lydstep Haven) are noticeable and detractive in parts. By contrast, the eastern half of the bay, where the estuaries dominate,

evokes a stronger sense of tranquillity and naturalness, broken by the sounds of military firing which can reverberate across the bay.

Rising hills behind the bay contributes to its setting, including the rounded profiles of the Pembrokeshire hills and the open, elevated commons topping the Gower peninsula. In turn, these elevated locations afford expansive views into and across the bay, contributing to a sense of vast scale and openness. The changing light and sea conditions have long provided inspiration for artists and writers, including a number of watercolour painters from the 18th century onwards, such as Charles Bentley, Nicholas Pocock and A.R. Quinton. Laugharne has famous literary associations with the poet Dylan Thomas, whose works provide insights of life in a small Welsh community during the mid-20th century. The castle and 'Dylan's Birthday Walk' trail around the castle and shores of the Taf celebrate the inspiration the landscape gave for his work '*Poem for October*' (1944).

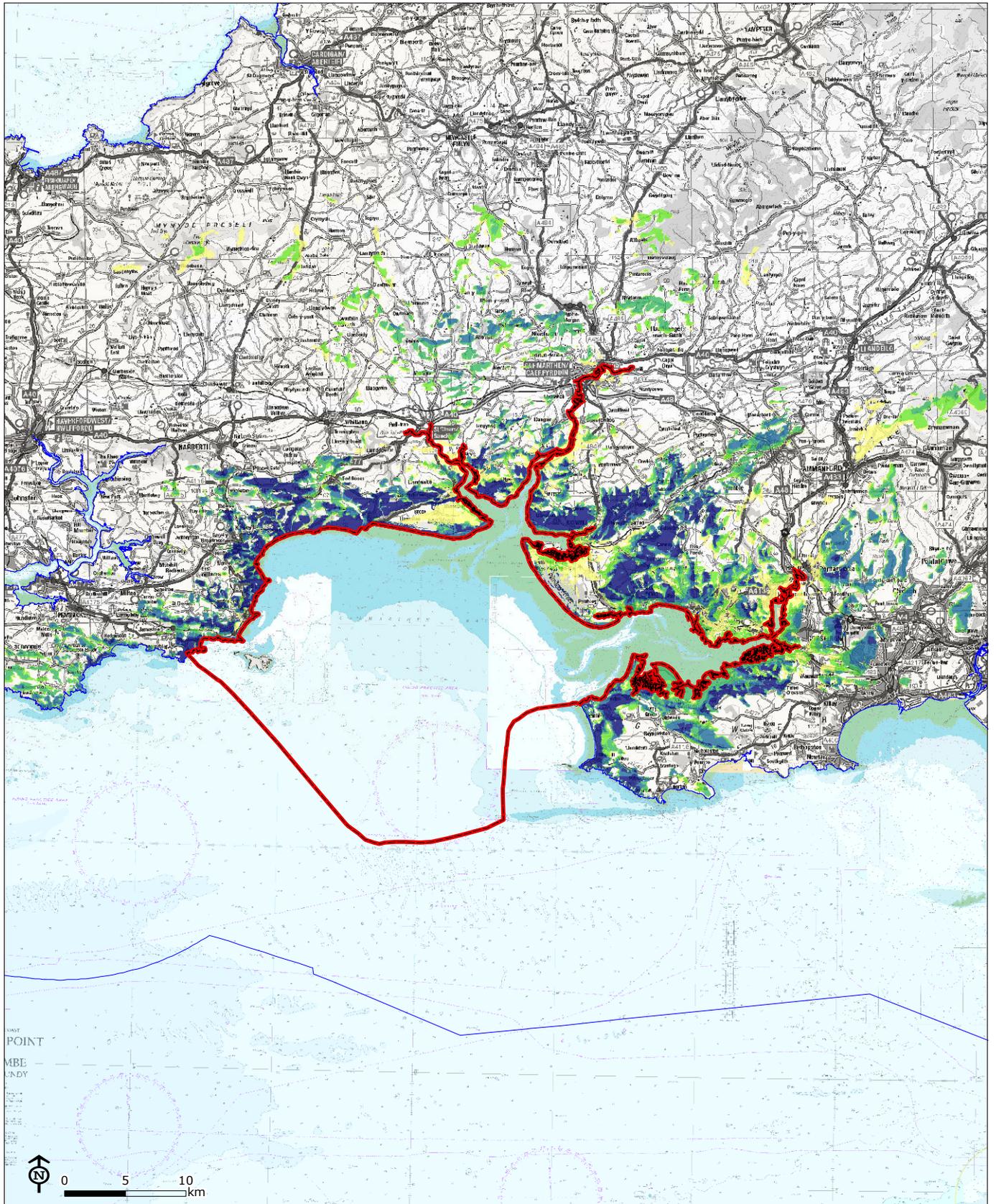


'Shipping off Tenby' by Charles Bentley, 1838. With Caldey Island visible in the background (© Crown Estate, 2013)

The Visual Resource Maps (VRM) that follow provide a more detailed spatial representation of the visibility of this MCA from the surrounding land in Wales. Please refer to the technical report for an explanation of how these maps were generated and how they should be interpreted.

The first map shows land with views to this MCA, the darker shading indicating land where from which more of this MCA is visible.

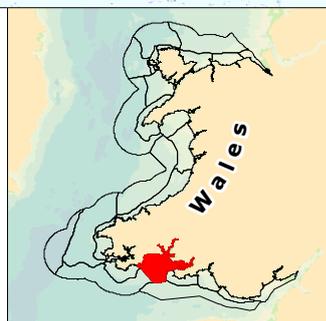
The second map shows sea visible from land, the warmer colours being areas of sea that are visible from more places on land. This comes from a national assessment of Wales so the results do not relate specifically to this MCA, whose boundary is overlaid for location only. The four individual versions show how the results vary depending on how far inland hypothetical viewers are located.



- 24: Carmarthen Bay and Estuaries
- Wales Inshore Marine Plan Area

Land with sea views (Percentile)

- < 20 (Lowest)
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100 (Highest)



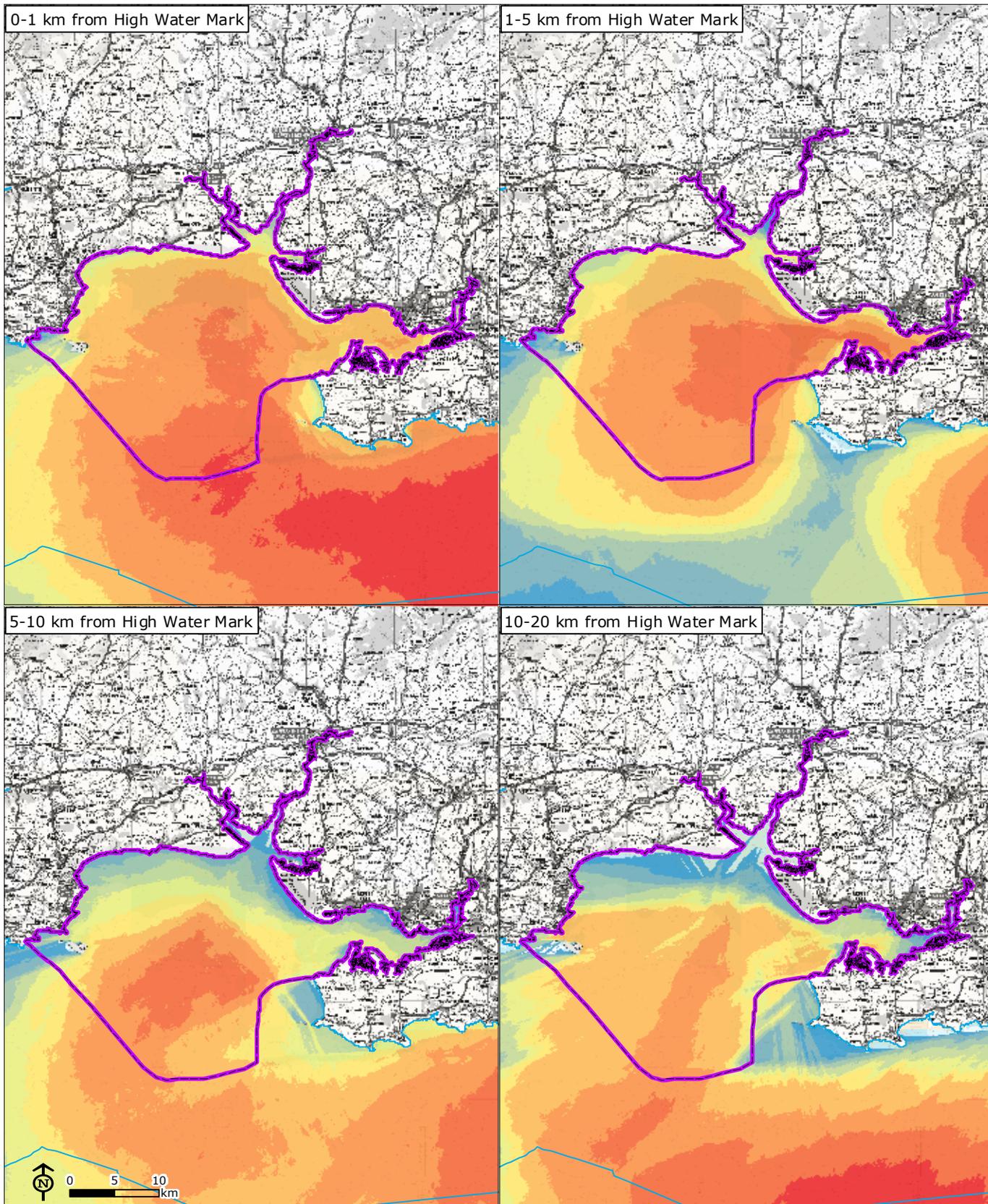
Wales National Seascape Assessment

**Land with Views of:
MCA 24: Carmarthen Bay and Estuaries**

Source: LUC, NRW, OceanWise



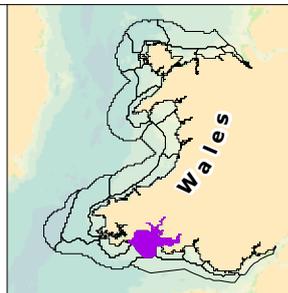
Map Scale @ A4: 1:450,000



-  24: Carmarthen Bay and Estuaries
-  Wales Inshore Marine Plan Area

Visibility of sea from land (percentile)

 <10 (Lowest)	 51-60
 11-20	 61-70
 21-30	 71-80
 31-40	 81-90
 41-50	 91-100 (Highest)



Wales National Seascape Assessment

Relative Visibility of the Sea Surface from Viewers on Land
MCA 24: Carmarthen Bay and Estuaries



Map Scale @ A4: 1:620,000