

Location and boundaries

This Marine Character Area (MCA) covers the Welsh side of the Dee Estuary, extending offshore to cover the sand banks and main approach channels which define the entrance from Liverpool Bay.

- The MCA's offshore extent marks the edge of the shallows surrounding the West Hoyle Bank, marking the transition to the deeper waters of MCA 4: North Wales Open Waters.
- Its landward and eastern boundaries are formed by the Wales Inshore Marine Plan Area. Please note that the Dee Estuary and West Hoyle Bank extend into English waters, as indicated in the map above.
- Its western extent takes in the whole of West Hoyle Spit and its related shallows, and includes the main entry point into the Dee via the Welsh Channel from South Hoyle Channel (MCA 02).

Key Characteristics

Please note that the Dee Estuary continues into English Waters under the jurisdiction of the Marine Management Organisation as indicated in the map above. This MCA profile focuses on the western part of the estuary which falls within Welsh waters.

| Key Characteristics |
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| The Dee Estuary forms a natural border between Wales and England , backed by the rising foothills of the Clwydian Range AONB. |
| Estuary internationally and nationally designated for biodiversity , the expansive intertidal sand, mudflats and saltmarsh supports thousands of wetland birds including shelducks, teals, godwits, waders and tern. |
| Constantly shifting sandbanks with changing depths; hazards marked by numerous buoys, lights and fog horns, including the former Point of Ayre lighthouse. Main entry channel to the Dee maintained by dredging. |
| Flat, open topography and low water stand means the area can be quickly inundated during high tide. A small bore can develop on a particularly high spring tide. |
| Long-standing importance for trade, defence and occupation , including the nationally important remains of Flint Castle and Basignwerk Abbey – the latter exploiting the rich natural resources of the coast and surrounding farmland. |
| The Dee provided the maritime approaches to the Roman port of Chester . Signs of past industry are visible along the length, including abandoned industrial waste heaps. |
| The remains of historic ships foundering on the sand banks include an emigrant vessel en-route from Liverpool to America in 1801 with 300 passengers (all rescued). |
| Nationally important industries continue to dominate , including processing plants for Irish Sea gas and servicing plants for the nearby offshore wind farms from the Port of Mostyn. |
| Waters commercially and recreationally fished , including shrimp trawling and the traditional hand gathering of cockles and mussels. |
| MCA valued as an important recreational space providing access to the coast for nearby urban populations, including via the Wales Coast Path. RSPB reserves provide opportunities for bird watching. |
| The sand dunes at the bar of the estuary contain inland views and urban/industrial influence, creating a contrasting maritime character with expansive views along the coast and out to the Irish Sea (with its offshore wind farms). |
| The sounds and sights of thousands of birds and the expansive intertidal habitats with ever-changing tidal character provide a contrast to nearby human activities and noise. |

Natural Influences

The Dee Estuary is a large, funnel shaped sheltered landform which forms a natural border between Wales and England. It is one of the largest and most important estuaries in the UK, supporting extensive areas of intertidal sand, mudflats and saltmarsh. In Wales, the MCA stretches from the industrial fringes of Connah's Quay to beyond the estuary mouth as it opens into Liverpool Bay. This outer part of the area is defined by the expansive drying sand banks of West Hoyle, Mostyn Bank and Salisbury Bank. The low-lying shoreline of the estuary is backed by the foothills of Halkyn Mountain and the Clwydian Range AONB, creating a contrasting upland backdrop to this flat, open seascape.

The estuary is unusual in that comparatively little water occupies so large a basin. It is believed that it owes its origin to the passage of glacial ice flowing south-easterly from the Irish Sea during successive glaciations, eroding a broad and shallow iceway through the relatively soft Triassic sandstones and Coal Measures mudstones which underlie the area. The inner parts of this channel were filled by glacially derived sands and gravels in the Holocene epoch, with infilling by mud and silt continuing since. The sand banks defining the estuary mouth are constantly on the move and water depths change frequently, characteristics that need to be considered by anyone navigating through the waters.



Holywell Bank, Dee Estuary

The main channel in and out of the Welsh part of the Dee (South Hoyle Channel in neighbouring MCA 02 which merges into the main Welsh Channel within this MCA) is maintained by dredging as far as the commercial quay at the Port of Mostyn. After this point the channel narrows and is canalised through to Chester. The course of the navigational channel is marked out by buoys and a frequent series of navigational markers, including red and white flashing lights to aid night-time navigation. The now-disused 18th century Point of Ayr lighthouse forms a supplementary day mark at the entrance to the Dee – situated prominently on the northernmost point of mainland Wales.

As well as the physical hazards presented by the shifting sand banks, the estuary's flat open topography and low water stand means that the area becomes quickly inundated during high tide. On a particularly high spring tide a small bore can develop, travelling along the estuary to as far as Chester. These events can be associated with a rare wildlife

spectacle; the sight of thousands of birds and other wildlife (including small mammals) fleeing the tidal surge. At these times the RSPB runs special high tide bird watching events from its Parkgate reserve on the eastern (English) shoreline of the estuary.

All of the Dee Estuary, including Gronant Dunes and Talacre Warren, is designated as SPA, SAC, Ramsar and SSSI. The area is also designed by the RSPB as an Important Bird Area, with the organisation managing a significant amount of shoreline as reserves. These national and international designations (which also cover the English side) reflect its varied intertidal habitats including expansive sand and mud flats, Atlantic salt meadows, dune slacks and dune grassland. It is a dynamic seascape, with natural processes brought about by tidal movements and the transportation of sediment meaning both accretion and erosion are taking place. This includes the development of new areas of saltmarsh along the shoreline as well as the erosion of sand dunes along the north-west coast. The elaborate feeder creeks create a diverse array of habitats and the whole estuary system is of international importance for passage, breeding and wintering wetland birds, as well as its populations of sea and river lamprey. The presence of the uncommon anadromous fish, smelt (*Osmerus eperlanus*), is also of note.

During the winter the intertidal flats, saltmarshes and fringing habitats provide feeding and roosting sites for internationally important numbers of ducks and waders. In summer the site supports the last remaining breeding colony of Little Terns in Wales. Additionally, the estuary is important during migration periods, particularly for wader populations moving along the west coast of Britain and for Sandwich terns in the post-breeding season. West Hoyle Bank is a regionally important haul-out site for a large herd of grey seals, a particular draw for leisure sailors who use the traditional anchorage east of the sand bank for shelter.

Cultural/social influences

From the earliest times, the estuary was a major trading and military route to and from the Roman port of Chester. Extensive Roman industrial settlement has been identified along the Roman road to the east of Flint, probably served by docks and wharves on the estuary. From around the 14th century, Chester provided facilities for trade with Ireland, Spain, and Germany, and seagoing vessels would "lay to" in the Dee awaiting favourable winds and tides (finding anchorage in the Wild Road at the mouth of the estuary or Mostyn Deep further inside the river). Supporting industries such as shipbuilding thrived at several locations along the Dee, including Sandycroft Ironworks where the famous (but ill-fated) 19th century Australian passenger vessel the *Royal Charter* was constructed – see also MCA 4.

As the Welsh side of the Dee started to silt up during this period, harbouring facilities developed on the Wirral side, including "Hoyle Lake" or Hoylake. The excavation of the New Cut in 1737, to improve access to Chester, diverted the river's course to the Welsh side of the estuary, serving a number of small harbours and quays including Greenfield and Connah's Quay. However, this failed to stem the silting up of the river, and Chester's trading function declined as that of Liverpool on the River Mersey grew.

Evidence for early settlement, occupation and defence along the coastline and hills above is present in a range of features dating back to the prehistoric period. Strategically sited ancient features include the Iron Age hillfort of Moel y Gaer, located on the summit of Halkyn Mountain (itself on the national Register of Outstanding Historic Landscapes). The hillfort overlooks the estuary from above and allows long-distance views across the Mersey to Liverpool. The shoreline of the estuary includes the nationally important remains of the Cistercian Basingwerk Abbey, originally founded as a house of the order of Savigny in 1131 to exploit the natural resources of the adjacent waters and surrounding farmland. A further nationally important site is the remains of Flint Castle, also situated in a prime defensive shoreline position. Managed as a visitor attraction by Cadw, the castle was one

of a series established by Edward I in 1277. Along with nearby Rhuddlan it was deliberately sited in order to enable its supply and access by sea and subsequently formed a launching point for the final invasion of Gwynedd in 1282. It is the earliest of Edward's great north Walian castles, the spectacular isolated great tower representing a masterpiece of medieval military architecture. The castle retains significant views into the estuary and along the coastal communication routes that served it and the buried remains of docks and landing bays are likely to be preserved alongside the ruins. It also features in Shakespeare's *Richard II*.

Further offshore, the West Hoyle Bank has been the cause of numerous shipping losses over the centuries – indeed, in terms of documented losses it is the greatest navigational hazard in Welsh waters. These have included a ship with 300 emigrants on board which set sail from Liverpool to America in April 1801. The ship stranded on the Hoyle Bank but the passengers and crew were rescued. A wooden sailing vessel *Ceylon* was also stranded on the bank in 1901 carrying iron and scrap from Port Dinorwic to Liverpool. Historic vessels navigating through these hazardous waters were previously guided by the Grade II Listed Point of Ayr Lighthouse, originally constructed in 1776 though inactive since 1883. The lighthouse once displayed two lights. The main beam shone seaward towards Llandudno (MCA 2) with a secondary beam shining up the Dee, towards the hamlet of Dawpool, in Cheshire. Today the lighthouse is a popular visitor attraction and continues in its navigational role as a prominent day marker.

The estuary fringes were industrialised from quite early on in the Industrial Revolution, and an industrial character pervades despite the presence of expansive intertidal semi-natural habitats. These include a steel works, the gas fired Deeside Power Station at Connah's Quay, paper mills, a large landfill site, a chemical manufacturing plant along with numerous smaller manufacturing industries and a web of pylon lines. Signs of past industry are visible along the whole length of the estuary. Large stretches of what now appear as flood embankments are formed from abandoned industrial waste heaps, some still containing highly reactive and caustic materials.



Deeside Power Station

For many years a colliery operated at Point of Ayr at the northern extremity of the Flintshire Coalfield; it was one of the last remaining operational deep mines in Wales, closing in 1996. The coalfield extended northwards under the Irish Sea. By 1953, 738 men were producing 213,000 tons of coal annually. Nothing now remains of the colliery, however, like many former coal mines, the name is retained by "Point of Ayr Colliery Band", a brass band competing at Championship level. Today a natural gas sweetening plant is situated on the site of the former colliery, fed by gas piped in from the Douglas Complex of gas and petroleum drilling platforms in Liverpool Bay (including in MCA 4). After processing, the gas is used to power the combined cycle gas turbine power station at Connah's Quay. Views to the turbines comprising the UK's first major offshore windfarm at North Hoyle, within MCA 4, reinforce the importance of the wider area for energy generation. The Port of Mostyn serviced the construction of this wind farm, as well as Rhyl Flats (MCA 2) and several others within the Irish Sea, including in the North West Marine Plan Area. The port still plays a major role in the operational maintenance of all seven current Irish Sea wind farms.

The waters of the estuary and its approaches are commercially and recreationally fished, including trawling (e.g. for shrimp), set netting and the traditional hand gathering of cockles and mussels along the shoreline. Small charter boats lie up along the South Hoyle Channel, just outside the estuary approaches in MCA 2, fishing in the shallow waters for whiting, plaice and dab.

The MCA sits on the doorstep of the large urban populations of both north Wales and north-west England. It therefore provides nearby recreational opportunities for many to access the coastline and its immediate waters. Large sections of the shoreline are crossed by the Wales Coast Path and a locally promoted community link walk, whilst reserves managed by the RSPB allow visitors opportunities for wildlife watching. The main A548 and Chester to Holyhead railway line also pass along the fringes of the MCA, linking England with mainland Wales and affording views to travellers along the estuary and beyond.

Aesthetic and perceptual qualities

This is a seascape of contrasts. An outer, open and exposed sea and coastline extends north into Liverpool Bay from the Point of Ayr while a sheltered, more enclosed inner-estuarine part lies south of that point. Both areas have very different qualities in consequence.

Within the estuarine part to the south of the MCA, there is a distinct sense of containment from adjacent land. On the Welsh side this setting is characterised by rising hillsides of woodlands, hedgrows and pasture land, interspersed with pockets of built settlement, where many modern houses face out to capture panoramic views over the estuary.

Between the hillsides and estuary the narrow strip of coastal level provides constricted space for both road and rail transport, and is also the location where most activity is focussed. It overlies a wealth of fascinating small-scale detail associated with the evolution of past estuary-side industry. Much has been over-written but occasional small sheltered creeks remain, with oozing mud, the remains of old quaysides, rotting boats and associated smells. In many places modern industry now supercedes, with industrial landmarks seen from all parts of the estuary and collectively form the most heavily industrialised seascape setting in North Wales. Further large structures are seen at Port of Mostyn, where in recent years very large, distinctive, white components for offshore wind farms have been stacked on the quay.

Yet within the estuary, extensive sand and mud banks and remaining areas of salt marsh are still collectively of sufficient scale and intactness to retain a sense of wildness and remoteness. The sight and sound of adjacent industry and transport contrast with the calls of the thousands of birds which make the area their home. When in the estuary, it is easy to under-estimate the vast scale. Temptation to walk out across the apparent flatness is moderated by realisation of the danger of being caught out by swiftly-flowing and far-reaching incoming tides, especially when combined with the soft, contorted muddy channels, issuing their muddy water from the salt marsh and, further out, the shifting sand banks and deep main channels.

As the outer estuary beyond Point of Ayr moves into Liverpool Bay, the moving blades of the 107 metre high turbines at North Hoyle (MCA 4) become the dominant features. Further out to sea, offshore wind farms continue to form key characteristics, notably in Wales being the Gwynt-y-mor (also MCA 4) and Rhyl Flats (MCA 2) developments. The historic Point of Ayr lighthouse provides a prominent marine navigation focal point.

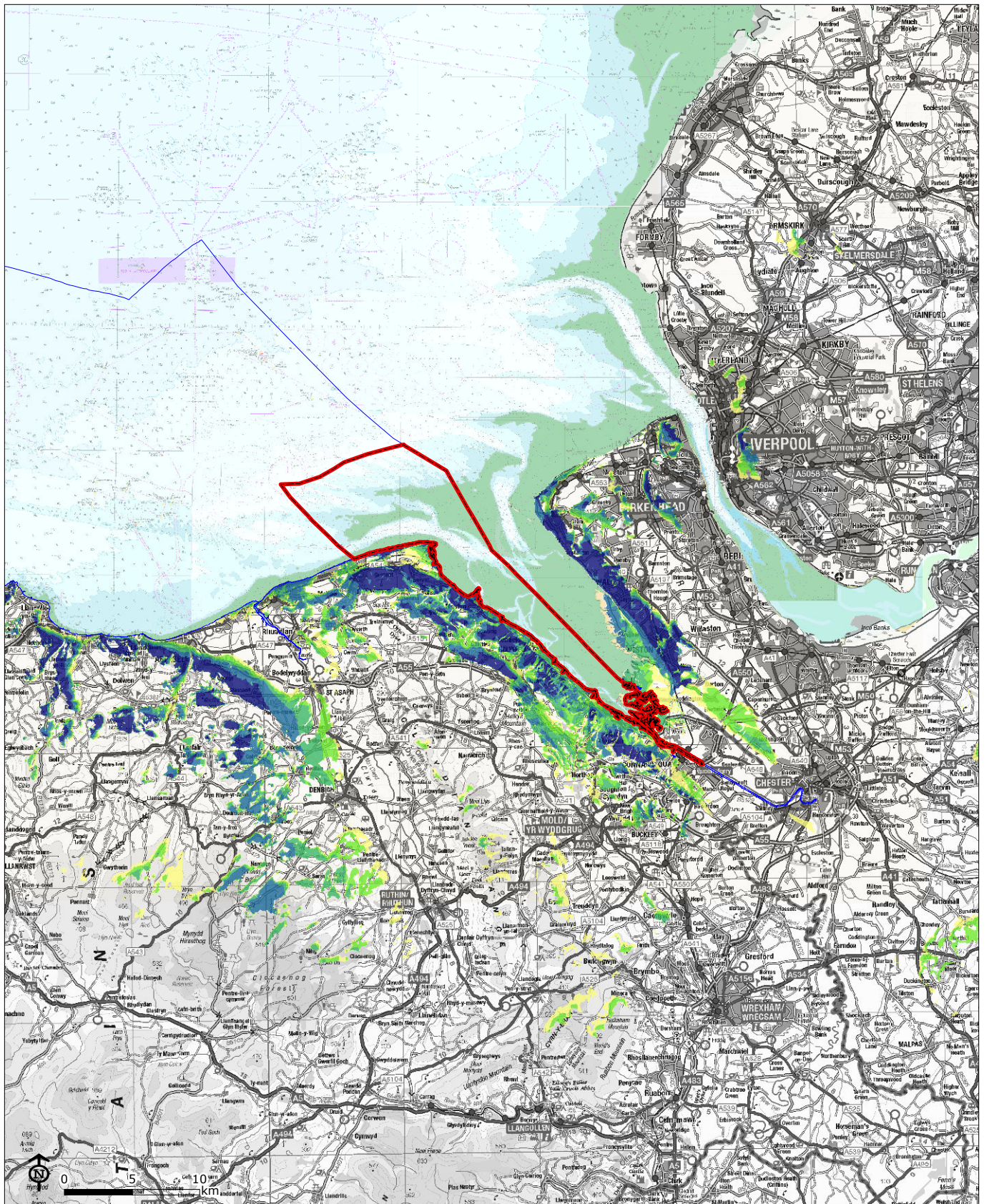
The landward backdrop to this northern part of the MCA is the wider coastline of sandy beaches backed on the Welsh side by Gronant Dunes and on the English side by Formby Dunes, and between which the greater built development of the Wirral and Liverpool is clearly visible, including its port and wind turbine structures.

From further inland, broader and more elevated panoramas across the MCA are gained from Halkyn Mountain and the Clwydian Range and Dee Valley AONB. Halkyn Mountain, including the A55 road as it passes, offers expansive, panoramic views across the more enclosed estuarine area, while the northern elevated tip of the AONB, between Prestatyn and Gwespyr, offers expansive views out into the wider Liverpool Bay.

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.

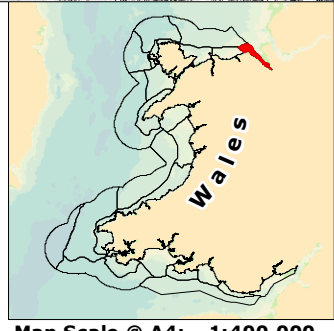


01: Dee Estuary (Wales)

Wales Inshore Marine Plan Area

Land with sea views (Percentile)

| | |
|--------------|--------------------|
| Yellow | < 20 (Lowest) |
| Light Green | 21 - 40 |
| Medium Green | 41 - 60 |
| Dark Green | 61 - 80 |
| Blue | 81 - 100 (Highest) |



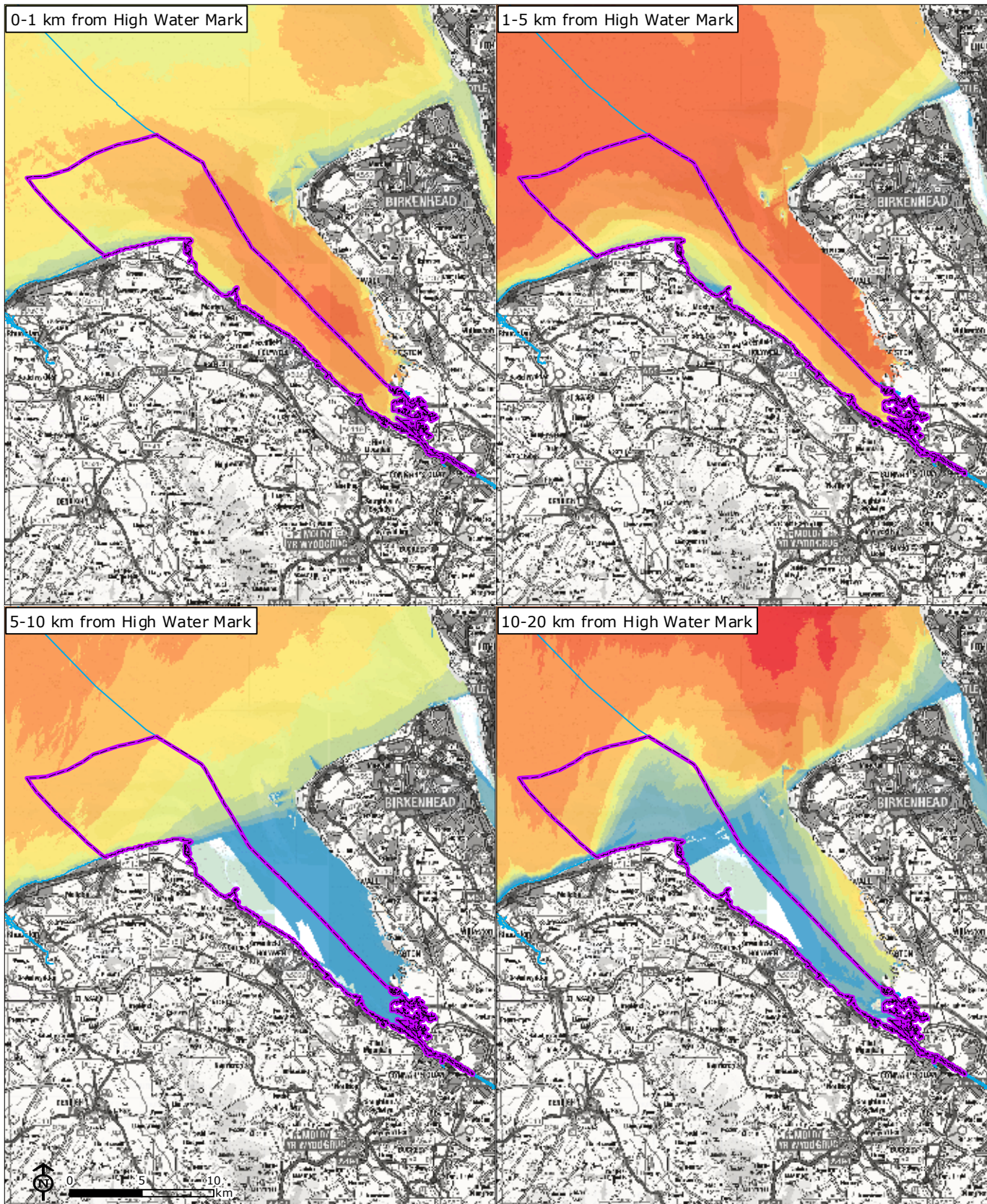
Wales National Seascape Assessment



Land with Views of: MCA 01: Dee Estuary (Wales)

Source: LUC, NRW, OceanWise











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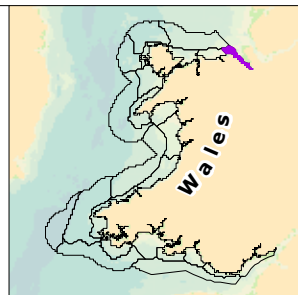
Map Scale @ A4: 1:400,000



-  01: Dee Estuary (Wales)
-  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 01: Dee Estuary (Wales)



Map Scale @ A4: 1:380,000