

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 6, Annex 8.2: Seascape and landscape character baseline technical report

Document Number: MOCNS-J3303-RPS-10121

Document Reference: F6.8.2

APFP Regulations: 5(2)(a)

February 2024

F01



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Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
F01	Application	RPS	Mona Offshore Wind Ltd	Mona Offshore Wind Ltd	Feb 2024

Prepared by:

RPS

Prepared for:

Mona Offshore Wind Limited.

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Glossary

Term	Meaning
Landscape	An area, as perceived by people, the character of which is a result of the action and interaction of natural and/or human factors.
Landscape character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscape Character Areas	These are single unique areas which are the discrete geographical areas of a particular landscape type.
Landscape Character Assessment	The process of identifying and describing variation in the character of the landscape and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscape distinctive. The process results in the production of a Landscape Character Assessment.
Landscape Character Types	These are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation, historical land use, and settlement pattern.
Marine character area	Each MCA has its own individual character and identity, even though it can share the same generic characteristics as other areas. The use of MCAs provides a good framework within which to draw out patterns of local distinctiveness and those factors influencing sense of place. They can be used to develop more tailored policies or strategies, reflecting the things that make a particular area different, distinctive or special. Character areas may also be more recognisable and identifiable for non-specialists (than 'character types').
Zone of Theoretical Visibility	A map, usually digitally produced, showing areas of land within which, a development is theoretically visible.

Acronyms

Acronym	Description
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
LCA	Landscape Character Area
LCT	Landscape Character Type
LUC	Land Use Consultants
MCA	Marine Character Area
MOD	Ministry of Defence
NCA	National Character Area
NLCA	National Landscape Character Area (Wales)
NRW	Natural Resources Wales
RSPB	Royal Society for the Protection of Birds
SCA	Seascape Character Area
SSSI	Site of Special Scientific Interest

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Acronym	Description
SSZ	Seascape Sensitivity Zone
ZTV	Zone of Theoretical Visibility

Units

Unit	Description
%	Percentage
km ²	Square kilometres
nm	nautical miles

1 Seascape and landscape character baseline technical report

1.1 Introduction

- 1.1.1.1 This technical report describes the seascape and landscape character baseline that will form the offshore part of the Seascape, Landscape and Visual Impact Assessment (SLVIA) provided in Volume 2, Chapter 8: Seascape and visual resources of the Environmental Statement.
- 1.1.1.2 A separate technical report relates to the onshore seascape and landscape character baseline and is provided in Volume 7, Annex 6.2: Landscape and seascape character baseline technical report of the Environmental Statement. This latter report forms part of the SLVIA within Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement.
- 1.1.1.3 Baseline data on nationally and internationally designated landscapes is documented in Volume 6, Annex 8.5: International and nationally designated landscape study - offshore development of the Environmental Statement, along with the assessment of effects on their special qualities.

1.2 Study area

- 1.2.1.1 The SLVIA study area for the generation and transmission assets of the Mona Offshore Wind Project, hereafter referred to as the 'SLVIA offshore study area', is shown in Figure 1.1 located in Appendix B. The SLVIA offshore study area for the assessment of effects on seascape and landscape character has been PDE on the findings of an analysis of the Zone of Theoretical Visibility (ZTV). The SLVIA offshore study area comprises the area of land and sea to be temporarily and permanently occupied during construction, operations and maintenance and decommissioning of the Mona Offshore Wind Project together with a 50 kilometre (km) buffer from the Mona Array Area. The SLVIA offshore study area incorporates the Mona offshore cable corridor and access areas.
- 1.2.1.2 This SLVIA offshore study area aligns with recommendations in the White Consultants report for Natural Resources Wales (NRW) 'Seascape and Visual Buffer Study for Offshore Wind Farms' (White Consultants with Northumbria University, 2020).
- 1.2.1.3 The buffer used to define the SLVIA offshore study area is based on the Maximum Design Scenario (MDS) set out in Volume 2, Chapter 8: Seascape and visual resources of the Environmental Statement.

1.3 Desktop study

1.3.1.1 Information on the baseline landscape and seascape character within the SLVIA offshore study area was collected through a detailed desktop review of published studies and datasets. These are summarised in Table 1.1 below.

Table 1.1: Summary of key desktop characterisation sources.

Title	Source	Year	Author
Isle of Man Landscape Character Assessment	Isle of Man Government	2008	Chris Blandford Associates
(2016-2019) National Character Area (NCA) Profile	Natural England website	Various (2012 to 2014)	Natural England
National Landscape Character	NRW website	Various (2013)	NRW
Seascape Character Assessment for the Northwest Inshore and Offshore Marine Plan Areas	Marine Management Organisation	2018	Land Use Consultants
National Seascape Assessment for Wales NRW Evidence Report No 80	NRW website	2015	Land Use Consultants (LUC)
Seascape and visual sensitivity to offshore wind farms in Wales: Strategic assessment and guidance. – Stages 1-3- Seascape and visual sensitivity assessment for offshore wind farms, NRW Report No. 331	NRW website	2019	S. White, S., S. Michaels, S., H. King, H.

1.3.2 Introduction to results

1.3.2.1 This section provides summary descriptions of National Landscape Character Areas (LCAs), Marine Character Areas (MCAs) and National Seascape Character Areas (SCAs) relevant to the offshore generation component of Mona Offshore Wind Project array.

1.3.2.2 The landscape and seascape character descriptions are drawn from published assessments and are supported by observations in the field. The extent of the ZTV has been used to identify those character areas and designated landscapes which have the potential to experience direct and indirect impacts of the Mona Array Area.

1.3.2.3 Data on the special qualities of nationally and internationally designated landscapes of relevance to the Mona Offshore Wind Project is documented in Volume 6, Annex 8.5: International and nationally designated landscape study – offshore development.

1.3.2.4 The ZTV for the Mona Array Area is shown in context with the Wales National MCAs, Welsh Seascape Sensitivity Zones (SSZs), English MCAs and Isle of Man Seascape/MCAs (RPS characterisation). These are illustrated in Figure 1.2 to Figure 1.4 in Appendix B.

1.3.3 Wales National MCAs

1.3.3.1 The Wales National Seascape Assessment undertaken by Land Use Consultants (LUC) in 2015 (LUC, 2015) identified and described MCAs within coastal and inshore

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areas of Welsh territorial waters. Eight MCA fall within the SLVIA offshore study area as follows:

MCA 01 – Dee Estuary (Wales)

1.3.3.2 Key characteristics relevant to the Mona Offshore Wind Project include:

- The Dee Estuary forms a natural border between Wales and England, backed by the rising foothills of the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB)
- 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
- MCA valued as an important recreational space providing access to the coast for nearby urban populations, including via the Wales Coast Path. Royal Society for the Protection of Birds (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).

MCA 02 – Colwyn Bay and Rhyl Flats

1.3.3.3 Key characteristics relevant to the Mona Offshore Wind Project include:

- Low-lying coastline backed by coastal levels associated with the broad mouth of the Vale of Clwyd to the east half of the MCA
- Little Orme and Great Orme headlands form dramatic rugged landmarks
- Developed coastline with many seaside resort towns, notably Llandudno (and pier) Colwyn Bay (and pier), Rhyl and Prestatyn, the latter having many caravan and chalet parks on their fringe. The coast serves as a traditional holiday destination
- Wales Coast Path and a popular cycleway run the length of the coastline. Collectively, the A55, A548 and main Holyhead to Chester railway line follow close to the coastline
- Rhyl Flats Offshore Wind Farm forms a dominating offshore feature. The moving turbines are supplemented by further turbines associated with another offshore wind farm project beyond it (in MCA 29)
- Limestone hills form a backdrop, in the east linking to the adjacent slopes of the Clwydian Range and Dee Valley AONB. From further out to sea, views reach beyond to the mountains of Eryri National Park (Snowdonia National Park).

MCA 03 – Red Wharf and Conwy Bays

1.3.3.4 Key characteristics relevant to the Mona Offshore Wind Project include:

- Comprises – east to west; Conwy, Red Wharf and Dulas Bays, characterised by broad sand flats and low-lying sandy beaches, punctuated by rugged cliffs and prominent limestone headlands

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- Northeast aspect of the bays in the west is unusual for Wales, with Great Orme's Head prominent in many land-to-sea views
- Popular tourist destination, evidenced by several coastal settlements. Activities include swimming, angling and diving, jet-skiing and pleasure trips. There are several recreational dive sites located along the coast
- The Wales Coast Path follows much of the coastline in this MCA. Most of the adjacent Anglesey coastline is AONB-designated, reflecting its nationally important scenic qualities. Eryri National Park (Snowdonia National Park) rises dramatically to the south from Colwyn Bay
- Puffin island a key feature of the seascape setting in views north, with Great Orme being a distinctive feature to the east; forming gateway features into Conwy Bay
- Off the Beaumaris shoreline views are dominated by the open expanse of Conwy Bay, its colours and textures continually changing in response to weather and tidal conditions, and numerous boats
- To the west of this MCA the seascape setting dominated by Ynys Dulas off the east coast of Anglesey, and by the large vessels waiting out at sea for the Liverpool Pilot.

MCA 04 – North Wales Open Waters

1.3.3.5 Key characteristics relevant to the Mona Offshore Wind Project include:

- Dominant maritime character is one of transit: recreational vessels entering or leaving the Menai Strait/Conwy Bay, or commercial vessels passing east and west to and from the Mersey and Dee
- Gwynt y Môr offshore wind farm dominates the east of the MCA, and to the north – access is restricted around the Douglas oil field (marked by a series of lit buoys and shipping lanes depicted on marine charts).
- Commercial shipping seen offshore, including large vessels waiting for Liverpool Pilots to guide them safely into port
- Recreational boats are a feature particularly in the southeast of the MCA during the warmer months
- The landward view changes considerably throughout this MCA, with rocky headlands, islets and large bays found to the west and the large shallow opening of Conwy Bay to the east, with a backdrop of the mountains of Snowdonia.

MCA 05 – North-West Anglesey Open Waters

1.3.3.6 Key characteristics relevant to the Mona Offshore Wind Project include:

- Glimpses of ferries and the Holyhead harbour breakwater are signs of significant human activity in adjacent MCA 24, while commercial shipping can be seen passing further offshore
- Recreational boats can also be seen in coastal waters during the warmer months

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- The Skerries are prominent seascape features viewed from this MCA, with the Isle of Man and Holyhead Mountain also visible in clear conditions
- In the south, visual relationships with the adjacent rocky north coast of Anglesey, with small bays and inlets, which contribute to character
- The box-like form of Wylfa Power Station forms a prominent man-made feature in views to the coast, standing out against a rugged and open coastal scene
- Commercial shipping lanes offshore, recreational boats can be seen close to the shore in the warmer months.

MCA 06 – North Anglesey Coastal Waters

1.3.3.7 Key characteristics relevant to the Mona Offshore Wind Project include:

- A rocky, high energy north-facing coastline with extensive wave-cut platforms and deeply incised bays
- Evidence of both modern and historic industry visible along the coast including historic brickworks, disused factories and the dominant form of Wylfa power station
- Coastal headlands, including Point Lynas are popular locations for spotting cetaceans. Coast crossed by the Isle of Anglesey Coast Path and large sections are owned by the National Trust
- Low-lying coast creates strong visual and physical connection between land and sea. The box-like, bright form of Wylfa nuclear power station, with associated lighting at night, stands out in stark scale contrast
- Seascape features include the lighthouse on Point Lynas, the offshore islands of West Mouse, Middle Mouse and East Mouse and expansive views including the Skerries and the Isle of Man on the horizon.

MCA 07 – Holyhead Bay and the Skerries

1.3.3.8 MCA 07 is located off the northwest Anglesey coast. Due to the island blocking intervisibility with the Mona Array Area and the very small proportion that would be indirectly affected, that could have potential visibility, MCA 07 has been scoped out of the SLVIA.

MCA 10 – Menai Strait

1.3.3.9 MCA 10 is located off the south coast of Anglesey, between the mainland and Anglesey. Due to Anglesey blocking visibility of the Mona Array Area from this MCA, it has been scoped out of the SLVIA.

1.3.4 Welsh SSZs

1.3.4.1 In addition to MCAs identified within the Wales National Seascape Assessment (LUC, 2015), Welsh SSZs have also been identified and described in NRW Report No. 331: Seascape and visual sensitivity to offshore wind farms in Wales - Stage 3 - Seascape and visual sensitivity assessment for offshore wind farms (White *et al.*, 2019c). Some of these SSZs overlap with the MCAs, but not all of them. Summary descriptions of the SSZs provided in NRW Report No. 331 are set out in the following sections below.

SSZ No. 1: North East Wales Inshore

1.3.4.2 MCA 01 and MCA 02 and the east section of MCA 04 lie within SSZ 1. The descriptive summary of SSZ 1 is as follows:

1.3.4.3 To the east is a large scale open, relatively straight coastline with a large proportion of urban settlement, the tourism is focussed on beach holidays. There are already wind farm and gas developments offshore, which act as lit vertical foci together with related service vessels and commercial shipping. To the west the settled coast becomes embayed with headlands and more formal promenades terminating in the distinctive landform of Great Orme.

SSZ No. 2: North East Wales Offshore

1.3.4.4 SSZ 2 falls mostly beyond the area of the Wales National Seascape Assessment (LUC, 2015). The descriptive summary of SSZ 2 is as follows:

1.3.4.5 The SSZ lies in open sea with the north edge of Gwynt y Môr offshore wind farm located on its south margins and the Douglas oil and gas complex nearby. Beyond this to the south are further offshore wind farms and the northeast Wales coast which has large scale open, relatively straight coastline to the east and embayed coastline with headlands and the distinctive landform of Great Orme to the west. The coast has a high proportion of urban settlement focused on residential and tourism, with caravan and beach holidays to the east and Victorian resorts with associated promenades mainly to the west.

SSZ No. 3: North Wales and North Anglesey Inshore

1.3.4.6 Welsh MCAs 03, central and west parts of MCA04, MCA05 and MCA07 lie within SSZ 03. The descriptive summary of SSZ 03 is as follows:

1.3.4.7 To the east the settled coast is backed by the mountains of Snowdonia (the Carneddau) and framed by the high cliffs of Great Orme's Head to the east and Puffin Island and the coast of Anglesey to the west. Anglesey generally has a lower plateau topography with resultant low cliffs and slopes, apart from the distinctive form of Holyhead Mountain which terminates the area with high sea cliffs to the west. Anglesey's north coast is rocky and convex meaning development out to sea would be largely unscaled whilst its northwest and east coasts have a series of small embayment's and coves with associated small settlements and holiday accommodation in places.

1.3.4.8 Some industrial features such as Wylfa nuclear power station are now disused, but structures may remain juxtaposed with onshore wind farms inland. The sea is open and exposed with commercial vessels running to and from the Mersey ports and ferries issuing from Holyhead's busy harbor.

SSZ No. 4: North Wales and North Anglesey Offshore

1.3.4.9 This SSZ 04 falls beyond the area in the Wales National Seascape Assessment (LUC, 2015). The descriptive summary of SSZ 04 is as follows:

1.3.4.10 The area lies in open sea, offshore from Anglesey and the north Wales coast with the Isle of Man to the north. To the southeast lies the Great Orme and Snowdonia but the area is closest to the north coast of Anglesey from Lynas Point running round west to Holy Island. Anglesey generally has a low plateau topography with resultant low cliffs and slopes, apart from the distinctive form of Holyhead Mountain which terminates the

likely affected coastline to the west. Anglesey's north coast is rocky and convex meaning development out to sea would be largely unscaled. On the other hand, its northwest and east coasts have a series of small embayments and coves with associated small settlements and holiday accommodation in places. The main built coastal landmark is Wylfa nuclear power station, but structures may be seen juxtaposed with onshore wind farms inland. The sea is open and exposed. Commercial vessels running to and from the Mersey ports and ferries issuing from Holyhead's busy harbor tend to pass between SSZ 04 and the coast.

SSZ No. 5: North Wales and Anglesey Outer Offshore

- 1.3.4.11 This SSZ falls beyond the area in the Wales National Seascape Assessment (LUC, 2015). The descriptive summary of the SSZ 05 is as follows:
- 1.3.4.12 The area lies in open sea at least 44 km offshore from the Anglesey, North Wales and Llŷn peninsula coasts, although the SSZ's north edge is located around 22 km from the Isle of Man. To the southeast there are the existing offshore wind farms at Gwynt y Môr and further array areas lie to the northeast, including Walney Extension offshore wind farm and West of Duddon Sands offshore wind farm.
- 1.3.4.13 Anglesey predominantly has a low plateau topography and rocky coastline with a distinctive high point at Holyhead Mountain. Development out to sea would be largely unscaled in views. More elevated, northward views are possible from the north Wales coast at Great Orme and Conwy Mountain. The Llŷn peninsula also has cliff top views to the northeast towards the southwest extent of the SSZ. The sea is open and exposed with commercial vessels running inshore from this SSZ to and from the Mersey ports, and ferries issue from Holyhead's busy harbor.

1.3.5 English Seascape/MCAs

- 1.3.5.1 The character of English territorial waters within the SLVIA offshore study area is described by LUC in Seascape Character Assessment for the Northwest Inshore and Offshore Marine Plan Areas (MMO, 2018).

MCA 31 St Bees to Haverigg Coastal Waters

- 1.3.5.2 MCA 31 is located off the Cumbria coast. Only a very small proportion of this MCA lies within the ZTV of the Mona Array Area, and it lies on the very northeast edge of the SLVIA offshore study area. MCA 31 is predicted to experience negligible impacts, at most, and for this reason it has been scoped out of the SLVIA.

MCA 32 Walney Coastal Waters and Duddon Estuary

- 1.3.5.3 This MCA lies to the west of Morecambe Bay. Barrow, Ormonde and parts of Walney and West Of Duddon Sands Offshore Wind Farms lie within this MCA. Key characteristics relevant to the Mona Offshore Wind Project include:
- Gently shelving, muddy sand seabed, extending from the coast and edges of Morecambe Bay westwards to a depth of around 20 m
 - Four wind farms lie off the coast, forming prominent moving structures within the seascape
 - Views out from the south extent of the Lake District National Park are dominated by the undeveloped Duddon Estuary which forms a significant component of the Park's setting in this locality

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- Views out to sea from Black Combe and the south Fells into the MCA are a significant characteristic of this part of the Lake District National Park
- Views inland have the backdrop of the Lake District's mountains and also industrial elements; views offshore feature the Isle of Man and the Galloway coast in Scotland.

MCA 34 Blackpool Coastal Waters and Ribble Estuary

1.3.5.4 This MCA shares a long east boundary with the Blackpool/Southport coastline. Key characteristics relevant to the Mona Offshore Wind Project include:

- Shallow waters and a high tidal range (up to 9.8 m at Lytham St Anne's) backed by extensive sandy and muddy/sandy beaches, intertidal sand flats and mudflats
- Along the Sefton Coast the landscape is dominated by sand dunes, stretching over 17 km long. Around Formby and Ainsdale the dunes reach over 20 m high, forming dominant features
- The Lennox oil and gas field, one of five interlinked sites currently operational in Liverpool Bay, is in the southwest of the MCA
- The Fylde Coast is now very urbanised, with much industrial development (e.g. around Blackpool and Preston)
- From the coast there are long views to the mountains of North Wales and the Lake District, and from the Sefton Coast shipping lanes, wind turbines and oil and gas infrastructure are visible.

MCA 35 Inner Liverpool Bay

1.3.5.5 This MCA lies off the approach to Liverpool. The Burbo Bank offshore wind farm lies within this MCA. Key characteristics relevant to the Mona Offshore Wind Project include:

- Gently shelving coastal zone, from around 5 m depth where it gives way to the inshore area of sand banks, mud flats and channels approaching the Mersey and Dee estuaries – to around 20 m in the west and north
- A busy area for commercial shipping, with most vessels entering the Mersey passing through it. There is also moderate usage by recreational craft, including recreational anglers, as well as ferries
- An important area for oil and gas extraction. One of the five interlinked sites is the Hamilton East gas field, connected by pipeline to the Hamilton North gas field in MCA 38: Irish Sea (South)
- More recently, offshore wind farms have been developed in this area
- An area in the southwest of the MCA, and extending further west, is licensed by the Crown Estate for the dredging of marine aggregates, landed at Liverpool to supply the local market
- MCA widely visible from land in its south parts. The closer coasts are low lying and unlikely to be prominent in views from the sea, for example from the ferries which cross this area

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- The offshore platforms, shipping activity and offshore wind turbines also influence views and perceptual qualities at night-time.

MCA 36 Dee and Mersey Estuaries and Coastal Waters

- 1.3.5.6 The Welsh National MCA01 lies within the west part of this MCA. Key characteristics relevant to the Mona Offshore Wind Project include:
- The River Mersey, its historic waterfront and its maritime history are at the heart of Liverpool's strong sense of place and its importance as a tourist destination
 - Burbo Bank offshore wind farm, and several others in Welsh waters are prominent in views. There are also views across the Mersey to oil refineries at Ellesmere Port and to the Welsh coast
 - Blackpool Tower is a distant landmark to the north, and on clear days Anglesey and Snowdonia can be seen
 - Views also characterise both estuaries, with the vistas up and down the Mersey characteristic of Liverpool's setting.

MCA 37 Irish Sea North (England)

- 1.3.5.7 Key characteristics relevant to the Mona Offshore Wind Project include:
- The east tip of the King William Banks is within the MCA where water depth is less than 10 m. These banks extend westward into Isle of Man waters
 - There are no fixed offshore structures in this MCA, and only a single light buoy at the east tip of the King William Banks, giving the MCA an undeveloped character
 - Some recreational sailing routes cross the area, noted as medium or light use, connecting the ports of Whitehaven, Douglas and Ramsey
 - Under clear conditions, there is intervisibility with the hills of the Lake District National Park, the Dumfries and Galloway coast, and the Isle of Man
 - With an absence of offshore lights, there are dark skies across this MCA.

MCA 38 Irish Sea South (England)

- 1.3.5.8 Key characteristics relevant to the Mona Offshore Wind Project include:
- A series of offshore oil and gas platforms. In the north the Morecambe, Calder and Millom fields supply gas via pipelines to Barrow-in-Furness
 - The Hamilton and Douglas fields in the south deliver their gas to Point of Ayr in North Wales, while oil from these fields is transferred to tankers
 - Dredging for aggregates is carried on in the north in the shallow sea east of the Isle of Man, and in the south in the vicinity of the Douglas oil field
 - Walney offshore wind farm extends west into this area from MCA 40, close to the North Morecambe gas platforms
 - Several key shipping routes cross this sea, adding to the busy nature of the waters. These routes include the approaches to the major ports of Fleetwood and the Mersey

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- Many 'medium use' recreational sailing routes cross the MCA, linking all the harbours on the English, Welsh and Isle of Man coasts
- The coast is relatively distant from this MCA, and the nearest areas are low-lying, meaning that there are low levels of intervisibility with the land. Under clear conditions, there is intervisibility with the hills of the Lake District National Park and the Isle of Man
- Lighting from the offshore platforms and wind turbines influences night-time seaward views
- The area is viewed from ferry services which link Liverpool and Heysham with Douglas, Belfast and Larne.

1.3.6 Isle of Man Seascape/MCAs (RPS characterisation)

MCA A: Dreswick Point to Maughold Head, Isle of Man Southeast Inshore Waters

1.3.6.1 This large MCA has been defined as extending from the east seaward boundaries of the Isle of Man coastal character areas E1 to E6, as well as E11 and part of H5, to the 12 nautical miles (nm) inshore waters boundary. Key characteristics relevant to the Mona Offshore Wind Project include:

- The waters to the east of the Isle of Man are less than 50 m deep, with a large area of shallower water to the north of MCA A
- This is a busy area of the Isle of Man inshore waters, as there are ferry routes from the English mainland (Liverpool and Heysham to Douglas) as well as smaller numbers of shipping from Ireland and Scotland. Shipping routes from the English mainland to Scotland and the Island of Ireland pass through this MCA
- This is also a popular area for recreational sailing, with boats crossing the Irish Sea, as well as travelling along the coast of the Isle of Man
- A Ministry of Defence (MOD) firing practice area is located to the north of MCA A. This is linked to a larger area in English territorial waters (D406C), extending from the MOD's Eskmeals Range, Cumbria. The west edge of Walney Extension offshore wind farm is less than 5.5 km from the east edge of this MCA.

MCA E: Bradda Head to Dreswick Point, Isle of Man Southwest Inshore Waters

1.3.6.2 This MCA has been defined as extending from the seaward boundaries of part of H4, J1, E9 and E10 Isle of Man coastal character areas. Key characteristics relevant to the Mona Offshore Wind Project include:

- This is an area of smaller coves and islands. The depth of the sea is shallow within the coves, and around the rocks and islands. However, the depth of the seabed deepens close to the land and commercial shipping *en route* to Ireland comes close to the Isle of Man. This is a well-trafficked area of inshore waters which also hosts many recreational boats travelling in and out of Port St. Mary

- Lighthouses and light buoys mark the Islands, rocks and coasts of the Isle of Man. This, together with the commercial shipping and recreational craft, results in it being a busy MCA.

Onshore NCAs/National Landscape Character Areas (NLCAs) that coincide with the Mona Array Area ZTV

1.3.6.3 The ZTV for the Mona Array Area is shown in context with the Wales NLCAs, England NCAs and Isle of Man Landscape Character Types (LCTs). These are illustrated in Figure 1.1 to Figure 1.4.

1.3.7 Wales NLCAs

1.3.7.1 The national landscape character of Wales within the SLVIA offshore study area is described by NRW in its online NLCA resource.

NLCA 01 Afordir Môn/Anglesey Coast

1.3.7.2 The NLCA coincides with much of the Anglesey Coast AONB designation. Key characteristics relevant to the Mona Offshore Wind Project include:

- Much of the highest land on the island falls within the coastal area, including Parys Mountain (147 m) and Holyhead Mountain (220 m)
- Great variety of coastal types - The coastline has great variety, from sheer coastal cliffs and dramatic rocky headlands to small sandy coves and extensive low lying dunes and sandy estuaries
- Coastal Settlements – often relating to former industry. Much of the C20th coastal development relates to tourism and retirement property
- A number of prominent man-made landmarks – including Beaumaris Castle (World Heritage Site), the two bridges that cross the Menai Strait and connect with the mainland, Parys Mountain (distinctive industrial quarry landscape), Wylfa nuclear power station, and the aluminium works on Holy Island, with its tall, widely visible chimney.

NLCA 02 Canolbarth Môn/Central Anglesey

1.3.7.3 Key characteristics relevant to the Mona Offshore Wind Project include:

- The gentle topography, low lying and near flat in places, follows a northeast to southwest 'grain' imposed by major faults
- Extensive drumlin fields - thick layers of glacial boulder clays, especially in northwest
- Hedgerows and cloddiau - This is generally a rolling, open landscape with a well-established pattern of field boundaries, predominantly of hedgerows but with cloddiau in some areas
- Few woodlands - Woodlands larger than a small copse are an exception, being notably around Llangefni Dingle and Llyn Cefni reservoir, together with estate woodlands at Presaddfed (Bodedern). Except in sheltered areas, individual trees are few

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- Generally rural settlement patterns - The only urban settlement is the county town of Llangefni, in the centre of the island. Its nucleated historic core contrasts with modern peripheral housing and expanding light industrial and business park developments
- There are only a few villages, but numerous scattered hamlets and farms throughout the area. Historic windmill towers - including some restored examples, form local features
- Modern wind farms - generally limited to an area north of Llandeusant but are seen in longer distance views from a much wider area.

NLCA 03 Arfon

1.3.7.4 Key characteristics relevant to the Mona Offshore Wind Project include:

- The Arfonian plateau – a broad, gently undulating lowland and valley land form, rising from the coast to about 200 m and flanked by the much higher adjacent uplands of Eryri
- Soft open coastline – at Morfa Dinlle with shingle and sand beaches and dunes, extensive mud and sand flats in Foryd Bay and at Traeth Lafan
- A dramatic inland panorama of steeply rising mountains - with many views to well-known ridges and peaks, including Snowdon (Yr Wyddfa)
- Wooded valley slopes – by rivers and beside the Menai Strait
- Lowland – upland contrasts – from the intimate, wooded, lush, soft, sheltered lowland and pastures to the exposed, open, heavily grazed, marginal upland fringes
- Landed estates and their designed parklands - from the Medieval and post Medieval periods, such as Penrhyn, Faenol and Glynllifon, on the better land and often with designed parklands and scattered individual trees
- Settlement pattern relates to sites of strategic significance: river mouths and ports, coastal defensive, where the upland valleys emerge, and near slate workings.

NLCA 06 Eryri/Snowdonia

1.3.7.5 It coincides with Eryri National Park (Snowdonia National Park) designation. Key characteristics relevant to the Mona Offshore Wind Project include:

- A mountainous topography - with the principal mountain range orientated broadly northeast to southwest
- Wales's sharpest ridges and highest peaks lie within this area – in a landscape often defined by massive, angular skylines. Most famously this includes the massif of Snowdon, with the peak of Yr Wyddfa, highest in England and Wales at 1,085 m above ordnance datum (AOD) (which lies beyond the SLVIA offshore study area boundary), and several radiating ridges
- An upland character, principle land cover elements include: Hill sheep grazing, forestry, heather dominated moorland and upland grassland. Rock outcrops and slate/shale ridges and screes are frequently apparent

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- Estuaries and coast – although only directly fronting open sea in a few places, the tempestuous, dark, mountainous character abuts, or is seen in views close to milder, sheltered, woodland-fringed estuaries and sunnier, sandy open coast. This combination provides an iconic and contrasting image of great appeal to many
- Sparsely populated/few large settlements – confined to valleys, the few include the small towns of Dolgellau and Bala, and the slate town of Blaenau Ffestiniog, and compact valley villages in slate and stone such as Beddgelert and Betws-y-Coed. Sublime, picturesque, iconic visual and sensory landscape of great drama – the inspiration for many artists over the last 200 years, part of the great tour for Wordsworth and others
- Tourism - today Snowdonia is recognised as a National Park and is visited by thousands of tourists who come to experience the natural and cultural heritage. The area forms a great outdoor challenge for many recreational visitors as they explore.

NLCA 07 Dyffryn Conwy/Conwy Valley

1.3.7.6 Key characteristics relevant to the Mona Offshore Wind Project include:

- A deep, major fault-guided glaciated valley - between the adjacent rugged and shapely uplands of Snowdonia to the west and gentler rolling Rhos Hills to the east
- A very abrupt, steep, wooded edge to the adjacent Snowdonia uplands, with cliffs - marking the terminal point of a bedrock geology
- Hanging woodland - including beech and oak, and areas of planted conifers, to slopes
- Busier north section around Conwy - with strategic transport crossing points over the wide estuary and shelter for boats
- Field patterns - geometric on the flood plain, with areas of dry-stone walls or reens (ditches) as boundaries. Mixed hedgerows generally, with small irregular fields on rising slopes to the west side. More improved fields and hedges to the east side slopes
- Conwy Castle with its associated walled town - a World Heritage Site, dramatically located on a promontory overlooking the estuary, and forming a landmark feature
- A strong sense of containment to the valley – creating a natural route for north-south road and rail links.

NLCA 08 Arfordir Gogledd Cymru/North Wales Coast

1.3.7.7 Key characteristics relevant to the Mona Offshore Wind Project include:

- Carboniferous limestone hills and coastal headlands - resulting in distinctive light- coloured rocky escarpments with cliffs and scree, including most prominently Great Orme's Head
- The mouth of the Vale of Clwyd – a broad flat coastal plain centred on Rhyl, including the small estuary of the River Clwyd, including a network of medium scale pastoral fields of regular pattern, with ditches and, to a lesser extent

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mixed, managed hedgerow, and occasionally interspersed with small stands of mixed farm woodland

- Seaside resort towns - urban development and arterial road and railway routes along coast, constricted in places by topography and rising hills
- Steep sided hill back drop to coastal towns - wooded, or exposed limestone and sheep pasture
- A generally man-made coastal edge – promenades, sea walls, groynes, rock armour and other forms of protecting the coastal edge run for most of the length of the coastline
- Hinterland away from the coast – with intervening hills makes for a quiet, sheltered, inland, rural feel, with some classic limestone outcrops, notably south of Llanddulas, Rhuddlan Castle is strategically sited at a crossing point over the Clwyd, at what was once the east boundary of the Medieval kingdom of Gwynedd
- A number of historic parklands - lie within the area, while the estate architecture of Gwrych Castle and wooded parkland is a locally prominent feature
- Iconic image of historic Llandudno and its famed natural setting – between two rocky headlands, with its pier, grand sweeping promenade and Victorian building façades, arguably the finest of their type in Wales, the town is known as the 'Queen of resorts' and is known nationally for seaside holidays.

NLCA 09 Bryniau Rhos/Rhos

1.3.7.8 Key characteristics relevant to the Mona Offshore Wind Project include:

- Rural inland foothills and valleys – that rise to the adjacent Denbigh Moors to the south
- Sheep grazed pasture – predominant land cover
- Occasional woodlands – often occurring on the river valley slopes, for example on the Clywedog and the Ystrad, and running up riverside slopes
- Mixed field patterns – often geometric but varies widely in scale, from small to large size fields. A denser network of mixed hedgerows with more trees in sheltered valleys, running up to sparse, windswept hedges and fences occupying areas of former moorland
- Sparsely settled – affording rural peace and tranquillity, with wide views from the higher points and a sense of intimacy and enclosure in the valleys close by.

NLCA 11 Dyffryn Clwyd/Vale of Clwyd

1.3.7.9 Key characteristics relevant to the Mona Offshore Wind Project include:

- The Vale of Clwyd is a broad agricultural vale - between adjacent upland areas
- Distinctive line of hills forming the east boundary, also forming an upland-lowland boundary, following a geological fault line
- Arable and pasture, well managed hedges

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- Many hedgerow and parkland trees and some woodland blocks – and of ecological importance, some Alder woodland, swamp and rush pasture and some ash-wych elm dominated woodland.

NLCA 12: Bryniau Clwyd/Clwydian Range

1.3.7.10 Parts of the area are designated within the Clwydian Range AONB. Key characteristics relevant to the Mona Offshore Wind Project include:

- Rounded, heather clad open hills in two main groups. The north chain rising to Model Famau (554 m), although this peak is outside the ZTV, peaks further north coincide with part of the ZTV for the Mona Array Area and include Moel y Gaer (258 m), Cefn Du (268 m), Moel Maenafa (287 m) and St Elmos Summer House (235 m)
- Hedgerows and numerous hedgerow trees – improved hill sheep grazing and lowland pasture
- Culturally a divide – the area reflects the historical divide between English influences to the east and Welsh influences to the west. Parts of the area are designated as an AONB
- Offa's Dyke National Trail follows close to the highest points in this LCA.

NLCA 13: Wrecsam a Glannau Dyfrdwy/Deeside and Wrexham

1.3.7.11 Key characteristics relevant to the Mona Offshore Wind Project include:

- Lowland, foothills and levels – sloping down to the lower Dee and Dee Estuary
- Mixed pasture and some arable – and farm woodland cover
- A strongly settled character is apparent in the central and south parts of the area, with the relatively large, almost linked settlements of Holywell-Connah's Quay-Mold-Wrexham-Ruabon. Holywell is the only one of these settlements within the SLVIA offshore study area.

1.3.8 England National Character Areas (NCAs)

NCA 57 Sefton Coast

1.3.8.1 Key characteristics relevant to the Mona Offshore Wind Project include:

- Sedimentary coastline with wide, gently sloping beaches, estuaries, coastal sand dunes, coastal dune heathland, conifer plantations and settlements backed by farmland; low-lying, rising in places to 20 m above sea level
- A mixture of agriculture, ranging from open grazed marshes to areas of reclaimed pasture and enclosed fields supporting dairy or beef cattle and some arable farming
- Development is primarily of Victorian date or later, orientated as a line of tourist/commuter towns and villages along the coastal railway and road
- Coastal recreation facilities arise from the seaside tourist attractions, beach access, public rights of way and the coastal footpath; chalet/caravan sites and several golf courses introduce a manicured appearance into this varied coastline.

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- 1.3.8.2 The Sefton DC LCA (LCAs 1 to 6) gives an additional level of detail which can be summarised as follows:
- Coastal, sands dunes and saltmarsh have wide views to a far horizon and give a strong impression of sky and space. There are intimate, visually contained landscapes within the dunes and wide vistas and glimpses of the sea from dune summits. Extensive tracts of unenclosed saltmarsh. Within the estate plantations in the south the topography changes to gently rolling with plantations and tree belts.

ONCA 59 Wirral

- 1.3.8.3 Key characteristics relevant to the Mona Offshore Wind Project include:
- Low-lying but gently rolling platform punctuated by low sandstone outcrops, this west portion of the Wirral peninsula stretches from the mid-Wirral sandstone ridge to the Dee Estuary
 - The north Wirral coast is characterised by extensive beaches along the foreshore, while the large, funnel-shaped Dee Estuary lies between the Wirral peninsula and northeast Wales
 - Recreation and tourism are supported by good access to the dramatic coastal landscape and its outstanding ornithological interest, with a number of country parks, Local Nature Reserves and Local Wildlife Sites; links-style golf courses are a distinctive feature along the coastline.
- 1.3.8.4 The Wirral Landscape Character Assessment (Wirral Council, 2019), gives additional level of detail which can be summarised as follows:
- Expansive views over the open water of Liverpool Bay to Sefton and beyond and across the adjacent estuaries, east towards Liverpool Docks and west towards the Welsh coast. Extensive offshore and onshore wind farms are prominent across these views
 - Despite surrounding coastal settlement, the area retains a sense of remoteness with strong sensory characteristics including the contrasting colour and texture of habitats and changing sea moods.

1.3.9 Isle of Man LCTs

- 1.3.9.1 The landscape character of the Isle of Man is described in The Isle of Man Landscape Character Assessment (Isle of Man Government, 2008). The assessment includes the coastal waters immediately adjacent to the LCTs. In addition, for the purposes of this SLVIA, to fill in the gap in seascape assessment for the Isle of Man territorial waters, new MCAs have been defined by RPS up to 12 nm from the Isle of Man coastline, as previously assessed above (e.g. MCAs A and E).

LCT C Broad Lowland Valley

- 1.3.9.2 The ZTV for the Mona Array Area overlaps a very small part of LCA C3: Union Mills, Glen Vine and Crosby, to the west of Douglas. The potential impact is predicted to be negligible, at most, and so this LCT is not considered further in this assessment.

LCT D Incised Inland Slopes

1.3.9.3 Key characteristics relevant to the Mona Offshore Wind Project include:

- The north area landward of Laxey Bay has strongly sloping topography. There is a strong sense of enclosure within Laxey, provided by the steep wooded sides of the glen and valley. Visual dominance of the sea, which contrasts with the coastal landform
- The LCAs to the south in this landscape type are more gently undulating with land sloping down south-eastwards towards the coast with numerous notable rounded hill tops. The landcover is a mosaic of densely wooded valley bottoms amongst undulating rolling land with large rectilinear arable and pastoral fields on the gently sloping hill sides and rounded tops. LCA D10 has rough heathland vegetation and includes the Coniferous Chibbanagh Plantation on hill tops and higher exposed areas
- Most of the area has dramatic, panoramic views eastwards across the ever-changing colour and nature of the sea and sky which contribute to strongly recognisable sense of place. The south part of this landscape type has open and expansive views from most of the area out to sea, along the coast, over Douglas Bay and inland over the incised plateau up to the north uplands.

LCT E Rugged Coast

1.3.9.4 Key characteristics relevant to the Mona Offshore Wind Project include:

- South of Douglas the coastal landscape consists of Sheltered coves of Port Grenaugh and Port Soldrick with shelving shale beaches. The coastline is characterised by low rocky jagged sea cliffs, a strong sense of tranquillity, open and expansive views and a general sense of openness. In the south in LCA 11 the coastline becomes a relatively narrow peninsula/isthmus of predominantly flat landscape, protruding from the south edge of the island. Locally, the sense of tranquillity greatly disturbed at times by proximity to Ronaldsway airport. Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape. The lighthouse and Dreswick Point act as dominating landscape features
- LCA E3 is characterised by the built-up areas of Douglas and Onchan which form dominating back-drop to the area. The gently graded sandy beach is contained by two prominent rocky headlands with jagged sea cliffs. Views along the coast are constrained by the two large headlands that enclose the area. There is little tranquillity in the area but an interesting character resulting from the urban back drop
- The north of LCT E is comprised of LCAs E4 and E5. LCA E4 is characterised by a jagged indented rocky coastline with some natural arches with a rocky foreshore with banded bedrock and scattered large offshore rocks. The headland is open and exposed headland with medium sense of tranquillity. Laxey Bay to the north is a rugged coastline lined by cliffs that fall steeply, from the Incised Inland Slopes to west, towards the sea. Houses nestle around the bay and overlook the wide expanse of blue sea to the east. A strong sense of enclosure is provided by rising headlands to the east and west, contributing to a sense of remoteness and seclusion. Little sense of remoteness and relatively low tranquillity due to the influence of Laxey, the railway and the A2. Colour and

movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape throughout this section.

LCT F Undulating Lowland Plain

- 1.3.9.5 The ZTV for the Mona Array Area overlaps with a small part of this LCT in the southwest end of the Isle of Man in the vicinity of Ronaldsway Airport. The ZTV for the Mona Array Area overlaps with LCA F7: Castletown and Ballasalla. A very small part of LCA F8 Poyllvaish and Scarlett Peninsula adjoins the SLVIA offshore study area boundary and this is scoped out of the assessment.
- 1.3.9.6 LCA F7 is mostly comprised of the extensive runways and terminal building associated with Ronaldsway Airport. This area overlooks the coastline to the east at Derby Haven in the adjacent LCA E11.

1.4 Summary

- 1.4.1.1 This technical baseline report identifies the seascape/marine and landscape character areas that have the potential to be affected by the Mona Offshore Wind Project. The SLVIA offshore study area and ZTV is based on the MDS for the Mona Array Area.
- 1.4.1.2 National landscape character areas, national MCAs and relevant regional seascape character areas which have the potential to be affected by the Mona Array Area have been identified. The seascape and landscape characteristics with potential to be affected by the Mona Array Area have been identified and described in section 0 of this technical report. Extracts of published assessments for relevant seascape/marine and landscape character areas are reproduced in Appendix A. Where there is no published seascape assessment coverage within the SLVIA offshore study area, for instance around the Isle of Man, additional MCAs have been defined and described by RPS and included in this baseline assessment.

1.5 References

LUC (2018) Seascape Character Assessment for the Northwest Inshore and Offshore Marine Plan Areas

LUC (2015) National Seascape Assessment for Wales. Available: <https://naturalresources.wales/?lang=en>. Accessed July 2022.

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Wirral Council, (2019) Wirral Landscape Character Assessment

Appendix A: Extracts from Published Seascape and Landscape Character Assessments

Character Area/Type	Key Characteristics
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Seascape Character: Wales

Wales MCAs

MCA 01: Dee Estuary (Wales)	<ul style="list-style-type: none"> • 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 Basingwerk 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.
MCA 02: Colwyn Bay & Rhyl Flats	<ul style="list-style-type: none"> • Low-lying coastline backed by coastal levels associated with the broad mouth of the Vale of Clwyd to the east half of the area

Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • High, exposed, rocky limestone hills and open headlands with intermediate developed bays to the west half of the area. Little Orme and Great Orme headlands form dramatic rugged landmarks • Long sandy beaches and shingle storm beaches. All the soft coastline is protected by various coastal defences including groynes, rock armour, beach recharging, walls and traditional promenades • Shallow waters (<20 m) with gently shelving beaches and extensive network of offshore sandbank and flats • Significant peat exposures off Rhyl and at Rhos on Sea attesting to inundated land surfaces dating to the end of the last Ice Age • Extensive marine sediments of sand and gravel extending from the neighbouring Dee Estuary MCA and forming long, linear sandbanks running roughly parallel to the shore • Constantly shifting sandbanks with changing depths; hazards marked by numerous buoys, lights and fog horns • South Hoyle Channel and Inner Passage provided the approaches to Roman port of Chester. The present-day navigation channels are maintained regularly by dredging. • Most of the area is included in the Liverpool Bay SPA, designated for its international importance to overwintering populations of red-throated diver and common scoter • The flats, sand banks, bays and rocky shores are important for biodiversity extensively designated including SPA, SAC and Site of Special Scientific Interest (SSSI) • Wave exposure generally low closer to shore, increasing in more open waters where the sheltering effect of Great Orme’s Head (in MCA 03) diminishes • Developed coastline with many seaside resort towns, notably Llandudno (and pier), Colwyn Bay (and pier), Rhyl and Prestatyn, the latter having many caravan and chalet parks on their fringe. The coast serves as a traditional holiday destination • Recreational activity includes water sports such as jet skiing and speed boating. Tourist pleasure trips run from the pier at Llandudno, usually heading westwards around Great Orme’s Head • Wales Coast Path and a popular cycleway run the length of the coastline. Collectively, the A55, A548 and main Holyhead to Chester railway line follow close to the coastline • Concentrations of documented shipwrecks in the approaches to Rhyl and Foryd harbours, also in locations where they were blown ashore from traditional anchorages. • Both Colwyn Bay and Rhyl are popular shore and boat angling areas. Rhyl includes the main harbour along this stretch of coast • Historic military use of the seascape at Rhyl providing the last coastal fix for aircraft operating out of Hawarden and Sealand • Rhyl Flats offshore wind farm forms a dominating offshore feature. The moving wind turbines are supplemented by further wind turbines beyond (in MCA 29) • Limestone hills form a backdrop, in the east linking to the adjacent slopes of the Clwydian Range AONB. From further out to sea, views reach beyond to the mountains of Eryri National Park (Snowdonia National Park).

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Character Area/Type	Key Characteristics
MCA 03: Red Wharf & Colwyn Bays	<ul style="list-style-type: none"> • Comprises Conwy, Red Wharf and Dulas Bays, characterised by broad sand flats and low-lying sandy beaches, punctuated by rugged cliffs and prominent limestone headlands • Offshore waters deepening to a maximum of 30 m. There is an extensive intertidal area around the mouth of the Conwy Estuary, extending westwards and including Lavan Sands • Northeasterly aspect of the bays in the west is unusual for Wales, with Great Orme's Head prominent in many land-to-sea views • Varied coastal geology of cliffs and rocky or sandy beaches giving rise to diverse nationally and internationally important habitats within a relatively small area, including valued maritime grasslands and limestone heath • Limestone cliffs of the Great Orme host a variety of birds including guillemot, razorbill, kittiwake, fulmar and peregrine. Grey Seals haul out on the rocky beaches • A mosaic of seabed types found in the north of the MCA with algae and fauna covered bedrock and boulders amongst sand and mixed sediments • Significant area within the Liverpool Bay SPA, designated for overwintering populations of red-throated diver and common scoter. Lavan Sands (SPA/SSSI) is also designated for its wintering birdlife, especially the oystercatcher • Partly within the Menai Strait and Conway Bay SAC, recognised for its unusual and varied coastal and intertidal habitats and the associated reef communities • Migratory salmon and trout pass through these waters on their way to and from the river Conwy • The bays are sheltered by Anglesey with Great Orme headland being the only area exposed to the full force of the sea, especially in northerly wind conditions • Rich evidence for a long history of human occupation, with large sections of the adjacent coast designated as Landscapes of Outstanding Historic Interest • The 12th Century Conwy and Beaumaris Castles (World Heritage Sites) overlook the MCA • Nationally important Bronze Age copper workings on Great Orme are thought to be the earliest metal workings in the UK • A number of shipwrecks, including the tragic loss of the Royal Charter in 1859 and the planned sinking of the Ghambira. The wreck of the Flying Foam is visible in the intertidal area on the east side of the Conwy Bay • The North Menai Strait mussel fishery is located within this MCA and is the UK's biggest, producing 7-10,000 tonnes of mussels per year (up to 75% of the UK's production). Red Wharf Bay is used for bait digging • Popular tourist destination, evidenced by several coastal settlements. Activities include swimming, angling and diving, jet-skiing and pleasure trips. There are a number of recreational dive sites along the coast • The Wales Coast Path follows much of the coastline in this MCA. Most of the adjacent Anglesey coastline is AONB-designated, reflecting its nationally important scenic qualities. Eryri National Park (Snowdonia National Park) rises up dramatically to the south

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Puffin island a key feature of the seascape setting in views north, with Great Orme being a distinctive feature to the east; forming gateway features into Conwy Bay • Two distinctive bridges, built by Telford and Stephenson cross the river at Conwy and mirror those found in the Menai Strait.
MCA 04: North Wales Open Waters	<ul style="list-style-type: none"> • An offshore MCA where depth increases gradually from approximately 15m below chart datum near Conwy Bay to over 60 m in the northwest • A thin layer of mostly coarse quaternary sediments overlying Carboniferous and Triassic sedimentary bedrock. Finer sand is found in the southeast of the MCA • Includes a significant proportion within the Liverpool Bay SPA and Menai Strait and Conwy Bay SAC • A rich variety of life on the seabed and high levels of phytoplankton in the water provides important feeding grounds for sea birds, particularly in the southeast. Marine mammals including bottlenose dolphin and grey seal can be sighted • Moderately strong east-west tidal currents. The strongest currents are found in the southwest • A number of wrecks can be found in the MCA, including collisions owing to busy approaches to the Mersey, wartime losses, and losses from mine-laying activity • Dominant maritime character is one of transit: recreational vessels entering or leaving the Menai Strait/Conwy Bay, or commercial vessels passing east and west to and from the Mersey and Dee • Includes the former Mersey Docks and Harbour Board's spoil dumping ground in the northeast corner • Large fishing boats target demersal fish and scallops offshore with smaller potting boats seen closer to the coast • Gwynt y Môr offshore wind farm dominates the east of the MCA, and to the north – access is restricted around the Douglas oil field (marked by a series of lit buoys and shipping lanes depicted on marine charts) • Commercial shipping seen offshore, including large vessels waiting for Liverpool Pilots to guide them safely into port • Recreational boats are a feature particularly in the southeast of the MCA during the warmer months • Several wrecks are visited by recreational divers and diving clubs, including the HMS Derbent, Cartagena, Kincorth, Delfina, Cork and Vigsnes. The wreck of the Resurgam is a designated wreck • The landward view changes considerably throughout the MCA, with rocky headlands, islets and large bays found to the west and the large shallow opening of Conwy Bay to the east, with a backdrop of the mountains of Snowdonia.
MCA 05: North-West Anglesey Open Waters	<ul style="list-style-type: none"> • The seabed drops steeply away from the north coast of Anglesey, with water depth greater than 30 m bathymetry, increasing to more than 80 m in the northwest • Preserved glacial bedforms found offshore. Fine sediment particles are suspended in the water resulting in a substrate of mostly exposed Precambrian rock and boulders with shallow patches of coarse gravel, pebbles and cobbles • Robust fauna colonising the harsh seabed environment supporting a mixture of demersal fish species. Marine mammals are frequently sighted

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Sand scour limits the amount of life found on the rocks particularly in the south. In lower energy areas diverse reef communities are found with many filter feeders • Strong/very strong tidal currents and wave climate, particularly to the southwest • A large number of wrecks, including from both World Wars, representing a wealth of seafaring heritage. • Wartime losses include the Apapa which was sunk by a U-boat in 1917, and HMS Westphalia which was also sunk by a U boat • Lobster and crab potting takes place closer to the shore, with whelk potting, trawling and scallop dredging occurring elsewhere • Glimpses of ferries and the Holyhead harbour breakwater are signs of significant human activity in adjacent MCA 24, while commercial shipping can be seen passing further offshore • Recreational boats can also be seen in coastal waters during the warmer months • The Skerries are prominent seascape features viewed from this MCA, with the Isle of Man and Holyhead Mountain also visible in clear conditions • In the south, visual relationships with the adjacent rocky north coast of Anglesey, with small bays and inlets, which contribute to character • The box-like form of Wylfa power station forms a prominent man-made feature in views to the coast, standing out against a rugged and open coastal scene
MCA 06: North Anglesey Coastal Waters	<ul style="list-style-type: none"> • A rocky, high energy north-facing coastline with extensive wave-cut platforms and deeply incised bays • Marine processes of long-shore drift creating crescent-shaped shingle beach at Cemlyn Bay – a dynamic landform • Steeply sloping bathymetry, with deep water of up to 25 m coming in close to the shore • Subtidal substrate of bedrock and boulders with some coarse sediment and sand. Exposed rock colonised by marine species including featherstars and sponges • A range of wetland habitats associated with the brackish water of the Cemlyn Bay lagoon (designated as SSSI, SPA and SAC for its importance for bird life – especially terns) • Other SSSIs at Hen Borth and Cae Gwyn notable for geological interest and plant life • Tidal rapids and strong currents visible from land in certain conditions, notably around the rocky reef of Harry Furlong’s Rocks and around West Mouse • Despite navigational aids, many ships have been lost on the offshore rocks, especially around the West Mouse • Fishing activity along the rocky coast is mainly potting for crabs and lobsters, and recreational angling. Recreational charter fishing boats also depart from Amlwch port • Evidence of both modern and historic industry visible along the coast including historic brickworks, disused factories and the dominant form of Wylfa Power Station

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Until recent years, Amlwch Harbour was used for export of copper ore, as well as supporting industries such as shipbuilding • Coastal headlands including Point Lynas are popular locations for spotting cetaceans. Coast crossed by the Isle of Anglesey Coast Path and large sections are owned by the National Trust • Popular recreational dive sites include wrecks of Abbotsford near Wylfa power station, Deo Gratis on the Archdeacon Rock and Edith Owen and Fawn on Coal Rock • Low-lying coast creates strong visual and physical connection between land and sea. The box-like, bright form of Wylfa nuclear power station, with associated lighting at night, stands out in stark scale contrast • Seascape features include the lighthouse on Point Lynas, the offshore islands of West Mouse, Middle Mouse and East Mouse and expansive views including the Skerries and the Isle of Man on the horizon.
MCA 07: Holyhead Bay & The Skerries	<ul style="list-style-type: none"> • This MCA encompasses the large-scale Holyhead Bay, backed by an AONB-designated coastline stretching from Carmel Head in the north to Porth Namarch on Holy Island • The rocky islets of the Skerries (with associated rough seas) are found to the north of Carmel Head. The Skerries lighthouse is visible over long distances • Bay fringed to the east by rugged volcanic cliffs punctuating small sandy bays. Shelter is provided to the south by the rising mass of Holyhead Mountain • The seabed substrate follows the energy gradient, with exposed rock in the north and areas of coarse sediment in the south • The Skerries designated as SPA, SSSI and Important Bird Area, managed as a reserve by the RSPB. The islets are important for Arctic terns and as a seal haul site • Nationally important geology exposed in the cliffs – some of the oldest rocks in Wales. Cliffs topped by wind-pruned maritime grasslands and heath, supporting important sea bird colonies (including within the Holy Island Coast SPA and SAC) • Extensive SSSI covering intertidal areas, including the Afon Alaw estuary, as well as the seagrass beds, sand and rock found in Beddmanarch Bay • Very strong tidal currents and wave climate around the Skerries in the north, with a more sheltered region of water within Holyhead Harbour to the south • Many wrecks, including the protected wreck of the 17th century Royal Yacht Mary and the dangerous wreck of the Castillian, which sank in 1943 with live ordnance on board • Breakwaters, beacons and lit shipping markers mark passage into the 19th century Holyhead Harbour. The Skerries lighthouse is visible over long distances • The wider bay is used by many different types of shipping for transport and trade – a long-standing use, particularly associated with close connections to Ireland

Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Waters support a range of recreational activities including sailing, boating, diving and fishing/sightseeing charters. The surrounding beaches are popular tourism destinations • Seascape setting dominated by the Skerries to the north, and by Holyhead Mountain to the south • Coastline traversed by the Isle of Anglesey Coastal Path, with large sections under National Trust ownership • A strong contrast between remote seas and coasts and the bustling port and marina at Holyhead • Ferries (Holyhead- Dublin) are features on the seaward horizon. The Wicklow and Mourne Mountains in Ireland can be visible in clear conditions. The Isle of Man is also visible in distant views north from Carmel Head.
MCA 10: Menai Strait	<ul style="list-style-type: none"> • The Menai Strait occupies a glacially-eroded bedrock trough which has subsequently flooded, separating mainland Wales from Anglesey • Very complex tidal patterns with changing conditions in the channel due to geological variation and sediment processes. It includes strong, swirling tidal currents and whirlpools as well as small rocky islets (including the famous Swellies) • The Strait has been the scene of many shipwrecks owing to its challenging navigational conditions, including the Pwll Fanog and the HMS Conway • The tidal-swept bedrock is a mixture of mudstone, sandstone, limestone and slate. Boulders and coarse mobile sediments create a rich and unique marine environment • Entire strait designated as SAC, representing one of Wales' jewels in terms of marine and coastal biodiversity. These include mudflats, intertidal rocky shores, rare rocky islands and sessile oak woodland • Two iconic bridges cross the Menai Strait, providing the first road and rail connections to the Welsh mainland, designed respectively by Thomas Telford and Robert Stephenson • Other important historic and cultural features include historic harbours for slate export, disused fish weirs, Bangor pier, and the internationally designated medieval Caernarfon Castle and town walls • Further historic landscape influence is strongly associated with the nationally important estate landscapes found on both banks of the Strait • Channel used for commercial and recreational shipping. Surrounding land used for estate parkland, farmland and settlement • Mussels and Pacific oysters are cultivated in this MCA, and lobster/crab/whelk potting contributes to a thriving traditional seafood industry • Waters popular for a range of activities including sailing, recreational angling (from shore and boat-based), kayaking and diving. Plas Dinorwic marina and the Plas Menai National Watersports Centre for Wales serve the area • The Llŷn and Isle of Anglesey Coast Paths skirt around the coastline and the Lon Las Menai cycle route runs from Caernarfon to Y Felinheli • Views dominated by the ever-changing channel of the Menai Strait and framed by the surrounding wooded landform. Perceptions of tranquillity are interrupted by nearby transport infrastructure and development • Spectacular views afforded from elevated points to the Anglesey AONB, and southwards towards the mountains of Eryri National Park (Snowdonia National Park).

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Character Area/Type Key Characteristics

Wales Seascape Sensitivity Zones (SSZs) – Published character descriptions and sensitivity to offshore windfarms

<p>SSZ No. 01: North East Wales Inshore</p>	<p>To the east is large scale open, relatively straight coastline with a large proportion of urban settlement, the tourism is focussed on beach holidays. There are already gas developments and a wind farm offshore which act as lit vertical foci with related boats. To the west the settled coast becomes embayed with headlands and more formal promenades terminating in the distinctive landform of Great Orme.</p> <p>The area's susceptibility lies particularly in the elevated views from Conwy Mountain and the Carneddau to the south west and from the Great Orme Country Park. There is also susceptibility in views from the north tip of the Clwydian Range and from the framed views from Llandudno and from Colwyn Bay including the promenades. The area's value lies in its proximity to the Snowdonia National Park to the southwest and the Great Orme Heritage coast as well as views from Conservation areas (e.g. Llandudno) and listed buildings along the coast. There is potential for combined cumulative effects on the Great Orme and Snowdonia if further wind farms or extensions extend west, especially closer to shore.</p> <p>Overall sensitivity - Medium</p>
<p>SSZ No. 02: North East Wales Offshore</p>	<p>The zone lies in open sea with the north edge of Gwynt y Môr wind farm located on its south margins, and the Douglas oil and gas complex nearby. Beyond this to the south are further wind farms and the north east Wales coast which has large scale open, relatively straight coastline to the east and embayed coastline with headlands and the distinctive landform of Great Orme to the west. The coast has a high proportion of urban settlement focussed on residential and tourism, with caravan and beach holidays to the east and Victorian resorts with associated promenades mainly to the west.</p> <p>The area's susceptibility lies particularly in the elevated views from Conwy Mountain and the Carneddau to the southwest and from the Great Orme Country Park. There is also susceptibility from the north tip of the Clwydian Range and from the framed views from Llandudno and from Colwyn Bay including the promenades. The area's value lies in its location offshore from the Snowdonia National Park to the southwest and the Great Orme Heritage coast as well as views from Conservation areas (e.g. Llandudno) and listed buildings along the coast.</p> <p>Overall sensitivity – Medium/Low</p>
<p>SSZ No. 03: North Wales and North Anglesey Inshore</p>	<p>To the east the settled coast is backed by the mountains of Snowdonia (Carneddau) and framed by the high cliffs of Great Orme's Head to the east and Puffin Island and the coast of Anglesey to the west. Anglesey generally has a lower plateau topography with resultant low cliffs and slopes, apart from the distinctive form of Holyhead Mountain which terminates the area with high sea cliffs to the west. Anglesey's northern coast is rocky and convex meaning development out to sea would be largely unscaled whilst its north west and east coasts have a series of small embayments and coves with associated small settlements and holiday accommodation in places. Industrial features such as Wylfa have now become disused but structures may remain juxtaposed with onshore windfarms inland. The sea is open and exposed with commercial vessels running to and from the Mersey ports and ferries issuing from Holyhead's busy harbour.</p> <p>The area's susceptibility lies particularly in the elevated views from Conwy Mountain and the Carneddau from the south, from Great Orme Country Park to the east, and from the rural Anglesey coastal fringe with associated Coast Path. Views north from the mainland could be affected if wind farms are seen in conjunction with Beaumaris or Puffin Island. The area's value lies in its proximity to the Snowdonia National Park and Great Orme Heritage coast to the southeast, and Anglesey AONB (and associated heritage coast) to the south and west as well as juxtaposition with the world heritage site at Beaumaris, and scheduled monuments along the coast. Particularly sensitive receptors on Anglesey include users of Penmon Point, Red Wharf Bay and Holyhead Mountain and the coast has some tranquillity and remoteness especially towards the north.</p> <p>Overall sensitivity – High</p>

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Character Area/Type	Key Characteristics
SSZ No. 04: North Wales and North Anglesey Offshore	<p>The area lies in open sea offshore from Anglesey and the north Wales coast with the Isle of Man to the north. To the southeast lies the Great Orme and Snowdonia but the area is closest to the north coast of Anglesey from Lynas Point running round west to Holy Island. Anglesey generally has a low plateau topography with resultant low cliffs and slopes, apart from the distinctive form of Holyhead Mountain which terminates the likely affected coastline to the west. Anglesey's north coast is rocky and convex meaning development out to sea would be largely unscaled whilst its northwest and east coasts have a series of small embayments and coves with associated small settlements and holiday accommodation in places. The main built coastal landmark is Wylfa nuclear power station but structures may be seen juxtaposed with onshore wind farms inland. The sea is open and exposed. Commercial vessels running to and from the Mersey ports and ferries issuing from Holyhead's busy harbour tend to pass between this zone and the coast.</p> <p>The area's susceptibility lies particularly in the elevated views from Great Orme Country Park to the southeast, from the rural Anglesey coastal fringe with associated Coast Path and from Conwy Mountain and the Carneddau from the south. The area's value lies in its location offshore from the Anglesey AONB (and associated heritage coast) to the south, Snowdonia National Park and Great Orme Heritage coast to the southeast, and scheduled monuments along the coast. Particularly sensitive receptors on Anglesey include users of Penmon Point, Red Wharf Bay and Holyhead Mountain and the coast has some tranquillity and remoteness especially towards the north.</p> <p>Overall sensitivity – Medium</p>
SSZ No. 05: North Wales and Anglesey Outer Offshore	<p>The area lies in open sea at least 44km offshore from the Anglesey, North Wales and Llŷn peninsula coasts although the zone's north edge is located around 22 km from the Isle of Man. To the southeast there are the existing arrays at Gwynt y Môr and further arrays lie to the north east including Walney and West of Duddon Sands. Anglesey predominantly has a low plateau topography and rocky coastline with a distinctive high point at Holyhead Mountain. Development out to sea would be largely unscaled in views. More elevated views are possible north from the north Wales coast at Great Orme and Conwy Mountain. The Llŷn peninsula also has cliff top views to the northeast towards the southwest extent of the zone. The sea is open and exposed with commercial vessels running inshore from this zone to and from the Mersey ports, and ferries issue from Holyhead's busy harbour.</p> <p>The area's susceptibility lies predominantly in combined views from Anglesey and Llŷn AONBs offshore from Caernarfon Bay where development may be apparent in sunset conditions. The least susceptible area lies to the northeast as this is located in further out to sea than existing wind, oil and gas development to the south and east. The value associated with the zone lies in its relationship with Anglesey and Llŷn AONBs and associated heritage coasts, Snowdonia National Park and Great Orme Heritage coast. Particularly sensitive receptor locations include Holyhead Mountain, Bardsey Island and the tip of the Llŷn peninsula, Point Lynas and Carmel Head.</p> <p>Overall sensitivity – Medium/Low</p>

Seascape Character: England

English Seascape/MCAs

MCA 31: St Bees to Haverigg Coastal Waters	<ul style="list-style-type: none"> • A sandstone coast, with Triassic rock extending south from St Bees Head to Haverigg Point. The same sandstone extends offshore, giving way to mudstones and halite in the southwest • The rivers Esk, Mite and Irk meet at the coast at Ravenglass, forming a distinctive trident-shaped tidal estuary. Broad dune systems have built up either side of the main channel
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MONA OFFSHORE WIND PROJECT

Character Area/Type

Key Characteristics

- Elsewhere, a long, smooth coast without significant indentation. The broad foreshore comprises sandy beaches with areas of shingle and exposed wave-cut rock
- The foreshore and seafloor are mainly sandy, with more mud further offshore as well as overlying glacial till and gravels
- Rocky scars project some way offshore in several locations, most notably at Selker Rocks some 2 km from the High Water Mark, and Kokoarrah Scar off the Drigg dunes
- The shallow sea slopes gently out from the coast towards the 20m depth contour, which represents a gradual transition into the adjacent MCA, with significant areas of less than 10 m depth
- Very limited low-energy tidal flows, of less than 0.5 m/s
- The Cumbria Coast MCZ and protects rocky and sandy habitats and peat exposures, from St Bees to the Esk. The Esk estuary and adjacent dune systems are protected at an international level
- Haverigg Point, at the east edge of the Duddon Estuary, is protected at numerous levels for its intertidal habitats, and the area between here and the Esk provides an important area for foraging tern species
- A particular concentration of shipwrecks is recorded off Haverigg Point
- Britain's 'Energy Coast', with nuclear power having been generated at Sellafield from the 1950s to the early 21st century. The extensive plant remains a significant visual presence in views from land and sea
- Military firing practice range based at Eskmeals on the dunes near Ravenglass; the range extends out to sea
- An onshore wind farm is located at Haverigg, with offshore wind farms visible to the south (see MCAs 32 and 38)
- Although there are no harbours on this coast, small yachts can moor at Ravenglass, and there are medium-use recreational sailing routes following the coast
- Fisheries are limited but include crab, lobster, mussels and winkles around Ravenglass, and netting for bass, cod and thornback ray along the coast
- Caravan parks located along the coastline, associated with the sandier stretches of foreshore. Ravenglass is a tourist centre in this part of the Lake District National Park
- This area of sea is highly visible from land, including in views from the fells of the southwest Lake District National Park that look out to the Isle of Man: in turn it forms part of the seascape setting of the designated landscape
- The higher hills in the southwest Lake District, including Black Combe, are prominent features in views from the sea, as is St Bees Head in the north
- This MCA forms part of the seascape setting of St Bees Head Heritage Coast, in views south along the coastline
- An undeveloped coastline with no large settlements. The exception is the nuclear power station and associated industrial development at Sellafield, at the mouth of the Calder

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Character Area/Type	Key Characteristics
MCA 32: Walney Coastal Waters & Duddon Estuary	<ul style="list-style-type: none"> • A strong sense of tranquillity with dark night skies, particularly between Ravenglass and Millom. • Gently shelving, muddy sand seabed, extending from the coast and edges of Morecambe Bay westwards to a depth of around 20 m • The exception to this bathymetry is Lune Deep, a glacially incised channel over 10 km in length which reaches 86 m depth at one point • Glacial processes and subsequent movement of coastal sediments carried by strong tidal currents have resulted in a distinctive coastal landscape • Complex sediment movement resulting in the development of ness/foreland dunes at several locations in the Duddon Estuary. There are also spit dunes at North Walney, formed largely from river sediment • Walney Island is the largest barrier island in England, formed from glacial till and alluvium, and has been extended northwards and southwards by recurved shingle spits • International designations reflect the importance of the intertidal habitats, including sand dunes, vegetated shingle, salt marsh and lagoons supporting a rich birdlife • Offshore there are important subtidal habitats, protected by the West of Walney MCZ and Shell Flat and Lune Deep SAC • Piel Castle is a reminder of the earlier history of the area. Built in the 14th century by the abbot of the wealthy Furness Abbey, it provided protection for trading vessels using the harbour at Barrow • Natural systems have been much modified over time; much of the coastal marshland has been drained over the centuries to provide farmland • A chain of coastal defences dating to WWI and WWII, including pillboxes and observation posts, are reminders of the importance of Barrow's shipyard • Barrow-in-Furness has been a major ship-building centre from the 19th century. It continues to be a centre for building the UK's nuclear submarine fleet, requiring the Walney Channel to be heavily dredged • Lune Deep is important as a shipping access route through the sand banks and flats into Morecambe Bay • Significant shoreline protection works line the Duddon Estuary and Barrow area, with the coastal railway line forming an important sea defence • Four wind farms lie off the coast, forming prominent moving structures within the seascape • A 34 km long pipeline from the Morecambe Bay Gas Field, located in MCA 38, supplies the Rampside Gas Terminal to the east of Walney Island • The waters of Duddon Estuary, Walney Channel and Foulney spit support harvested mussel beds, crab and lobster fisheries, and occasional cockles • Other fisheries include crab and lobster potting, cod, bass and thornback ray netting, and sole and flatfish beam trawling in the Lune Deep • Inshore areas support seagrass and are important as nurseries for pelagic and demersal fish species such as herring and plaice • There are important bird colonies around Walney Island, as well as Cumbria's only colony of seals

MONA OFFSHORE WIND PROJECT

Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Wildlife and heritage are the principal attractions for visitors, with recreational angling also important for tourism • There is a marked contrast between natural and man-made elements on the land, coastline and sea, creating a distinct sense of place • Views out from the south extent of the Lake District National Park are dominated by the undeveloped Duddon Estuary which forms a significant component of the Park's setting in this locality • Views out to sea from Black Combe and the south Fells into the MCA are a significant characteristic of this part of the Lake District National Park • Views inland have the backdrop of the Lake District's mountains and industrial elements: views offshore feature the Isle of Man and the Galloway coast in Scotland.
<p>MCA 34: Blackpool Coastal Waters & Ribble Estuary</p>	<ul style="list-style-type: none"> • A shallow, coastal area no more than 20 m deep, shelving very gently down from the low-lying Lancashire coastal plain • Shallow waters and a high tidal range (up to 9.8 m at Lytham St Anne's) backed by extensive sandy and muddy/sandy beaches, intertidal sand flats and mudflats • Complex coastal processes, with a high rate of movement of sand and shingle, although sea defences limit this in places • Frequent storm surges, combining with high tides to cause flooding. Man-made barriers protect most of the coast, and sand bars, salt marsh and dunes also provide a natural defence • Beyond the sandbanks, the Ribble Estuary is a landscape of intertidal salt marshes, pierced by dendritic creeks • Along the Sefton Coast the landscape is dominated by sand dunes, stretching over 17 km long. Around Formby and Ainsdale the dunes reach over 20 m high, forming dominant features • The protected dune systems support internationally and nationally important species including natterjack toad and sand lizard • The Ribble Estuary and the Sefton Coast dunes have distinctive character, and in places, when screened from urban influences, a sense of remoteness and wildness • Large intertidal areas are internationally designated for their importance for migratory wildfowl, wading birds and sea birds • The extensive Liverpool Bay SPA includes all of this coast and supports common scoter and red-throated diver. The Fylde MCZ includes extensive areas of subtidal sediment habitats typical of the area and overlaps with the Shell Flat and Lune Deep SAC • At Formby Point, coastal erosion of the foreshore has revealed preserved human, animal and wading bird footprints dating from the Mesolithic Period (7,000–5,000 years ago) • Coastal waters and the Ribble Estuary are important nursery areas for commercially fished species such as herring, plaice, Dover sole and bass • The Ribble Estuary supports commercial fisheries for brown shrimp and cockles. Other commercial fisheries in this MCA include mussels, bass, crab, lobster, flatfish and thornback ray • The Lennox oil and gas field, one of five interlinked sites currently operational in Liverpool Bay, is located in the southwest part of the MCA

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • The Fylde Coast, in particular, is now very urbanised, with much industrial development (e.g. around Blackpool and Preston) • The marshy coastal area was sparsely populated until the 19th century, when land drainage enabled agriculture and the railways boosted tourism, most notably for Blackpool and Southport • In addition to urban and beach-based tourism the coast is popular for bird watching, with a number of national and local nature reserves providing facilities for visitors. Recreational angling is also an attraction • There are a number of prominent landmarks on the developed areas of coast, such as Blackpool's tower, pier and rollercoaster • From the coast there are long views to the mountains of North Wales and the Lake District, and from the Sefton Coast shipping lanes, wind turbines and oil and gas infrastructure are visible.
MCA 35: Inner Liverpool Bay	<ul style="list-style-type: none"> • A gently shelving coastal zone, from around 5 m depth where it gives way to the inshore area of sand banks, mud flats and channels approaching the Mersey and Dee estuaries – to around 20 m in the west and north • The seabed is covered with Quaternary, mostly glacial and post-glacial sand and gravel deposits. These are underlain by mudstones and halite • Large quantities of material dredged from estuary areas, such as the Mersey docks, have been deposited in this part of Liverpool Bay since Victorian times. • The semi-enclosed character of the Irish Sea means that wave heights are generally low • Several species of phytoplankton are noted for causing blooms in Liverpool Bay, the most visual expression of this being the 'red tides' associated with invertebrate mortalities • Spawning grounds for whiting, Dover sole and plaice extend southward and eastward as far as the north end west parts of the MCA • The whole of the MCA, along with other shallow waters along the northwest coast, is important as a nursery for pelagic and demersal fish species, including herring, plaice and Dover sole • Contains important foraging grounds sustaining the significant populations of red-throated diver, common scoter and terns, internationally designated as part of the Liverpool Bay SPA • Further offshore, cetaceans are found including dolphins, porpoise and occasional whales • A busy area for commercial shipping, with the majority of vessels entering the Mersey passing through it. There is also moderate usage by recreational craft, including recreational anglers, as well as passenger ferries • An important area for oil and gas extraction. One of the five interlinked sites is the Hamilton East gas field, connected by pipeline to the Hamilton North gas field in MCA 38: Irish Sea (South) • More recently, offshore wind farms have been developed in this area • An area in the southwest of the MCA, and extending further west, is licensed by the Crown Estates for the dredging of marine aggregates, landed at Liverpool to supply the local market

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • MCA widely visible from land in its south parts. The closer coasts are low lying and unlikely to be prominent in views from the sea, for example from the ferries which cross this area • The offshore platforms, shipping activity and offshore wind turbines also influence views and perceptual qualities at night-time.
MCA 36: Dee & Mersey Estuaries and Coastal Waters	<ul style="list-style-type: none"> • Coastal area consisting of the Dee Estuary, the Mersey Estuary, the smaller Alt Estuary and their associated coastal waters • Low-lying coastline underlain by Triassic shales and sandstones, which form distinctive, isolated, coastal outcrops such as Hilbre Island (at the mouth of the Dee) and Perch Rock (Mersey) • A high tidal range and shallow, very gently shelving coastal waters with numerous sand banks and mudflats • Sandstone bedrock constrains the width of the Mersey near its mouth, channelling water to create strong currents which cause localised tidal scour in places • The funnel shape of the Dee Estuary encourages sedimentation, largely from longshore drift, which over time has caused ports in the upper reaches of the estuary to silt up. The Dee itself has been channelized in the inner estuary • The inner Mersey Estuary is composed of extensive intertidal mud and sandflats, distinct areas of rocky shore, and areas of saltmarsh • Sand dunes are a notable feature, visually and ecologically, in particular the extensive system that starts at Seaforth and continues north for many miles. At up to 25 m high and 5 km wide, it is the largest dune system in England • Important nursery grounds for herring, plaice, Dover sole and bass. The Dee is also noted for a number of protected fish species, including sturgeon and allis shad, and for shellfish beds • Commercial fisheries include cockles, mussels, shrimps, bass, plaice, Dover sole, flounder, dab, turbot, brill, codling, whiting, cod, mackerel and mullet • Mudflats, sand flats, man-made lagoons and salt marshes are internationally important for a range of wildfowl and wading bird populations, reflected in overlapping international designations across the majority of this MCA • The Dee Estuary supports a population of grey seals • At the end of the last glaciation the coast was c.15 km further west. Rising sea levels covered ancient landscapes but prehistoric sites and artefacts have been discovered in the intertidal zone • The Merseyside Conurbation, centred on Liverpool, developed largely as a result of the physical characteristics of the coastline, with natural tidal pools providing the basis for early docks • A major international port for several hundred years, Liverpool suffered a decline in the 1970s, but remains an important trade hub, with ongoing investment into the 'superport' and a range of associated industries and services • Shipping routes from the Irish Sea converge on the Queens Channel/Crosby Channel to access the Mersey, with onward links inland to the Manchester Ship Canal

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • The combination of high shipping volumes and numerous sandbanks has resulted in many hundreds of shipwrecks, concentrated along Queen's Channel and between Liverpool and Birkenhead • The River Mersey, its historic waterfront and its maritime history are at the heart of Liverpool's strong sense of place and its importance as a tourist destination, designated as a World Heritage Site • The MCA's wide, sandy beaches and local and national nature reserves are recreation and tourism draws. At Crosby, Antony Gormley's installation 'Another Place' is a further attraction on the foreshore • Long stretches of coast are protected by man-made defences in response to threats from storm surges and sea level rise • The Burbo Bank Wind Farm, and several others in Welsh waters are prominent in views. There are also views across the Mersey to oil refineries at Ellesmere Port and to the Welsh coast • Blackpool Tower is a distant landmark to the north, and on clear days Anglesey and Snowdonia can be seen • Views also characterise both estuaries, with the vistas up and down the Mersey characteristic of Liverpool's setting.
MCA 37: Irish Sea North (England)	<ul style="list-style-type: none"> • Underlain largely by rocks of the Triassic period, with small areas of Carboniferous rock west of the Isle of Man with potential hydrocarbon deposits • The deep basin, formed by a syncline, is filled with deep Permo-Triassic mud, sand and gravel sediments which completely obscure these rocks • The resulting sea floor is relatively even, shelving gently down to the west from around 20 m depth to around 40 m, only becoming deeper in very small areas to the northwest • The east tip of the King William Banks is within the MCA, where water depth is less than 10 m. These banks extend westward into Isle of Man waters • A calm sea with low tidal energy and flows, rising only slightly across the north part of the MCA where the Solway flows out • Areas of sea-bed mud support Nephrops (Dublin Bay prawn) as well as crabs, shrimp, sea urchins and hydroids. In the far south of the MCA these mud habitats form part of the West of Walney MCZ. Brittlestars are typical of more sandy areas • Spawning grounds for commercially exploited cod, whiting and plaice occur within this MCA • Cetaceans are found in this area, including dolphins, porpoise and occasional whales • Relatively few wrecks, reflecting the lower levels of activity and/or calmer seas, though a number of ships are known to have foundered off St Bees Head in the north-east of the MCA • There are no fixed offshore structures in this MCA, and only a single light buoy at the east tip of the King William Banks, giving the MCA an undeveloped character • Extensive military live-firing ranges cross the MCA, centred on Eskmeals Range off the Cumbrian coast and Kirkcudbright Range off the Scottish coast, resulting in potential for unexploded ordnance on the seabed

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> The principal fishing activity is benthic trawling for Nephrops by boats from Fleetwood, Whitehaven and further afield. Other important fisheries include bass, thornback ray, cod, codling and flatfish Some recreational sailing routes cross the area, noted as medium or light use, connecting the ports of Whitehaven, Douglas and Ramsey Under clear conditions, there is intervisibility with the hills of the Lake District National Park, the Dumfries and Galloway coast, and the Isle of Man With an absence of offshore lights, there are dark skies across this MCA.
MCA 38: Irish Sea South (England)	<ul style="list-style-type: none"> Seabed primarily comprising Triassic mudstones and sandstones, with volcanic dykes running across the north edge that coincide with shallower waters The sea becomes steadily deeper from around 20 m in the east to just over 40 m at the westmost point – with shallower waters associated with the volcanic dykes Sand, mud and gravel seabed deposits sitting on deep layers of glacial till deposited during the Pleistocene glaciation Tidal flows are generally quite weak, only becoming slightly faster along the south-west edge of the MCA West of Walney MCZ protects areas of mud habitat, supporting Nephrops (Dublin Bay prawn) as well as other molluscs, sea urchins and sea pens. There are high densities of brittlestars in more sandy areas Spawning grounds for commercially exploited cod, Dover sole, whiting and plaice. Scallops, queen scallops and Nephrops are targeted by trawlers A series of offshore oil and gas platforms. In the north the Morecambe, Calder and Millom fields supply gas via pipelines to Barrow-in-Furness The Hamilton and Douglas fields in the south deliver their gas to Point of Ayr in North Wales, while oil from these fields is transferred to tankers Dredging for aggregates is carried on in the north in the shallow sea east of the Isle of Man, and in the south in the vicinity of the Douglas oil field Walney offshore wind farm extends west into this area from MCA 40, close to the North Morecambe gas platforms Several key shipping routes cross this sea, adding to the busy nature of the waters. These routes include the approaches to the major ports of Fleetwood and the Mersey Many ‘medium use’ recreational sailing routes criss-cross the MCA, linking all the harbours on the English, Welsh and Isle of Man coasts The coast is relatively distant from this MCA, and the nearest areas are low-lying, meaning that there are low levels of intervisibility with the land. Under clear conditions, there is intervisibility with the hills of the Lake District National Park and the Isle of Man Lighting from the offshore platforms and wind turbines influences night-time seaward views The area is viewed from ferry services which link Liverpool and Heysham with Douglas, Belfast and Larne.

Character Area/Type **Key Characteristics**

National Landscape Character: Wales

Wales NLCAs

NLCA 01: Afonir Môn/Anglesey Coast

- The coastal zone – off by far the largest island in Wales (720 km²), containing the largest outcrop of Precambrian rocks in south Britain, but with areas of other rock types too
- Much of the highest land on the island falls within the coastal area, including Parys Mountain (147 m) and Holyhead Mountain (220 m).
- Strong geological orientation – There is a southwest to northeast geological orientation, resulting in corrugated topography, which is manifest along the coastline in places as rocky headlands and sandy bays. Igneous rock intrusions and outcrops of quartzite have created the dramatic landforms and skyline of Holyhead Mountain and South Stack, at Holy Island
- Great variety of coastal types – The coastline has great variety, from sheer coastal cliffs and dramatic rocky headlands, to small sandy coves and extensive low-lying dunes and sandy estuaries. A legacy of coastal quarrying that has long since ceased, remains apparent in places, for example at Penmon
- Wind exposure but some shelter – The striking and windswept heathland landscapes of the wild coastline at Holyhead Mountain and North and South Stack, together with the barren, mined landscape of Parys Mountain, contrast markedly with the gentler, green, pastoral landscapes inland, away from the immediate coastal edge
- Pasture – Soils include deep loams supporting predominantly pastoral land cover with occasional hay meadows, away from the coastline
- Heather and heath – a feature of the thin soils in the more elevated areas such as Holyhead Mountain, Mynydd Bodafon and the coastline near Amlwch
- Cloddau – or earth bank field boundaries feature in the north and west with occasional stone walls, whereas hedges are more common in the south and east
- Reclaimed marsh – The large sandy Malltraeth estuary includes significant reclaimed areas and the straightened tidal river channel of the Afon Cefni, with wetland elements including rush pasture and marsh
- Lagoons – There are a series of distinctive freshwater lagoons on the coast facing Caernarfon Bay, sandwiched between rising inland landscapes and the very well-developed coastal dune systems
- Prehistoric and funerary sites – including standing stones, chambered tombs, barrows and cairns, distinctive Iron Age hill and promontory forts, the largest and most prominent being Bwrdd Arthur, on the Penmon peninsula
- Coastal Settlements – often relating to former industry, such as the mining town of Amlwch at the foot of Parys Mountain, or to strategic transport routes, such as Thomas Telford’s A5 and the port town of Holyhead (the only large settlement in the area) on Holy Island. Much C20th coastal development relates to tourism and retirement property
- A number of prominent man-made landmarks – including Beaumaris Castle (World Heritage Site), the two bridges that cross the Menai Strait and connect with the mainland, Parys Mountain (distinctive industrial quarry landscape), Wylfa Nuclear Power Station, and the Aluminium works on Holy Island, with its tall, widely visible chimney.

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Character Area/Type	Key Characteristics
<p>NLCA 02: Canolbarth Môn/Central Anglesey</p>	<ul style="list-style-type: none"> • The land-locked central part of Anglesey – part of the largest island in Wales (720 km²). Rock outcrops and a distinct geological grain – the gentle topography, low lying and near flat in places, follows a northeast to southwest ‘grain’ imposed by major faults. Contrasting rock types include Ordovician sandstones and shale, bands of volcanic tuffs and Carboniferous Limestone. In various places there are many craggy rock outcrops • Extensive drumlin fields – thick layers of glacial boulder clays, especially in north-west Anglesey, result in a classic ‘basket of eggs’ rolling drumlin landscape • Lowland pastures and mixed field patterns – silty and peat soils underlie lowland pastoral grazing land bounded by a strongly geometric pattern of medium to large scale and, more occasionally, small scale fields • Minor rivers and fens – a number of minor rivers and streams cross the landscape, whose alignment is influenced by the northeast to southwest trend. There are many shallow hollows and fens with wetland features including rush pasture and valley mires, for example Cors Erddreiniog NNR • Hedgerows and cloddiau – this is generally a rolling, open landscape with a well-established pattern of field boundaries, predominantly of hedgerows but with cloddiau in some areas • Few woodlands – woodlands larger than a small copse are an exception, being notably around Llangefni Dingle and Llyn Cefni reservoir, together with estate woodlands at Presaddfed (Bodedern). Except in sheltered areas, individual trees are few • Generally rural settlement patterns – the only urban settlement is the county town of Llangefni, in the centre of the island. Its nucleated historic core contrasts with modern peripheral housing and expanding light industrial and business park developments. There are only a few villages, but numerous scattered hamlets and farms throughout the area. Linear, ribbon villages concentrate along Telford’s the A5 road across the island • Prehistoric and funerary sites – ritual and funerary monuments including cairns and round barrows, Iron Age hill forts and Early Christian churches, burial grounds and inscribed stones • Historic windmill towers – including some restored examples, form local features. Modern wind farms – generally limited to an area north of Llandeusant, but are seen in longer distance views from a much wider area • Llyn Alaw – a large reservoir, nearly 3 miles long and a notable visual feature, providing significant over wintering habitat for wildfowl. Llyn Cefni is a smaller example of the same.
<p>NLCA 03: Arfon</p>	<ul style="list-style-type: none"> • The Arfonian plateau – a broad, gently undulating lowland and valley landform, rising from the coast to about 200 m and flanked by the much higher adjacent uplands of Eryri • Menai Strait – the tidal channel separating Anglesey and the mainland • Soft open coastline – at Morfa Dinlle with shingle and sand beaches and dunes, extensive mud and sand flats in Foryd Bay and at Traeth Lafan • Extensive sheltered inter-tidal areas at Foryd Bay and Traeth Lafan, with high ecological importance • A dramatic inland panorama of steeply rising mountains – with many views to well-known ridges and peaks, including Snowdon (Yr Wyddfa)

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Deep ‘U’ shape valleys emerge from uplands into Arfon – and whose rivers then cross the area. The rivers include the Gregyn, Ogwen, Cegin, Gwyfrai, Seoint and Llyfni, and in the Llanberis area also include the ice-deepened lakes of Llyn Padarn and Llyn Peris • Very extensive slate workings – on the flanks of the upland valleys, including associated old mines, levels, railways, waste tips and workshops. Many are at a spectacular scale • ‘Gwerin’ – landscapes associated with slate quarry worker’s housing and smallholdings that encroached onto former commons, typically heavily dominated by slate walls and buildings, and in places (e.g. Nebo) tiny field sizes. Slate fencing in a few places (e.g. Mynydd Llandegai) • Pastoral land cover – predominates • Wooded valley slopes – by rivers and beside the Menai Strait • Lowland – upland contrasts – from the intimate, wooded, lush, soft, sheltered lowland and pastures to the exposed, open, heavily grazed, marginal upland fringes. • Prehistoric and funerary sites – a rich concentration of burial sites, hill forts and stone-built hut circles and their field systems, which often survive on the more marginal parts of the foothills • Landed estates and their designed parklands – from the Medieval and post Medieval periods, such as Penrhyn, Faenol and Glynllifon, on the better land and often with designed parklands and scattered individual trees • Settlement pattern relates to sites of strategic significance: river mouths and ports, coastal defensive, where the upland valleys emerge, and near slate workings • Caernarfon Castle – World Heritage Site, and its associated Medieval walled town overlooking the Menai Strait • The University City of Bangor – occupying a constricted site flanked by coast and wooded hills.
<p>NLCA 06: Eryri/Snowdonia</p>	<ul style="list-style-type: none"> • A mountainous topography – with the principal mountain range orientated broadly northeast to southwest • Wales’s sharpest ridges and highest peaks lie within this area – in a landscape often defined by massive, angular skylines. Most famously this includes the massif of Snowdon, with the peak of Yr Wyddfa, highest in England and Wales at 1,085 m AOD, and a number of radiating ridges • U-shaped glacial valleys and corries – carved through the mountainous terrain and deepened by the ice in the last Ice Age • An upland character to principal land cover elements – including hill sheep grazing, forestry, heather dominated moorland and upland grassland. Rock outcrops and slate/shale ridges and scree are frequently apparent • Moorland and blanket bog – substantial areas with significant ecological interest and large parts of the area are designated SSSI. Species rich crag flora and grassland is a feature of upland areas, for example, at Moel Hebog • Rivers, lakes, waterfalls – principal rivers include the Dysinni, the Llugwy, the source of the Conwy, the Mawddach, Glaslyn and Dwyrdd. There are numerous small lakes and waterfalls (e.g. at Betws-y-Coed), and Llyn Tegid at Bala is Wales’ largest natural lake

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Estuaries and coast – although only directly fronting open sea in a few places, the tempestuous, dark, mountainous character abuts, or is seen in views close to milder, sheltered, woodland-fringed estuaries and sunnier, sandy open coast. This combination provides an iconic and contrasting image of great appeal to many • Prehistoric archaeology – many ritual and funerary sites including cairns, standing stones and stone circles, many located along hill crests, mountains, ridges and passes, often forming strong visual features • Ancient stone built remains – deserted stone-built Iron Age, Roman period, Medieval and later, settlements and field systems survive in an almost unbroken “cordon” of relict landscapes along the lower slopes between the Dyfi in the southwest and the Conwy in the northeast • Slate mining heritage – abundant in many parts but notably created the extensive slate landscape of Blaenau Ffestiniog and slate is the principal building material in much of the area. Remains include quarries, waste heaps, mines, levels, workshops and cottages • Copper, gold and other minerals heritage – copper mining was historically important, notably at Sygun, near Beddgelert and Drws-y-Coed, near Nantlle. The exploitation of other minerals, for example, gold, lead, zinc and manganese, have also left industrial archaeological remains in the landscape. Welsh gold is worn by the Royal Family • Sparsely populated/few large settlements – confined to valleys, the few include the small towns of Dolgellau and Bala, and the slate town of Blaenau Ffestiniog, and compact valley villages in slate and stone such as Beddgelert and Betws-y-Coed • Transport routes affected by steep topography – the majority of the area has few roads, these are routed along valleys, linked by the occasional twisting mountain pass. Railway routes do likewise and with tunnels. There are remains of numerous narrow-gauge quarry railways, some with inclines. There are several operational narrow-gauge heritage railways for tourists • Sublime, picturesque, iconic visual and sensory landscape of great drama – the inspiration for many artists over the last 200 years, part of the great tour for Wordsworth, and others • A stronghold of the Welsh language and culture – of small-scale rural farming, of large-scale mineral exploitation. It includes great contrast and exhibits an intimate relationship between the natural drama and the cultural heritage of its people • Tourism – today Snowdonia is recognised as a National Park and is visited by thousands of tourists who come to experience the natural and cultural heritage. The area forms a great outdoor challenge for many recreational visitors as they explore.
NLCA 07: Dyffryn Conwy/Conwy Valley	<ul style="list-style-type: none"> • A deep, major fault-guided glaciated valley – between the adjacent rugged and shapely uplands of Snowdonia to the west and gentler rolling Rhos Hills to the east • South flood plain section – deep river alluvium with silty and clayey soils and seasonal flooding, whose flatness contrasts with the adjacent spectacular wooded hillside to the west. Development and road links generally keep off the flood plain • A very abrupt, steep, wooded edge to the adjacent Snowdonia uplands, with cliffs – marking the terminal point of a bedrock geology of Silurian argillaceous rock. Dramatic, boulder-strewn, tumbling small rivers cascade down • Hanging woodland – including beech and oak, and areas of planted conifers, to slopes • Hilly farmed middle section with a meandering, serpentine estuary – fringed with marsh, reed beds and tidal flats, backed by pastures, hedges and deciduous woodland blocks. Strong tidal movement along estuary. Hamlets, villages, scattered farms

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Lowland pasture and hay meadow – with hill sheep grazing to the valley sides • Busier north section around Conwy – with strategic transport crossing points over the wide estuary and shelter for boats. Historic road and railway bridges and a modern road tunnel • Field patterns – geometric on the flood plain, with areas of dry stone walls or reens (ditches) as boundaries. Mixed hedgerows generally, with small irregular fields on rising slopes to the west side. More improved fields and hedges to the east side slopes • Conwy Castle with its associated walled town – a World Heritage Site, dramatically located on a promontory overlooking the estuary, and forming a landmark feature • Settlement to lower valley sides – keeping off the flood plain, notably the linear Dolgarrog, Trefriw and Glan Conwy. Principle settlements are Conwy town and Llanrwst • A strong sense of containment to the valley – creating a natural route for north-south road and rail links.
<p>NLCA 08: Arfordir Gogledd Cymru/North Wales Coast</p>	<ul style="list-style-type: none"> • Carboniferous limestone hills and coastal headlands – resulting in distinctive light-coloured rocky escarpments with cliffs and scree, including most prominently Great Orme’s Head, with characteristic clints, grykes, stepped crags and scree slopes • The mouth of the Vale of Clwyd – a broad flat coastal plain centred on Rhyl, including the small estuary of the River Clwyd, including a network of medium scale pastoral fields of regular pattern, with ditches and, to a lesser extent mixed, managed hedgerow, and occasionally interspersed with small stands of mixed farm woodland • Seaside resort towns – urban development and arterial road and railway routes along coast, constricted in places by topography and rising hills. Much 19th century development with more recent suburbia. Some caravan parks and holiday camps between Llanddulas to Prestatyn coalesce settlements • Steep sided hill back drop to coastal towns – wooded, or exposed limestone and sheep pasture • A generally man-made coastal edge – promenades, sea walls, groynes, rock armour and other forms of protecting the coastal edge run for most of the length of the coastline • Limestone quarrying – a number of old and active limestone quarries have left holes and scars; coastal quarries having used sea ships for transportation • Hinterland away from the coast – with intervening hills makes for a quiet, sheltered, inland, rural feel, with some classic limestone outcrops, notably south of Llanddualas • Ecological importance – Great Orme is ecologically important for its concentration of calcareous grassland, while elsewhere, there is a diversity of habitat types, including the coastal dunes at Gronant and remaining areas of coastal habitat such as sandbanks, marshland and tidal river flats • Archaeology – Great Orme has a range of archaeological features illustrating a variety of historic land uses, including prehistoric caves, extensive evidence of underground, Bronze Age copper mining, ritual and funerary monuments, and hillforts

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Rhuddlan Castle is strategically sited at a crossing point over the Clwyd, at what was once the east boundary of the Medieval kingdom of Gwynedd • A number of historic parklands lie within the area, while the estate architecture of Gwrych Castle and wooded parkland is a locally prominent feature • Iconic image of historic Llandudno and its famed natural setting – between two rocky headlands, with its pier, grand sweeping promenade and Victorian building façades, arguably the finest of their type in Wales, the town is known as the ‘Queen of resorts’ and is known nationally for seaside holidays.
<p>NLCA 09: Bryniau Rhos/Rhos Hills</p>	<ul style="list-style-type: none"> • Rural inland foothills and valleys that rise to the adjacent Denbigh Moors to the south • Bedrock geology – is composed primarily of Silurian sandstone and argillaceous rock of the Ludlow and Wenlock Series, in addition to small areas of Carboniferous limestone and areas of slaty mudstone and siltstone • Extensive drift deposits – glacial till overlays the solid geology giving rise to the undulating land form of the area • River valleys and flood plains – river alluvium and fluvio-glacial river terrace deposits are present • An undulating land form – comprising a series of ridges and valleys associated with the river catchment, including the Cledwen and the Aled. A range in grades of slope • Soils – well drained fine loamy/silty typical brown earth soils, with seasonally wet silty soils over shale in the river valleys • Sheep grazed pasture – predominant land cover • Occasional woodlands – often occurring on the river valley slopes, for example on the Clywedog and the Ystrad, and running up riverside slopes • Mixed field patterns – often geometric but varies widely in scale, from small to large size fields. A denser network of mixed hedgerows with more trees in sheltered valleys, running up to sparse, windswept hedges and fences occupying areas of former moorland • Archaeology – a number of sites occupy the more elevated parts of the area, including Neolithic burial chambers, Bronze Age round barrows and cairns, and Iron Age hillforts such as Mynydd Y Gaer. The Pontnewydd Cave is internationally renowned for evidence of the earliest known humans in Wales • Sparsely settled – affording rural peace and tranquillity, with wide views from the higher points and a sense of intimacy and enclosure in the valleys close by.
<p>NLCA 11: Dyffryn Clwyd/Vale of Clwyd</p>	<ul style="list-style-type: none"> • A broad agricultural vale – between adjacent upland areas • Distinctive line of hills forming the east boundary, also forming an upland-lowland boundary, following a geological fault line • Limestone and sandstone – predominantly Permo-Triassic sandstone but localised areas of Carboniferous Limestone • Undulating fringe either side of vale – being deposits of fluvio-glacial drift and till • Flood plain – river alluvium marks the extents of the broad, flat floodplain

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Arable and pasture, well managed hedges • Many hedgerow and parkland trees and some woodland blocks – and of ecological importance, some Alder woodland, swamp and rush pasture and some ash-wych elm dominated woodland • Castles and towns – reflects historic strategic importance of main three towns of Denbigh and Ruthin and ecclesiastical importance of St Asaph cathedral • Rural – dispersed, scattered farms, settlement confined to small villages and hamlets and the three towns • Prosperity – enduring through history based on agriculture • Many cultural associations with people – a richness and diversity including William Morgan, the translator of the Bible into Welsh and the Victorian explorer H M Stanley.
<p>NLCA 12: Bryniau Clwyd/Ciwydian Range</p>	<ul style="list-style-type: none"> • Rounded, heather clad open hills in two main groups, a north chain rising to Model Famau (554 m), a south chain rising to Moel y Gamelin (577 m). Formed by sandstones and argillaceous rocks and shales • Narrow, minor river valleys dissect the hills – draining into the Vales of Clwyd or Llangollen • A gentle intervening vale – the River Alyn flows north, at times incised, then east • Well defined west and south edges – with adjacent deep valleys • Carboniferous Limestone to the east – with classic scenery of clints, grykes, crags and scarp slopes, use of stone in field boundaries and buildings, large quarries, and in places an exposed appearance. Gentler slopes towards Deeside • A series of minor rivers – have their sources in the hills, draining west into the Clwyd in the Vale of Clwyd • Heaths – in the Halkyn Mountain area • Hedgerows and numerous hedgerow trees – improved hill sheep grazing and lowland pasture • Quarries and mining heritage – a number of large limestone quarries in the east and slate quarries in the south near Horseshoe Pass. Extensive evidence of old mineral workings on Halkyn Mountain • Archaeology – a relatively high density of prehistoric ritual and funerary monuments, including round barrows, and later, Iron Age hill forts indicate the area's past strategic importance • Historic parks – A number of historic parks and gardens occur within the area, notably Bryngwyn and Penbedw • Culturally a divide – the area reflects the historical divide between English influences to the east and Welsh influences to the west. Parts of the area are designated as an AONB • Sparse level of settlement – confined to compact, nucleated hamlets and isolated farmsteads. Crossed by a number of arterial 'A' roads, the presence of the A55 Expressway across the north part of the area is the most apparent.

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Character Area/Type	Key Characteristics
NLCA 13: Wreccsam a Glannau Dyfrdwy/Deeside & Wrexham	<ul style="list-style-type: none"> • Lowland, foothills and levels – sloping down to the lower Dee and Dee Estuary. Carboniferous Coal Measures interspersed with outcrops of Millstone Grit, Holywell shales and Cefn-y-Fedw sandstones. Glacial till, fluvio-glacial and river terrace drift overlay in parts of the valley floor, giving rise to localised gentle land form variation • A single large river, the Dee, traverses the area. The Dee opens out into a broad estuary with tidal sand and mud flats. A number of minor rivers dissect the landscape, for example, the Alyn and Eitha, and associated streams • A broad flat flood plain adjacent to the Dee Estuary – with wide open views to Wirral • Narrow, incised, wooded tributary valleys – many running down from the west • Mixed pasture and some arable – and farm woodland cover • Archaeology – variety of historic sites indicate the former strategic importance of the coastal route and the turbulent history of the Marchlands, including Offa’s Dyke and Wat’s Dyke. Late Medieval parklands and ecclesiastical/funerary sites • Urban settlements – a strongly settled character is apparent in the central and south parts of the area, with the relatively large, almost linked settlements of Holywell-Connah’s Quay-Mold-Wrexham-Ruabon. • An industrial character – evident in the line of coalesced settlements at Connah’s Quay and Holywell, associated both with the Chester to Holyhead railway line, mining and large scale power generation and industrial plants. Include landmark scale structures such as Broughton aircraft factory, Shotton Steel works and Connah’s Quay power station. Industry tends to dwarf historic settlement and features (e.g. Flint and its castle) • Small settlements – outside urban areas, compact villages associated with landed estates and isolated farmsteads, or coalesced ribbon developments and encroachment upon commons, which are the legacy of the former coal and lead mining industries • Culturally many connections to Chester and Merseyside.

National Landscape Character: England

England NCAs

NCA 57: Sefton Coast	<ul style="list-style-type: none"> • Sedimentary coastline with wide, gently sloping beaches, estuaries, coastal sand dunes, coastal dune heathland, conifer plantations and settlements backed by farmland; low-lying, rising in places to 20 m above sea level • Underlying soft sandstones and mudstones of Triassic age are almost entirely masked by thick deposits of glacial and more recent drift • A dynamic coastal landscape affected by the movements of the sea and wind; the estuary and dune systems are subject to ongoing change • Inland, the low-lying hinterland is pumped to drain the land for agriculture and to provide flood protection for urban areas such as Southport • Large conifer plantations (housing a colony of red squirrels) around Formby and Ainsdale, with isolated wind-sculpted deciduous woodland on estates and farmsteads • A mixture of agriculture, ranging from open grazed marshes to areas of reclaimed pasture and enclosed fields supporting dairy or beef cattle and some arable farming
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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Field boundaries include hedgerows, ditches, post-and-wire fencing and embankments • An extensive coast with internationally, nationally and locally recognised wildlife and geological sites including intertidal mudflats and sand flats, coastal salt marsh, embryonic shifting dunes, mobile dunes, dunes with creeping willow, humid dune slacks, fixed dunes, dune grasslands and dune heathland; the significant dune system is one of the largest in England • Evidence of human activity goes back to the Mesolithic period, but settlement was sparse until the 19th century; development is primarily of Victorian date or later, orientated as a line of tourist/commuter towns and villages along the coastal railway and road • Coastal recreation facilities arise from the seaside tourist attractions, beach access, public rights of way and the coastal footpath; chalet/caravan sites and several golf courses introduce a manicured appearance into this varied coastline.
NCA 59: Wirral	<ul style="list-style-type: none"> • A low-lying but gently rolling platform punctuated by low sandstone outcrops, this west portion of the Wirral peninsula stretches from the mid-Wirral sandstone ridge to the Dee Estuary • Geology is dominated by glacial till overlying Triassic red mudstones and sandstones, with sandstone ridges and outcrops • The north Wirral coast is characterised by extensive beaches along the foreshore, while the large, funnel-shaped Dee Estuary lies between the Wirral peninsula and northeast Wales • Drainage is into the Dee Estuary in the west and the Mersey Estuary in the east, with a network of small streams and drainage ditches • Woodland is predominantly broadleaved, with woodland cover on sandstone ridges, country parks and country estates • The formal landscape has been created by former large country estates and the core of the area is mixed agricultural land, with areas of improved pasture, arable farming and market gardens and extensive areas given over to grazing horses • Fields are defined by intermittent clipped hedgerows, with copses, some red sandstone walls and field ponds ('marl pits'); coastal areas often feature a geometric field pattern bounded by ditches draining former marshlands • This is a significant coast and estuary, with internationally, nationally and locally recognised wildlife and habitats that include intertidal mudflats, sand flats and coastal salt marshes, with coastal sand dune systems. Inland, extensive areas of lowland heathland are associated with sandstone outcrops • The rural landscape, with country estates, scattered farms and a mix of ancient and post-medieval fieldscapes, is interspersed with residential commuter belt development, with towns and villages coalescing due to suburban development, linked by an intricate network of lanes, bridleways and footpaths • Red sandstone is common throughout the area; the pink hues of the local red stone bring warmth to the landscape and provide a unifying theme in buildings, walls, bridges and churches • Recreation and tourism are supported by good access to the dramatic coastal landscape and its outstanding ornithological interest, with a number of country parks, Local Nature Reserves and Local Wildlife Sites; links-style golf courses are a distinctive feature along the coastline.

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Character Area/Type Key Characteristics

Landscape Character: Isle of Man

<p>LCA C3: Union Mills, Glen Vine & Crosby</p>	<ul style="list-style-type: none"> • A well treed and settled rural valley with a strong sense of enclosure along the River Dhoo valley floor near the roads and the river • Wide flat bottomed river valley with historic terraces on the more undulating north valley side • Settled character with the three notable settlements of Union Mills, Glen Vine and Crosby • Lush riparian vegetation and deciduous woodland surrounds the River Dhoo and relatively steep and pronounced south valley side • Deeply cut and densely wooded valleys of River Glass and River Dhoo • Mixed field pattern of predominantly rectilinear fields in a variety of sizes along the flatter valley floor becomes more elongated and rectangular fields of rough pasture on the lower slopes of the north upland • Sense of tranquillity on the upper areas of the slopes • Presence of Manx Milestones.
<p>LCA D3: Conrhenny & Groudle</p>	<ul style="list-style-type: none"> • Gently rolling topography, which is cut by a series of rivers • Contain the relatively narrow corridors of the Groudle and Ballacottier Rivers • Patchwork of organised pasture and arable fields delineated by a combination of hedgerows, Manx banks and visible drainage ditches • Patches of regular coniferous woodland plantations as visible landmarks with the surrounding landscape • Distinctive black and white Manx milestones lining the A2 road corridor • Series of scattered, isolated farmsteads (several of which have associated modern farm buildings) • Sense of enclosure provided by Uplands to the northwest • Open views to visually harsh red roofs of modern housing developments at the edge of Onchan dominate views southwards • Dramatic, panoramic views eastwards across the ever-changing colour and nature of the sea and sky, contribute to strongly recognisable sense of place.
<p>LCA D10: Braaid</p>	<ul style="list-style-type: none"> • Gently undulating land sloping down south-eastwards towards the coast with numerous notable rounded hill tops • Rough heathland vegetation • Coniferous Chibbanagh Plantation on hill tops and higher exposed areas • Large open predominantly pastoral fields with low Manx hedges and gorse spreading from hedgerows into more elevated fields in numerous places creating a semi-upland character • Sparsely settled area with some scattered farmhouses surrounded by trees in an otherwise open and treeless area • Numerous historic settlements and elements such as long and round houses at Braaid and remains of Broogh Fort

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Small gullies containing burns and low vegetation cut across the fields • Mount Murray Golf course and associated buildings near the small linear settlement of Newtown, extending along the A5 • Sunken lanes enclosed by grassed Manx hedges with some gorse and thorn bushes growing on the top enclosing the road corridor.
LCA D12: Douglas Head	<ul style="list-style-type: none"> • Prominent gently rounded hill overlooking the coast with some steeper undulations in the north and south • Open and windswept with large scale predominantly rectilinear fields over the majority of the area and some patches of heath on the seaward and north areas as well as on the summit around Upper Howe Farm • Carnane Communications mast forms a distinctive landmark on skyline • Former Douglas Head Hotel and surrounding buildings are highly visible surrounded by cut amenity grass on gently slopes • Panoramic views inland and out to sea • Scattered farmsteads, typically surrounded by trees • Strong sense of tranquillity in south and east parts, reduced elsewhere by views towards Douglas • Open and expansive views from most of the area out to sea, along the coast, over Douglas Bay and inland over the incised plateau up to the north uplands • Lighthouse and camera obscura at east tip of Douglas Head.
LCA D13: Santon	<ul style="list-style-type: none"> • A predominantly rural landscape, dissected by A5 and A25 roads • Densely wooded valley bottoms amongst undulating rolling land with large rectilinear arable and pastoral fields on the gently sloping hill sides and rounded tops • Steep sided densely wooded Victorian pleasure Glens of Glen Grenaugh and Port Soderick Glen lead down to the coast • Victorian electric railway line and stations runs through the area at the bottom of Crogga Glen • Fragmented woodland along field boundaries and along tracks that access the scattered farmhouses centred around Quine's Hill (along the A25) and small settlements of Santon and Ballaveare • Sea-facing hill slopes with large open fields running along the cliff tops with gorse, heather and bracken along the cliff top periphery • Incinerator chimney forms notable landmark in the immediate area • Presence of Manx Milestones • Abrupt linear south built edge to Douglas, comprising residential and industrial development with minor localised extension of industrial character into character area south of Cooil Road • Pulrose Golf Course on edge of Douglas

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Character Area/Type	Key Characteristics
LCA D14: Ballamodha, Earystane & St Mark's	<ul style="list-style-type: none"> • Land slopes down from the south uplands towards the coast • Numerous deeply incised wooded river valleys and glens cut down into the landscape forming ribbons of fragmented woodland • National Glens at Silverdale and Colby • Settled farmland character with some large, nucleated settlements along the A7, small villages and a variety of scattered dwellings and farms • Smaller predominantly rectangular pastoral fields with Manx hedges topped with gorse on the upland slopes to the north • Patches of gorse, bracken and heather in fields on the upper slopes • Larger rectilinear pastoral and arable fields with large deciduous trees growing on Manx hedges on the more gently sloping south slopes • Around the various settlements and farms there are smaller rectangular arable and pastoral fields with Manx hedgerows containing numerous trees and some stone walls • Network of tracks, small lanes and larger roads enclosed by substantial hedgerows containing deciduous trees all growing on grass covered Manx hedges • Numerous small reservoirs and water bodies associated with water courses • Some small churches with spires as well as various standing stones and other visible archaeological sites • Presence of Manx Milestones • Quarries at Turkeyland and at Ballown.
LCA E1: Port Grenaugh	<ul style="list-style-type: none"> • Sheltered coves of Port Grenaugh and Port Soldrick with shelving shale beach • Low rocky jagged sea cliffs • Inter-tidal rock pools on rocky platforms in the littoral zone • Steeply shelving grassy slopes abutting large flat pastoral and arable fields at cliff tops • Remains of numerous Promontory Forts along the coastal footpath • Strong sense of tranquillity • Open and expansive views • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape.
LCA E2: Port Soderick	<ul style="list-style-type: none"> • Rocky indented coast with various small coves and a graded shale beach at Port Soderick • Shelving grassy slopes with some heath land vegetation abutting irregular shaped pastoral fields, abut high jagged rocky cliffs • Rocky foreshore with banded Manx group slates and shales form rock pools with numerous offshore rocky outcrops

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Victorian pleasure drive of Marine Drive, with its crenellated entry arch (Registered Building), runs along the cliff edge with painted iron railings in places • Relatively strong sense of tranquillity • Open and expansive views from Marine Drive • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape.
LCA E3: Douglas Bay	<ul style="list-style-type: none"> • Built-up areas of Douglas and Onchan form dominating back-drop to the area • Gently graded sandy beach is contained by two prominent rocky headlands with jagged sea cliffs • Victorian esplanade with metal railings forms a promenade along the beach's edge marking the edge of the area • Settlement of Onchan perches on the cliff tops with development spreading to cliff edge path • Concrete piers and break waters of Douglas harbour • Views along the coast constrained by the two large headlands that enclose the area • Little tranquillity in the area but an interesting character resulting from the urban back drop • Strong visual contrast between sea and urban areas • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape.
LCA E4: Clay Head	<ul style="list-style-type: none"> • Jagged indented rocky coastline with some natural arches • Rocky foreshore with banded bedrock and scattered large offshore rocks • Sheltered cove and graded shale beach at Groudle Glen • Steeply shelving grassy slopes with intermittent heath vegetation surrounding irregular shaped pastoral fields at cliff tops • Groudle Glen railway runs along the cliff edge to reach Sea Lion Cove • Open and exposed headland with medium sense of tranquillity • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape.
LCA E5: Laxey Bay	<ul style="list-style-type: none"> • Glen Mooar and Glen Roy converge at Laxey and flow out towards the sea (via a relatively steeply incised valley) culminating within the bay • Rugged coastline lined by cliffs that fall steeply, from the Incised Inland Slopes to west, towards the sea • Green and vegetated cliffs provide a relatively strong sense of north-south enclosure within the bay • A cluster of two and three-storey white-washed houses, which overlooking Laxey Bay and climbing the steep enclosing slopes • Houses nestle around the bay and overlook the wide expanse of blue sea to the east

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Shallow stony beach marks the transition from sea to shore, lined to the south by a wide promenade and seafront road • Rigid form of the grey stone harbour wall (housing two small lighthouses), and marking the entrance to a colourful harbour, is dominant within views northwards • A strong sense of enclosure is provided by rising headlands to the east and west, contributing to a sense of remoteness and seclusion • Within the harbour, the masts of yachts provide dominant vertical elements against the strongly wooded headland sides • Little sense of remoteness and relatively low tranquillity due to the influence of Laxey, the railway and the A2 • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape.
LCA E9: Bay Ny Carrickey	<ul style="list-style-type: none"> • Relatively flat topography, with a gently shelving stony beach, marking the transition between the shore and sea • A series of rugged wave-cut platforms extend into the sea (visible at low tide) • Distant sense of enclosure to the east and west • Relatively strong sense of openness within views across the area • Sense of tranquillity disturbed as a result of proximity to the main coastal (A5) road and Port St. Mary to the west • Terraced housing fronting beaches at Port St. Mary with occasional individual houses or small groups of houses fronting seashore in east part of bay • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape.
LCA E10: Castletown Bay	<ul style="list-style-type: none"> • Adjacent to the large settlement of Castletown • Castle Rushen, Castletown harbour wall and the lighthouse are all landmark features • Relatively wide, sandy bay is dotted in places by weed-covered rocks and is lined to the north by an expanse of large, jagged boulders • Beach slopes gradually downwards in a south-easterly direction towards the vast expanse of sea • Bay is lined by a colourful array of predominantly modern houses, overlooking the seashore, and by the coastal road, which hugs the line of the shore • Settled character (particularly to the west), with sense of tranquillity generally disturbed by the hustle and bustle associated with Castletown • Extensive open views across the dynamic shoreline and constantly changing, colourful sea • Recognisable sense of place provided by views across the Bay, towards Langness Point to the southeast and rising landscape to the north of Castletown • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape.
LCA E11: Langness	<ul style="list-style-type: none"> • Relatively narrow peninsula/isthmus of predominantly flat landscape, protruding from the south edge of the Island

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Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • East rocky shore of the peninsula is indented with a series of rugged small indentations (gulleets) • St. Michael's Island (a small island connected to the north-east edge of the peninsula) facilitates dramatic views north east along the coastline • Castletown Golf Course/Links dominates the north end of this landscape character area • Generally lacking in settlement, but with occasional, white-washed buildings visible on the horizon and a concentration of housing at Derbyhaven • Two minor rural roads provide access to the area (Langness Road and Fort Island Road) • Panoramic views across adjacent ever-changing seascape • General sense of openness throughout the area • Sense of tranquillity greatly disturbed at times by proximity to Ronaldsway airport • Colour and movement of the sea contrasts with the coastal landforms and combine to create a dramatic landscape • Lighthouse and Dreswick Point act as dominating landscape features • Numerous historic features, including the chapel at St. Michael's Island and the lighthouse at Dreswick Point.
<p>LCA F7: Castletown and Ballasalla</p>	<ul style="list-style-type: none"> • Flat land with strong coastal influence • Area dominated by Ronaldsway Airport and the numerous associated aeroplane hangers, car parking, runways, control towers and access roads • Built-up areas of Castletown and Ballasalla influence the visual character of the area with the prominent crenulated tower of Castle Rushen visible from the surrounding areas • Riparian vegetation grows thickly on the banks of Silver Burn • Rectilinear arable and pastoral fields in a variety of sizes to the north and west of the airport with low Manx hedges • Busy A5 road corridor • Little sense of tranquillity • Route of the Isle of Man Steam railway runs along the area's western boundary with three stations • Ronaldsway Industrial Estate with large warehouses and areas of car parking • Open and panoramic views out to sea and over Langness' rocky shoreline beyond the Airport's numerous runways.
<p>LCA F8: Poyllvaish and Scarlett Peninsula</p>	<ul style="list-style-type: none"> • Predominantly flat open arable and pastoral land with large rectilinear fields in a rough geometric pattern in close proximity to the coast • Little settlement in the area other than a few scattered farms surrounded by small woodland blocks • Eastern periphery meets and is influenced by the built up areas of Castletown, Ballasalla and the environs of Ronaldsway Airport • Various archaeological sites along the coastal areas including a Viking burial

Character Area/Type	Key Characteristics
	<ul style="list-style-type: none"> • Coastal views over open land with little intervening substantial tree cover • Some small rectilinear drainage ditches running along field boundaries • Few abandoned limestone quarries now flooded • Isle of Man Steam Railway with various stations cuts across the area east-west • Relative sense of tranquillity amongst the fields and on the Scarlett Peninsula, but reduced near main roads and Poyll and Vaaish quarries • Large country estates west of Malew Road

Appendix B: Seascape and landscape character baseline technical report (offshore) figures

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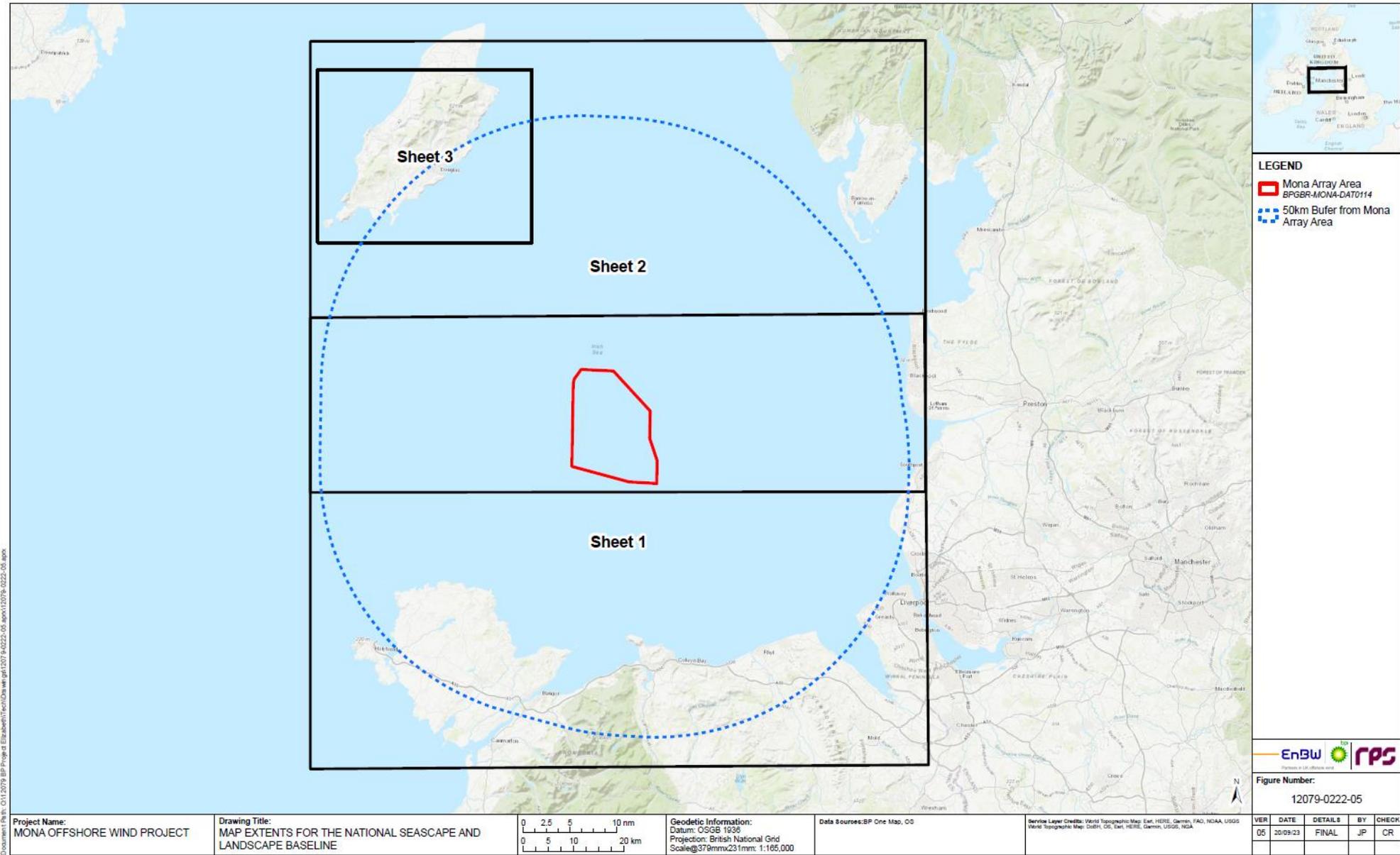


Figure 1.1: SLVIA offshore study area.

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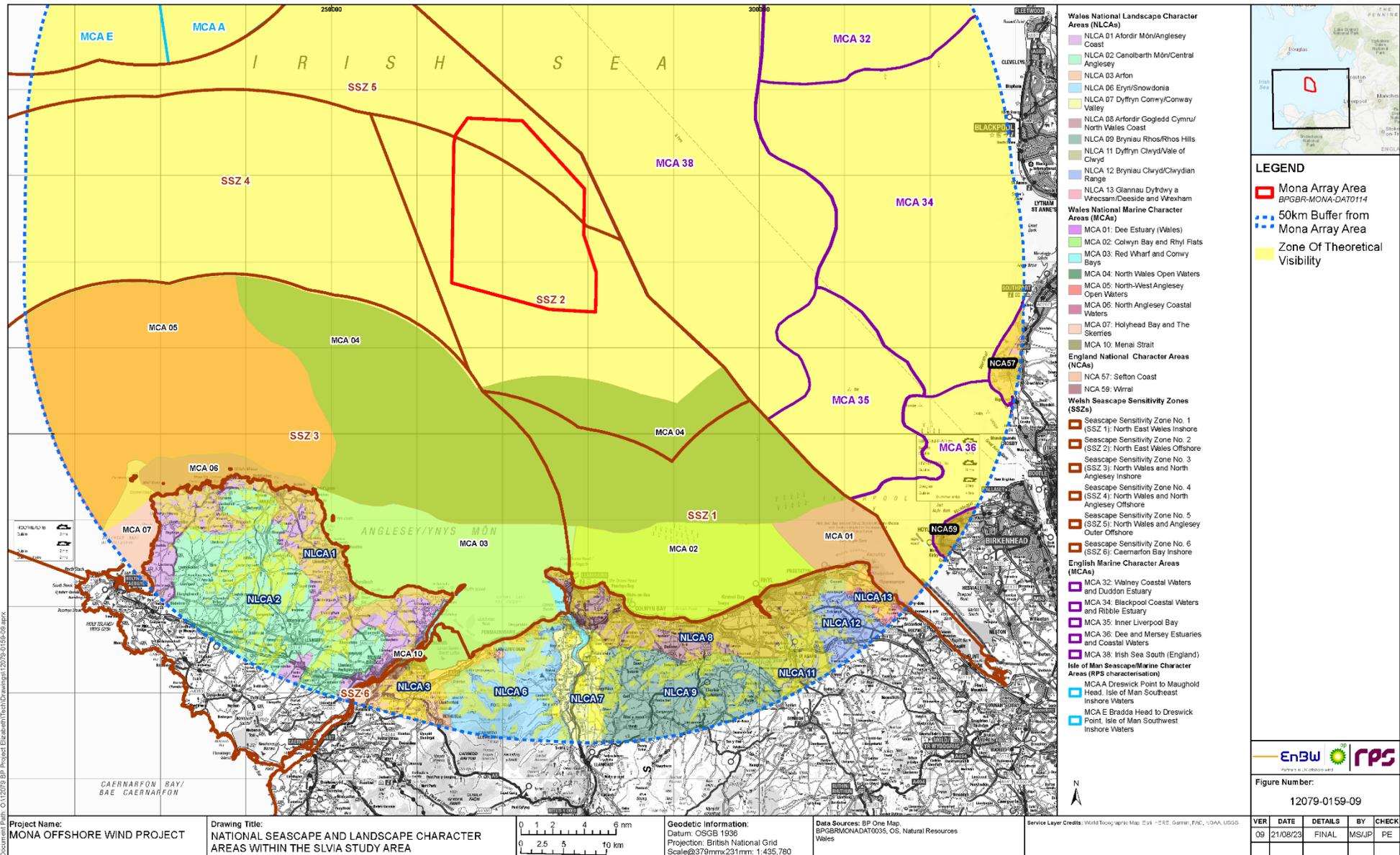


Figure 1.2: SLVIA offshore study area – sheet 1.

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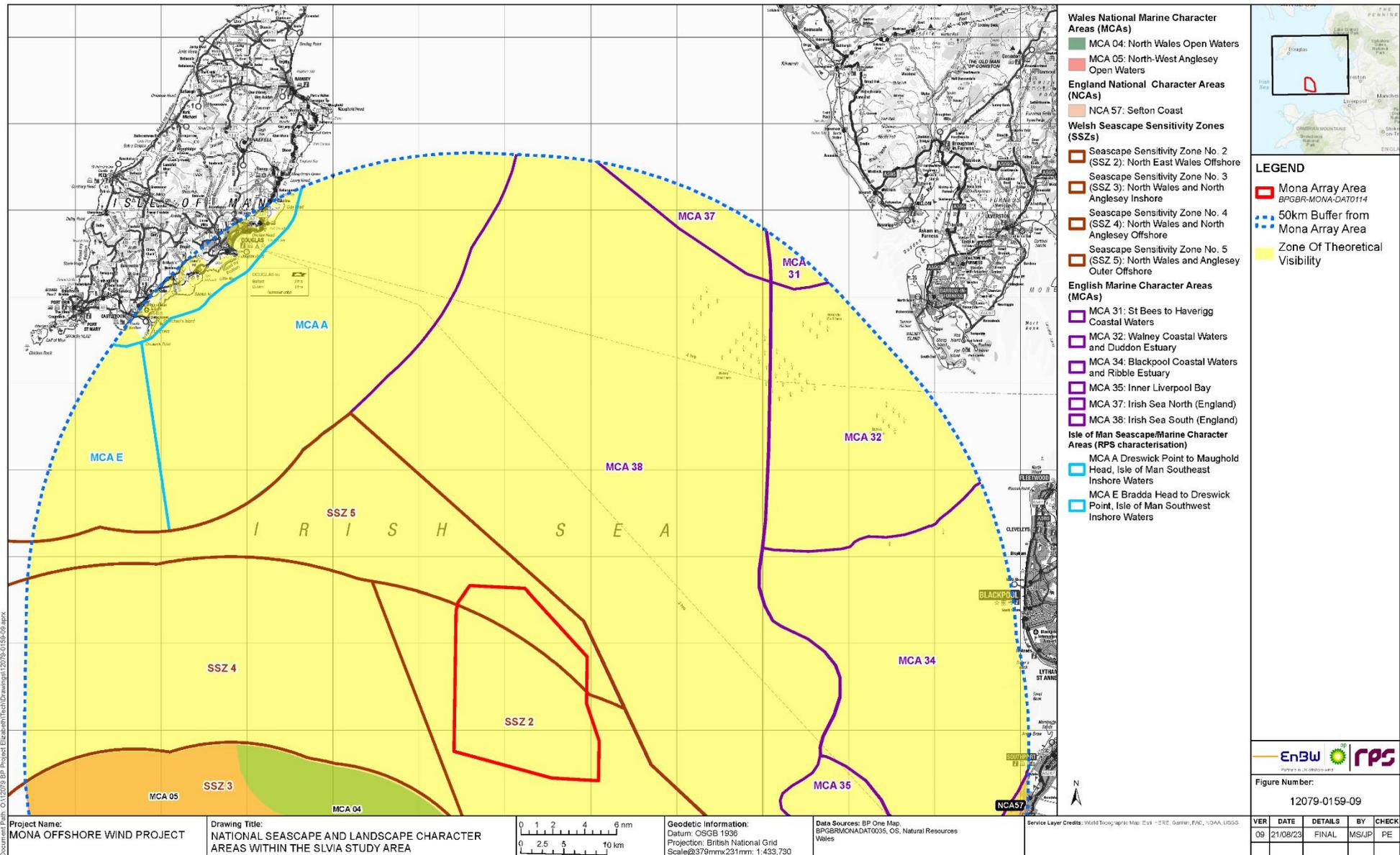


Figure 1.3: SLVIA offshore study area – sheet 2.

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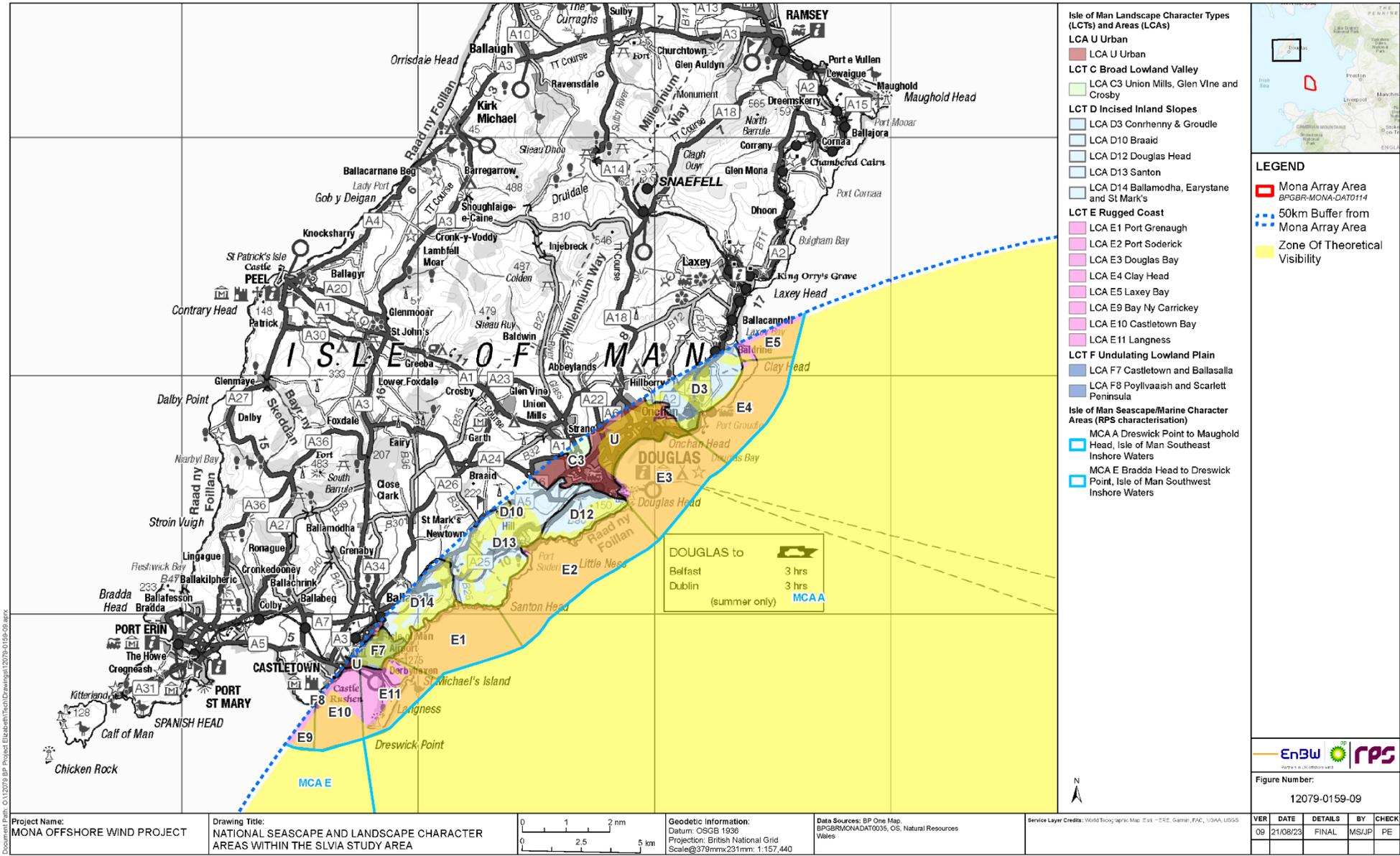


Figure 1.4: SLVIA offshore study area – sheet 3.