

APPENDIX 3c – LANDSCAPE/SEASCAPE

A3c.1 INTRODUCTION

Seascape is defined as ‘a discrete area within which there is shared inter-visibility between land and sea’, which can be separated into areas of sea, land and intervening coastline (DTI 2005). The study of seascape is not only concerned with the physical changes in a given view but the interaction of that view with individuals and how it affects overall visual amenity. Seascapes and coastal environments (including the sea itself) are extensively used for recreation which generates significant tourist income from which many coastal communities are dependent, and this can strongly conflict with commercial and industrial activity (Hill *et al.* 2001). Experience from terrestrial wind developments highlights that visual issues are often the largest source of public objection (DTI 2005). Assessments of the seascape resource attempt to gauge the capacity or sensitivity of an area to absorb a given development scenario based on a number of interacting factors – see the guidance in Hill *et al.* (2001), DTI (2005) and Scott *et al.* (2005).

A3c.1.1 UK Context

The sensitivity of the landscape to visual influences of offshore developments may be gauged partly on the presence of designated sites protected for their natural and cultural aesthetics. The coastal fringe of each Regional Sea contains a range of designations which relate in whole or in part to the scenic character of that area and these are categorised in the sections which follow. In addition to these, Natural England has described 58 Joint Character Areas (JCAs) which are relevant to the coasts of Regional Seas 1, 2, 3, 4 and 6. Historic Landscape Characterisation (HLC) is being carried out as part of a country-wide initiative in Wales, administered by each Welsh archaeological trust. Similarly, English Heritage has prepared HLC reports in association with local authorities and councils for almost two thirds of England. These are presented either in themed report form (e.g. Woodland, Industry) or interactive online GIS environments. This approach has been modified in the production of Historic Seascape Characterisations (HSC) which has been piloted in five locations and is due for implementation in 2008-09.

Areas of Outstanding Natural Beauty (AONB)

AONB designations are made by Natural England (NE), the Countryside Council for Wales (CCW) and the Northern Ireland Environment Agency (NIEA – formerly EHSNI), and these bodies also advise on policies for their protection. Provision is made to preserve not only the natural environment but traditional agriculture, forestry and industry. AONB designations are made under the National Parks and Access to the Countryside Act 1949 amended in the Environment Act 1995 in England and Wales; and the Nature Conservation and Amenity Lands (NI) Act 1985 in Northern Ireland. The Countryside and Rights of Way Act 2000 clarifies the procedure and purpose of AONB designations.

Heritage Coasts (England and Wales)

Heritage coasts comprise areas of coast more than 1 mile in length which are of exceptional scenic value and which are largely undeveloped. Their purpose is to protect and enhance the coast and their heritage features including architecture and archaeology. These are a non-statutory landscape definition which is agreed between the maritime agency and Natural England, and the Countryside Council for Wales. Though these sites are not afforded the same protection as National Parks or AONB, most are located within areas with such designations.

National Parks

The primary objective of National Parks is to preserve and enhance the landscape, while promoting public enjoyment, particularly of those residing within the park. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales. In addition, the Environment Act 1995 requires relevant authorities to have regard for nature conservation.

Country Parks

Statutorily declared under the Countryside Act 1968, Country Parks are intended for recreation and leisure close to population centres and need not have any nature conservation importance, though some form semi-natural environments.

World Heritage Sites

These sites are designated by UNESCO according to their natural (physical, biological, geological) or cultural (historic, aesthetic, archaeological monuments and structures) attributes considered to be of outstanding value to humanity.

National Scenic Areas (Scotland)

National Scenic Areas (NSAs) are Scotland's only national landscape designation. They are those areas of land considered of national significance on the basis of their outstanding scenic interest which must be conserved as part of the country's natural heritage. They have been selected for their characteristic features of scenery comprising a mixture of richly diverse landscapes including prominent landforms, coastline, sea and freshwater lochs, rivers, woodlands and moorlands.

Local Landscape Designations (Scotland)

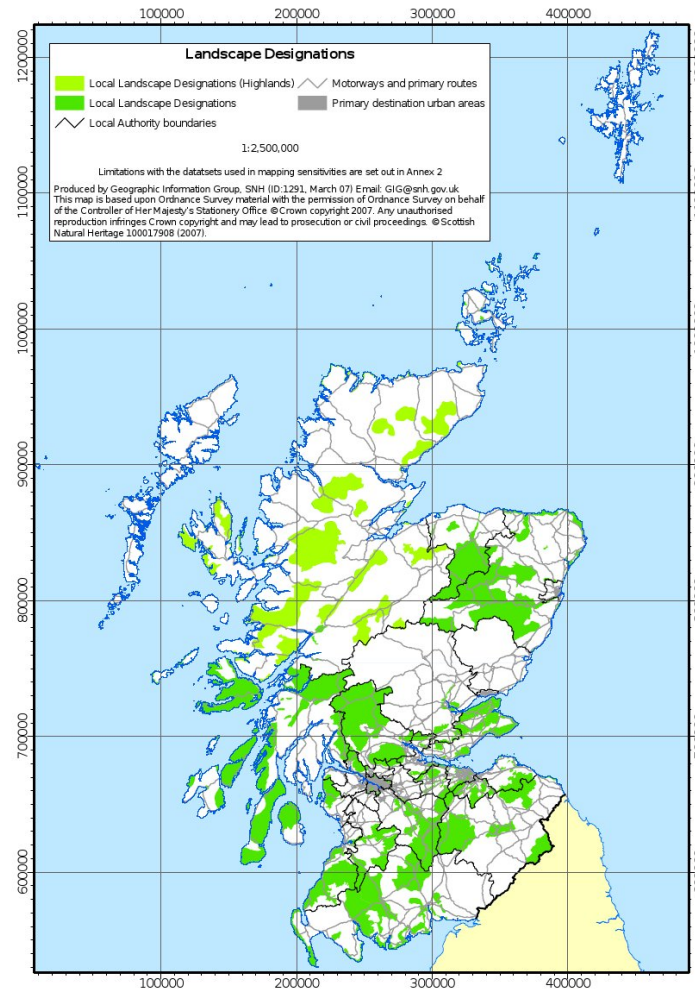
Local Landscape Designations (LLDs) are defined by local authorities with the aim of protecting the aesthetic appeal of an area while helping guide change in the planning process. In Scotland these are known as Areas of Great Landscape Value (AGLVs) as set out in SDD circular 2/1962. Nearly a third of the Scottish landscape is covered by such designations (Figure A3c.1), though spatial data held by some local authorities is at present only partial and these areas are often spatially variable and have differing focus and nomenclature (Scott & Shannon 2007). SNH and Historic Scotland jointly published guidance to create a more systematic designation process which developed from a review of sites started in 2003, and this is the only national guidance on LLDs in the UK and Europe (Scott & Shannon 2007).

A3c.1.2 Landscape convention

The European Landscape Convention (ELC) seeks to 'promote landscape protection, management and planning, and to organise European co-operation on landscape issues.' (Ch. 1 Art. 2), and encompasses 'the entire territory of the Parties and covers natural, rural, urban and peri-urban areas. It includes land, inland water and marine areas. It concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes.' (Ch. 1 Art. 1). The convention came into force in the UK on 1st March 2007. Many of the current landscape designations for the UK satisfy the articles set out in the convention (DEFRA 2007a, Scottish Executive 2008), though it can be generally accepted

that the treatment of landscape in countryside environments is better than that in urban areas (DEFRA 2005c).

Figure A3c.1 – LLDs in Scotland (Correct at March 2007)



Source: SNH (2007)

A3c.2 LANDSCAPE/SEASCAPE BACKGROUND

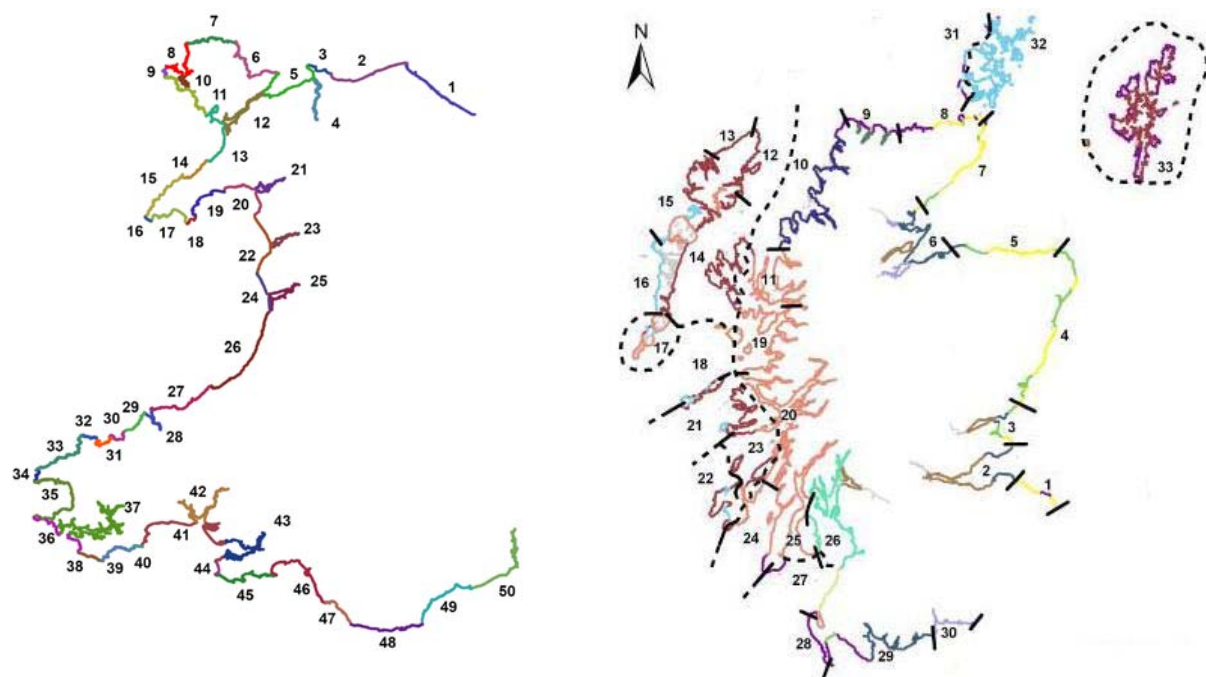
The visual impact of offshore developments relating to oil, gas and wind farm infrastructure is principally a function of their visibility from the coast which is dependent on their distance from any given viewpoint, the elevation of that viewpoint, and the atmospheric conditions (e.g. contrast and haze) prevailing at the time of viewing (Hill *et al.* 2001, Bishop & Miller 2007). The limit of any impact is controlled by the viewable distance over the horizon, ultimately defined by structure height (dipping height), any viewable portion of a development being diminished (or enhanced) by the chromatic contrast of structures and their surroundings (i.e. sea and sky) and the arrangement/complexity of turbines. The landward and seaward buffer considered in landscape/seascape assessments is defined using these criteria which are spatially variable. For instance the buffer chosen by Scott *et al.* (2005) was 35km seaward due to the clarity of air in the north, whereas for the Welsh seascape study, CCW (2008a, b) chose 24km.

The SEA of Round 2 offshore wind farm leasing included a desktop seascape study to identify levels of visual sensitivity of seascape units to offshore wind farm developments

within the three Strategic Areas. This was carried out using distances commonly used in onshore public inquiries (8, 13 and 24km) and scoring/ranking seascape units using a series of factors such as land use and presence/absence of areas with landscape designations. The SEA concluded that "...analysis of seascape issues suggests that developments less than a certain distance from the coast (within 8 to 13km) will probably have significant visual impact. The distance will vary according to the nature of the seascape in the range of 8km to 13km". Round 2 wind farm leasing adopted the 8-13km distances as a buffer (or exclusion) zone to reduce visual intrusion/impact on seascape. However, the effectiveness of this buffer has not been practically tested. Guidance on seascape and visual impact assessment for offshore wind farms was prepared after the Round 2 SEA by DTI (2005) and further regional studies have been undertaken (e.g. Scott *et al.* 2005, CCW 2008a, b).

Hill *et al.* (2001) introduced the concept of using 'seascape units' which are spatial areas defined partly by the remit of a given seascape study and by the changing physical attributes of the coast. These can be considered on a national, regional and local scale – for wind turbine developments, the regional scale is typically adopted (Hill *et al.* 2001, DTI 2005). This concept has been used to identify relevant seascape units for the Scottish (Scott *et al.* 2005), English (White Consultants 2009) and Welsh (CCW 2008a, b) coasts (Figure A3c.2). The character, sensitivity and capacity of these areas to a given development scenario can then be assessed.

Figure A3c.2 – Welsh and Scottish regional seascape units



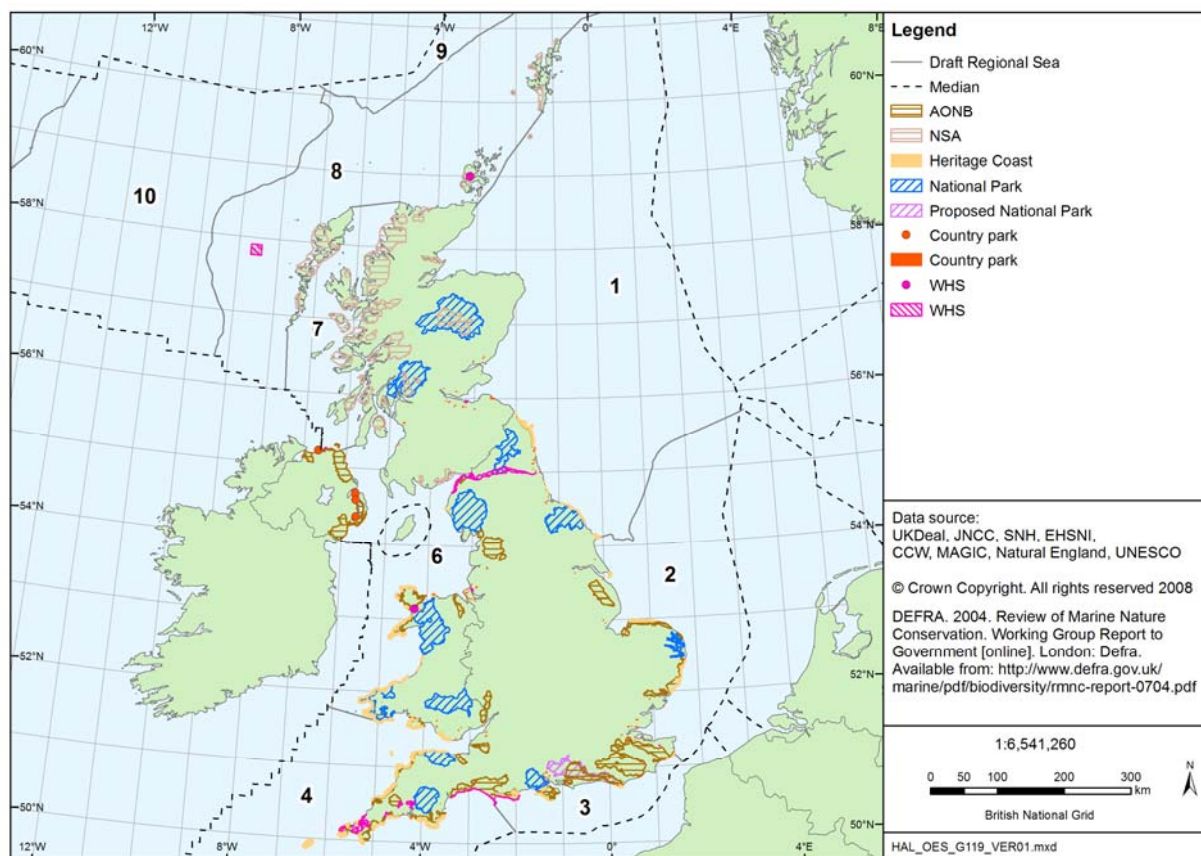
Source: Scott *et al.* (2005), CCW (2008a, b)

The sensitivity of any given regional seascape unit is defined using a number of criteria including physical (e.g. scale, openness, form, aspect) perceptual (e.g. naturalness, remoteness, how the area is experienced) and dynamic (e.g. forces of change) aspects, the output being a largely qualitative judgement. Visibility analysis is carried out to project areas within each seascape unit visible from the sea and vice-versa, the result being a measure of relative visibility of sea to land and land to sea. In addition, value scores are attached to seascape units based on percentage coverage of each unit by statutory designations (e.g. National Parks) which were computed in GIS providing an objective, though perhaps less

locally sensitive, assessment. These values together can be used to generate an overall 'capacity' score for a given development scenario in each seascape unit.

The following sections summarise the principal landscape designations in each Regional Sea, which includes AONB, National Park, World Heritage Site, National Scenic Area and Heritage Coast sites (Figure A3c.3). In addition, the output from relevant landscape/seascape studies has been included.

Figure A3c.3 – The national distribution of designations mentioned in the text



A3c.3 OVERVIEW OF DESIGNATIONS AND INITIATIVES

A3c.3.1 Regional Sea 1

Relevant landscape conservation designations in Regional Sea 1

Site name	Designation	Summary
Fair Isle, Shetland	NSA	Fair Isle combines green fields, moors and sandstone cliffs – the coast has numerous stacks and natural arches.
Dornoch Firth		The firth is narrow and sinuous compared with other eastern firths, with rounded granitic hills supporting heath and scree. Lower slopes have deciduous and coniferous woods, much of which is in plantations. Pasture and arable land are present in the lower alluvial areas. The firth has innumerable bays, sands, flats and shallows.

Site name	Designation	Summary
Deeside & Lochnagar		Upstream of Braemar the valley has been widened and straightened by late glacial action. The Lui and Quoich waters enter the valley from narrow enclosed glens which afford walkers three approaches to the Cairngorms. Both coniferous afforestation and remnants of Caledonian pine forest feature on the Lochnagar estate. The mountain peaks in the area are sculpted by significant corries and the plateau features extensive upland heather moorland.
Cairngorms		The Cairngorms is an impressive mountainous plateau. It is a distinctive mix of rugged mountain with numerous corries, remnants of the ancient Caledonian Pine Forest, and expansive areas of upland heath.
Northumberland Coast	AONB	Stretches from Berwick-upon-Tweed to Amble. A low-lying coast with long views. Coastal dunes are broken by low rocky headlands and coves of Whin Sill basalt. The dunes marshes and mud-flats are important for their waterfowl and are recognised in conservation designations (e.g. Northumbria Coast SPA). The coast is largely undeveloped and a lack of coastal infrastructure contributes to its remoteness, though tourist pressure is rising.
North Northumberland	HC	Stretches between Tyne and Wear and Teesside, characterised by magnesian limestone grasslands cliffs, pebble and sandy beaches. Designated in 2001 after a substantial transformation of the coastline following a legacy of colliery waste dumping. The area has renewed tourist potential.
Durham		The seaward edge of the North York Moors National Park. High cliffs cut by bays characterise the coast. The area is a SSSI and is of special geological interest.
North Yorkshire & Cleveland		Probably the finest line of chalk cliffs in the country, rising at Bempton to 130 metres. Clay and chalk geology home to a distinct flora and a mainland gannet colony.
Flamborough Head		
North York Moors	NP	Holds the largest expanse of heather moorland in England. Red pantile roofs and sandstone give the cottages of the park a distinctive character.
Northumberland		The National Park stretches from Hadrian's Wall through the valleys of Tyne and Rede to the Cheviot Hills on Scotland's border.
Cairngorms	NP	The Cairngorms National Park has a large mountain range at its centre with diverse communities around it. It is home to 16,000 people and 25% of Britain's threatened species. It includes unique mountainous areas of wild land, moorlands, forests, rivers, lochs and glens. Sites designated as of importance to natural heritage take up 39% of the land area – two thirds of these are of European importance.
Old and New Towns of Edinburgh	WHS	Recognised for its unique juxtaposition of Medieval Old Town and neoclassical Georgian planned New Town. A Cultural heritage site containing 4,500 buildings, over 75% of which are listed.

Key: AONB=Area of outstanding Natural Beauty, HC=Heritage Coast, NP=National Park, NSA=National Scenic Area, WHS=World Heritage Site

Source: NE website a, HS website, SNH website a

Joint Character Areas relevant to Regional Sea 1

Site Name	JCA #	Summary
North East		
North Northumberland Coastal Plain	1	An intensively farmed open landscape. Hard rocky coasts are a feature to the north, with softer coasts and sandy bays occurring more in the south in addition to saltmarsh and mudflats. A distinctive heritage with ecclesiastical influences, medieval and world war defences. Settlements include isolated farmsteads, small nucleated settlements and coastal resorts. Housing consists of sandstone with thatch, red pantile or more predominantly blue slate.
South East Northumberland Coastal Plain	13	Sandy beaches and rocky headlands feature in this developed coast. Urban and industrial development, mining towns and large scale open-cast mining sites feature heavily, some of which have been restored. The mining towns consist of long rows of red brick houses with grey Welsh slate built in the 19 th century. Some older medieval settlements are still present. There are some undeveloped areas such as Seaton Sluice.
Tyne & Wear Lowlands	14	A developed coastal area similar in character to the South East Northumberland Coastal Plain. Coal mining changed the character of the landscape and built environment, and later the modern city of Newcastle-upon-Tyne. Only a few medieval relicts exist.
Durham Magnesian Limestone Plateaux	15	A varied coast of low cliffs and bays, and deeply dissected gorge-like denes, often wooded. The coast is despoiled in places with historic dumping of mining waste. Dense urban development dominated by Sunderland, and like further north, 19 th century mining towns. Some villages built in the local vernacular of Magnesian limestone are characteristic of agricultural settlements.
Tees Lowlands	23	Extensive urban and industrial development along the Tees to the coast which include chemical and oil refineries, dock and heavy plant facilities. Jurassic sandstones and shales outcrop at the coast and are resistant to weathering. Much of the area is low-lying and consists of estuarine marshland and mudflats. Where these have not been reclaimed, they are important for waterfowl and waders.
Yorkshire & The Humber		
North Yorkshire Moors & Cleveland Hills	25	The coast has high cliffs, small coves, bays and coastal towns and fishing villages. The coast is far less developed and less populated than further north. The proximity of the coast to the moors and dales gives the area a distinctive character. The south and east of the area is given over to arable farming which extends to the coast. Evidence of settlement extends to prehistoric times from the Neolithic and through the Bronze Age and Roman period. Scattered farmsteads and villages are typically built from local stone. Coastal towns are based around tourism and fishing.
Vale of Pickering	26	The coast is influenced by hummocky glacial till deposits and is separated from the sea by a low ridge of glacial moraine. Urban development and extensive tourist facilities are present at the coast and inland and there are further pressures for tourist development.
Yorkshire Wolds	27	A predominantly chalk landscape which falls away gently to the east, to the flatter Holderness area. Supports remnants of unimproved chalk grassland and arable farming. High chalk cliffs characterise the coastal area of Flamborough Head. The landscape is lightly settled with scattered farmsteads and small villages of primarily brick-built housing interspersed with chalk and limestone buildings. There are some development pressures in existing settlements. Caravan sites have developed along the coast.

Source: NE website b

Summary of landscape/seascape assessment for the Scottish coast relevant to Regional Sea 1

#	Area	Seascape character type	Sensitivity	Visibility	Value
1	Berwick upon Tweed	Mainland Rocky Coastline with Open Sea Views although a small area of Remote High Cliffs encompasses St Abbs Head.	Low/Medium	Low	1
2	Firth of Forth	Outer Firths, Developed Inner Firths	Medium	Low/Medium	1
3	East Fife/Firth of Tay	Deposition Coastline with Open Views, Outer Firths, Less Developed Inner Firths.	Medium	Low/Medium	1
4	North East Coast	Mainland Rocky Coastline with Open Sea Views/Deposition Coastline with Open Sea Views.	Low/Medium	Low/Medium	1
5	North Aberdeenshire/ Morayshire coast	Mainland Rocky Coastline with Open Sea Views/Deposition Coastline with Open Views.	Low/Medium	Low/Medium	1
6	Moray Firth	Outer Firths and Smaller and Less Developed Outer Firths. Less Developed Inner Firths and a small area of Developed Inner Firths. Deposition coastline with Open Sea Views occurs in Golspie.	Medium	Low/Medium	1
7	East Caithness and Sutherland	Mainland Rocky Coastline with Open Sea Views and a short section Deposition Coastline with Open Views and Narrow Coastal Shelf. A small area of Remote High Cliffs occurs on the north eastern tip of Caithness.	Low/Medium	Medium	1
8	North Caithness/Pentland Firth	Remote High Cliffs with Mainland Rocky Coastline with Open Sea Views, occurring to the east. Small areas of Deposition Coastline with Open Sea Views are also present.	Medium	Low	1
33	Shetland	Islands, Sounds and Voes with small areas of Remote High Cliffs.	Medium/High	Low	1

Source: Scott et al. (2005)

Notes: Based on a wind farm development scenario of 100 turbines, 150m to blade tip, 8km from the shore in a grid covering 25km²

Visibility based on 10km landward, 35km seaward buffer.

Value scores range from; 1=Low value, 5=High value

A3c.3.2 Regional Sea 2

Relevant landscape conservation designations in Regional Sea 2

Site name	Designation	Summary
Norfolk Coast	AONB, HC	Consists of sand and mud flats, dunes, shingle, saltmarsh, reedbeds and grazing marsh in addition to soft, eroding cliffs of glacial sands and gravels east of Weybourne and the farmland, estates and woodland of the coastal hinterland, with important areas of heathland.
Suffolk Coast and Heaths	AONB, HC	A mosaic of different habitats: farmland, heathland, ancient woodland, commercial forestry, reed beds, estuaries, grazing marsh, small towns and villages, low crumbling cliffs and shingle beaches.
Kent Downs	AONB	This area includes the southeast's outcrop of chalk. Dip slopes and dry valleys of the chalk ridge are of wildlife importance and include unimproved grassland, scrub communities and broadleaved woodland. Kentish hop gardens, orchards and historic parklands are also important features.
Dedham Vale		This area includes an exceptional lowland river valley, which is characterised by hedged water meadows, copses and riverbank willows. An exceptional example of pastoral land.
Lincolnshire Wolds		A dissected chalk tableland sloping gently to the east, the abandoned chalk pits and grasslands provide areas for rare plants and insects. Mixed managed woodland includes oak, ash and coppiced hazel.
Spurn	HC	This area comprises the curving hook of shingle and sand which makes up the tip of the eastern part of the mouth of the Humber and is home to many migratory bird species in spring and autumn.
The Broads	NP	This area was designated under its own Act of Parliament in 1989. The broads consist of peat-pits dug in the medieval period, connected to interior lakes by dykes, allowing lock-free navigation. Fen and carr woodland and drained marshland are characteristic of the area.

Notes: AONB=Area of Outstanding Natural Beauty, HC=Heritage Coast, CP=Country Park, NP=National Park.

Source: NE website a

Joint Character Areas relevant to Regional Sea 2

Site Name	JCA #	Summary
Yorkshire and the Humber		
Holderness	40	<p>Bounded to the east by the North Sea and the south by the Humber area. The area has a flat, open character accentuated by a lack of tree cover. Low, rapidly eroding cliffs of glacial till, sand and gravel are a feature of the coast. The area has fragmented, remnant semi-natural carr, swamp and moist grassland environments.</p> <p>Settlement is widely distributed with buildings of primarily brick and pantile and some limestone, and closer to the coast the characteristic 'cobbles' of Holderness. There are limited pressures from caravan sites at the coast though there is demand for golf courses.</p>
Humber Estuary	41	<p>This area has a view over estuary, mudflats and salt marshes. There are internationally important mudflats, wetland and coastal habitats such as the Spurn peninsula.</p> <p>Where traditional buildings appear, they generally follow the Holderness vernacular. The area has industrial influences around Hull and the south bank. The Humber Bridge has a large influence on the landscape.</p>

Site Name	JCA #	Summary
		Lighthouses and coastal defences appear at the coast. Few buildings are on the extreme coast due to the possibility of flooding.
East Midlands		
Lincolnshire Coast and Marshes	42	<p>The area has a dispersed settlement pattern supporting medium-scale agriculture with limited remnant ridge and furrow and arable agriculture. Woodland cover is sparse. The coastal area is both eroding and accreting, and a major dune system backs an area of extensive sand flats which are exposed at low tide.</p> <p>The docks and oil refinery at Immingham dominate the skyline for miles and create a significant intrusion on the Outmarsh area. The coastal town of Grimsby is now a sprawling modern town. Cleethorpes, Mablethorpe and Skegness are major tourist centres. Caravans, holiday camps and theme parks are now a feature of the coast. A massive concrete sea wall now protects the coast from Mablethorpe to Skegness.</p>
The Fens	46	<p>A low-lying area of level terrain often below sea-level, this area is primarily cultivated, being largely reclaimed peatland which was drained between the 17th and 19th centuries. Fen and woodland are now rare. Saltmarsh and mudflats extend towards the Wash.</p> <p>Towns form medium to large clusters and many have churches of medieval age. Modern bungalows and large agricultural buildings have built up around traditional settlements. Kings Lynn has a distinctive Dutch influence from its history as a trading port.</p>
North West Norfolk	76	<p>This area briefly meets the coast at Hunstanton, where the underlying red and white chalk overly ferruginous sands. The area is a grassland and arable landscape with remnant heath and mixed woodland. The population is widely dispersed.</p> <p>Settlement is sparse and widely distributed. Buildings are dominated by those of the 18th and 19th centuries with relatively little infill of modern structures.</p>
North Norfolk Coast	77	<p>The coast here is very diverse and includes low-lying intertidal sand and mudflats, sand dunes, shingle beaches, saltmarsh, reed beds, tidal creeks and harbours. The environment changes to one of an arable landscape quickly inland.</p> <p>The area is sparsely populated but is significantly supplemented with tourism, being a major East Anglian tourist resort. Buildings are of traditional flint and brick with pantiled roofs.</p>
Central North Norfolk	78	<p>Agriculture is long-established in the area, interspersed with heath and woodland. The coast is typified by cliffs at Cromer, which fall to the north Norfolk Coast to the northwest.</p> <p>There are no large population centres. Housing styles have been largely preserved and there are few examples of buildings later than the 20th century.</p>
North east Norfolk and Flegg	79	<p>This is an area of dispersed rural settlement with small- to medium-scale fields. The coastal margin is dominated by extensive coastal dune systems or sea-walls which block much of the sea view.</p> <p>On the coastal strip, caravan parks, holiday chalets and facilities are found, particularly around Great Yarmouth on the Flegg.</p>

Site Name	JCA #	Summary
The Broads	80	<p>An area of fen and marsh surrounding open water of artificial channels generated by peat working. Carr woodland, grazing on drained marshes and arable cultivation are also prominent land-uses.</p> <p>There is no distinctive building style in this area though thatch can be common. This area is thinly populated but is an important tourist location in the summer months.</p>
Suffolk Coast and Heaths	82	<p>This area extends along the east coast in a narrow band of shingle and sand. To the south, estuaries, mudflats, marshes and arable land dominate. The sea is cut-off from the land by low sea walls and dunes.</p> <p>There are a number of distinctive built features at the coast. The pagodas at Orford Ness, the distinctive Dutch gabled housing at Aldeburgh, and the 1920s town of Thorpeness designed in a mock-historic manner. South of Lowestoft, the coast is largely undeveloped, though the Sizewell nuclear power stations and their associated cables and pylons are a feature. Poor road access has limited coastal development and industrial buildings stand out.</p>
South East and London		
Greater Thames Estuary	81	<p>The coast is defined by estuaries, mudflats and broad tracts of tidal salt marsh and sand and shingle beaches. An extensive area of former marshland now drained for grazing or arable agriculture.</p> <p>There is a lack of major settlements and there are some of the least populated areas on the English coast. Pillboxes are a distinctive historical feature of the coastline. Industry, housing, caravan sites, transport routes and other structures now occupy what are often highly visible sites within the low-lying marshes due to post-war improvements in flood defence measures.</p>
North Kent Plain	113	<p>The west is a large, exposed, intensively cropped area of fields devoid of trees.</p> <p>Urban areas have a strong influence on the character of the area and provide a contrast to the primarily agricultural environment. The coast is heavily developed around Margate, Broadstairs and Ramsgate with tall buildings, tower blocks and power stations.</p>
North Downs	119	<p>This area has a topography heavily influenced by the underlying chalk topography. To the east, the area is extensively farmed to the limit of the white chalk cliffs between Deal and Folkstone.</p> <p>The North Downs are a primarily rural area with a few large settlements (e.g. Dover, Chatham) and local building materials of flint and Wealden bricks are commonly used. The Channel Tunnel terminal development dominates the views from the escarpment at the eastern-most end of the Downs where it widens before ending abruptly at the White Cliffs of Dover.</p>

Source: NE website b

Previous relevant Landscape/Seascape studies

A number of landscape/seascape assessments relating to existing offshore wind farm developments within Regional Sea 2 have been carried out as part of their Environmental Impact Assessments. The output from these studies is available via the Cowrie Data Service website. Available reports are listed below with their associated title and operator.

Landscape/Seascape assessments for offshore wind farm developments relevant to Regional Sea 2

Site Name	Report Title	Operator
Gunfleet Sands	Seascape and Visual Assessment for the Offshore Wind Farm at Gunfleet Sands	DONG Energy
Gunfleet Sands II	Seascape and Visual Assessment for Proposed Offshore Wind Farm Development at Gunfleet Sands Extension, Clacton-on-Sea	DONG Energy
Lincs	Lincs Offshore Wind Farm Development: Seascape and Visual Assessment	Centrica
London Array	Landscape, Seascape and Visual Assessment Data from the London Array offshore wind farm	London Array (Shell WindEnergy, E.ON and DONG Energy)
Thanet	Environmental Statement for Thanet Offshore Wind Farm: Seascape and Visual Assessment	Thanet Offshore Wind Limited (Warwick Energy)

Source: Cowrie Data Management Website

A3c.3.3 Regional Sea 3

Relevant landscape conservation designations in Regional Sea 3

Site name	Designation	Summary
Isle of Wight	AONB	There are five separate areas of land across the island constituting the AONB, representing different attributes of the island. These include: chalk and sandstone cliffs, salt-marsh and mud-flats, chalk farmland, wooded dairy pasture, heathland, hay meadows and distinctive 'chines'.
Chichester Harbour		Features range from tidal inlets and creeks, salt-marsh, intertidal mudflats, orchards and historic harbour settlements with a distinctive vernacular. The tidal flats and saltings in the area are extensive, and host wildfowl, waders and a rich plant and invertebrate diversity.
Sussex Downs		This designation meets the sea with significant cliffs including Beachy Head and the Seven Sisters. Lowland heath and chalk grassland are important habitats in the area, as are the ancient downland turfs which are now quite depleted.
High Weald		Much of this AONB is located inland and consists of a hilly area of ridges and valleys with the highest proportion of ancient woodland in the country. The area meets the sea at Hastings. The built environment is characterised by brick, tile and weatherboard houses, oasthouses, and traces of the Wealden iron industry.
Kent Downs		The area meets the coast at the prominent cliffs of Dover and extends inland behind the Weald to an elevation of 240m. This AONB includes unimproved chalk grassland, scrub and broadleaved woodland communities. Orchards, hop gardens, horticulture and arable farming, ancient lanes and historic parklands all add to the visual amenity of the area.
New Forest	NP	Ancient woodland, bog, heathland and unspoilt coastline with views of the Solent and Isle of Wight. It uniquely supports a medieval forest and pastoral system. The National Park is of nature conservation interest in addition to being a working and recreational landscape.

Site name	Designation	Summary
South Downs		This area has been proposed for national park designation. A public enquiry closed on 4 th July 2008 and a decision is expected in early 2009. The area reaches the coast only in its eastern extent in East Sussex between Seaford and Eastbourne.
Purbeck	HC	The area ranges between Poole Harbour and Studland. The area includes excellent examples of chalk and limestone cliffs.
Hamstead		Contains the drowned estuary of Newtown River. The area includes saltmarsh and mudflats which harbour overwintering birds. The clay and limestone cliffs are rich in fossils unique to this area of Britain.
Tennyson		This area includes 'The Needles', high chalk cliffs and 'chines' (steep chalk gullies) unique to the Isle of Wight.
Sussex		Comprises the eastern end of the South Downs, terminating at the coast in the chalk cliffs of Beachy Head and the Seven Sisters.
Dover-Folkstone		7.2km in length, the area encompasses a section of the white chalk cliffs at Dover and part of the Saxon Shore Way.
South Foreland		Includes a section of the white cliffs of Dover and the Saxon Shore Way along St Margaret's Bay. Covers 6.9km from Dover to Kingsdown near Deal.

Key: AONB=Area of Outstanding Natural Beauty, NP=National Park, HC=Heritage Coast

Source: CCW website, NE website a

Joint Character Areas relevant to Regional Sea 3

Site Name	JCA #	Summary
South East		
Dorset Heaths	135	Lowland Heath with stunted pines and gorse scrub forming mosaics with farmland. An area with open valleys containing floodplain pastures and willows. The edge of the area is marked by pasture, woodland and dense hedges representing a transition to chalk landscapes. The area is sparsely populated and is centred on the Poole-Bournemouth conurbation.
Isle of Wight	127	A small island encompassing many features of the mainland southern English coast. Wooded dairy pastures and arable farming meet the coast at steep chalk cliffs, stacks and estuarine seascapes. The southern and northern coasts differ, with few hedges and trees being present in the unimproved grasslands of the south, and lush green dairy pasture with mature hedgerow, woodland and coppiced woodland to the north. Salt marsh, mudflats and creeks are numerous on the north coast. Coastal 'chines' are a unique feature of the area.
New Forest	131	A mosaic of broadleaved and coniferous woodlands, wood pasture, heath, grassland and farmland. The landscape and landcover are influenced by numerous grazing ponies and cattle. The southern coastal plain consists of open salt-marshes and shingle beaches, contrasting markedly with the more enclosed interior.
South Coastal Plain	126	An intensively farmed, open, flat coastal plain. Inlets contain a diversity of features including tidal creeks, mudflats, shingle beaches, dunes, grazing marshes and paddocks. Tree cover is sparse, the landscape dominated by large, open fields bordered by low hedgerows. There is the occasional remnant of coastal heath, and to the east, farmland gives way to more developed settlements.

Site Name	JCA #	Summary
South Downs	125	This area meets the coast in its eastern extent which is characterised by broad alluvial floodplains with pasture and wet grazing meadows. Hedgerows are largely absent and trees form a marginal landcover, with arable farming and grassland being more dominant. Roman and Drove roads are distinctive cultural features in addition to Barrows and Iron Age hillforts. The area is sparsely populated and flint has been used extensively as a building material.
Pevensey Levels	124	Much of the area consists of reclaimed land maintained by drainage systems and floodplain improvements. Wet grazed meadows and limited arable fields are characterised by dykes, the character further distinguished by a lack of trees and hedges. 'Eyes', which are areas of higher ground some of which support farmsteads, are bordered by reeds and low-lying waterlogged areas and rushy pasture.
High Weald	122	At the coast, the High Weald gives way to eroded sandstone and clay sea cliffs at Fairlight, disappearing below Bexhill and Hastings to the south east. Broad and often flat-bottomed river valleys reach the coast at Romney Marsh between Tenterden and Fairlight. Inland the area is well wooded with scattered hamlets and villages. An earlier iron industry has left a legacy of 'hammer ponds' used for power, coppiced woodland and old ore extraction areas. Farmland is mixed, but mostly pastoral. Fields are bordered by species-rich hedgerows and areas of cleared woodland have given way to meadows. Building vernacular is dominated by local stone and red tile roofs, more recently diluted by increasing suburbanisation.
Romney Marshes	123	Much of this area consists of treeless reclaimed marshland maintained by drainage systems and floodplain improvements. High quality agriculture and wet pastures dominate, in addition to dykes, mudflats, sand-dunes, and shingle ridges of Dungeness. Former sea cliffs mark the post-glacial coastline overlooking Romney Marsh – the Napoleonic military canal runs along the base of much of this cliff. The coastal strip has numerous 20 th century developments.
Wealden Greensand	120	This area lies primarily inland, following a large belt of Cretaceous Greensand typified by its scarp/dipslope topography. The area is represented by a small strip of land at the coast centred on the settlement of Folkstone.
North Downs	119	The area comprises a distinctive chalk downland dipping towards the Thames and English Channel incised by the 'coombes' (valleys) of the Stour, Medway, Darent and Mole rivers. Vegetation includes unimproved chalk grassland, and mixed woodland and scrub. Arable fields dominate land use with the addition of small areas of traditional downland grazing. To the south-east the Downs become open and more intensively farmed ending at the chalk cliffs of Dover. The rural built environment includes buildings of local stone such as flint.

Source: NE website b

A3c.3.4 Regional Seas 4 & 5

Relevant landscape conservation designations in Regional Sea 4

Site name	Designation	Summary
Gwyr AoHNE	AONB	The area varies from Carboniferous limestone scenery at Worms Head and Oxwich Bay to the salt-marshes and dune systems in the north. Heath, grassland, fresh and saltwater marshland, dunes and oak woodland provide a varied landscape.
Wye Valley		This AONB reaches substantially inland from the coast. Riparian limestone scenery is made up of sheer wooded cliffs as the river has cut down into the rock. Open valley reaches with rounded hills and bluffs make up much of the intervening countryside.

Site name	Designation	Summary
Mendip Hills		The area has Britain's most southerly example of Carboniferous limestone scenery, with gorges, dry valleys and sink holes being prominent features - Cheddar Gorge and Wookey Hole Caves being excellent examples of such features.
Quantock Hills		The area runs north-west from the Vale of Taunton Deane to the Bristol Channel coast. The ridge which makes up this area is surrounded by an agricultural plain, and has elements of heathland and sessile oak which are diminished in southern England.
North Devon +HC		An area of cliff scenery reaching inland to take in the cliff top plateau around Hartland. Valleys come down to the coast, truncated by cliffs often terminating in waterfalls. The area also includes the dune systems at Braunton Burrows on the Taw and Torridge Estuary.
Cornwall		Includes Lands End and the Lizard Peninsula. The northern area includes Tintagel and St Agnes Head, and some of the highest cliffs in Britain. The south coast is less dramatic and is indented by the oak-fringed estuaries of the Fal, Fowey and Helford Rivers. The Camel Estuary, Bodmin Moor and heath plateau of the Lizard and Penwith moorland all feature in this AONB.
South Devon		The South Devon AONB stretches from Torbay to the outskirts of Plymouth. The coast ranges from cliffs (Bolt Head), sandy beaches (Slapton Sands) and wooded estuaries (Dart, Kingsbridge) and some of Britain's best ria coastline.
East Devon		East Devon, from Lyme Regis to Exmouth, is characterised at the coast by red sandstone cliffs, broken by chalk at Beer Head. Inland the area rises to a high flat plateau incised by the rivers Axe, Sid and Otter.
Dorset		The Dorset AONB is underpinned by a curving chalk ridge which runs from the upland Axe, east to the Stour Valley and a southern section circles Dorchester and reaches the Isle of Purbeck. The area has downland and heath the likes of which are now diminished in southern England.
Exmoor	NP	The moorland plateau terminates with the tallest cliffs in England, overlooking the Bristol Channel coast. Inland, the grass moorland of the former Royal Forest is surrounded by heather-covered moors, intersected by roundsided combs. Lynton and Lynmouth form the largest settlement, and have traditional stone and slate buildings which contrast with more ornate Victorian structures. The Vale of Porlock villages have colour-washed cob, stone and thatched cottages. Bronze Age burial mounds and stone circles, Iron Age hillforts, Roman fortlets, medieval castles, bridges, farmsteads, and unique rural industrial sites are preserved within the agricultural and moorland landscape.
Dartmoor		Dartmoor consists of two, high, boggy plateaux divided by the River Dart. Surrounding them is rocky land which has dramatic stone outcrops (tors). The softer river valleys, with their ancient clapper bridges, provide a contrast to the stark magnificence of the moors. There are many standing stones, Bronze and Iron Age hut circles and hillforts as well as tin mining remains. The last mine closed in 1939.
Brecon Beacons		The Brecon Beacons is a remote part of Wales with contrasting woodlands, reservoirs, waterfalls, caves and windswept uplands. The area supports a diverse array of natural and cultural heritage features and provides recreational access. A section of the park is part of the European Geopark network, which aims to preserve geological heritage.

Site name	Designation	Summary
Exmoor	HC	Managed within the Exmoor National Park, the area includes England's highest sea cliffs interspersed with wooded 'combes' dominated by oak, which reach right down to the shore which is lined by a pebble beach.
North Devon		Sand and sand dunes, open-cliffed headlands, softer wooded cliffs and several villages characterise this coastline which is part of the North Devon AONB. The coastline forms part of the South West Coast Path, Britain's longest National Trail.
Lundy		A massive granite island with rugged 400ft cliffs. The island is host to a vast seabird colony.
Hartland		At 48km long this area includes sections of both Devon and Cornwall. Sheer cliffs, reefs and waterfalls descending from hanging valleys characterise the coast, with views as far as Lundy Island.
Pentire Point-Widemouth		These sections of heritage coast are modified by storms which have attributed to dramatic coastal erosion in the formation of blowholes, stacks and caves. Lighthouses and redundant mine chimneys around St Agnes indicate historically recent anthropogenic activity at the coast.
Trevoze Head		
St Agnes		
Godrevy-Portreath		
Penwith		An area characterised by heath topped cliffs and promontories which include redundant mine chimneys backed by small field enclosures with stone walls.
Isles of Scilly		A heritage coast of extreme variety, the coast has cliff as well as beach and sand dune environments, the interior consist of a bare heathland plateau. The islands are home to rare migratory bird species, as well as a rare flora contained in sub-tropical gardens. Lagoons between the islands are warm and clear, and home to seals and porpoise.
The Lizard		Green serpentine rock supports a rare heathland habitat. Small coves, beaches and fishing villages are scattered along the coast.
The Roseland		A gentle coastline dominated by cliffs with coastal heath and scrub, and small sandy bays broken by rocky areas such as Dodman and Chapple Points
Gribbin Head-Polperro		Steep sloped, wooded valleys reach the coast, defined by the Fowey Estuary. The picturesque harbours of Fowey and Polperro nestle on steep slopes at the mouth of wooded valleys.
Rame Head		Lies on the western tip of the entrance to Plymouth Sound. A treeless conical headland which has a wooded, sheltered east side and an exposed west side.
South Devon		The coastal scenery includes reedbeds, sand dunes, shingle ridges, mud flats, salt marshes, and the freshwater lake of Slapton Ley National Nature Reserve.
East Devon		Red sandstone cliffs with pebble beaches contrast markedly with the white chalk cliffs which outcrop at Beer. The coast forms part of Britain's longest national trail, the 'South West Coast Path'. Tourist pressures have made screening and landscaping of facilities an important management issue.
West Dorset		This area includes the vast shingle beach at Chesil, which forms a tombolo at its eastern end, joining the island of Portland to the mainland.
Dorset and East Devon Coast	WHS	Known as The Jurassic Coast, this National Park covers 95 miles of coastline from East Devon to Dorset, with rocks recording 185 million years of the Earth's history.

Site name	Designation	Summary
Cornwall and West Devon Mining Landscape	WHS	This designation consists of a number of sites of 18 th and 19 th century mining heritage, signifying the variations in mining technology and related impacts which occurred over time. During the expansion of mining, infrastructure and settlements rapidly expanded in what was prior to this, a very rural landscape, which in many areas generated wholesale landscape change. In some areas evidence of this change survives essentially intact and it is possible to visualise how these areas looked and functioned a century and more ago.

Key: AONB=Area of Outstanding Natural Beauty, NP=National Park, HC=Heritage Coast

Source: CCW website, NE website a

Joint Character Areas relevant to Regional Sea 4

Site Name	JCA #	Summary
Severn and Avon Vales	106	This character area extends inland from Avonmouth to Stratford-upon-Avon, being represented at the coast only at the Severn which dominates the area to the south of Gloucestershire. At the mouth of the River Severn small villages and old orchards contrast with industrial complexes at Avonmouth and riverside power stations. The riverside landscape is often open with few coppiced trees and many ancient market towns and villages are present along river banks. Traditional building vernacular follows a brick and timber frame design.
Bristol, Avon Valleys and Ridges	118	The area is bounded by the Cotswolds on its eastern edge, the Mendip Hills to the south and the Severnside levels extending from the Severn and Avon Vales to the west. The landform, geology and settlement pattern is mixed. Limestone ridges with wooded scarps extend across the area. Settlements range from large villages to conurbations (e.g. Bristol) separated by undisturbed rural areas. The legacy of the coal industry is emphasised by settlement patterns, tips and reclaimed land.
Somerset Levels and Moors	142	An area of flat, open, wet pasture with wetland and arable land divided by ditches (rhynes). The area is surrounded by low hills and ridges, some of which support settlements. There is a sparse tree cover unlike further inland. Peat working has taken place probably since prehistoric times and continues today – historic features (prehistoric trackways, medieval enclosures) attest to a long occupation for the area. The wetland landscape generates an internationally important area for waders and waterfowl. A few larger settlements including Weston-super-mare and Burnham-on-sea occur at the coast.
Exmoor	145	A diverse, upland, treeless heath and grass moor rising up from a complex coastline of headlands, cliffs and coves which border the Bristol Channel. Field systems are enclosed by regular, strait sided stone or earth banks. Older buildings are distinctively constructed from slate and sandstones, and prehistoric structures such as Bronze Age hillforts are a prominent feature of the area.
The Culm	149	There is sparse tree cover except occasional windswept hedgerow, farmstead trees, conifer blocks and valley woodlands on this open, undulating pasture. Poor drainage has developed rushy pasture which is of conservation interest. Scattered hamlets and farms in cob and whitewashed stone are connected by sunken lanes, and at the coast there are a few fishing villages in sheltered coves in the backdrop of high cliffs.
Lundy	159	Lundy is a small, isolated granite island in the Bristol Channel which is a prominent landmark when viewed from the mainland. The island consists of a relatively flat plateau with steeply sloping sides, with the windward west coast being more rugged, steep and bare of vegetation. Maritime grasses and patchy scrub are found elsewhere adjacent to coastal cliffs. Views of the sea are unobstructed and create a sense of isolation. The main settlement consists of locally quarried granite with slate roofing.

Site Name	JCA #	Summary
Cornish Killas	152	This area, which encompasses most of the Cornish coast, consists of an undulating plateau utilised for mixed farming with sparse woodland except for isolated hedgerows. There are numerous broadleaved valleys which are narrower in the north than the south where they meet the sea as rias with wide estuaries. The coast is typically formed by steep cliffs up to 100m in height with little access to the sea and broad sandy bays, particularly in the north which has numerous dramatically sited ruins from 19 th century mining buildings to Tintagel Castle. In the south the coast is more sheltered and wooded. Hamlets, farmsteads and fishing villages are dispersed throughout the region and form the dominant settlement types.
West Penwith	156	This peninsular area is sparsely populated and meets the sea at granitic cliffs. The coastal area is remote relative to further inland which, though sparsely populated, has been settled for some time, evidenced by ancient field systems and settlements, extensive archaeological sites (e.g. hillforts, standing stones and circles), and a more recent legacy from the mining industry (e.g. engine houses). Inland, extensive treeless upland heath has developed. To the north-west rough pasture is divided into many small irregular fields separated by granite stone walls. The fields may date back to Bronze Age or Iron Age times.
Isles of Scilly	158	These are low-lying, largely treeless and windswept granite islands, many of which are uninhabited. Coastlines range from sandy beaches, sand dunes, distinctive granite tors, coastal heaths and grasslands. Small fields are used for horticulture and the built environment has structures of granite and slate. The islands have been settled since prehistoric times and there is an extensive Bronze Age record. Distinctive Tudor and Napoleonic war fortifications are also present.
The Lizard	157	The area of the Lizard is a windswept heathland plateau cut by enclosed valleys and surrounded by a coastline of cliffs and coves. The land is undulating and generally treeless with the exception of some coniferous plantations. The landscape is broken by the large satellite dish installation at Goonhilly Down, a wind farm, and Bronze Age barrows. At the coast, several fishing villages retain their old character of white-washed buildings with slate or thatch roof, elsewhere hamlets and farmsteads are the main population centres. Tourism has grown along the main route way of the A3083 primarily in the form of caravan parks.
South Devon	151	South Devon is a plateau dissected by steep, wooded valleys separating rounded hills. Large wooded rias extend inland and contain extensive mudflats and saltmarsh. Elsewhere there are sand and shingle beaches and cliffs of sandstone and slate which make up the headlands of Start Point, Prawle Point, Bolt Tail and Bolt Head. Agriculture is mixed and soils appear pink or red when ploughed. Farmsteads and hamlets are linked by sunken lanes, and villages and towns are typically located in sheltered valley locations. Local stone and slate have been used for masonry in villages and farmsteads where thatch also still features as a roofing material.
Devon Redlands	148	The characteristic red colouring of the underlying Permo-Triassic Sandstone and cob buildings give this character area its name. The landscape is hilly with large woodlands confined to valley sides. Villages, hamlets and farmsteads are dispersed throughout rural areas, contrasting with extensive urban development such as at Exeter and Exmouth. Towards the coast, the valleys widen out to extensive, open floodplains which are emphasised by their lack of tree cover. The hills gradually decrease in height towards the coast, where settlement, roads and railways often dominate the landscape.
Blackdowns	147	The dominant visual characteristic of this area is the contrast between the windswept vales and ridges and the more sheltered valleys. The high ground is divided into rectilinear fields and by straight roads. In the valleys, hamlets and villages are built mainly from chert, cob and thatch. Larger villages and ancient burrows still retain their pre-20 th century character. The distinctive coastal landscape consists mainly of erosional

Site Name	JCA #	Summary
		cliffs interrupted by a small number of estuaries with associated saltmarsh and shingle ridges. The largest of these is the Axe valley which opens out to a substantial floodplain with coastal saltmarshes. From east of Axmouth to Lyme Regis, the dominant feature of the coastline is the presence of major landslips, forming thickly-wooded 'undercliffs'.
Marshwood and Powerstock Vales	139	At the centre of this character area is the bowl-shaped clay Vale of Marshwood. Upper Greensand ridges and hills divided by a deeply-incised network of valleys rise around it. This is a pastoral landscape with regular field boundaries and abundant oak hedgerows. The coast is made up of small valleys separated by headlands, and between Charmouth and Lyme Regis there are complex landslips leaving dramatic slopes. The cliffs rise eastwards from Lyme Regis culminating in the headland of Golden Cap. Cliffs extend eastwards below Burton Bradstock before dropping down to the edge of Chesil Beach. Many farmsteads are recent buildings with rendered finishes, whereas older buildings are of roughly coursed or random Ham Hill Stone and limestone
Weymouth Lowlands	138	The coastline is dominated by the extensive shingle beach of Chesil which connects the mainland to the Isle of Portland by a shingle tombolo. Chesil beach also acts as a barrier to the sea for the brackish lagoon of The Fleet. Inland, open and largely treeless ridgetops are often home to arable farmland. The area of Weymouth and the Island of Portland is heavily urbanised. Older buildings are constructed of grey limestone and sometimes brick with thatch comprising the traditional roofing material.
Isle of Portland	137	

Source: NE website b

Historic Landscape Characterisations in Wales

Site Name	Summary
Milford Haven	
Dale to St Bride's Coastal Strip	Dale to St Bride's historic landscape character area consists of a narrow band of cliff-top ground. The Pembrokeshire Coast Path runs through this area and several iron age promontory forts lie within it. Gateholm Island has sites dating from the prehistoric period through to the post-Roman period. Other sites include 19 th century limekilns, three of which are grade II listed, and 20 th century military coastal defences.
Monk Haven to Gelliswick Coastal Strip	Monk Haven to Gelliswick Coastal Strip is a narrow bank of cliff-top ground through which runs the Pembrokeshire Coast Path. Included in this area are iron age promontory forts such as Great Castle Head and Little Castle Head. Other sites include several World War II coastal defence installations, most notably gun batteries and searchlight batteries, sites of quarries and mines, prehistoric flint working floors and an early medieval cemetery near St Ishmael's.
Milford Haven	Milford Haven historic landscape character area is a late 18 th century grid-pattern planned town with docks dating to the late 19 th century. Large 20 th century housing estates and light industrial developments surround the town's older core.
Gulf Oil Refinery	Gulf Oil Refinery historic landscape character area comprises the massive structure of this late 20 th century industrial complex including railways and jetties.
Neyland	Neyland is a small urban historic landscape character area centred on the old port and railway station. The town expanded from this focus during the 19 th century to include the former village of Great Honeyborough. Late 20 th century housing and light industrial development lie on the outskirts of the town.
Benton	Benton historic landscape character area is situated on the bank of the Milford Haven waterway. It mostly comprises deciduous woodland but includes the rocky and muddy foreshore, small former shipping/ferry points and a handful of 19 th century dwellings.

Site Name	Summary
Carew Milton and Nash	Carew Milton and Nash is a large agricultural area that contains several mansion houses set in parkland and gardens, many large farms and a scattering of smaller farms. Fields are large and are divided by hedges on banks. Woodland is a strong component of parts of the landscape.
Pembroke Dock	Pembroke Dock historic landscape character area comprises the 19 th century naval dockyards and the 19 th century grid-pattern planned town. Included in this area are many 19 th century worker and town houses, with 20 th century housing and light industrial development on its outskirts.
Texaco Oil Refinery	Texaco Oil Refinery historic landscape character area includes the massive late 20 th century industrial complex, the old BP oil pumping station located in Fort Popton, a 19 th century defensive structure, and a short length of sea-cliff top.
Angle	Angle is a distinctive and complex historic landscape character area. It is centred on the linear village of Angle, which includes medieval, 19 th century and 20 th century examples of domestic architecture. Also included is a harbour area, strip fields – the enclosed medieval open fields of the community – a 19 th century fort and steep, wooded coastal slopes.
West Angle to Freshwater West Coastal Strip	West Angle to Freshwater West Coastal Strip comprises several kilometres of cliff top along which the Pembrokeshire Coastal Path runs. Included in this area are iron age forts, a 16 th century gun tower and 20 th century gun batteries.
Stackpole Warren	
Bosherston	Bosherston is characterised by small fields bounded by banks and mortared walls and stone-built 18 th century and 19 th century houses, farms and cottages, many of which were constructed by the Stackpole estate.
Stackpole Court Park and Gardens	Artificial lakes, woodland, parkland and gardens are the main components of Stackpole Court Park and Gardens historic landscape character area. Most buildings are estate related, such as stables, summerhouses and cottages, although the mansion was demolished in the 1960s.
Stackpole Warren	Stackpole Warren consists of a plateau of wind-blown sand perched on the edge of high limestone sea cliffs. Several important prehistoric settlement and ritual sites are located here and occupation is apparent from the Mesolithic Period through to the Romano-British Period and beyond.
Manorbier	
Freshwater East to Lydstep Coastal Strip	Freshwater East to Lydstep Coastal Strip consists of high sea cliffs, sandy coves and a narrow band of cliff top through which runs the Pembrokeshire Coast Path. The built heritage includes a Neolithic chambered tomb, iron age forts, World War II military installations and old stone quarries.
Lydstep Haven	Lydstep Haven historic landscape character area is dominated by a modern caravan park, with a strong secondary country estate component consisting of Lydstep House, lodges and woodland. Recorded archaeology is limited to prehistoric finds on the foreshore that are associated with peat deposits.
Taf and Tywi Estuary	
Morfa Bychan	Morfa Bychan character area consists of moorland on steep, sometimes craggy coastal slopes, sea cliffs, deciduous woodland in sheltered valley sides and a conifer plantation on valley sides at Teagues Wood.
Laugharne and Pendine Burrows	Laugharne and Pendine Burrows character area consists of a long band of windblown sand. A post World War II Ministry of Defence establishment has been constructed in the dunes. There are no other historic landscape components present.
Laugharne Saltmarsh	Laugharne Saltmarsh character area consists of recently formed land which is subjected to frequent tidal flooding outside seawalls and below the castle and town of Laugharne.
Black Scar	The area consists of cliffs and steep coastal slopes overlooking the Taf and Tywi estuaries. The steep slopes are covered with deciduous woods, bracken and are used for rough grazing. Old limestone quarries are present, including the remains of substantial 18 th and 19 th century limekilns. Apart from a Roman find, recorded archaeology is confined to quarrying features.
Llansteffan	Llansteffan character area is centred on a medieval church and a single street of 18 th and 19 th century houses, with a secondary centre of 19 th and 20 th century dwellings on the estuary, and 20 th century housing between the two. The village lies in the shadow of a Medieval castle.

Site Name	Summary
Ferryside	The area now occupied by the settlement of Ferryside formed part of the Medieval holding of St Ishmael, founded as its name indicates, on a crossing point of the River Tywi. It owes its modern origin to the establishment of a mainline railway in 1852.
St Ishmael	St Ishmael character area consists of rolling hills of improved pasture divided into medium sized fields by earth banks and hedges that possibly evolved from strip fields during the 17th century, with a settlement pattern of dispersed farms. Several possible Bronze Age standing stones are suggested by field names, and there is a possible Medieval cross. An Iron Age hillfort is present. Post-Medieval sites include farmsteads and cottages, a mill and millrace, sandpits, the railway, sea defences and a WWII battery and lookouts at St Ishmael.
Kidwelly Burrows	Kidwelly Burrows character area consists mostly of reclaimed marsh land that has been used for industry and infrastructure. A stable environment permitted the construction, in 1766-8 of Thomas Kymer's Canal, and in 1852, of the GWR main line. The industry has now gone, but the mainline railway is still in use. There are 19 th and 20 th century sea-defences to the south of the area.
Pembrey Saltmarsh	Pembrey Saltmarsh character area consists of saltmarsh which has accumulated outside sea walls over the past few hundred years. The southern side has mainly developed since the construction of Banc-y-lord (1817-18), the great sea-wall which forms the southern edge of the area. The northward side of the estuary has been subject to erosion, but this area featured a quay, (Berwyn Quay) until the mid 19 th century. A quay was established at Pill Tywyn at the end of Ashburnham's Canal in c.1801 before the construction of Banc-y-lord.
Pembrey Burrows	This area consists entirely of a range of sand dunes. The dunes probably started to form in the 17 th century. Two Second World War gun emplacements occupy the northern part of the area; otherwise it features no recorded archaeology.
Pembrey and Burry Port	Pembrey and Burry Port is an urban character area. It consists of mostly 19 th and 20 th century residential development and related services. Apart from two harbours, little trace remains of the once thriving heavy manufacturing and copper industries of this area.

Source: Dyfed Archaeological Trust website

Summary of landscape/seascape assessment for the Welsh coast relevant to Regional Sea 4

#	Area	Seascape character type	Sensitivity	Value
36	Skomer Island to Linney Head	THMR, TSLD	Medium/High	5
37	Milford Haven	EHMR, EHMU, EHLR	High	4
38	Linney Head to St Govan's Head	THMR	Medium/High	5
39	St Govan's Head to Old Castle Head	THMR	Medium/High	4
40	Old Castle Head to Giltar Point/Caldey Island	THMR	Medium/High	3
41	Giltar Point to Pembrey Burrows [Carmarthen Bay]	THMR, THMU, TSLD	Medium	2
42	Taf, Tywi and Gwendraeth estuaries	EHMR	High	1
43	Loughor Estuary	ESLR	High	2
44	Whiteford Point to Worms Head- Rhossili Bay	THMR	Medium/High	5
45	Worms Head to Mumbles Head- South Gower	THMR	Medium/High	4
46	Mumbles Head to Porthcawl Point [Swansea Bay]	THMR, TSLU, TSLD, THIU	Medium	1
47	Porthcawl to Nash Point	THMR, TSLD, THIU	Medium	1
48	Nash Point to Lavernock Point	THIR, TSLU	High	1

#	Area	Seascape character type	Sensitivity	Value
49	Lavernock to Gold Cliff	TSLR, TSLU, THMU, THIR	High	1
50	Gold Cliff to Chepstow	TSLR	High	1

Source: CCW (2008a, b)

Key: T=Tidal, L=Lateral current – lateral, E=Enclosed estuary or ria, H=Hard rock coastline, S=Soft coastline, I=High (>100mAOD 250m inland), M=Medium (25-100mAOD 250m inland), L=Low (<25m 250m inland), R=Rural, U=Urban, D=Dunes

Notes: Based on a wind farm development scenario of many parallel turbines (160m to blade tip) at 550m intervals, 13km from the shore. Visibility is based on a landward and seaward buffer of 24km.

Value scores range from; 1=Low value, 5=High value

A3c.3.5 Regional Sea 6

Relevant landscape conservation designations in Regional Sea 6

Site name	Designation	Summary
North Arran	NSA	Arran's northern extent consists of a dissected granitic massif with peaks reaching almost 900m, leaving only a narrow coastal plain where there are raised beaches supporting clachan style settlements.
Nith Estuary		An area of extensive flats unusual to Scotland. The area is enhanced by Criffell, a granite hill rising to 569m and the long well-wooded ridge extending back to Marthorn Hill. The Nith at this point is broad and bordered by open fields, marshes and riverside trees in some places.
Fleet Valley		Dominated to the west by Cairnharrow (456m), the relief to the east is less pronounced consisting of a ridge ending at Bar Hill, south of Gatehouse. Woodland dominates the valley sides opening into moorland and eventually pasture on lower ground by the riverside.
East Stewartry Coast		The area comprises Auchencairn Bay, Orchardton Bay, Rough Firth, Sandyhills Bay, the Mersehead Sands and their immediate hinterlands. An area characterised by wide tidal flats, dunes, woodland and bays.
Knapdale		A glacially overdeepened landscape now heavily wooded, with a distinctive north-west south-east axis of parallel ridges and glens. Loch Sween has many parallel channels, meeting land at the Forest of Knapdale. This is in contrast to the more open Loch Caolisport. To the north there is moor, meadow and arable land, the meandering River Add and the hills of Dunadd and Cnoc na Moine.
Kyles of Bute	AONB	Includes Bute, mainland Cowal and Loch Ruel. The loch is markedly tidal, with mixed woodland shores and frequent rocky outcrops on surrounding hills. There are views to north Bute and mainland hills afford views of the kyles below.
Solway Coast		Stretching along the Cumbrian shore of the Solway Firth this is a low, open and windswept area with wide views across to the hills of Galloway. Its characteristic feature is a 7.6m raised beach. Siltation has left the foreshore strip with a marine terrace of low-scrub covered cliffs or dunes.
Arnside and Silverdale		Consists of small scale limestone hills and agricultural land sheltered by deciduous woodlands and valleys. A diverse landscape juxtaposing salt marsh, limestone cliffs and reclaimed moorland, with limestone pasture, rock outcrop and limestone pavements at higher altitudes.

Site name	Designation	Summary
Forest of Bowland		Geologically part of the Pennines, this area has a central core of incised gritstone fells and large areas of heather moorland. The fell's fringe of foothills is dissected by 'cloughs', steep-sided valleys which open out into the rich green lowlands of the Ribble, Hodder, Wyre and Lune Valleys.
Ynys Mon AoHNE		Consists of almost the entire Anglesey coast. The designated area includes low ridges and shallow valleys at the coastal plateau, with Holyhead Mountain its highest point at 219m. The east coast has limestone cliffs interspersed with sandy beaches, whereas sand dunes are more prominent to the south.
Llyn AoHNE		A low peninsula consisting of a marine eroded platform with complex geology affording varied coastal landscapes from the steep craggy cliffs around Aberdaron Bay to sandy bays and headlands and fine dune systems. The area also has an upland component in the form of volcanic peaks dominated by the granite crags of Yr Eifl (564m).
Bryniau Clwyd AoHNE		The Clwydian Range is a 35 km long chain of undulating hills rising between the Vale of Clwyd to the west and the Dee Estuary to the east. In the uplands heather moorland dominates, and lower down hedged field and coppice woodland becomes prominent.
Strangford Lough		Strangford Lough is an almost landlocked inlet of the sea set within a diverse lowland topography. Within the lough, tips of drowned drumlin hills create a spectacular myriad of islands, while on shore the hills form a pleasant rolling landscape.
Mourne		The twelve peaks in this area include Slieve Donard, which at 850m is Northern Ireland's highest mountain. Mountain slopes descend through moorland, woodland, field and farm before meeting the coast.
Lake District	NP	Much of the lake district consists of moorland and fell. The 16 lakes, the largest of which is Windemere, were formed by glacial meltwater. Around Skiddaw and in the south of the Park there are angular and rounded hills. Neolithic stone circles, like Castlerigg and Roman forts, like Hardknott, reflect Lakeland's long history. Townend at Troutbeck is an example of a local yeoman farmer's house. Former iron workings and more modern slate quarrying have also left their marks.
Snowdonia		This is the highest upland area in England and Wales, supporting upland heath and river, wooded valleys and even parts of the Welsh coast. 20% of the area is designated as either a SAC or Ramsar site, in addition to 17 NNRs and 56 SSSIs. The area has remnant features of extensive mining, particularly for slate, in addition to old abandoned agricultural buildings.
Pembrokeshire		The coast varies from the upland area of Carningli, Newport, in the north to the cliffs and broad sandy beaches of St Brides Bay, which span between the islands of Ramsey and Skomer. Further south Carboniferous limestone plateaus are present on the Castlemartin Peninsula. North of the peninsula, Daugleddau Estuary is a sheltered, wooded, deep water harbour which forms the area of Milford Haven.
St Bees Head	HC	The area is formed by a red sandstone cliff which spans between Scotland and North Wales. A cliff edge path forms part of the Cumbria Coastal Way and Wainwright's Coast to Coast Walk. Coastal cliffs rise to 300ft providing excellent views to the north, south and offshore to the Isle of Man.

Site name	Designation	Summary
Ceredigion Coast		Consists of four sections totalling 21 miles of coast, the area includes cliffs which line the coast from Aberystwyth to Borth where an extensive sandy beach extends to the mouth of the River Teifi. Similarly, to the south of Aberystwyth, cliffs dominate the coastal scenery. This heritage coast was the first to have its designation extended into the offshore area by 1 mile with the intention of protecting marine heritage through a code of conduct for seafarers and marine and coastal recreational users*.
Great Orme		A small peninsula by Llandudno, this heritage coast is relatively undeveloped compared with the surrounding countryside. Rising to 209m, the site comprises cliffs, calcareous grassland, limestone heath, scrub and woodland on lower slopes. Limestone pavement and several scheduled ancient monuments also characterise the Orme.
St David's Peninsula		This area stretches for 50 miles of the Pembrokeshire coast from St Bride's Bay to Fishguard. The coast is varied but mainly consists of cliffs and small bays backed by sandy beaches, for instance at Whitesands Bay.
St Bride's Bay		An area of high cliffs and broad sandy beaches (e.g. Broad Haven, Newgate, Druidston Haven) residing between St David's and Marloes headlands.

Key: NSA=National Scenic Area, AONB=Area of Outstanding Natural Beauty, NP=National Park, HC=Heritage Coast,

Source: CCW website, NE website a, SNH website a

*See Ceredigion County Council website for details

Joint Character Areas relevant to Regional Sea 6

Site Name	JCA #	Summary
North West		
Solway Basin	6	This area features a diverse coast of intertidal mudflats and saltmarshes, raised beaches, dunes, pebble and sandy beaches. Intertidal areas are host to wintering and migrating waders and wildfowl, and further inland raised bogs and lowland mires are of conservation interest. A largely treeless area, the lowlands are grazed, fields are medium to large separated by hedgerows, and the river systems heavily managed. A mix of building materials and styles characterises the main settlement of Carlisle and Port Carlisle, a reflection of heterogeneous cultural and physical influences.
West Cumbria Coastal Plain	7	Pasture and agriculture contrast with the historically industrial nature of the coast which was formerly associated with iron ore and coal production and more recently the chemical industry and nuclear reprocessing. The physical coast varies from mud and salt-flats, shingle to pebble beaches and localised sandy beaches and sand dunes. Intertidal habitats are provided by an extensive estuarine landscape, and rivers with semi-natural ancient woodland extend inland.
Morecambe Bay Limestones	20	The coast consists of shifting intertidal sandflats and saltmarsh backed by low limestone cliffs which rise into hills with occasional scree further inland above farmland and pastures with infrequent trees, scrub and broadleaved woodland. Semi-natural habitats include limestone pavements, scrub, coppice woodland, herb rich grassland and peat fens. Ulverston is a sizeable market town dating to the 13 th century and enjoys conservation status. Nucleated settlements occur throughout the area with local vernacular maintained by the influx of a relatively affluent population looking for second homes.

Site Name	JCA #	Summary
Morecambe Coast and Lune Estuary	31	Undulating lowland pasture enclosed by hedgerows and stone walls make up a relatively flat lowland enclosed by escarpments which open out at the coast at which there are substantial drumlin features. Salt marshes, reclaimed marshland, sand and shingle beaches and sandstone cliffs feature at the coast towards the Lune estuary. Heysham power station and caravan parks characterise the developed areas of the coast, interspersed with pastoral farming. Buildings that are constructed from local millstone grit sandstone tend to be in the form of two and three storey terrace housing.
Lancashire and Amonderness Plain	32	The flat rolling plain of Lancashire supports a large pastoral and arable agricultural landscape characterised by blocks of wind sculpted trees and a few isolated hills (e.g. Parbold Hill). To the east there is a high density of field ponds and in the west drainage systems (raised ditches and dykes) and remnants of lowland mires are present. Saltmarshes are present at the head of the estuaries of The Ribble and Wyre). Rural areas feature isolated brick farmsteads, with planned Victorian coastal resorts, for instance Blackpool, present at the coast.
Sefton Coast	57	The coastal landscape is characterised by intertidal sands, silts and muds, dune systems, dune heath and salt marshes along the Ribble Estuary. Elsewhere, wide beaches and sand dune systems are key features. Coniferous plantations occur around Formby where they provide a habitat for red squirrels. Wind sculpted deciduous forest occurs elsewhere at Ince Blundell estate and within local farmsteads. The area remains rural with the exception of Formby, Hightown, Southport and Ainsdale. Golf courses are prominent along the coast.
Merseyside Conurbation	58	This area incorporates the City of Liverpool and its environs together with the urban/industrial areas of Birkenhead north-east of the mid-Wirral sandstone ridge. The amount of open countryside within the urban fabric of the Merseyside conurbation is extremely limited and generally is restricted to isolated pockets of versatile, high quality Grade 2 land. To a lesser extent, the Leeds and Liverpool Canal and the railway network form important landscape corridors.
Wirral	59	The core of this area is mixed agricultural land of medium-sized fields with intermittent clipped hedgerows, copses and field ponds. Wooded sandstone ridges, sometimes with mature pines, and sandstone outcrops thick with gorse and/or heath punctuate the low-lying plain. Along the Dee Estuary intertidal mud and sandflats, salt marshes and sand dunes (particularly at Meols) are present. Building style is a mix of traditional sandstone and modern post-war housing; the latter is increasing due to demand for housing from a growing commuter population.

Source: NE website b

Historic Landscape Characterisations in Wales

Site Name	Summary
Arfon†	
Lowland coastal area around Wig	A lowland area abutting the Menai Straits dominated by large estate farmhouses and divided up into large regular enclosures. The main arterial road and rail links between north-west Wales and the north of England dominate the landscape, and are largely responsible for its current appearance.
Penrhyn demesne	The area includes extensive gardens, stabling and a home farm. It also includes a number of industrial features, early roads, railways and bridges. The park is enclosed by a substantial mortared stone wall.

Site Name	Summary
Port Penrhyn	An outstanding example of a 19 th century port landscape. It is also an unusual example of an industrial area in which polite architectural influence is apparent in a number of buildings. The port itself and the majority of the buildings are constructed out of Penmon limestone.
Bangor	The city of Bangor has a Medieval urban core which has expanded since the early 17 th century. The winding High Street and the area around the Cathedral reflect the pattern of Early Christian settlement. Bangor is particularly rich in architecture of the 19 th and 20 th centuries and was a pioneer of attractive social housing in the inter-war years. There is practically exclusive use of purple Arfon slates, with the exception of the Pembrokeshire slates on the main University building.
Y Felinheli	The building stock is largely 19 th century and includes a variety of architectural styles and building materials. There is some use of non-local stone including Aberdeen granite brought in as ballast on the ships. There is considerable use of yellow brick, as in the former station and the substantial Arvon stores, though many structures are pebble-dashed. There are many buildings with ornamental features such as verandas and railings.
Ffestiniog†	
Porthmadog	A newly built port town dating to the 19 th century, Porthmadog has broad, well laid-out streets, large houses and chapels, and substantial commercial premises on the High Street. Little remains of the industrial areas to the north and east of the town (foundries, saw mills, slate works, gas works, a flour mill, soda-pop plant). The unattractive inland revenue office replaced the Glasyn foundry buildings which were demolished in the 1960s.
Glasyn estuary – reclaimed land	Land assigned to William Alexander Madocks as part of the enclosure act of 1803, the whole area was drained by the creation of the Cob, finally completed in 1813. The area is flat with the exception of some outcrops which would have been islands pre-1813. The lanes across the reclaimed areas tend to be long and straight. Farmhouses are largely modern and concrete-built, though the farm-buildings themselves are often of 19 th -century build with walls of rounded local stone.
Penrhyn-Garth	The peninsula today is largely of 19 th century dwellings, though at the coast, well laid-out field walls and patterns indicate a legacy of 18 th and 19 th century estate improvement, moving into more regular 19 th century fields inland. There are areas of woodland both towards the peninsula's end and down below Penrhyndeudraeth. The area today gives little impression of its former existence as an important promontory.
Ardudwy†	
Ynys Llanfihangel-y-traethau	This area has its origin as an island off the north-west coast of Meirionnydd, now linked to the mainland by the enclosure and reclamation of the morfa by the estate of Glwyn Cywarch after 1798. The principal small, nucleated settlement ('Ynys') here lies below a Medieval church and a craggy cliff, on what would have been the original shoreline on the mouth of the river Afon y Glyn (now canalised through the reclaimed marsh).

Site Name	Summary
Morfa Harlech: dunes	This character area is defined by the extent of the sand dune system. Morfa Harlech was first notified as an SSSI in 1953 which has subsequently been revised, and designated as a combined biological and geomorphological site. An extensive area of estuarine mudflats, saltmarshes, sand dunes and dune grassland, all of considerable biological value. It comprises a major cusped foreland in which the alignment of a sand beach and dunes at an acute angle has former cliffs and encouraged extensive sedimentation.
Llandanwg	A coastal settlement of fewer than 100 houses below a modern main road and bisected by the railway. The church is Medieval but the earliest surviving buildings appear to be 18 th century – the building stock is mainly detached holiday 'villas' and houses.
Morfa Dyffryn	This character area is defined by the extent of the sand dune system. Morfa Dyffryn was first designated an SSSI in 1953, and has since been revised. It is an area of both mobile and fixed coastal sand dunes with saltmarsh and estuary which forms an extension to the Morfa Dyffryn NNR. The extensive calcareous dune system contains dunes rising to 60ft. It is also important for flora and wading birds.
Coastal plain behind RAE Llanbedr	In the north of the area, around Llanbedr, there is a pattern of improved pasture fields around three farms which are defined by distinctive white, boulder drystone walls. Cut drainage features occur across the area, concentrated around the Artro. Llanbedr station lies on the edge of the area on a road which comes down from the village and leads to RAE Llanbedr and eventually (allowing for the state of the tides) to the holiday location of Mochras.
Southern coastal strip	The area is a juxtaposition of drystone walls defining fields of improved pasture and 20 th century caravan parks, entertainment centres, fish and chip shops and beach shops. There are a few traditional stone-built farms and farm buildings in the area, as well as a railway station.
Mawddach†	
Barmouth	Barmouth was a small and inaccessible fishing settlement until it started to develop in the 18 th century. The sea was the basis of the town's economy and shipbuilding started in the 1750s. By 1770 the town was well-established as a small port in coastal trades, based largely on the Meirionnydd woollen industry. The harbour was deepened and a new quay built in 1802, and the opening of the railway in 1867 resulted in further growth as the town began to cater for the new tourist trade. The town has a distinctive Victorian architectural character. Later 19 th and 20 th century housing has been built to the north-west away from the older development, maintaining the historic character of the town.
Fairbourne	Fairbourne is a modern (20 th century) holiday village on the southern side of the seaward end of the Mawddach estuary, opposite Barmouth. It bears the hallmarks in its layout and building stock of having been built deliberately as a seaside resort, serviced by both railway and road. Its principal attraction is the Fairbourne light railway.
Gallt Ffynnon yr Hydd	An 11km coastal stretch from a point south of Morfa Mawddach which takes in parts of Gallt Ffynnon yr Hydd. The north-west facing shore is backed by high rocky, but eroding, soft, sedimentary cliffs. It is important for its structural geological and mineralogical features which provide important evidence regarding the age of the Dolgellau Gold Belt.

Site Name	Summary
Llwyngwril	Llwyngwril is largely a late 19 th and 20 th century ribbon development set out along the main A493 road with some nucleation towards its southern end where the road crosses the Afon Gwrlil, and where the earliest origins of the settlement lie. The houses towards the southern end are mainly terraced while further north they give way to large Victorian detached and semi-detached villas. The Quaker cemetery here is a distinctive historical feature.
Coastal strip, south of Llwyngwril	The three main characteristics, as described above, include the distinctive drystone walls, most of which appear to be late 19 th century, the remains of the WWII camp (which includes a grey, brick blockhouse, rifle range, earthen butts and brick-faced concrete plinths along the coast edge), and the rigid lines of white, static caravans.
Lower Teifi Valley‡	
Ferwig	Ferwig is a historic agricultural landscape lying at the extreme western end of the Teifi valley. Dispersed farms set in fields characterise this area. Many of the buildings are modern and there is some clustering of modern and 19 th century houses at Ferwig village.
Towyn Burrows and Gwbert	The main components of this character area include scrub over wind-blown sand and 20 th century houses, bungalows, caravan parks, golf clubs and yacht parks
St Dogmaels	St Dogmaels is an old, unplanned settlement centred on the remains of a ruined abbey. Houses date mainly to the 19 th century and while many are stucco over stone or brick, a significant number are of banded stone.
Crossway – Glanpwellafon	The extensive Crossway-Glanpwellafon historic landscape character area is overwhelmingly agricultural, with farms ranging from small gentry holdings with Georgian houses to cottages. Hedges on banks bound fields, which are larger and more regular than normal for the lower Teifi valley.
Cippyn	This character area lies at the extreme western end of the Teifi valley and is exposed to westerly gales. Consequently, settlements and woodland are confined to slopes affording some shelter. Stone and rubble banks topped with windswept hedges bound fields.
Tre-Rhys	Situated on a very exposed west-facing coastal slope, Tre-Rhys is a treeless agricultural historic landscape characterised by dispersed farms and fields bounded by low, windswept hedges on high banks.
Newport and Carningli‡	
Nevern Estuary	Consisting of tidal mud flats, reed beds, marsh and scrubby woodland edging the water, the Nevern Estuary historic landscape character area contains few built elements apart from Newport Bridge, an old limekiln and the Pembrokeshire Coastal Path.
Newport	Lying on the southern shore of the Nevern estuary, the small town of Newport is strongly characterised by numerous stone-built 19 th century houses. It is of Anglo-Norman foundation, and the medieval church and medieval castle are still strong townscape components.
Holmhouse-Tycanol	Holmhouse-Tycanol is an agricultural historic landscape character area consisting of relatively large farms set within large, regular fields bounded by stone-faced banks topped with well maintained hedges. Buildings are stone-built and mainly 19 th century in age.

Site Name	Summary
Bryn-henllan	Lying on the north Pembrokeshire coastal plain, Bryn-henllan character area is a combination of hamlets, small farms and fields. The hamlets of 19 th century stone-built houses are now connected by modern housing development. Farms are relatively small, as are the fields which are irregular and bounded by banks topped with hedges.
Goodwick to Aber-bach Coastal Strip	Goodwick to Aber-bach Coastal Strip historic landscape character area comprises high sea cliffs and a narrow band of cliff top. The only buildings consist of Strumble Head lighthouse and former keeper's cottage, and abandoned World War II structures.
Penmaen Dewi	The Penmaen Dewi area occupies the extreme western point of the St David's peninsula. It comprises high sea cliffs backed by open moorland to the summit of Carn Llidi at 180m. Prehistoric remains, including a promontory fort, chambered tombs and field systems lie on the moorland.
Porthmawr	Porthmawr historic landscape character area is a treeless landscape of dispersed farms and fields. Dry-stone walls are the main type of field boundary – hedges are few, and where present are low and windswept. Improved pasture is the main land-use. Camp sites and caravan parks are present. Paired farms situated on the south-facing slopes of Carn Llidi are a feature of this landscape. A wide range of dwelling type is present, with stone being the traditional building material.
Tywyn	The Tywyn character area comprises an area of wind-blown sand inland of Whitesands Bay which was common land until enclosed by an Act of Parliament in 1869. Inland of a dune system close to the coast, the blown-sand is covered with grass. A golf course, hotel, modern houses, car park and other tourist facilities are situated in this area.
Treleddyn - Treginnis	Treleddyn - Treginnis historic landscape character area lies on the western fringes of the St David's peninsula. It comprises high sea cliffs and a treeless agricultural landscape of small fields, tor-like rocky outcrops and scattered farms. Farms are clustered in groups which shelter in the lee of the tors. Buildings are traditionally stone-built and range from sub-medieval houses and Georgian houses to 19 th century cottages. Land-use is a mixture of pasture, arable and rough grazing. Camp sites and caravan parks are present.
Caer Llundain - Caer Ysgubor	Caer Llundain - Caer Ysgubor historic landscape character area comprises the hilly and craggy treeless open moorland part of Ramsey Island, bounded on three sides by high sea cliffs. Remains of prehistoric field boundaries are found in.
Ramsey	Ramsey historic landscape character area is the sheltered, treeless, northeast part of Ramsey Island which has been divided into large fields by dry-stone walls. It includes a 19 th century farm and a landing place. The land is mostly under pasture.
Ynys Selyf - prehistoric fields	Ynys Selyf - prehistoric fields historic landscape character area comprises all of Skomer Island not cultivated in the 18 th and 19 th century. High sea cliffs surround a plateau on which the remains of prehistoric fields and settlements survive as low earthworks and walls. It is treeless landscape. Heavy grazing by rabbits maintains short grass over much of the island.
St Nons - Llandrudion	St Nons - Llandrudion historic landscape character area lies along the southern fringe of the St David's peninsula. It includes high sea cliffs, inland of which lies a treeless landscape of small fields and dispersed farms. Traditionally, buildings are stone-built with most houses dating to the 19 th century. There are several camp sites and

Site Name	Summary
	caravan parks in the area, but the predominant land-use is pasture with some arable land. Hedges, where they survive on the earth and stone boundary banks, are low and windswept.
Middle Mill	Middle Mill historic landscape character area lies in the narrow, steep-sided valley of the Solva River and is centred on a hamlet: Middle Mill. Traditional building material is stone, with most dwellings dating to the 19 th century, but with a scattering of 20 th century houses. A large abandoned quarry lies on the valley side above the hamlet. Land use consists of pasture on the valley bottom and woodland and scrub on the valley sides.

Source: *†*=Gwynedd Archaeological Trust website, *‡*=Dyfed Archaeological Trust website

Summary of landscape/seascape assessment for the Scottish coast relevant to Regional Sea 6

#	Area	Seascape character type	Relative visibility	Sensitivity	Value
26	Firth of Clyde	Outer Firth with Islands	Low	Medium/High	3
27	South Arran/South Ayrshire/South Easay Kintyre	Narrow Coastal Shelf, Remote High Cliffs, Sounds, Narrows and Islands	Medium	Medium	1
28	Corsewall Point-Mull of Galloway	Remote High Cliffs	Medium-High	Medium	1
29	Outer Solway	Remote High Cliffs, Mainland Disposition Coastline/Open Views, Outer Firths	Medium-High	Medium/High	1
30	Inner Solway	Less Developed Inner Firths	Low-Medium	High	3

Source: Scott et al. (2005)

Notes: Based on a wind farm development scenario of 100 turbines, 150m to blade tip, 8km from the shore in a grid covering 25km²

Visibility based on 10km landward, 35km seaward buffer.

Value scores range from; 1=Low value, 5=High value

Summary of landscape/seascape assessment for the Welsh coast relevant to Regional Sea 6

#	Area	Seascape character type	Sensitivity	Value
1	Dee Estuary	ESLR	High	1
2	Point of Ayr to Colwyn Bay	TSLR, TSLU, THLU	Low/Medium	1
3	Rhos Point to Great Ormes Head	THIR, THLU, THMR	Medium	2
4	Conwy Estuary	EHMR, EHLR, EHLU	High	3
5	Great Ormes Head to Puffin Island	THIR, THIU, THLR, THMU, THMR	Medium	3

#	Area	Seascape character type	Sensitivity	Value
6	Puffin Island to Point Lynas	THMR, THLR	Medium	2
7	Point Lynas to Carmel Head	THIR, THLU, THLR, THMR	Medium	3
8	Carmel Head to Holyhead Mountain North Stack	THIR, THMR	Medium	2
9	Holyhead Mountain North Stack to Penrhyn Mawr	THIR, THMR	Medium/High	4
10	Penrhyn Mawr to Pen-y-Parc/Maltraeth Bay	THMR, THLR	High	2
11	Holy Island Straits	LHLR	Medium/High	2
12	Menai Straits	LSLR, LHMR	High	2
13	Maltraeth Bay to Trefor	TSLR, THLR, THMR	Medium/High	2
14	Trefor to Porth Dinllaen	THIR, THMR	Medium/High	4
15	Trwyn Porth Dinllaen to Braich y Pwll/Mynydd Mawr	THMR, THIR	Medium	4
16	Braich y Pwll and Bardsey Island	THIR, THMR	High	5
17	Bardsey Island to Trwyn Cilan	THMR, THLR	High	5
18	Trwyn Cilan to Penrhyn Du [Porth Ceiriad and St Tudwal's Island]	THMR	Medium/High	4
19	Penrhyn Du to Pen-ychain [Abersoch and Pwllheli]	THLR, TSLR	Medium/High	3
20	Pen-ychain to Morfa Dyffryn [Tremadog Bay]	THLR, TSLR	Medium/High	4
21	Porthmadog Estuary	ESMR, ESLR	High	5
22	Morfa Dyffryn to Pen Bwch Point [Barmouth Bay]	TSLR, THMR, THIR, TSMR	Medium	5
23	Mawddach Estuary	ESLR, EHMR	High	5
24	Pen Bwch Point to Upper Borth	TSLR, THMR	Medium	3
25	Dyfi Estuary	ESMR, ESLR	High	3
26	Upper Borth to Newquay [central Cardigan Bay]	THMR, THIU	Medium	1
27	Newquay to Cardigan Island	THMR, THIR	Medium/High	1
28	Teifi Estuary	EHMR, ESLR	High	2
29	Cemaes Head to Trwyn y Bwa	THIR, THMR	Medium/High	4
30	Trwyn y Bwa to Dinas Head [Newport Bay]	THMR	Medium/High	5
31	Dinas Head to Crincoed Point [Fishguard Bay]	THMR, THMU	Medium	3
32	Crincoed Point to Strumble Head	THMR	Medium/High	3
33	Strumble Head to St David's Head	THMR	High	3
34	St David's Head to Ramsey Island	LHMR, THMR	High	5
35	Ramsey Island to Skomer Island [St Brides Bay]	THMR, TSLR	High	4

Source: CCW (2008a, b)

Key: T=Tidal, L=Tidal current – lateral, E=Enclosed estuary or ria, H=Hard rock coastline, S=Soft coastline, I=High (>100mAOD 250m inland), M=Medium (25-100mAOD 250m inland), L=Low (<25m 250m inland), R=Rural, U=Urban, D=Dunes

Notes: Based on a wind farm development scenario of many parallel turbines (160m to blade tip) at 550m intervals, 13km from the shore. Visibility is based on a landward and seaward buffer of 24km.

Value scores range from; 1=Low value, 5=High value

Previous relevant Landscape/Seascape studies

A number of landscape/seascape assessments relating to existing offshore wind farm developments in the Irish Sea have been carried out as part of their Environmental Impact Assessments. The output from these studies is available via the Cowrie Data Service website. Available reports are listed below with their associated title and operator.

Landscape/Seascape assessments for offshore wind farm developments relevant to Regional Sea 6

Site	Report Title	Operator
Walney	Effects of the Visual Landscape at the Walney Offshore Wind Farm	DONG
West Duddon	Seascape and Visual Impact Assessment of the West Duddon Offshore Wind farm	Scottish Power, DONG, Eurus Energy

Source: Cowrie Data Management Website

A3c.3.6 Regional Sea 7

Relevant landscape conservation designations in Regional Sea 7

Site name	Designation	Summary
South Lewis, Harris and North Uist	NSA	A rocky indented coast with wide sandy beaches between rocky headlands, numerous stacks and deep sea lochs. Harris has the highest peaks of the Outer Hebrides.
South Uist Machair		A flat area of machair dune formations and diverse vegetation with lime-rich lochans. Cultivated machair the largest in Scotland, extending 2km inland.
Wester Ross		The largest of all the NSAs, comprising a diverse range of landscapes including the Applecross Forest, Ben Damph Forest, Torridon Mountains and Loch Maree. Along the coast, Gruinard Bay, Loch Ewe and Loch Gairloch present a mixture of beaches, islands, headlands, inlets, woodlands and crofting settlements.
Trotternish		This area extends from Flodigarry in the north to Grealin in the south and includes the Quirang. The coastal edge comprises columnar basaltic cliffs or 'kilt rocks' which have spectacular views over the south of Raasay to the mainland.
The Small Islands		A small archipelago in the inner Hebrides. The four main islands include Rum, Eigg, Muck and Canna, while several other small islands and skerries are also present. Rum is now an important study site for research into the ecology of red deer, while Canna is well known for its populations of puffins and Manx shearwaters.
The Cuillin Hills		The area includes the Black and Red Cuillin Hills, Loch Scavaig and the Island of Soay. These mountains dominate the island seaboard of north-west Scotland.
North West Sutherland		Characterised by a bare, rugged and occasionally mountainous landscape, attributable to Lewisian gneiss geology – one of the oldest known formations in the world. The Clo Mor cliffs near Cape Wrath in the north are the highest on the Scottish mainland.

Site name	Designation	Summary
Morar, Moidart and Ardnamurchan		Extends from the south shore of the Morar Peninsula to include the Sound of Arisaig, Loch Moidart, Kentra Bay and the northern shore of Ardnamurchan. There are numerous unspoilt sandy beaches with mountainous backdrops, the deepest lake in Britain at Loch Morar, and the most western point on mainland Britain at Ardnamurchan Point.
Knoydart		A remote peninsula only accessible by boat or a 26km walk across mountains and moorland. It includes four Munros and several lesser peaks, separated by broad glens, rivers and high lochs.
Kintail		Three long mountain ranges terminate in this area, and it is home to one of Britain's highest waterfalls, the Falls of Glomach. The coastline is dominated by mountains dropping sharply into sea lochs.
Assynt-Coigach		Located in the north-west of Scotland, north of Ullapool. Inland, there are spectacularly shaped steep hills, rising from moorland and lochs. The coastline presents a diverse landscape of inlets, sandy bays, rivers, lochs and native woodland.
Knapdale		Situated on the west coast of Scotland. Its landscape is dominated by the dense Knapdale Forest, covering many hills and providing scenic views across the Western Isles.
Jura		Jura is an island in the Inner Hebrides adjacent and to the northeast of Islay. It is dominated by three steep-sided conical mountains (the Paps of Jura), which rise to 762m above sea level. Jura also has a large population of red deer.
Loch na Keal, Mull		Comprises the sea lochs of Loch na Keal and Loch Tuath, and the several small islands amongst them. A variety of landscapes exist, including island-studded seascape, various cliff forms, hills and woodland.
Lynne of Lorn		Includes the island of Lismore and its surrounding islets and skerries. It presents an island-studded waterway dominated by parallel limestone ridges both on land and partially submerged. These ridges support rich vegetation, varying from green, lush meadows to dense oaks and conifers.
Scarba, Lunga and the Garvellachs		Located to the north of the island of Jura. It includes the islands of Scarba, Lunga, the four Garvellach islands and many smaller islands and skerries. Scarba rises from the sea to a pyramid peak of 449m, while the Garvellachs are smaller and lower in elevation, but sharply angular with vertical cliffs to the north-west. The landscape is visually enhanced by the strong tidal currents which cause water to race amongst the islands.
Glen Affric		An area of varied glen scenery from remnants of Caledonian Pine Forest to heather, blaeberry and open moor.
Loch Shiel		Has the appearance of a deep fjord dissected into a mountainous terrain with lower slopes comprising woodland, grassland or rocky material. The character of the area is enhanced by Eilean Fhianain, the narrows of Linne Gorm and Loch Doilet in Glenhurich.

Site name	Designation	Summary
Ben Nevis and Glen Coe		The variety of scenery throughout the area is witnessed in hills that may be smooth or jagged, rounded or precipitous, grass or heather covered. The glens may contain moorland, meadow, arable or forest, and swift streams or calm lochs. The sea shore may be wooded and bayed as in outer Loch Leven, or fjord-like as in the inner loch and Loch Etive.
Loch Lomond, Argyll & Stirling		Loch Lomond is the largest water body in Great Britain. The loch straddles the highland boundary fault, and thus has a variety of scenery stretching from the lowland character of the south shore to the deeply entrenched fjord-like northern head of the loch at Ardlui. The semi-natural woodlands of the islands are complemented by the plantations on the shore. The summit of Ben Nevis dominates some of the views around the Loch north of Ross Point.
Causeway Coast, NI	AONB	Encompasses 18 miles of coastal scenery including cliffs and headlands broken by the wide sweep of sandy beaches backed by dunes. Volcanic rocks and white chalk eroded by the North Atlantic form geological features including the Giant's Causeway and Carrick-a-Rede. Small harbours, fisheries and farms are found along the coast. A varied wildlife thrives on the offshore islands and rocks, amid the cliffs, sand dunes and hinterland.
Antrim Coast and Glens, NI		The coastline of County Antrim from Ballycastle to Larne and the Glens of Antrim contain some of the most beautiful and varied scenery in Northern Ireland. The area is dominated by a high undulating plateau cut by deep glens which open north and eastwards to the sea. Gentle bays are separated by blunt headlands; exposed moorland gives way to sheltered valleys; wide open expanses to enclosed farmland. Rathlin Island is rich in historical, geological and botanical interest.
Binevenagh, NI		Covers the area between the Roe Estuary and Magilligan, the cliffs of Binevenagh, the Bann Estuary and Portstewart sand dunes. The skyline of the cliffs at Binevenagh makes a breathtaking contrast with the outstanding expanse of Magilligan Strand. The steep, round-topped grassland hills and the sandy shoreline are the dominant features, separated from the rocky shore of Donegal by just one kilometre of sea.

Key: NSA=National Scenic Area, AONB=Area of Outstanding Natural Beauty

Source: CCGHT website, NIEA website, SNH website a

Summary of landscape/seascape assessment for the Scottish coast relevant to Regional Sea 7

#	Area	Seascape character type	Sensitivity	Relative visibility	Value
10	Cape Wrath to Loch Torridon	Enclosed Bays, Islands and Headlands cover most of this area with Remote High Cliffs at the northern tip.	High	Low	4
11	Inner Sound/Sound of Raasay	Sounds, Narrows and Islands. Low Rocky Island Coast represents two small sections at the edges of this area.	High	Low	5
12	North East Lewis	Low Rocky Island Coasts	Medium/High	Low	1
14	The Little Minch	Low Rocky Island Coasts, and Sounds, Narrows and Islands.	High	Low	2
17	Barra	Sounds, Narrows and Islands, Deposition Coasts of Islands and Low Rocky Island Coasts	High	Medium	2
18	West Coll and Tiree, Canna and Rum	Deposition Coasts of Islands, Low Rocky Island Coasts and Sounds, Narrow and Islands.	Medium/High	Medium/High	1
19	Sound of Sleat to Ardnamurchan	Sounds, Narrows and Islands.	High	Medium/High	5
20	Sound of Mull/Firth of Lorn/Sound of Jura	Sounds, Narrows and Islands	High	Low	2
21	West Mull/East Tiree and Coll	Low Rocky Island Coasts with small areas of Deposition Coasts of Islands	High	Low/Medium	2
22	West Islay	Low Rocky Island Coasts with areas of Deposition Coasts of Islands.	Medium/High	Medium/High	1
23	South Mull/Colonsay/West Jura/Sound of Islay	Low Rocky Island Coasts, Sounds, Narrows and Islands.	High	Medium	2
24	West Kintyre/South East Jura and South East Islay	Sounds, Narrows and Islands with a small area of Remote High Cliffs	High	Low/Medium	1

Source: Scott et al. (2005)

Notes: Based on a wind farm development scenario of 100 turbines, 150m to blade tip, 8km from the shore in a grid covering 25km²

Visibility based on 10km landward, 35km seaward buffer.

Value scores range from; 1=Low value, 5=High value

A3c.3.7 Regional Sea 8

Relevant landscape conservation designations in Regional Sea 8

Site name	Designation	Summary
Hoy and West Mainland, Orkney	NSA	Coastal Hoy is made up of soaring cliffs and headlands and the famous stack, <i>the old man of Hoy</i> . The area has a strong visual interrelationship with the west mainland. The landscape is noticeably open due to the lack of trees, and supports abundant relics of former occupation.
South Lewis, Harris and North Uist		A rocky indented coast with wide sandy beaches between rocky headlands, numerous stacks and deep sea lochs. Harris has the highest peaks of the Outer Hebrides.
South Uist Machair		A flat area of machair dune formations and diverse vegetation with lime-rich lochans. Cultivated machair the largest in Scotland, extending 2km inland.
Kyle of Tongue		This area extends from the east shore of Torrisdale Bay in the east, westwards along the coast of Sutherland including Neave Island, Eilean nan Ron and the Rabbit Islands to Port Vasgo in the west, and southwards to include Ben Hope and Ben Loyal.
Foula, Shetland		Foula contributes to Shetland's scenery of the mainland and is characterised by stacks, cliffs, arches and caves.
South West Mainland, Shetland		The southern mainland varies from open cliff coasts to fjord-like indentations. Numerous stacks and small islands give the western seascape a distinctive character.
Muckle Roe, Shetland		Remarkable high red sandstone cliffs make a significant contribution to the wider coastal scene of St Magnus Bay.
Esha Ness, Shetland		Consists of fine headlands, cliffs, skerries and stacks.
Fethaland, Shetland		The roads from Burgo Taing to Greenfield on the northern side of the village of North Roe and the summits of Hill of Sandvoe, Saefti Hill, Heogel of the Moor and Fugla Ness define the southern limit. To the north, the peninsula, Ramna Stacks and Uyea Isle are included in the scenic area.
Hermaness, Shetland		A broad coastal strip from Uyea to Burravoe in Northmavine
St Kilda	NSA, WHS	Comprises the entire archipelago (Hirta, Soay, Boreray and Dun). The landscape consists of steep cliffs, stacks and steep grassy valley slopes. The islands are home to internationally important seabird colonies
Neolithic Orkney	WHS	Cover several important sites on the west mainland including Skara Brae, Maes Howe, the Stone of Stenness and the Ring of Brodgar and adjacent standing stones and burial mounds. The area lies in a wide, open loch basin located with an NSA.

Key: NSA=National Scenic Area, WHS=World Heritage Site

Source: NE website a, SNH website a

Summary of landscape/seascape assessment for the Scottish coast relevant to Regional Sea 8

#	Area	Seascape character type	Sensitivity	Relative visibility	Value
32	East Orkney	Deposition Coasts and Islands	Medium/High	Medium/High	1
8	North Caithness & Pentland Firth	Remote High Cliffs and Mainland Rocky Coastline with Open Sea Views to the west, and Deposition Coastline with Open Sea Views to the east	Medium	Low	1
10	Cape Wrath	Kyles and Sea Lochs and Remote High Cliffs	Medium/High	Low	4
13	Butt of Lewis to Carloway	Low rocky Islands and Coasts	Medium	Low/Medium	1
15	Carloway to Griminish Point	Low Rocky Island Coasts, Deposition Coasts of Islands, Sounds, Narrows and Islands.	High	Low/Medium	4
#	Area	Seascape character type	Sensitivity	Relative visibility	Value
16	West Uists	Deposition Coasts of Islands	Medium	High	1
17	Barra	Sounds, Narrows and Islands, Coasts of Islands and Low Rocky Island Coasts	High	Medium	2
33	Shetland	Islands, Sounds and Voes with small areas of Remote High Cliffs.	Medium-High	Low	1

Source: Scott et al. (2005)

Notes: Based on a wind farm development scenario of 100 turbines, 150m to blade tip, 8km from the shore in a grid covering 25km²

Visibility based on 10km landward, 35km seaward buffer.

Value scores range from; 1=Low value, 5=High value

A3c.3.8 Regional Seas 9, 10 & 11

Regional Seas 9, 10 and 11 are not located within sufficient distance of the coast to impact visually on any coastal location. For all of these areas, and certainly Regional Seas 10 and 11, oil prospecting and offshore wind energy generation is highly unlikely due to inappropriate geology and significant water depths. Given likely future technological developments in these areas, any offshore structures in these Regional Seas are likely to impact on recreational, commercial and ferry traffic, where views of the open ocean may be interrupted by surface infrastructure.

A3c.4 EVOLUTION OF THE BASELINE AND ISSUES

Prior to the development of offshore renewables, offshore developments in UK waters have primarily been in relation to North Sea oil and gas installations where the only representation of such developments at the coast or on land was generally in the form of cable and pipe landfall and associated infrastructure (e.g. former fabrication and maintenance yards such as that at Nigg and Ardersier, terminals). Drilling activity and production platforms have in the

most part (with the exception of Beatrice in the Moray Firth, exploration wells sites off Dorset and Cardigan Bay, structures in the east Irish sea and those associated with the Cromarty Firth rig support industry) been too far from shore to be visible.

The more recent development of offshore renewables, namely offshore wind farms (OWFs), has led to a greater consideration of landscape/seascape issues in addition to other potentially deleterious environmental influences. Current OWFs are restricted on technical and economic grounds to water depths of between 30 and 60m though most current developments are in shallower waters than this (Scott *et al.* 2005). OWFs are therefore likely to be coastal phenomena or are at least more likely to be viewable from the coast.

The principal environmental issue relating to landscape/seascape is by what degree the character and quality of a given view is deleteriously affected by development both in relation to its interaction with the natural (scale, lighting) and built environment (urban, developed, rural), and any other proposed or existing development scenario which may result in cumulative effects.