

Type 2

Coastal Margins



This is a predominantly flat open landscape incorporating diverse characteristics from Cumbria's coastal margins to the urban fringes of coastal settlements.

Where the sea meets the land, sandy beaches and a dune landscape are present, and are very open and grazed. The soft organic and dynamic forms of the shoreline and coast become more stable as you move inland through a geometric mosaic of undulating pasture/moss land and sporadic woodland.

Coastal plains consist of boulder clay topography, large field systems with agriculture being the main land use. Urban developments tend to be strong forms upon a flat open landscape where weak field boundaries are coupled with man-made landforms and a visible industrial heritage.

Sub types:

2a Dunes and Beaches

2b Coastal Mosses

2c Coastal Plan

2d Coastal Urban Fringe

Dunes and Beaches

Location

This sub type is found around the mouth of the Duddon Estuary and south of Seascales. The sub type continues into the Lake District national park and is classified as sub type BI – Dunes and Beaches in the Lake District National Park Landscape Character Assessment.

Key Characteristics

- Hummocky dunes and flat raised beaches
- Beaches of mud, sand, shingle and pebbles
- Semi-natural grassland dominates
- Isolated farms and linear stone villages
- Bounded by small roads leading to minor tracks and paths
- Strong sense of tranquility in some parts

Physical character

This sub type is predominantly underlain by marine alluvium or undulating boulder clay covered by recent windblown sandy drift and soils. The dunes are influenced by tidal movements, coastal forces and weather events. These sculpt the dunes and beaches, changing their profile, position and shoreline orientation. Plants have trapped the sand and established colonies providing stability to the dunes in these landscapes.

Land cover and land use

The seascape comprises hummocky sand dunes, wet hollows and raised beaches and is an interface between the sea and farmland.

The vegetation is a mix of dune grassland and heathland and semi-natural grassland which is occasionally grazed or mown. Access is limited to minor tracks and paths. The landscape type is often bounded by minor rural roads serving a string of linear villages and isolated farms.

There is a strong building vernacular of a substantial stone and cobble construction. Buildings are closely spaced for shelter. Cobble stone banks and walls traditionally form the boundaries of farms and roads with some recent replacement with fences.

Hard sea defence works and tourism development contrast with the soft natural features, vernacular development and rural roads.

Ecology

All the sand dune systems in Cumbria are either of international or national ecological importance. Their damp dune slacks support 50% of the UK's population of natterjack toad, and provide habitat for breeding colonies of eider duck, terns, gulls and great crested-newt. Sand dunes are also important for rare plants, fungi and invertebrates. In Cumbria they form some of the most botanically diverse dune systems in the country. Species include coralroot orchid and dune helleborine which are often found in wet hollows. The largest UK population of coralroot orchid is found at Sandscale Haws and dune helleborine is an UK endemic species confined to a small number of sites.

Historic and cultural character

A very volatile environment frequently remodelled through wave and wind action, though rarely permanently settled evidence of prehistoric land use and occupation sometimes erodes out of the dunes in the form of stone tools and the remains of fires. The remains of ancient beaches (remnants of ancient seas) may be found far inland, complete with shells and beach pebbles.

Perceptual character

The sea is the dominant influence on this rare and dynamic landscape, the mood changing with the tides, season and

weather. The beaches have wide uninterrupted views across open sea, marsh and mudflats or landwards to mountains and fells. These open and exposed seascapes offer wide attractive views. The big skies and natural forces can be exhilarating and evocative with focal points such as Piel Island and Criffell in Scotland adding interest. In contrast the dunes offer shelter and a feeling of intimacy with plants and providing a rich variety of interest. Most enjoy a sense of tranquillity and remoteness. In contrast beaches on the fringes of settlements are more energetic and are often full of human activity.

Sensitive characteristics or features

The wildness and high ecological value of the sand dunes and dune grassland are likely to be sensitive to coastal dynamics, shoreline management responses and changes in management regimes. The small scale traditional coastal villages and farms are sensitive to medium to large scale expansion of modern housing and industry. The open and expansive views to a largely undeveloped horizon both inland and offshore are sensitive to large scale wind energy development. The feeling of tranquillity arising from 'naturalness' of the landscapes is sensitive to unsympathetic development and noisy land uses. The organic form and line along the coastal edge could be sensitive to hard realignment and changes in sea level and coastal dynamics.

Vision

The conservation and enhancement of the wild qualities and ecological value of the dunes and grassland will be a priority, while at the same time the public's freedom to roam will be retained. There will be co-ordinated management for the dynamic dune system and its ecosystem. There will be more interpretation to foster greater respect of the dune system. Important habitats such as those for Natterjack toads will be maintained and any opportunities to increase the extent of or enhance the unique features of the dune system will be taken. Impacts linked to coastal erosion will be monitored and managed. New development will be sensitively sited and designed to reflect the tranquility of the dunes and beaches. Recreational uses will be monitored and managed to minimise negative impacts.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Climate Change and Coastal Processes

- As this is a dynamic and changing seascape natural processes will continue to change the character of the area. The threat of sea level rise and increased storminess as a consequence of global warming is likely to increase pressure for more coastal defences in some areas. In some places the dunes are eroding, in others they are accreting. Evidence suggests that erosion may be related to the loss of sediment supply due to the extraction of sand and gravel or the introduction of hard coastal defences in adjacent stretches of coast. However, erosion could increase due to climatic changes and become severe in some areas resulting in direct biodiversity loss.

Management Practices

- Practices such as tipping, heavy grazing and intensive mowing have tended to tame the wild qualities of the dune grasslands and their ecological interest.
- Scrub can establish quickly in areas that are not appropriately managed by mowing or grazing.

Development

- Energy infrastructure including tidal, large scale wind and pylons could be considered in the adjacent estuary and bay areas. These could have significant effects on natural coastal processes, habitats and the open seascape character.
- Major and medium scale development in adjacent landscapes including coastal defences, energy infrastructure, communication masts and caravan site extensions could compromise the remote qualities of these areas.
- Minor detractors include engineered urban detailing to features such as streams, fences and walls along with neglect of traditional features such as cobblestone banks.
- Development in nearby settlements could influence the need for changes to shoreline management that could influence the character of the area.

Access and Recreation

- Damage due to recreational pressures including wear and erosion by vehicular access, spoiling by litter, fly

tipping, unauthorised camping, fires and disturbance to wildlife.

- Damage to the dune system from the misuse of four wheel drive vehicles, quads, mussel fishers and unrestricted parking is very evident here, leaving the shingle shore and vegetation in an unmanaged state. Plover, tern, oystercatcher and other protected birds are also vulnerable.
- The planned implementation, over the next decade, of enhanced access to the whole of the English coast could result in some disturbance to wildlife in sensitive locations at certain times of the year.
- Coastal access will be improved to support the coastal open access programme. Space will be needed to allow the route to shift in this dynamic area and in response to any future coastal erosion.
- Some poorly designed facilities such as informal car parks can visually detract.
- Large scale tourism developments could detract from the open qualities of the area.

Guidelines

Climate Change and Coastal Processes

- Support the reinforcement of the dune system as a coastal defence and favour 'soft' accretion solutions for coastal protection in favour of less compatible 'hard' coastal defences.
- Ensure coastal defence schemes are carefully planned and based on knowledge of local erosion and deposition processes along the seacoast. They should also minimise visual intrusion, avoid indirect damage to adjacent coast and selectively protect the most valuable wildlife and historic sites.

Management Practices

- Manage dune grassland for low key recreation by reducing grazing levels in areas that are overgrazed, and maintaining a suitable grazing regime, to maximise species diversity and prevent scrub encroachment.
- Encourage the reclamation of improved pasture to dune grassland with restriction of fertiliser and herbicide applications.
- Encourage improvement of species diversity on golf courses and extent of 'rough' grassland by controlled grazing, relaxing mowing regimes, reducing the use of fertilisers and herbicides.
- Conserve and manage traditional features such as

cobblestone banks to strengthen a sense of place. Minimise the intrusion of incongruous features such as fences, tracks, hard coastal defences, engineered drains and channels that compromise the remote and wild qualities of the dunes.

Development

- Ensure large scale development does not cause significant harm to natural coastal processes and habitats.
- Protect the periphery of dunes from the intrusion of large scale development within neighboring landscape types.
- Development should be sited and designed to maintain an open and undeveloped shoreline character.
- Ensure that new facilities are carefully sited and designed to minimise their landscape and visual effects on this undeveloped and natural seascape.
- Provide and replace vehicle restraints to a robust and consistent design sympathetic to the dune character.
- In the Solway Coast Area of Outstanding Natural Beauty, ensure that housing development and associated stone walls utilise traditional materials from locally sustainable sources. Cobble removal from the shoreline should be managed to prevent a negative change in character and changes in function as a natural sea defence.
- Prohibit extraction of sand and gravel from the foreshore.

Access and Recreation

- Coastal access footpaths, areas and facilities should be improved and developed to be compatible with the undeveloped and natural character of this sub type. In line with the Marine and Coastal Access Act consideration should be given to routing coastal access footpaths along appropriate sea defence structures.
- In areas where coastal access will introduce new routes, appropriate access management may be needed in sensitive locations at certain times of the year, to minimise disturbance to wildlife.
- Information should be provided to encourage responsible enjoyment of these undeveloped and natural seascapes, and the importance of not damaging the dune system with unauthorised vehicles.
- Develop coordinated programmes of recreation management including repair and maintenance of

facilities, regulating public access, repairing grassland damaged by vehicles and pedestrians, removal of rubbish, interpretation of wildlife interest.

- Consider relocation of existing car parks away from dune grassland, particularly where these are exacerbating erosion problems and are poorly screened.
- Improve the appearance of facilities such as car parks, picnic areas, toilet blocks, signs, footpath links and boundary treatments. Unify designs in an appropriate coastal vernacular avoiding urban municipal characteristics and using high quality durable materials.

Coastal Mosses

Location

This sub type is found around the head of the Duddon Estuary and to the north and west of Carlisle. The sub type also occurs in the Lake District national park and is classified as sub type B2 – Coastal Mosses in the Lake District National Park Landscape Character Assessment.

Key Characteristics

- Lowland raised mosses
- A mosaic of heath, Willow Carr, Birch scrub woodland and pasture
- High ecological value
- Field shapes vary, bounded by hedges and fences
- Some woodland around the Duddon Estuary
- Picturesque backdrop of the Lakeland Fells/open flat panoramic views
- Distinct raised edges
- Sense of remoteness and tranquility

Physical character

Lowland raised mosses (peat bogs or raised mires) have formed by peat accumulation in poor draining alluvial or boulder clay basins. The mosses rise up to three metres above surrounding levels. These are often associated with post glacial drumlins that form local features in the adjacent landscapes. They are usually found close to the coastal edge or in areas of drained land.

Land cover and land use

These comprise a mosaic of moss, willow carr or birch scrub woodland and pasture. The woodland scrub often forms distinctive edges, particularly in the Solway. Enclosure may be by trimmed hedges or overgrown gapped hedges and fences. Woodland is limited to the upper mosses around the Duddon Estuary.

Field shapes range from the small and irregular in undulating areas to large rectangular fields on flat open mosses.

Settlement is sparse, though some vernacular farm buildings lie on the fringes of the mosses. Large scale peat extraction can be found in places around the Solway. The distinctiveness of the mosses is being weakened and fragmented by encroaching pasture and peat extraction.

Ecology

This is a landscape of great ecological importance, dominated by lowland raised bogs of international and national significance. Most of the remaining raised mire in England lies in Cumbria. Whilst many of the mires have been subjected to peat extraction and drainage there are still extensive areas of relatively intact raised mire and these support communities dominated by Sphagnum mosses and cotton-grasses, whilst drier areas of mire are often dominated by heather or birch and Scot's pine woodland. The drained margins of these mires can support large areas of rush and purple moor-grass pasture. Lowland raised mire supports a range of uncommon and rare species, including the large heath butterfly, variable dragonfly, reed bunting, skylark and redshank.

Historic and cultural character

The mosses have a rich cultural heritage and contain evidence of reclamation, particularly in areas north of the county in the areas held by Holme Abbey. Within the field systems is the preserved evidence of former peat rooms in long narrow enclosures. In general there is good boundary preservation and evidence of both traditional field patterns consisting of small irregular enclosures and later larger more regular enclosures.

Where the mosses are not degraded they have the potential to preserve waterlogged organic archaeological deposits including wood. Consequently, they may contain evidence of prehistoric trackways or other features that do not survive in normal terrestrial environments. They are also important for preserving pollen which allows the past environment and climate to be interpreted and they have previously produced skeletal evidence of past fauna both wild and domesticated.

Perceptual character

This is a rare landscape in both national and Cumbrian terms. The open remnant patches of moss provide a rich note of interest in surrounding agricultural landscapes. The variety of moss plants is colourful and rough textured, contrasting with the smoother improved pasture fields. Despite some peat extraction the mosses are generally peaceful backwaters. The small, yet open and undeveloped nature of the mosses contributes to broader seascape views across the Solway Firth and along the Duddon Estuary. The Duddon Mosses have the benefit of the backdrop of the Lakeland Fells and uninterrupted views along the Duddon Estuary. In the Solway views tend to be limited and discrete, and the remaining uninterrupted views to the sea are important to the sense of remoteness associated with these landscapes. The experience of these landscapes is influenced by the seasons and weather with a calm and tranquil feeling sometimes giving way to a wilder feeling when winds rise and skies darken.

Sensitive characteristics or features

Changes in drainage around the moss land could affect the simple balance of the mosaic landscapes and habitat. The sense of remoteness and naturalness, the rich habitats and presence of birds, and the flat dark and open areas that contrast with green farmland, large skies and seaward views could be sensitive to significant changes in land management and large scale infrastructure development.

Vision

The mosses will be conserved and restored creating a landscape enriched with ecological diversity. Detailed management and restoration projects will extend the mosses and allow their visual and wildlife interest to flourish creating much more diverse landscape and habitat. The small-scale pattern of carr woodland will be retained and proposals for the extraction of peat and extensive commercial woodland planting will face strong opposition ensuring the protection of the hydrology of the peat body and retaining a sense of tranquility.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Climate Change and Coastal Processes

- Increased rainfall could provide opportunities to improve the condition of existing areas and reinstate areas of moss. Active mosses can help with carbon sequestration and mitigate against climate change.
- Those that are found close to the coastline could be susceptible to periodic inundation from sea water if sea levels rise significantly.

Management Practices

- Agricultural reclamation and improvement has traditionally been the main pressure on this rare landscape. Even where the moss is not directly removed, adjacent drainage works can cause the edges to dry out encouraging scrub development with a consequent risk of fire. Dessication can also cause land shrinkage, drops in height and road deformation.
- Large-scale peat cutting and coniferous planting also weaken the character of this landscape by obscuring or destroying mosses. A number of Cumbria's lowland mosses are still subject to commercial peat extraction, especially around the Solway.
- Unmanaged burning can damage the surface vegetation and the overall hydrological integrity of the bog.

Development

- The introduction of energy infrastructure and associated tall and vertical structures such as pylons and large scale wind turbines can impact greatly on the character of these expansive open areas. The introduction of pylons with regard to the grid upgrade could act as an incentive to developers looking to site tall structures which could obscure important views.

Access and Recreation

- The planned implementation, over the next decade, of enhanced access to the whole of the English coast could result in some disturbance to wildlife in sensitive locations at certain times of the year.
- Coastal access will be improved to support the coastal open access programme. Space will be needed to allow the route to shift in this dynamic area and in response to any future coastal erosion.

Guidelines**Climate Change and Coastal Processes**

- Strategic projects should be developed to ensure the carbon sequestration potential of the raised mires is enhanced. Development, in and around the landscape, that could significantly reduce this potential should be avoided.
- Adopt environmentally sensitive management of the mosses including maintenance of a high water table, phased cutting and burning of heather, preventing damage to moss growth by overgrazing and poaching, control of scrub encroachment, restricting liming, fertilizer, and herbicide and pesticide treatments.
- Allow drained and managed mossland to revert back to semi-natural wetland. This may include 'blocking' of adjacent drainage systems, restricting grazing, appropriate wetland planting or seeding, removal of hedgerows and scrub.
- Resist improvement or introduction of drainage systems that might threaten the dampness of the mosses.

Management Practices

- Protect the mosses from further commercial peat cutting and agree schemes to ensure worked areas are restored to wetland.
- Resist burning as a management measure as this can damage the integrity of the peat body.

- Manage existing birch and alder carr woodland by a mixture of natural regeneration and coppicing, excluding stock, and thinning to prevent shading of water areas.
- Restrict new planting, particularly conifer woodlands to maintain an open semi-natural character.
- Remove tree and shrub growth where appropriate to support the restoration of the mosses.

Cultural Features

- Manage hedgerows in a traditional way involving a cycle of hand laying and trimming.
- Restore fenced boundaries to hedgerows involving replanting and renovation of gappy overgrown hedges. Discourage introduction of fences to replace or 'gap up' hedgerows.

Development

- Protect the small-scale open character of the mosses from inappropriate development, specifically large vertical developments such as large scale wind turbines and pylons.
- Avoid fragmentation of the natural patterns of the mosses and wildlife links by infrastructure development.

Access and Recreation

- In areas where coastal access will introduce new routes, appropriate access management may be needed in sensitive locations at certain times of the year to minimise disturbance to wildlife.
- Support the roll out of coastal access and encourage sensitively sited coastal access and recreational infrastructure. Coastal access footpaths, areas and facilities should be improved and developed to be compatible with the undeveloped and natural character of this sub type. In line with the Marine and Coastal Access Act consideration should be given to routing coastal access footpaths along appropriate sea defence structures.

Coastal Plain

Location

This sub type is found extensively around the Solway Firth, and to a lesser extent around the Duddon Estuary, Walney Island and Cartmel Sands. The sub type continues into the Lake District national park and is classified as sub type B3 – Coastal Plain in the Lake District National Park Landscape Character Assessment.

Key Characteristics

- Flat and slightly undulating coastal plain
- Long and narrow fields in undulating areas with larger fields in flat areas
- Intersected by shallow rivers and watercourses
- Hedges form main field boundaries
- Scarce tree cover
- Predominantly pasture with some arable in drier areas
- Frontiers of the Roman Empire - Hadrian's Wall World Heritage Site is a significant archaeological feature in the Solway
- Historic field pattern strongly linked to settlements

Physical character

The flat coastal plain is largely based on fluvial drift, marine alluvium and undulating boulder clay on Triassic mudstones and sandstones. The land is up to 15m AOD. This coastal landscape is subject to coastal erosion and flooding.

Land cover and land use

Improved pasture predominates in this agricultural landscape. In flatter areas the coastal plain is divided into large square fields surrounded by a linear matrix of drainage ditches. In undulating areas fields are often long and narrow and around historic settlements are derived

from the pattern of medieval common field farming in strips. In drier areas, particularly on boulder clay, arable crops are grown producing a patchwork of colour and texture. Rougher and marshy pasture with rushes or gorse scrub occur around the moss, saltmarsh fringes and along watercourses.

Proximity to the sea is a major influence on land cover. Field division is primarily by hedges with or without cobblestone banks (kests), but replaced with fences, particularly on more marginal farmland. On the exposed coasts hedges tend to be sparse, sometimes with gorse, and tree cover is often sparse. Thicker hedges and wind sculpted hedgerow trees are scattered in more sheltered areas. Further inland small copses or shelterbelts, associated with farms or churches are prominent features along with the thicker hedges. Birch woodland occurs on the edges of the mosses providing shelter and enclosure. Around the head of the Solway and Levens estuaries small coniferous and deciduous plantations are found, associated with large estates.

Coastal villages tend to be vernacular in character and nucleated and closely knit with stone walls for shelter. They are usually the most prominent feature on the skyline. Inland, buildings are more spread out and softened by hedges. Roads and railway lines, both operational and disused, form strong linear features that cut across the plains. These features are reinforced by scrub and woodland growing alongside.

Telecommunications masts and pylons provide prominent and contrasting vertical features in some of the areas. In parts of the Solway, the coastal plain adjacent to the mosses are characterised by 20th century military sites that include airfields, radar and radio installations. These are isolated developments and do not dominate the overall agricultural character of the landscapes.

Ecology

As this is some of the most agriculturally improved land in Cumbria, ecological interest is largely confined to small areas of remnant lowland raised mires and coastal and floodplain grazing marsh habitats. The former are mostly wooded with birch or Scot's pine, with only small areas of open mire vegetation. These woods are often important for red squirrel. The coastal and floodplain grazing marsh habitats support large flocks of wintering barnacle geese, pink-footed geese and whooper swan, particularly around the Solway. This agricultural landscape is also important for farmland birds, particularly barn owl and corn bunting, with most of the few remaining Cumbrian populations of the latter species occurring in this landscape type. The grazing marsh supports a range of plants including creeping bent and marsh foxtail. In wetter field margins greater reedmace, reed canary grass, water plantain and sedges are supported. The lower reaches of both the River Esk and River Eden flow through this landscape and both are important for otter and Atlantic salmon. The banks of these rivers also provide nest sites for sand martins.

Historic and cultural character

The coastal plain has a highly nucleated settlement pattern with evidence of the late enclosure of former common arable outfields. The settlements are characterised by vernacular buildings constructed of local stone with red sandstone, a feature of the north of the county. Many of these buildings date to the seventeenth and eighteenth centuries. In general the character of this landscape type has strong and discernable links to its past development. On the Solway Plain salt pans can be found. Clay built buildings are a characteristic feature too. Amongst the characteristic archaeological remains are former sea defences but the most significant archaeological feature is Hadrian's Wall, which, west of Carlisle, runs through the Solway Plain. Some present villages such as Burgh-by-Sands occupy the sites of former Roman forts along the Wall. Other cultural features include a monument to Edward I.

Perceptual character

The impression varies according to distance from the open sea and the local topography. Open, flat, larger scale landscapes with big expansive skies and long views of the sea and Lakeland and Scottish Fells contrast with undulating enclosed and intimate landscapes. Land cover patterns tend to be simple with farms and copses standing out as prominent features. Marginal farmland on the fringes can appear neglected. Outer coastal plains are strongly influenced by the sea with wind sculpted hedges and trees providing a sense of exposure to natural processes. Here experiences are influenced by the seasons and the weather and can leave you feeling tranquil and calm when the weather is good to vulnerable and exposed in stormy and poor weather. All areas have the appearance of peaceful backwaters relatively unspoilt by 20th century development.

Sensitive characteristics or features

The medieval field patterns and traditional scale vernacular villages are sensitive to village expansion and changes in land management. The open character of the exposed coastal farmland is sensitive to development. The open views across adjacent marshes and flats out to sea and inland to the Lakeland Fells are sensitive to large scale infrastructure development. Wind sculpted hedges and trees and traditional kest hedges are sensitive to changes in land management.

Vision

This working landscape is well maintained and supports a diverse range of wildlife habitats.

The impacts of agricultural intensification will be minimised and traditional farming practices will be supported resulting in the restoration and management of key features such as hedgerows, hay meadows, semi-natural and native woodland and historic field patterns. Any opportunities to restore semi-natural wetland will be exploited enriching wildlife and visual diversity. The contrasting open fields enclosed by bold masses of woodlands will be strengthened while the scattered pattern of isolated mature trees and clumps will be reinforced and conserved. Some diversification of farmland to new crops and recreational uses will

be accommodated and encouraged where it will benefit local character. Hadrian's Wall is a key feature within this type and will be conserved and maintained. Some infrastructure and energy developments will be accommodated in the landscape should they be designed carefully and sited appropriately.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Climate Change and Coastal Processes

- Areas close to the sea could be affected by rises in sea level, increased storminess, coastal erosion and the proposals of shoreline management plans.

Management Practices

- The switch from hay making to more intensive silage production changes the nature and biodiversity of the landscape.
- The drainage and improvement of wetland, remnant mires, grazing marshland and floodplain reduces the varied land cover and biodiversity. It can also reduce the remnant mire potential for carbon sequestration.
- The removal and neglect of hedges and move away from traditional maintenance practices erodes the distinctive character.
- Loss of farmland wildlife could be due to more intensive farming practices.
- Loss of woodland can reduce the biodiversity and interest of the landscape.

Development

- Proposals linked to tidal energy could lead to new infrastructure in the coastal plain which could affect the open and distinctive character of the landscape.
- This area could be affected by an upgrade to the national grid resulting in new pylons. These are needed to support future energy infrastructure and provide a stable and secure energy supply in Cumbria. New, larger pylons could affect the open character of the landscape.
- Developments such as new industrial scale farm buildings could impact on this type if they are introduced in large numbers or, if they lead the way for proposals for similar developments.

- Farm diversification could lead to an increase in the use of farm land for horse grazing and equestrian uses could result in changes to field patterns and boundaries. An introduction of stables and ménages could cause incremental change the character of the farmed areas.

Access and Recreation

- Over the next decade the planned implementation of enhanced access to the whole of the English coast could result in some disturbance to wildlife in sensitive locations, at certain times of the year.
- Coastal access will be improved to support the coastal open access programme. Space will be needed to allow the route to shift in this dynamic area and in response to any future coastal erosion.
- Visitor numbers could increase in these areas linked to the roll out of coastal access, and attractiveness of adjacent National Park areas. This could lead to the need for better management of sensitive parts of the landscape.

Guidelines

Climate Change and Coastal Processes

- Restrain development in areas susceptible to flooding to allow the land to possibly be grazed, drained or returned to wetland should areas of this landscape become liable to flooding due to climate change.
- Encourage Shoreline Management Plan responses to be sensitive to undeveloped nature of parts of the seascape.

Natural Features

- Allow suitable marginal land, which in the past has been reclaimed to agriculture to revert to mossland, saltmarsh or wet grassland.
- Reduce further drainage works that would result in the loss of wetland, hedges or trees and encourage sensitive ditch management to support wetland enhancement.
- Maximise opportunities to improve floral diversity along verges, dykes or ditches through reprofiling banks, extending clearance cycles, working short stretches to allow recolonisation and restricting herbicide use.

- Reinforce existing woods by appropriate management, natural regeneration, and exclusion of stock and restocking of plantations.
- Plant new woodland belts to ameliorate existing conifer plantations, enhance significant views and reduce the visual dominance of transmission lines.
- Consider the planting of willow coppice or other energy crops on farmland that avoids grazing marshland habitats and raised mires.
- Plant new hedgerow trees to replace maturing stock using indigenous species, or tagging selected saplings avoiding obstruction of attractive open vistas.
- Undertake small scale native woodland planting concentrated around villages and farmhouses to form visual islands on the coastal plain and soften the forms of new farm buildings.
- Encourage small scale woodland planting along field margins to develop ecological corridors and link with hedgerows.

Cultural Features

- Restore fenced boundaries to traditional hedgerows involving replanting and renovation of gappy overgrown hedges.
- Discourage the introduction of fences to replace or gap-up hedgerows.
- Manage hedgerows in a traditional way involving a cycle of hand laying and trimming.
- Restore and maintain locally distinctive boundary treatments such as cobblestone and turf hedge banks.

Development

- Minimise the impact of major developments such as large scale wind energy, roads, pylons, masts and infrastructure linked to offshore developments by careful siting to maximise screening from public view and high standards of design and landscape treatment. Open and exposed sites and those that affect key views should be avoided, especially where development would become the dominant feature.
- Reduce the impact of new farm buildings by careful siting, breaking down mass, choice of sympathetic colours and non-reflective finishes and screen planting.
- Encourage horse grazing and equestrian uses to respect field boundaries and field patterns. Stables and other facilities should be sited sensitively with appropriate landscape mitigation to prevent the erosion of the pastoral farmland character.

Access and Recreation

- Support the roll out of coastal access and encourage sensitively sited coastal access and recreational infrastructure. Coastal access footpaths, areas and facilities should be improved and developed to be compatible with the undeveloped and natural character of this sub type.
- In areas where coastal access will introduce new routes appropriate access management may be needed in sensitive locations at certain times of the year to minimise disturbance to wildlife.

Coastal Urban Fringe

Location

This sub type is found around Flookburgh, Ulverston, Walney and Millom in the south of the county and around Silloth and the coastal edge between Workington and Maryport in the north and west.

Key Characteristics

- Low lying flat land
- Urban influences linked to tourism development, derelict buildings and major transport routes
- Strong man-made landforms on coastal edges
- Mixed land cover of mown grass, pasture, scrub and semi natural grassland
- Weak field patterns.

Physical character

These are generally flat or gently undulating land largely based on fluvial drift, marine alluvium and undulating boulder clay on Triassic mudstones and sandstones. The land is up to 15m AOD.

Land cover and land use

The areas characterised by urban, industrial and leisure related development, derelict and unused buildings and transportation routes. In parts of the Duddon Estuary and Morecambe Bay the fringe areas are adjacent to coastal beaches and mudflats. These along with agricultural land, playing fields and recent man made landforms such as slag banks associated with former industrial sites provide an open character to the seascape.

Land cover is typically mixed; predominantly pasture, but sometimes mown grass or semi-natural grassland and scrub. Fields are small and patterns are weak. Field

division is often by hedges or fences. Hedges are sparse and gappy where they occur.

The areas along the coastal edges are usually hard and man-made characterised by roads, promenades, sea dykes and sea defences. Roads, railways, large scale wind turbines and pylons cut across the seascape around settlements. Holiday parks and redundant buildings and sites are frequently found, as are unmaintained fences and hedges. The urban characteristics of adjacent areas are increasing in this seascape with extension to business parks and leisure facilities, particularly around Carlisle and Barrow.

Ecology

This landscape supports a surprising wealth of wildlife, often, but not exclusively, associated with former industrial sites. Areas of iron slag are often colonised by herb-rich grasslands, which can support uncommon plants and wildlife. Previously developed land around Workington and Maryport support a significant population of small blue butterfly and purple broomrape. Great crested newts and natterjack toads are frequent in damp ground and pools within this landscape; and where it adjoins areas of saltmarsh and intertidal sand and mudflat areas can be used as a high tide roost by wintering and passage waders and wildfowl such as whooper swans, pink footed goose and barnacle goose. Hodbarrow Lagoon is of importance for breeding and wintering birds and scarce aquatic plants such as spiral tasselweed. Previously developed land also supports mosaic habitats of pen land, grassland, scrub, pools and heathland.

Historic and cultural character

There are rich Haematite deposits in Low Furness (Lindal), Millom (Hodbarrow), Egremont (Florence Mine) and west Cumbria. Monks of Furness Abbey first

exploited Furness Iron “industrially” in the 12th/13th century. There are rich coal deposits in west Cumbria. Further afield it was heavily involved in the slave trade between west Africa and the West Indies and American Colonies. From these it gained rum, sugar, cotton and tobacco. Cumberland rum butter, Kendal mint cake and Kendal snuff have all derived from this trade routed primarily through Whitehaven and Lancaster.

Whitehaven is important as the first classically planned new town in England, dating from the late 17th century, but there were others that came later along the west Cumbria coast in response to maritime trade and industry. These include Maryport, Harrington, Silloth, Askam, Barrow and Millom. Barrow-in-Furness is a Victorian model town, planned on grid pattern, utilising the natural harbour and local Haematite deposits for building steel ships. Iron-master, John Wilkinson built the first iron ship on the River Severn, having first experimented with a small version on Witherslack Mosses. He was a leading light of 18th century industrial revolution and was involved with Backbarrow Iron Furnace. Other features of John Wilkinson’s iron legacy can be found around Lindale and Castle Head House, which he built.

The cultural heritage of this zone is rich and highly variable from area to area. Near Silloth 20th century military remains are a significant feature in the landscape. Around Barrow the landscape is marked by former industrial manufacturing and mining sites. On Walney Island there is much below-ground evidence of prehistoric habitation and land use.

Perceptual character

This landscape is busy with many uses and a variety of land cover. It can have an air of neglect where buildings and land have become run down. It has a strong association both with the urban character of nearby villages, towns and cities and the open and undeveloped adjacent landscapes. Roads, railways, buildings and derelict sites detract from the unique attraction of sea views, beaches and water. Open and less developed parts provide an important link to interesting sea views and expansive skies. In these parts the time of day, seasons and weather can influence the character and experience of the landscape, especially when looking out to sea.

Sensitive characteristics or features

The high ecological value of some former industrial sites is sensitive to changes in land management and development. The views across adjacent landscapes to open sea and expansive skies are sensitive to development that would enclose or interrupt these views.

Vision

The qualities of this landscape and seascape will be enhanced, restored and improved as important settings for recreation. In order to foster strong local ownership and distinctiveness, improvements will be made regarding community involvement. The rural and natural qualities of these areas will be reinforced and there will be the development of a bold landscape structure to unify disparate uses. This will be achieved through the conservation of rural green areas and a reduction in the impact of development in prominent locations. Where possible, derelict and old industrial sites will be restored through positive development and management schemes, reflecting any historic or biodiversity value and landscape works will soften coastal edges, protect significant views and improve recreation facilities. In the farmed hinterlands hedgerows will be restored, natural grassland and scrub fringes will be conserved and extended and woodland will be created in more sheltered locations.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Climate Change and Coastal Processes

- Sea level rise and increased storminess may lead to pressure for further hard sea defence works to mitigate against flooding and other consequences.

Management Practices

- The farmed hinterland can sometimes suffer by neglect of agricultural management that may be a reaction to fragmentation of holdings or public access pressures.

- Mown grassland and large areas of concrete and tarmac weaken the natural distinctiveness provided by scrub woodland and grassland.

Development

- Fragmented and sporadic development has a negative influence on the character of this landscape. New housing and business development could reinforce a sporadic characteristic.
- The development of brownfield land could erode important habitats that have developed, particularly on sites that have been left vacant and neglected for some years.
- Farm diversification could lead to an increase in the use of farm land for horse grazing and equestrian uses could result in changes to field patterns and boundaries. An introduction of stables and ménages could cause incremental change the character of the farmed areas.
- The coastal edge is attractive to visitors and interest for recreational and tourism development is likely to continue in these areas.
- Energy infrastructure could be introduced and the national grid could be upgraded resulting in new, larger pylons and substations. This could affect the character of some of the less developed parts of the coastal urban fringe.

Access and Recreation

- Over the next decade the planned implementation of enhanced access to the whole of the English coast could result in some disturbance to wildlife in sensitive locations at certain times of the year.
- Coastal access will be improved to support the coastal open access programme. Space will be needed to allow the route to shift in this dynamic area and in response to any future coastal erosion.
- These areas provide good opportunities for large numbers of people to appreciate the surrounding landscapes and seascapes, particularly from promenades coastal roads. Interest in such activities is likely to continue to be popular.
- Recreation pressure on the coastal edge has led to an extension of mown grass areas or hard urban edges.

Guidelines

Climate Change and Coastal Processes

- Encourage Shoreline Management Plan responses to be sensitive to undeveloped nature of parts of the seascape and encourage coordinated policies for coastal protection that helps avoid piecemeal actions.
- Ensure that areas under threat from climate change have adequate defensive measures in place whether through managed retreat, soft 'accretion' solutions, re-wetting of the areas or hard defences if absolutely necessary.

Natural Features

- Conservation and management of coastal grassland by for example relaxing mowing regimes, managing public access, implementing restoration programmes and controlling scrub encroachment.
- Restore and reclaim derelict airfields, industrial sites and mining areas to remove eyesores, enhance open mosaic and semi-natural habitats and to make a positive contribution to the landscape.
- Encourage the protection and enhancement of habitat for the small blue butterfly along the coast between Workington and Maryport.

Cultural Features

- Retain and manage hedgerows in a traditional way encouraging restoration and maintenance of locally distinctive and historic boundary treatments such as cobblestone and turf hedge banks.
- Discourage introduction of fences to replace or 'gap-up' hedges and restore fenced boundaries to traditional hedgerows.
- Where a dilapidated pattern of fields may no longer function as part of a productive farm unit and their value in serving present day needs is questionable consideration should be given to removing some field boundaries to create open 'commons', and creating new woodlands that reflect topographic variation and help define public and private spaces.

Development

- Protect 'green' areas from sporadic and peripheral development. Support the retention and development of 'green gaps', green infrastructure and ecosystem services approaches in Local Development Frameworks where they would help maintain distinctive, undeveloped characteristics.

- Encourage new development on brownfield and vacant sites to protect and enhance habitats, such as those found in Workington and Maryport that support the small blue butterfly.
- Minimise the impact of new development by careful siting, design and high standards of landscape treatment particularly where public views are affected.
- Minimise the impact of major developments such as large scale wind energy, roads, pylons, masts and offshore infrastructure by careful siting in less sensitive areas, maximising screening from public view and following high standards of design and landscape treatment. Open and exposed sites and those that affect key views should be avoided, especially where development would become the dominant feature.
- Encourage horse grazing and equestrian uses to respect field boundaries and field patterns. Stables and other facilities should be sited sensitively with appropriate landscape mitigation to prevent the erosion of the pastoral farmland character.
- Establish new woodland belts or thick hedgerows along the edges of developments to soften their impact, provide a backcloth, define limits of urban expansion and integrate isolated development.
- Manage and restock existing woodland and hedgerow screens.
- Unify detailing such as street furniture, lighting and signing respecting any local distinctiveness and historic identity.
- Unify boundary treatments favouring locally distinctive elements such as cobblestone walls or stone and turf banked hedges.
- Upgrade existing rights of way and other paths with appropriate surfacing, waymarking, gates, gaps, bridges, planting, removal of eyesores and enhancement of views.

Access and Recreation

- Support the roll out of coastal access and encourage sensitively sited coastal access and recreational infrastructure. Coastal access footpaths, areas and facilities should be improved and developed to be compatible with the undeveloped and natural character of this sub type.
- In line with the Marine and Coastal Access Act consideration should be given to routing coastal access footpaths along appropriate sea defence structures.
- In areas where coastal access will introduce new routes appropriate access management may be needed in sensitive locations at certain times of the year to minimise disturbance to wildlife.
- Seek to improve the network and enjoyment of rights of way and other paths particularly circular and linking routes while protecting neighbouring land and sensitive habitats.
- Establish new planting to provide shelter, enclosure, interest and direct views.