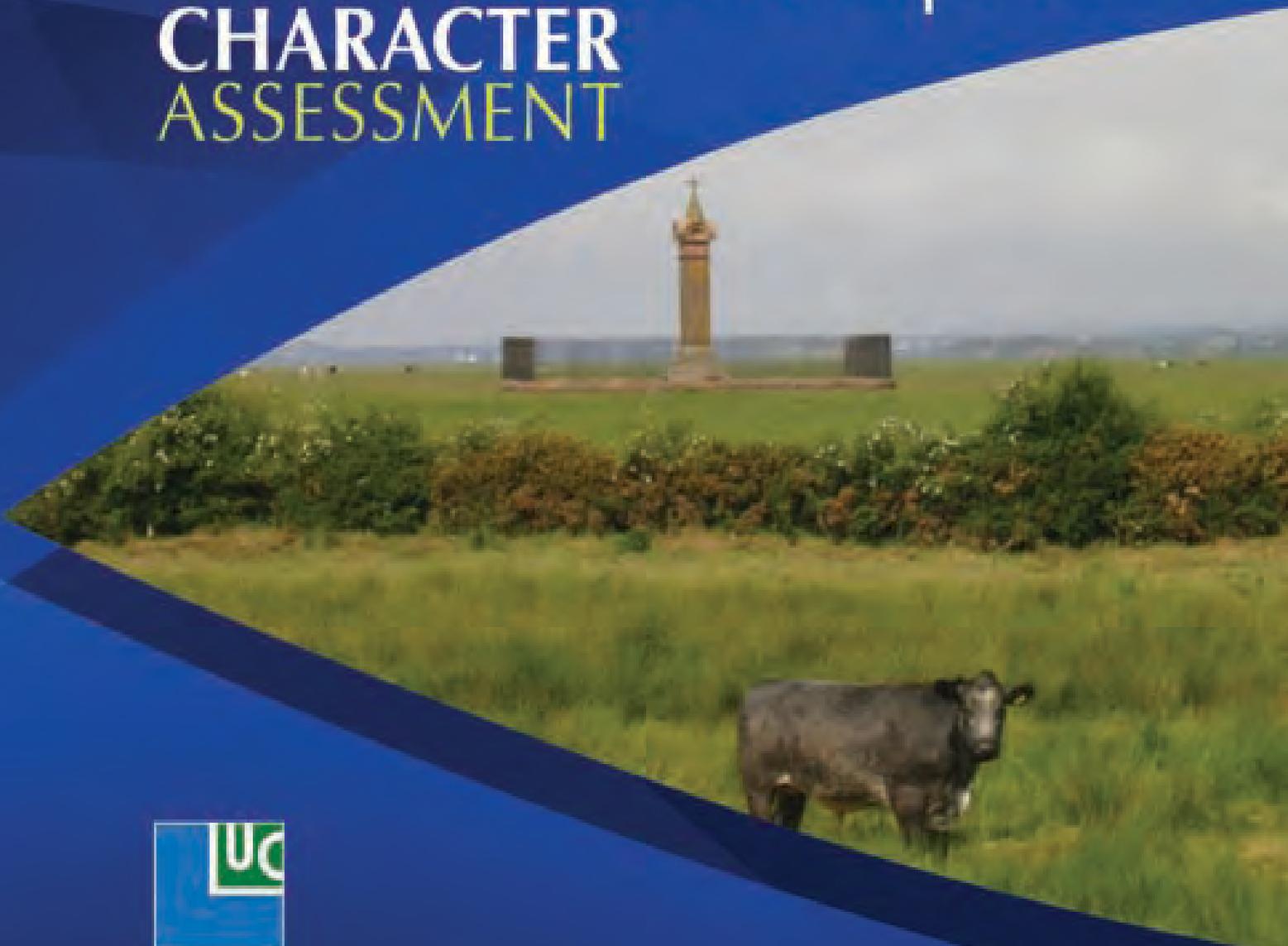


The Solway Coast Area of
Outstanding Natural Beauty

Landscape AND Seascape CHARACTER ASSESSMENT



Prepared for the Solway Coast AONB Partnership by
Land Use Consultants, November 2010

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1 INTRODUCTION

Commissioning details

- 1.2 Land Use Consultants was commissioned to “undertake a landscape and seascape character assessment for the AONB and its setting, updating and improving the existing study.”
- 1.3 The project was guided by a Project Steering Group, consisting of a number of partner organisations including Natural England, the AONB and Cumbria County Council. The lead AONB officer and other AONB officers, as well as volunteers for the AONB contributed to work on the project.

Purpose of the assessment

- 1.4 The purpose of the study is to “inform the management of the areas and to be available for use by the partners, stakeholders and communities.” The study provided an important opportunity to update and to widen the scope of the existing landscape character assessment.
- 1.5 There are a number of factors which led to the need for an updated landscape and seascape character assessment (LSCA) for the area. These included the publishing of the *Countryside Agency and Scottish Natural Heritage (2002) Landscape Character Assessment: Guidance for England and Scotland CAX 84*, the influence of the *European Landscape Convention*, the need for an assessment which integrates with national and local authority work, the requirement to acknowledge present and anticipated forces for change, including change to the climate and human adaptations to this, and change which have occurred across the area since 1997.
- 1.6 The *European Landscape Convention (ELC)* came into effect in the UK in March 2007 and is adopted and promoted by the Council of Europe. The ELC definition of landscape is all embracing: “*Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*”. The new AONB-wide LSCA recognises the importance of all landscapes and seascapes, and includes appropriate guidelines for their protection, management and future planning.

Study area

- 1.7 The AONB lies in the northwest of England, to the north of the Lake District National Park. The AONB covers a total area of 115 square km.
- 1.8 The study area includes the extent of the AONB, but also considers those areas of similar or matching landscape and seascape character around it, so that it can be seen where landscape/seascape character areas extend over the boundary, as well as those areas of land and sea which constitute the ‘setting’ of the AONB.
- 1.9 The study area falls largely within Cumbria, with a small area to the northwest falling within Dumfries and Galloway. A map of the AONB is provided in **Figure I**, indicating the wider regional context, the AONB boundary and local authority areas.

The purpose of the Solway Coast AONB

- 1.10 The purpose and concepts behind AONBs and the Solway Coast AONB in particular are set out in the *Solway Coast Area of Outstanding Natural Beauty Management Plan 2009-2014 (2009)*. The Solway Coast AONB was designated in December 1964, in recognition of the quality of its landscape and its significant historic and scientific interest¹.
- 1.11 The primary purpose of the AONB designation is to conserve and enhance the natural beauty, encompassing the three following aims:
- conserve natural beauty;
 - recreation will not be an objective of designation but AONBs should be used to meet the demands for recreation as far as this is consistent with the conservation of natural beauty and the needs of agriculture, forestry and other users; and
 - in pursuing the primary objective of designation, account should be taken of the need to safeguard agriculture, forestry, other rural industries and of the economic and social needs of local communities.
- 1.12 The Solway Coast AONB is one of England’s smallest AONBs, comprising two narrow coastal strips stretching along the Cumbrian shore of the Solway Firth between Carlisle and Maryport. The distinguishing qualities of the AONB are the combination, sequence and contrasting scales of landscape types and the elements within them: the vast open expanse of sea, river channels, saltmarsh and intertidal flats; sand dunes, coastal mosses and areas of more sheltered agricultural hinterland. The character of the Solway Coast landscape is intricately linked to its coastal setting, its historical cultivation and land use and as a ‘frontier’ between Scotland and England. The deeply rural setting of the AONB, which due to its isolation has remained relatively unchanged and undisturbed in character, contributes to the strong sense of remoteness which is fundamental to the character of the area. The special scenic qualities of the AONB relate to the wide, open and distinctive views across the Solway Firth to the Scottish coast and the distinctive hill of Criffel, and to the northern Lakeland Fells that rise above the Solway basin to the south.
- 1.13 The Solway Coast Area of Outstanding Natural Beauty Management Plan 2010-2015 (2009) provides a Statement of Significance in the Introduction which describes the special qualities of the AONB:
- 1.14 “*The Solway Coast AONB contains a unique mosaic of coastal and pastoral landscapes set among a wide and low lying coastal plain and lying under the ever-changing drama of the dominant sky. The landscape is further enriched by the twice daily influence of the tide that in turn reveals the rich birdlife which uses the estuary all year round.*”²

¹ AONB (2009) Solway Coast Area of Outstanding Natural Beauty Management Plan 2009-2014

² Ibid p. 4

- I.15 “The area is steeped in heritage from archaeological evidence of the Stone Age, through to Roman remains associated with Hadrian’s Wall to the airfields of WWII.”³
- I.16 “The Solway Coast contains many locally, nationally and internationally important features some centring on landscape and others on wildlife and heritage. Many features are protected by designations and collectively they indicate the high value of the area and underpin the need to protect and enhance it for future generations.”⁴

Uses of the landscape and seascape character assessment

- I.17 The landscape and seascape character assessment is a resource and source of information for all, including land owners and tenants, developers, land managers, conservation bodies, Natural England, the AONB Partnership, and Cumbria local authorities. The information contained within it provides the evidence base and underpins planning policy. It also helps in understanding what people value about the AONB, through the workshops which were held with interested stakeholders, records of which are included in **Appendix 5**. It should be read in conjunction with appropriate land management plans, including the *AONB Management Plan*. The guidelines can be used for the following purposes:
- informing the development and implementation of AONB management plan policies;
 - acting as a tool for spatial planning;
 - guiding land owners, land managers, tenants and developers in appropriate land use, management and development proposals;
 - assessment of planning applications;
 - understanding landscape and seascape sensitivity to change;
 - developing future landscape and seascape strategies;
 - helping prioritise land and coastal management;
 - responding to and informing other strategies;
 - engaging partners in understanding character of the AONB;
 - monitoring change;
 - informing the North West climate change adaptation project; and
 - forming part of the Cumbria Landscape Toolkit.

Approach and methodology

- I.18 The approach to the study followed the methodology set out in Countryside Agency and Scottish Natural Heritage (2002) *Landscape Character Assessment: Guidance for England and Scotland CAX 84*. A number of studies were available to inform the work, in particular the Solway Coast Area of Outstanding Natural Beauty Management Plan 2010-2015. These studies helped to ensure that this new and updated landscape/seascape

assessment reflects current aims and objectives for the area, as well as current planning policy. Relevant studies are listed in **Appendix 2**.

- I.19 The landscape and seascape characterisation included the following stages:
- desk study of maps, existing landscape character assessments and other available information;
 - overlaying of layers of mapped data using GIS;
 - identification of draft landscape types and character areas;
 - testing of this through field work;
 - further testing and information gathering through workshops to enable input from a wider audience;
 - updating and finalising the draft characterisation, with AONB and steering group involvement;
 - setting out the forces for change and appropriate guidance to manage change, informed by the workshops and in consultation with the steering group;
 - consultation by the AONB Partnership on the document with statutory bodies;
 - finalising the LSCA, and launch on the AONB website.
- I.20 The Countryside Agency’s guidance⁵ identifies three main levels of assessment:
- national and regional scale (typically at 1:250,000 scale);
 - local authority scale (typically at 1:50,000 or 1:25,000 scale); and
 - local/AONB scale (typically at 1:25,000 or occasionally at 1:10,000 scale).
- I.21 The new AONB LSCA was undertaken at 1:25,000 scale, and fits into the existing hierarchy.
- I.22 As recommended in the guidance, the AONB LSCA integrates with other LCA work which exists at various levels, ensuring consistency and interpretability. The landscape/seascape character assessment also integrates information on the natural and historic environments, including reference to geodiversity, ecological designations, habitats, flora and fauna, as well as the historic and cultural interest of the area as described in the *Cumbria Historic Landscape Characterisation Project*.
- I.23 The classification was informed by research and field surveys undertaken by landscape architects to help identify landscape types and boundaries between areas. GIS was used as a tool to overlay many different layers of information to help with the identification of area. These included maps of geology, soils, topography, water features, designated landscapes and habitats, landscape character units from the National Character Map of England and those

³ Ibid p. 5

⁴ Ibid p. 4

⁵ Countryside Agency and Scottish Natural Heritage (2002) *Landscape Character Assessment: Guidance for England and Scotland CAX 84*

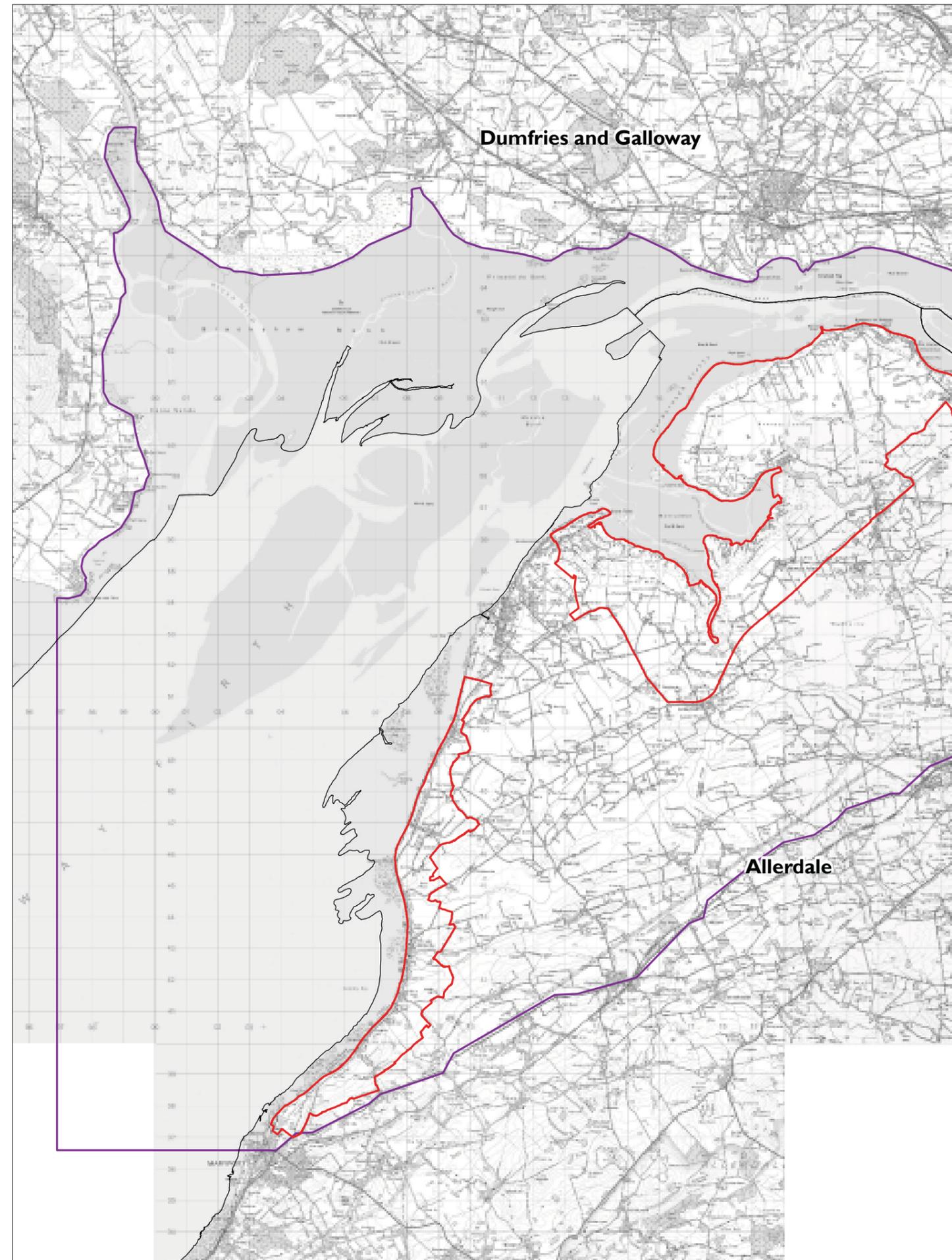
described by the *Cumbria Landscape Character Assessment*, as well as units developed through the historic landscape character study. From examining map overlays, areas of coincidence between boundaries became apparent. This is explained, for example, by the fact that the underlying rock types and subsequent geomorphological processes, including glaciation, influence the soils which overlie it, in turn influence drainage, vegetation, land use and settlement pattern. A change in landscape type is therefore often coincident with a change in geology, soils or topography. The GIS provides an updatable resource of information, complementing and supporting the written text.

- I.24 The Countryside Agency's guidance recommends consultation and the need to involve those who live and work in their landscapes. The involvement of the project steering group, the lead AONB officer and other AONB staff, as well as volunteers for the AONB helped to achieve stakeholder and local authority buy in, and to capture local detail. A workshop was held for invited audiences allowing local people and stakeholders to input into the process, a record of which is included in **Appendix 5**. This information was fed into the assessment enabling it to be finalised.

Report structure

- I.25 The report is structured as follows:
- **Section 1** is an introduction;
 - **Section 2** sets out background about the development and evolution of the landscape and seascape;
 - **Section 3** sets out future issues and forces for change;
 - **Section 4** introduces the landscape/seascape classification;
 - **Sections 5 and 6** describe the landscape and seascape character types and areas in the AONB under the headings of:
 - seascapes/intertidal landscapes; and
 - lowland landscapes.
 - **Section 7** describes the setting of the AONB and sets out some guidelines to manage change.
- I.26 The appendices list information sources and show how the landscape classification fits with other studies.

- **Figure 1: Solway Coast AONB and Regional Context**



2 DEVELOPMENT AND EVOLUTION OF THE LANDSCAPE AND SEASCAPE

Introduction

- 2.2 This chapter provides background information upon the development and evolution of the landscape and incorporates updated information from *The Solway Coast Landscape*⁶. It is supported by a series of themed maps, illustrating the factors which combine to influence landscape character. These are **Figures 2-10**.

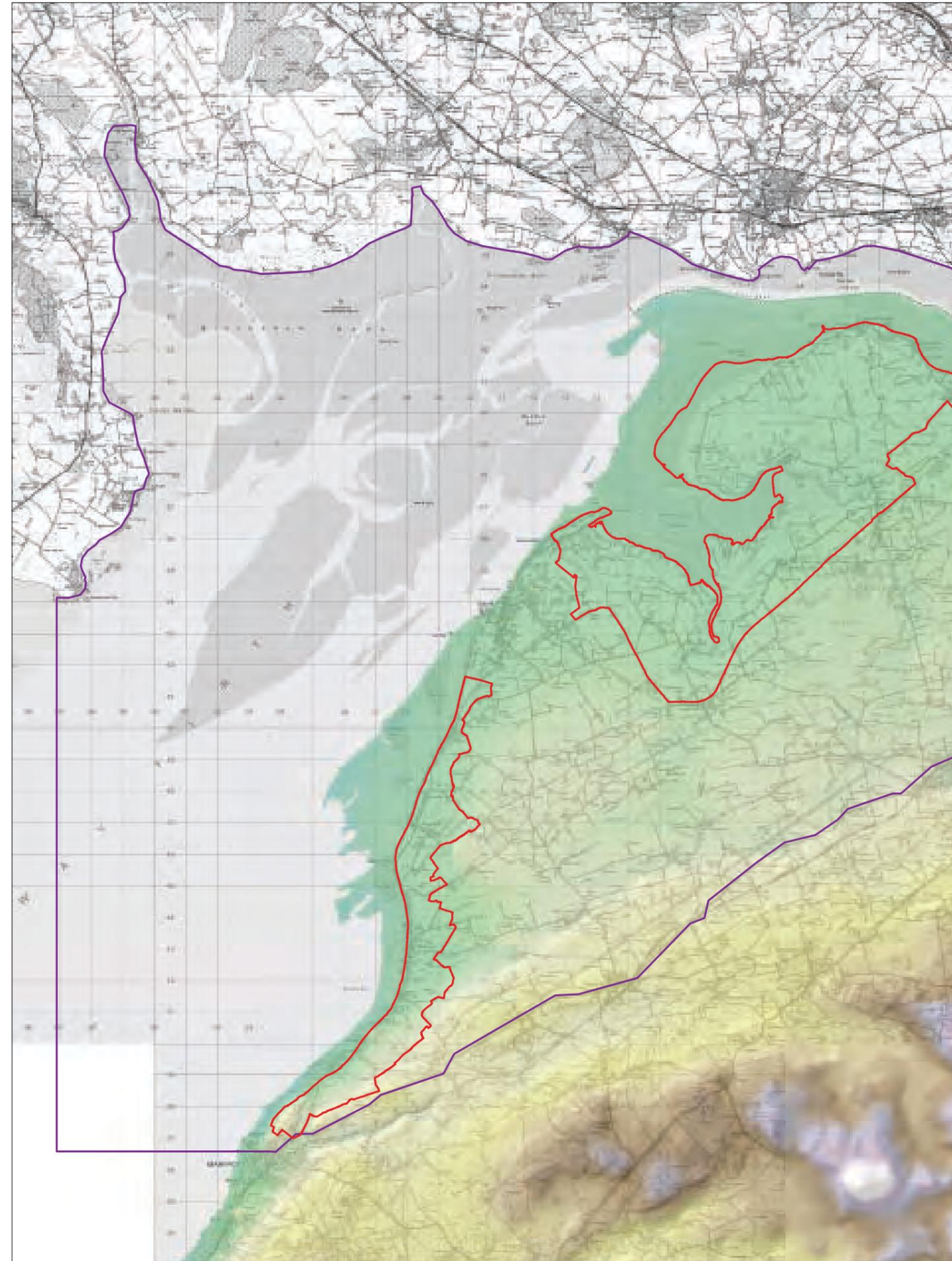
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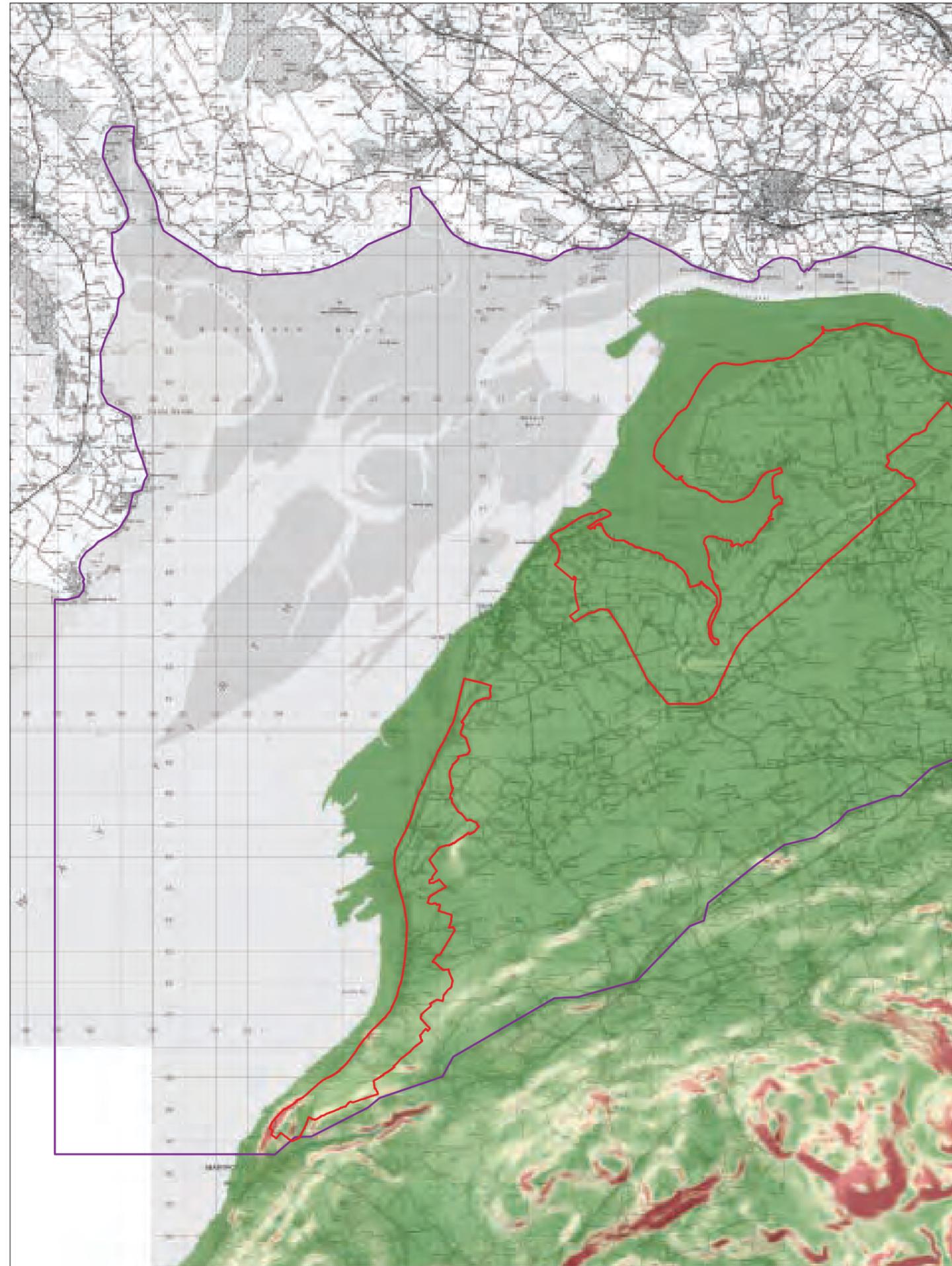
- 2.3 The Solway Coast AONB is a relatively small but distinctive area comprising a mosaic of coastal and farming landscapes, including raised beaches, lowland raised mires, sand dunes, saltmarshes and intertidal flats. The Solway Coast AONB lies within a basin to the south of the Solway Firth, the large intertidal estuary separating England and Scotland. The landscape is diverse and dynamic, shaped by the effects of past glaciation and by the continuing moderating influences of the coastal climate.
- 2.4 The AONB covers 115 sq km, including 59 km of coastline. The large area of surrounding intertidal sands and flats of the Solway Firth provide a rich wildlife habitat of international importance, and an attractive coastal setting to the area. The importance of this setting is expressed in the foreword to the *Solway Coast Landscape*:
- 2.5 “The expanse of the Solway – ‘the broad mirror of the Firth’ as described by Walter Scott – forms an impressive backdrop to the flats, marshes and dunes which characterise the AONB coast. The Firth is itself offset by distant views of the granite hills of Dumfries and Galloway and the Lakeland Fells.”⁷

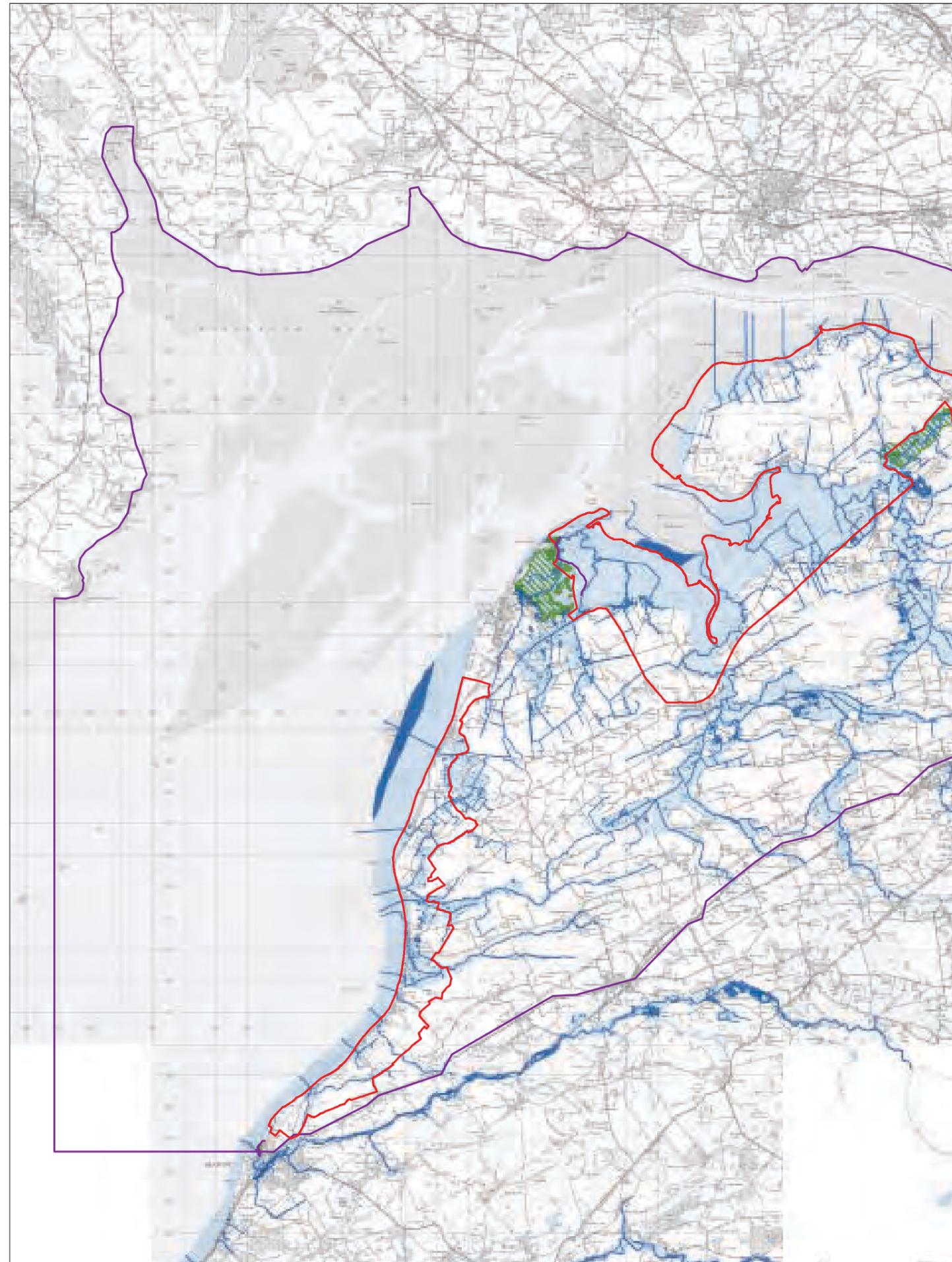
⁶ Countryside Commission (1995) *The Solway Coast Landscape*

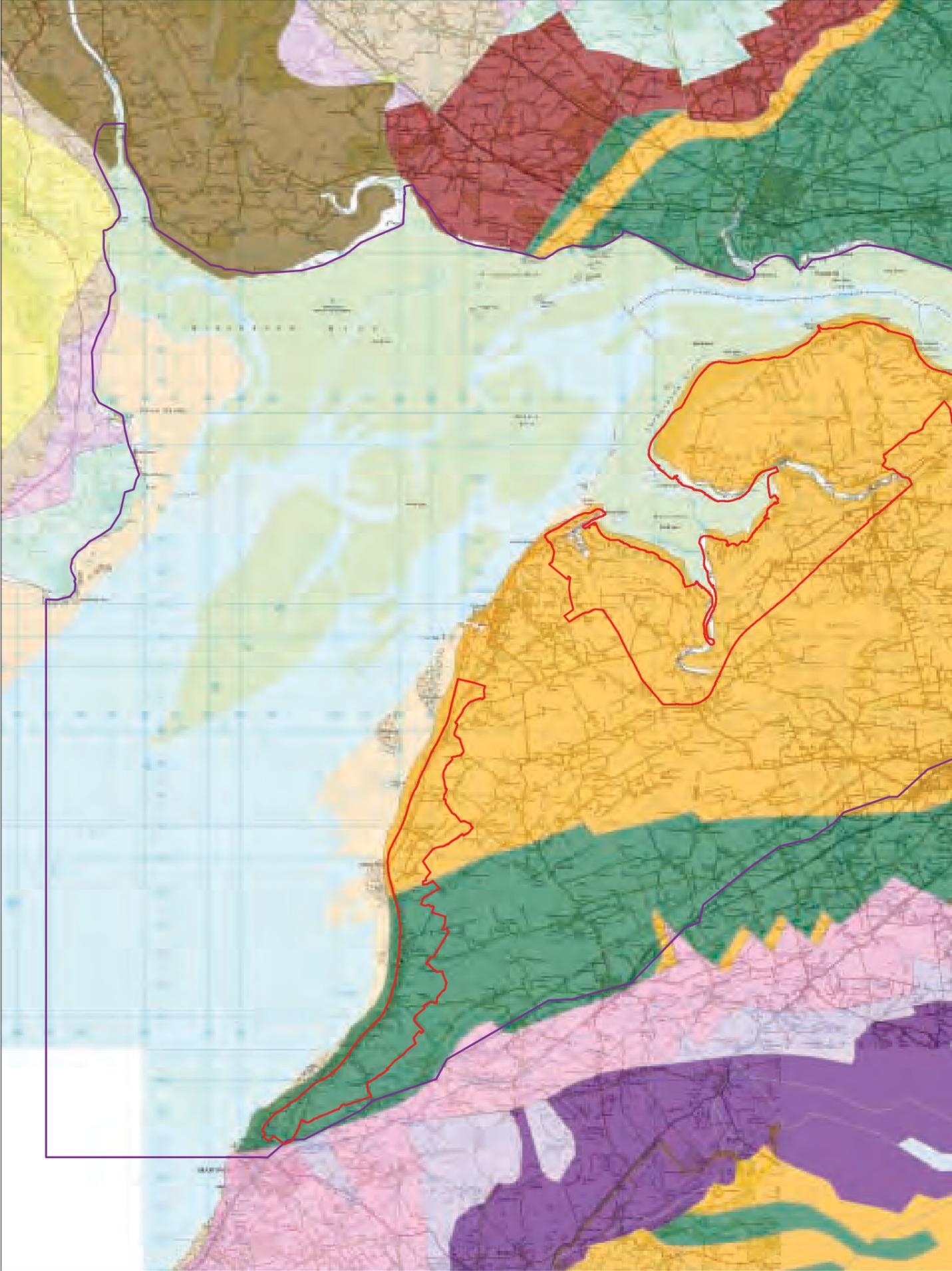
⁷ *Ibid* p. 3

- 2.6 The inland parts of the AONB are characterised by low, open and often windswept coastal plains, which contrast with the Cumbria high fells to the south and the more rugged coastline of the Dumfries and Galloway to the north. The sense of remoteness, preserved by the relative isolation of the area from large towns, together with the distinctive combination of coastal margins, mosses and rural agricultural landscapes, form the defining features of the Solway Coast landscape.
- 2.7 The Solway Coast was designated in 1964 in recognition of the outstanding qualities of the landscape and its considerable historic and scientific interest. There is a national, as well as a local, interest in its conservation and management.







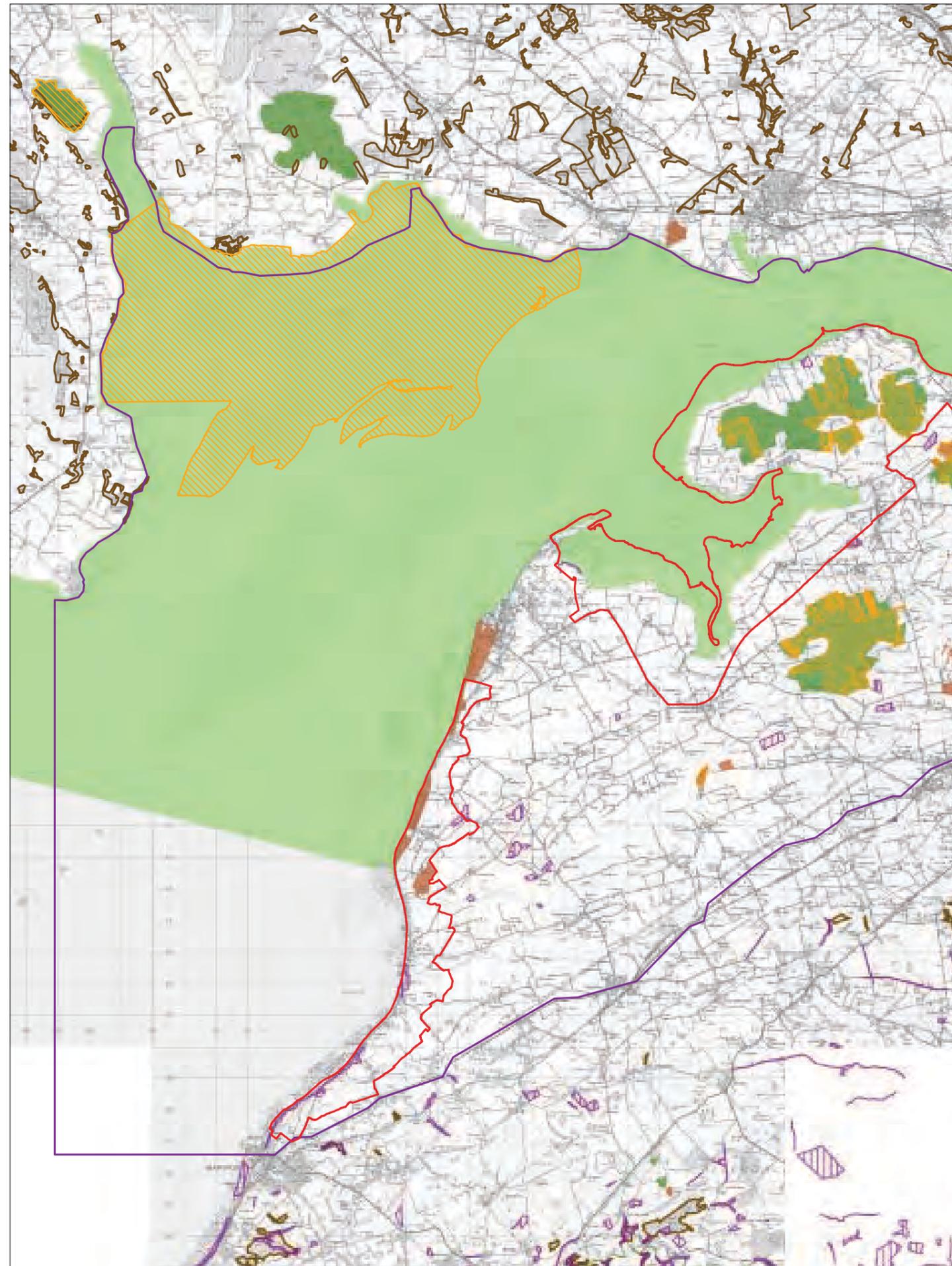


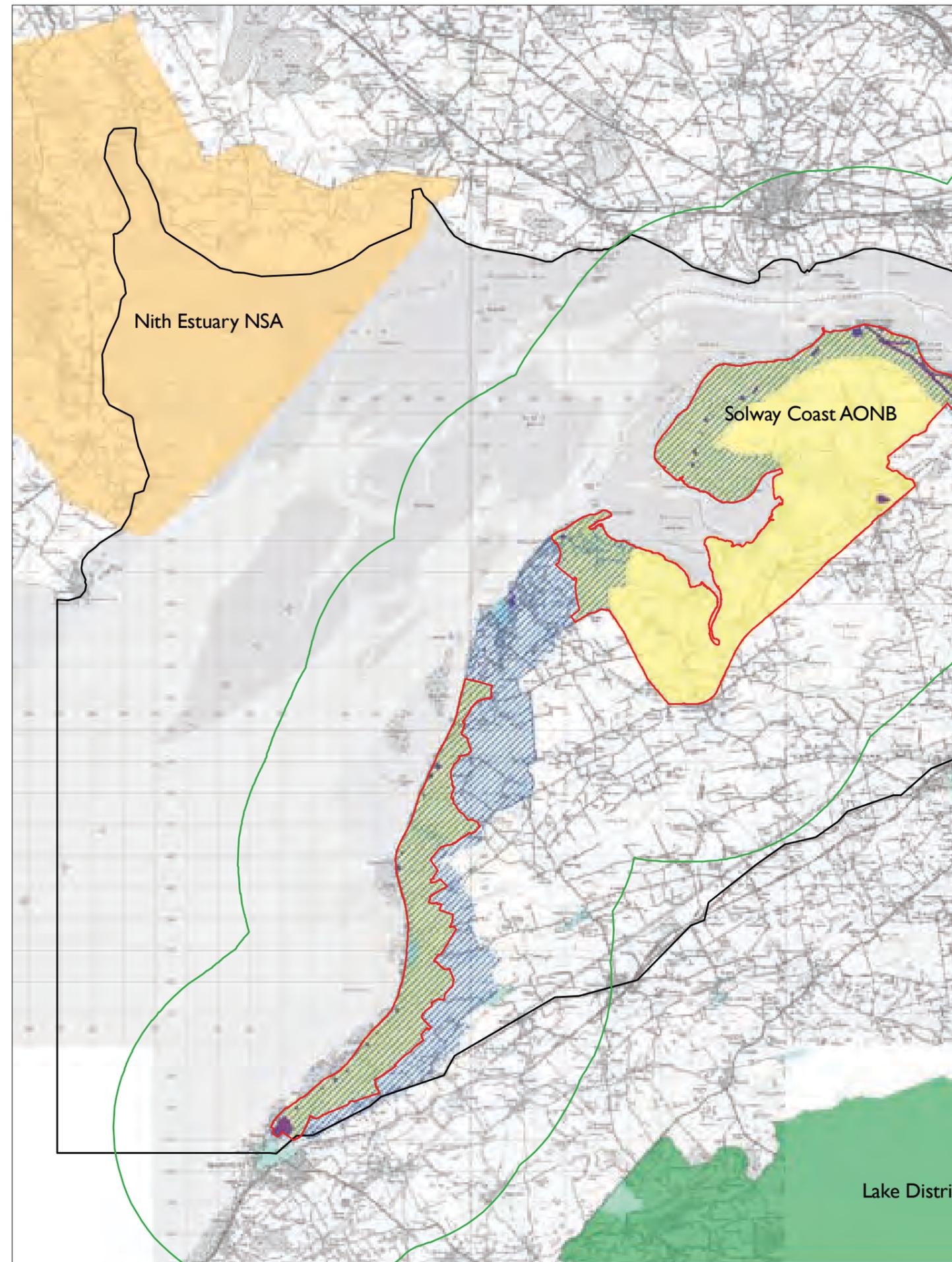
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PHYSICAL INFLUENCES

- 2.8 The simple and subtly changing landforms within the AONB reflect the effects of glacial and post-glacial erosion and deposition on the shaping of the landscape. The landscape has, in turn, influenced the pattern of settlement, constraining the activities of the early settlers and the ways in which they utilised the natural resources of the area.

Geology

- 2.9 The Solway Coast AONB is entirely underlain by the New Red Sandstone of the Triassic period, which overlies older layers of coal-bearing rocks of the Carboniferous period. The area which is now the Solway Basin was formed by the erosion of the weaker Permo-Triassic and Jurassic rocks during the Tertiary period and further modified by the movement of ice-sheets during the Quaternary glacial periods. During the last (Devensian) period of glaciation significant depths of till were deposited across the area by the British-Irish Ice Sheet. This deep mantle of glacial deposits has limited the exposures of 'solid' rock across the area, with the only outcrop occurring in the coastal cliffs north of Maryport and at Rockcliffe. It has also resulted in the underlying rock formations having a limited influence on the form of the landscape.
- 2.10 The surfaces of the till deposits were moulded into drumlins as ice flowed around the north Lake District hills and into the Solway lowlands. These characteristically ovoid glacial hills are reflected in the distinctive landforms found locally across the Solway plain, including the Cardrunk Peninsula at Rogersceugh and Drumburgh. The dominant orientation of the drumlins shifts from approximately due north in the Vale of Eden, swinging round to the west into the central Solway Plain and eventually to the southwest towards the Irish Sea coast. Moraine deposits to the west of Carlisle also exhibit evidence of re-working into drumlin forms, where ice flows changed direction as the ice mass in the Southern Uplands assumed greater influence (over the Lake District / Vale of Eden dispersal centre). The low drumlins and ridges form distinctively undulating scenery across the landscape of the study area surrounding the AONB. Esker formations – sinuous mounds of sands and gravels deposited by sub-and englacial streams – are also a feature of the area. They are associated with a complex of ice contact zone features around Holme St. Cuthbert on the periphery of the AONB. This complex includes an ice contact delta formation, with eskers and dead ice features (including the impressive kettle-hole now filled by Tarn Dub) to the northwest⁸. It is believed that these deposits relate to a later phase of ice lobe advance across the Solway from the northwest.
- 2.11 Evidence of the changes in sea level (rising with glacial retreat at the end of the last glacial period and slowing falling as the land rose after shedding the weight of the vast ice sheets) and which at one point brought most of the area of the AONB below sea level, can be seen in the raised beaches that follow the western coastline and the marine deposits underlying the peat

⁸ Livingston, S.J., O' Cofaigh, C., and Evans, D.J.A. (2008) 'Glacial geomorphology of the central sector of the last British-Irish Ice Sheet,' *Journal of Maps*, 2008, 358-377

bogs on Cardurnock Peninsula. A submerged forest on the foreshore at Beckfoot, occasionally exposed at low tide, is evidence of a period of lower sea level during the early Holocene.

Coastal deposition and erosion

- 2.12 The intertidal flats and marshes of the inner Solway Firth form one of the largest and most important areas of intertidal habitats in Britain, exceeded in size only by Morecambe Bay and The Wash. The estuarine system of flats and marshes is a dynamic one, with shifting channels and phases of erosion and deposition. Sand is the predominant substrate, although there are areas of mud and silt as well as a number of boulder-strewn areas, known as 'scaurs'. The rate of deposition and erosion has varied over the centuries. For example, Rockcliffe Marsh apparently did not exist in the 1400s, while Burgh Marsh is today much smaller than it was in the 1800s.
- 2.13 The river channels in the firth are also continually moving, illustrated dramatically by the River Eden which on 1880 maps is shown following a course close to the shore still facilitating navigation to the jetty of Port Carlisle, which was opened in 1823. By the end of the decade the channel had moved offshore and silt had been deposited around the port.
- 2.14 Grune Point marks the western extent of the mudflats and saltmarshes. Between Grune Point and Maryport the coast is directly exposed to the sea and a northerly longshore drift. In contrast to the low energy tidal regime of the inner Solway, this western section is characterised by high wave and tidal energy moving larger sediments such as gravels. At low tide rippled sand flats and river channels are exposed, overlain by scour beds and reefs near low-tide lines. The foreshore consists of sand and shingle beaches along most sections with a limited stretch of bedrock outcrops north of Maryport. Grune Point itself is a shingle bar extending out into Morecambe Bay. It is fed by beach materials from the south and although it is growing in length, it is relatively fragile and under threat of erosion in the vicinity of Skinburness.
- 2.15 A fragmented sand dune system extends along the coast from Grune Point to Maryport Golf Course. These dunes have been altered considerably by human activity. The dune system naturally accretes during periods of calm weather and erodes during extreme weather conditions. The most undisturbed and extensive area of dunes lies between Wolsty Bank and Dubmill Point. Raised gravel beaches from periods of higher sea-levels have also been identified along the coast between Bowness-on-Solway and Anthorn and behind the dunes between Grune Point, Beckfoot and Swarthy Hill.
- 2.16 Between the 1860s and the 1970s, millions of tonnes of colliery waste, together with iron and steel slag, were tipped onto the foreshore between Whitehaven and Maryport. The sea has progressively eroded this material over the years and transported it to the north adding to the beaches up to Silloth. Tipping has now stopped, but although the effect of foreign materials on the beaches between Maryport and Grune Point, such as slag, brick and concrete, has reduced over the years by the grinding down action of waves, they are still present on the upper foreshore.

- 2.17 Coastal processes were also disrupted during the recession of the 1930s when the Maryport sea wall and promenade was constructed at the foot of Sea Brows. This increased the effects of erosion immediately to the north, particularly affecting Maryport Golf Course and the area of the salt pans opposite Swarthy Hill. Informal gravel extraction has continued to affect the foreshore of the AONB in places which in turn may be affecting the rate and type of erosion and deposition along the coast to the north. Major tidal events, such as those in the 1950s, 1960s (when 20m of dunes were removed at Mawbray Banks) and 1997, demonstrate how dynamic the Solway Coast environment can be. Such events can still occur, and indeed may become more likely as the effects of climate change take hold.
- 2.18 Today, the pattern of erosion and deposition has seen the continuing erosion of areas adjacent to the golf course and the salt pans, with relative stability along Allonby Bay. The use of groynes and concrete sea defences have been used to check erosion at Dubmill Point and further north, and the construction of coastal defences at Silloth and Skinburness have affected shoreline erosion up the coast. Between Mawbray and Beckfoot, the erosion of the sand dunes is continuing and there have been attempts to reduce erosion by erecting sand trays to extend out to the beach from the foredunes. At Mawbray and Wolsty approximately 20m of dunes have been retained through these measures.

Soils

- 2.19 The surface geology of glacial till and the pattern and processes of coastal deposition has created a mosaic of different soils across the area. Small pockets of well drained sandy loams derived from glacial till of the Newport Association are found along the western coast of the Solway Plain. Marine alluvium of the Rockcliffe Association surrounds river estuaries and occurs in areas associated with saltmarshes on the western coastal edge. Calcareous sands occur on the dunes, with dune heath occurring where the sand gives way to boulder clay. Acidic peaty soils formed on boulder clays and acidic sands occur in areas relating to the mires on the Cardurnock Peninsula and the Salta, Drumburgh and Glasson Mosses. The low-lying mosses found in the area have peaty or brown earth soils which support heath vegetation communities. Reclaimed valley and floodplain mires of the Altcar Association of soils occur in a narrow band to the southwest of Abbeytown.

Drainage

- 2.20 The area is predominantly based on well drained soils and is dissected by a number of rivers. The River Waver, to the south of Morecambe Bay, flows through a shallow floodplain of drift deposits into the bay. The River Wampool also runs into Morecambe Bay in a channel through Whitrig marsh and is tidal in its lower reaches. In the east of the study area, the River Eden enters the inner Solway Firth at Rockcliffe, following the shifting Eden Channel that stretches across the north of the study area.

Present day climate

- 2.21 The maritime influences of the estuary have an important effect on the climate of the Solway Coast area. The climate is relatively temperate in

relation to the Lakeland Fells to the south, although harsh winters with hard frosts, mists and fog occur regularly. The influence of the southwesterly wind on the landscape can be seen in the characteristic windswept trees in exposed areas between Silloth and Maryport. In these areas the land lies at right angles to the prevailing wind from the sea, and there is an absence of trees adjacent to the coast. Hedgerows have suffered from exposure and salt-laden winds. Near the coast the hedgerows are gappy and dominated by gorse, while hawthorn becomes the dominant species progressively inland. The extreme eastern areas of the AONB, in the vicinity of Burgh-by-Sands and Beaumont, are protected from exposure to the wind to a greater degree both by the intervening Cardrunk Peninsula and a more strongly rolling landscape. This has resulted in denser hedgerows and a greater occurrence of well-formed hedgerow trees.

Natural features

- 2.22 Many of the most characteristic features of the AONB relate to its coastal location and the results of the physical and ecological succession from the open sea and river channels, through foreshore and saltmarshes to sand dunes and low cliff features. The combination and occurrence of these elements varies considerably, adding to the diversity and distinctiveness of the coastline.

Scaurs and pebble patches

- 2.23 Isolated collections of pebble and gravel storm ridges, boulder beds and scaurs are found both on the foreshore between Maryport and Silloth and scattered throughout the tidal areas from Moricambe Bay to Port Carlisle. The scaurs are particularly noticeable features at low tide.

Intertidal sand and mudflats

- 2.24 Sand and mudflats cover approximately 90 per cent of the foreshore area and by virtue of their sheer size and visibility form the dominant character type of the Inner Solway coast at low tide. They stretch from the English to the Scottish coast and are dissected by river channels which are constantly changing position. The mudflats retain water from the outgoing tide and as a consequence reflect sunlight over a large area.



Figure 2.1: Intertidal flats at Moricambe Bay

Beaches

- 2.25 Sandy beaches are limited to west-facing areas between Maryport Golf Course and Grune Point and to a small area associated with the River Wampool adjacent to Anthorn. They occur below the pebble band of the upper foreshore and stretch to the mean low-water line. The sand is mainly derived from the underlying bedrock, New Red Sandstone, and as a consequence is matt and dark red/brown in colour.
- 2.26 Pebble and shingle beaches occur as a narrow band on the upper foreshore adjoining the mean high-water level. They coincide with an increase in the gradient of the foreshore and are primarily composed of rounded pebbles. A fairly continuous beach of pebbles runs from Maryport Golf Course north towards Grune Point, where it becomes finer shingle. Isolated pebble beaches are also found locally at Bowness-on-Solway, Port Carlisle and adjacent to Glasson.



Figure 2.2: Beach at Swarthy Hill

Sand dunes

- 2.27 Sand dunes occur between Grune Point and Maryport Golf Course and are a distinctive feature of the coastal fringe of the Outer Firth. They can be subdivided in terms of their maturity and condition into foredunes, yellow dunes, mobile dunes, dune heaths, and dune grassland. Mobile dunes are also active along the coast, where higher dunes (grey dunes) are formed over a period of time as dunes shift inland, and dune slacks or hollows form in the hinterland. In some areas along the Solway Coast these are relatively intact, and they are easily identified to the north of Allonby and along the seaward dune edge from Dubmill Point to Silloth. They are composed of loose sand colonised by marram grass and lyme grass and vary in height rising to 2.5m above surrounding levels. From further inland they create a visual barrier to seaward views. Dune heaths are formed as the dunes become more stable and with changes in soil composition. Dune heaths occur in the Mawbray area where they have become colonised by large patches of heather and gorse. The dune heaths tend to be lower and more gently rolling than the mobile dunes. When in flower the resulting colour on the coastal margin contrasts with the more subtle colours of the beach, sea, sky and surrounding fields.
- 2.28 Dune grasslands represent areas that have been more greatly affected by disturbance such as re-grading, levelling, grass cutting, and heavy grazing by cattle and horses in the past. They tend to be remnant dune areas and occur from Maryport Golf Course along a narrow strip of dunes to Dubmill Point. These significantly altered dune systems provide a contrast with the more wild and unspoilt character of the other parts of the coastline. Improved pasture has replaced the dunes from the eastern part of the AONB up to the

B5300, while the remaining dune strip has been narrowed further by erosion from the sea in the west. Rising sea levels could continue this trend.



Figure 2.3: Beach and dunes to the south of Silloth

Saltmarsh

- 2.29 Salt marshes are large low-lying flat expanses of intertidal grassland, intersected by a mosaic of intertidal creeks and channels, that fringe the intertidal flats and extend as a continuous ribbon from the Eden estuary to Grune point. The saltmarshes of the Solway Coast are amongst the most important saltmarsh systems in northwest Britain, representing an important range and sequence of saltmarsh communities, from the seaward edge moving inland. The surfaces of the saltmarsh are characterised by distinct vegetation zones, a product of historic changes in sea level. These include the high marsh, formed when sea levels were higher around 8000 years ago, a middle marsh relating to the current tidal regime and new marsh at the lower marsh where grasses and vegetation first colonise the accreted mud. Underlying the vegetation are mud and silt deposits, layered or 'varved', which record the tidal deposition of new material.

Raised Mire – The Mosses

- 2.30 The Solway Coast has some of the most extensive tracts of unbroken raised mires within the UK. These raised mires, known locally as 'mosses', are large areas of rain-fed peatland, forming shallow raised domes of peat covered with small pools colonised by sphagnum moss. The mosses of the Solway Coast were once extensive across the Solway basin, before being drained and improved for agriculture. The mosses of the Solway Coast are of international importance for their rarity, high ecological value and palaeoecological/archaeological interest.

Cliffs

- 2.31 Erosion by the sea along the western seaward edge of the sand dunes and saltmarshes has created low cliff features. These are prominent elements in the landscape at Swarthy Hill, and opposite the village of Glasson. At Glasson a steep-sided raised cliff has been formed, colonised by gorse, bracken and coarse grasses, whilst the headland cliff near Glasson is a boulder clay drumlin which has been eroded by the sea. Lower cliff features are locally created along the coastline by strong tides, including the seaward edge in the vicinity of the salt pans.

Flora and fauna

- 2.32 The area supports a rich and diverse range of natural habitats which make a significant contribution to the scenic character of the AONB landscape. Much of the special interest of the area lies in the intricate mosaic of coastal habitats. Large expanses of saltmarsh, together with small but important areas of dune grasslands and heath, cover much of the coastal margin which remains agriculturally unimproved. The flora and fauna is rich, with many rare or uncommon species including those known only within the local area.

Coastal habitats

- 2.33 The Solway Firth supports a large wildfowl population which is mainly found on the open water areas and in the intertidal river channels, particularly around the mouth of Moricambe Bay. Species include goldeneye, scaup, pintail, wigeon, teal, shelduck, pink-footed and barnacle geese and whooper swan. Both grey and common seals can also be found in the Firth, together with porpoises in the deep water. Otters are also regularly sighted.
- 2.34 Intertidal estuarine mudflats and sandflats, interlaced with a dynamic system of shifting tidal channels, fringe many parts of the AONB. The mudflats are a rich source of invertebrates, including ragworm, lugworm, bivalves, snails and shrimps, with mussel beds forming on the scaurs. These invertebrates are a major food source for the wading birds for which the mudflats are renowned. Large flocks of oystercatcher, sanderling, knot, curlew, redshank, turnstone, golden plover, ringed plover, grey plover, bar-tailed godwit and dunlin can regularly be seen. The tidal sandflats are important to the survival of breeding waders and waterfowl. They support a diversity of wintering wading birds, including oystercatcher, dunlin and knott, and wintering wildfowl such as shelduck, pintail and wigeon.
- 2.35 The marshes provide large, relatively undisturbed areas which are heavily used by wintering, breeding and passage wildfowl. Waders, although mainly found on the intertidal flats, also frequent the saltmarsh in search of invertebrates among the grass. Rockcliffe Marsh is the least disturbed saltmarsh, and supports tens of thousands of ducks and wintering geese. Breeding populations of lesser black backed, black headed and herring gulls, common and arctic terns, redshank, lapwing and oyster catcher are also found. The Solway in general is particularly important for pink-footed and barnacle geese and forms a vital link in the chain of west coast estuaries used by migrating birds. The area regularly hosts over 120,000 wintering wildfowl including the entire breeding population of the Svalbard barnacle goose.

Geese, swans, ducks and wading birds can be seen in large numbers throughout the intertidal and saltmarsh areas of the AONB. The larger saltmarsh areas are seldom visited, although public disturbance can have adverse effects on ground-nesting birds in May and June and feeding and roosting birds in winter. Increasing erosion and collapse of creek profiles within the saltmarshes caused by sheep and cattle grazing has reduced the botanical diversity of the saltmarsh as habitats for sea lavender and sea aster.

- 2.36 The landward edge of the saltmarshes, as well as Mawbray Banks and Grune, support brackish pools favoured by the rare natterjack toads. Together with locations in the dune coast these are among the most northerly breeding areas in Great Britain and account for approximately 10 per cent of the British natterjack population. The AONB Partnership has been actively encouraging them by creating new ponds. Red fescue grass (*Festuca rubra*) dominates the swards of the higher coastal grasslands of the older, more stable saltmarshes.

Sand dune and coastal grasslands

- 2.37 The vegetation of the dune system found along the western coastal margin between Grune Point and Maryport Golf Course varies with the maturity and condition of the dunes. Strandline occurs as a narrow band in the shingle on the upper foreshore. Plant species characteristically found in this zone include sea sandwort, sea rocket, sea holly and sea bindweed, together with the first sand binding grasses, sand couch grass and lyme grass. The relatively undisturbed mobile dunes to the north of Allonby and along the seaward dune edge are characterised by sand couch grass with scattered sea rocket, sea sandwort and Halberd-leaved orache. The mobile dunes grade into the foredunes dominated by marram grass and associated red fescues and smooth stalked meadow grass. Also found are the rare species of Isle of Man cabbage and sand leek. As the dunes become less mobile they are colonised by red fescue, sheeps fescue, common bent and sand sedge forming areas of dry dune grassland. This is also characteristically species rich in wildflowers. The dunes become more acid away from the sea through leaching of calcareous matter and the dune grasslands finally give way to areas of acid dune heath. This is colonised by large swathes of heather with bell heather, sand sedge and sheeps fescue and Cladonia lichens in drier areas. Small areas of dune slacks are also present associated with damper areas. The dune system is notable for its breeding sites of natterjack toads, great crested newts and adders, together with the nesting sites of ringed plover and oyster catcher.

The mosses - wetland habitats of the AONB

- 2.38 The 'mosses' refers to areas of lowland raised mires and peat bogs, which are characteristic features of the inland areas of the AONB. Their presence increases the variety of form, texture and colour within the agricultural landscape surrounding them, and enriches the diversity of landscape character in the AONB as a whole. They are now rare habitats nationally and in recognition of this have been designated as Sites of Special Scientific Interest (SSSI) and Special Areas of Conservation (SAC). The largest mosses found within the study area are Glasson Moss, Bowness Common Wedholme Flow

and Drumburgh Moss. Together these form the South Solway Mosses Nature Reserve, managed by Natural England.

- 2.39 These bogs have been formed as a result peat-forming vegetation accumulating over wet alluvial or boulder clay basins to depths of up to 6.5m. In structure, they are dome-shaped and raised to 3m above surrounding levels by the extremely high water retention characteristics of the sphagnum moss. Each site has been affected, to a greater or lesser extent, by drainage associated with agriculture or through peat cutting. The surface of the bog forms an undulating, hummock-hollow mosaic with shallow sphagnum-filled pools in the wetter, less disturbed, areas. These are associated with bog rosemary and cotton grass; with cranberry, cross-leaved heath, heather and purple moor grass in the drier areas. Occasional glimpses can be afforded of the purple heather and white flowers of the cotton grass within the mosses, but these can only be fully appreciated by a visit on foot. In the autumn the yellow/gold colour of the cotton grass foliage is also particularly attractive.
- 2.40 Salta Moss is the driest of the mosses and tends towards a scrub heathland. The edges of Glasson Moss and Bowness Common are wetter and have developed an outer margin of willow carr and wet birch scrub, which gives way to wet meadows with rough grazing and rushy pasture. The peat bog habitat supports a rich and diverse wildlife including roe deer, badgers, stoats, rabbits and hedgehogs, together with adders, frogs and common lizards. Butterflies present include small pearl-bordered fritillary, green-veined white, ringlet, large skipper, meadow brown and large heath. The majority of Glasson Moss is now managed by Natural England together with parts of Bowness Common, while other areas are managed through agreements with Natural England. The biggest threats to the mosses are the effects of climate change, potential pollution by agricultural chemicals and land drainage.



Figure 2.4: Wedholme Flow

HUMAN INFLUENCES

Introduction

- 2.41 Like most of Britain's landscapes, those of the Solway Coast AONB have been greatly modified by the actions of human communities. Although many of the most visible relics of human activity relate to more recent events and processes, even the earliest permanent settlers in the region have left a distinctive mark on the landscape. From the Neolithic to the modern industrial era, the landscape has played a significant role in the everyday lives of communities and has made an important contribution to the formation of local identity.

Early prehistory

- 2.42 There is limited evidence of pre-Roman activity within the AONB. Palaeolithic finds are absent, and while Mesolithic hunter-gatherers may have used the coastal dunes, as they did in Copeland and along the Galloway coast, there is no direct evidence of it. Dramatic sea-level rise during the Mesolithic and Neolithic is likely to have inundated coastal sites, obscuring the contemporary settlement record.
- 2.43 It is widely accepted that the dramatic loss of elm pollen from fossil records across Britain during the late 5th and early 4th millennia BC (known as the 'elm decline') may have resulted, in part, from human activity during the late Mesolithic/early Neolithic. Current research suggests that this phenomenon occurred relatively rapidly – much like contemporary Dutch elm disease – and would have had a major effect on the oak and elm-dominated woodland landscapes of the region. The gradual transition to farming also had a significant impact on the landscape as communities cleared woodland to create small fields. The evidence from pollen analysis shows that substantial parts of the area, such as Bowness Common, went through periods of clearance of tree cover and abandonment, probably in relation to cycles of grazing.
- 2.44 Neolithic tombs and cairns, dating from about 4500 BC have been found on the Scottish side of the Solway, while characteristic late Neolithic/early Bronze Age Beaker pottery, dating from about 2300 BC, has been found to the south of the AONB. Bronze Age activity, mainly in the form of burials and metal hoards is evident in several parts of Cumbria, and within the AONB a cremation cemetery has been found at Ewanrigg, Maryport, and a bronze rapier recovered from Salta Moss.

Later prehistory

- 2.45 The absence of diagnostic pottery makes it difficult to identify Iron Age sites in Cumbria. Crop marks identified from aerial photographs could belong to either the Iron Age, Romano-British or even early medieval periods. However, this apparent lack of an obvious Iron Age may be as much a

product of a lack of recent research as an absence of obvious sites and monuments⁹.

- 2.46 Intensive survey work of the Solway Plain and the transitional zone revealed a possible pre-Roman phase at several sites, including Ewanrigg, Wolsty Hall and Boustead Hill¹⁰. There are a large number of settlement sites known from aerial photography and, while several have been dated to the Romano-British period on the basis of ceramics, Iron Age sites have gone largely unrecognised due to a lack of positive dating evidence. However, the palaeoecological record for the area – in common with much of the Northwest – indicates that the middle and later Iron Ages were periods of sustained and permanent woodland clearance¹¹. In landscape terms, this would have resulted in a dramatic change in character as the region became steadily more open as settlement and agriculture spread. Evidence for agricultural practices is sparse, however a single area of probably Iron Age ‘cord rig’ (very narrow system of cultivation ridges and drainage furrows) were found sealed beneath Hadrian’s Wall counterscarp bank and possible parade ground of Stanwix Roman fort at Tarraby Lane, Carlisle¹².

Romano-British and early historic periods

- 2.47 On the Solway plain, settlements tend to cluster in dry land locations on the sand and gravel eskers supporting often dense concentrations of sites, with evidence of rectangular single-ditched enclosures and ditches subdividing the dry land into blocks of 6-10 hectares (Higham and Jones 1985, 72, fig. 33).
- 2.48 Unlike southern England, the Romans appear to have had relatively minor impact on civilian life, except in the environs of the Hadrian’s Wall forts where the military imprint on the landscape is unmistakable. It has been suggested that the construction of the Wall may have led to the development of more stable agricultural communities to the south¹³. There may, however, be some bias in this putative settlement pattern as a result of preferential display of cropmarks on sand and gravel subsoils.
- 2.49 The Romans arrived in the area in 71-72 AD and subsequently advanced into southern Scotland. A line of defence, based on existing forts lining the ‘Stanegate’ road, was eventually drawn between Corbridge and Kirkbride via Burgh around 100-105 AD. Around 122 AD the Emperor Hadrian gave instructions for this to be replaced by a formal constructed frontier. This consisted of a wall with small fortlets at mile intervals and intervening watch towers at every third of a mile. These small fortifications were reinforced by the presence of the large Stanegate forts, holding between 500 and 1000 troops. In Cumbria, west of the River Irthing, the Wall took the form of a

turf wall on stone footings. Towards the end of Hadrian’s reign, the turf sections were rebuilt in sandstone.

- 2.50 Hadrian’s Wall terminates at Bowness-on-Solway which marks the westernmost wath (ford) of the Solway from Scotland. Within the AONB the wall ran, west to east, from Bowness-on-Solway through Glasson, Drumburgh, Burgh-by-Sands and Beaumont. From north to south the defences comprised: a sloping bank (the ‘glacis’) backed by a deep ditch; a flat area known as the ‘berm’; and the Wall itself. To the south of the Wall, a road – the Military Way – and a broad, flat-bottomed ditch (the ‘Vallum’) run parallel to the frontier. The turf wall ended at Bowness-on-Solway, but recent evidence suggests that a timber palisade continued westward. Freestanding towers and mile-fortlets extended along the coast from Bowness-on-Solway to the major garrison forts at Maryport and Beckfoot. Although the wall is no longer visible west of Carlisle, its stone is very much in evidence in local buildings, such as Drumburgh Bastle, which was rebuilt with Roman masonry in the 16th century.
- 2.51 The Wall functioned as the north-western frontier of the Empire, controlling movement into and out of the province of Britannia, enabling taxation on imports and exports and discouraging raiding from northern tribes. It was intended to be as much a symbolic barrier as a physical one, emphatically marking the delineation between Rome and the ‘barbarians’. It is thought that, despite its impressive defences, it may not have been intended as a fighting line but rather to provide surveillance of the whole frontier and enable a rapid response from the major garrisons along the Stanegate. It was abandoned during the AD 140s on completion of the Antonine Wall in central Scotland. Hadrian’s Wall was reduced to a support role, but was brought back into service following the abandonment of the northern frontier around 162 AD with the succession of Marcus Aurelius. The wall was reinforced and continued in its role as the frontier of the Roman Empire until the early 5th century withdrawal.
- 2.52 Roman administration in the northwest ended in the early 5th century AD. In rural areas, such as the AONB, this may have had a relatively limited impact on communities. Similarly, it is likely that there would have been little change in agricultural and settlement practices from the late Iron Age into the early medieval period.
- 2.53 Between the Romans leaving Britain until the latter part of the 12th century, the control of the Solway was disputed between Britons, Anglians, Scandinavians, Scots and Normans. From the 5th century, the area appears to have belonged to the British kingdom of Rheged, but by the mid-7th century, its area was firmly under the control of the Northumbrians, a people of mixed Anglian and British origins. As a strongly militaristic society – like the Romans – they chose the best and most strategic sites for settlement. However, there is little evidence of their presence in the AONB apart from place names such as ‘Burgh’ (fort).
- 2.54 The settlement pattern changed dramatically in the late 9th and early 10th centuries as Irish-Scandinavians colonised Cumbria. The names of many of the coastal settlements date from this period: ‘-by’ for instance is a secondary

⁹ Haselgrove et al 2001 ‘Understanding the British Iron Age: an agenda for action. A report for the Iron Age Research Seminar and the Council of the Prehistoric Society. Salisbury.

¹⁰ Bewley, R H 1994. Prehistoric and Romano-British settlement on the Solway Plain, Cumbria. Oxford: Oxbow Monograph 17.

¹¹ Hodgkinson et al 2000, The Lowland Wetlands of Cumbria.

¹² McCarthy, M. 2002. *Roman Carlisle and the Lands of the Solway*. Stroud: Tempus.

¹³ Higham and Jones 1985, 77-80.

settlement, '-ness' a headland, 'holm' an island. The Scandinavians, too, left few obvious remains apart from part of a cross and a hogback tomb at Crosscanonby. Towards the end of the 10th century, the kingdom of Strathclyde expanded from across the Solway and most of the Celtic names in the area, such as Cardurnock, probably date from this period.



Figure 2.5: Fortified church at Newton Arlosh

The Norman Conquest to the 17th century

- 2.55 The Conquest of 1066 and the subsequent entrenchment of the Norman feudal system created a distinctively medieval landscape within the fertile farmland of the Eastern fringe of the AONB. William II of England took Carlisle in 1092 and under William and Henry I the medieval baronies were formed, with the AONB area lying within the barony of Allerdale, from the Wampool south eastward, and the barony of Burgh-by-Sands to the north.
- 2.56 Moated manorial sites such as that near Wolsty were established and, most significantly, Holm Cultram Abbey was founded in 1150. The monks had extensive holdings on both sides of the Solway. Within the AONB they were responsible for draining some of the inland marshes, establishing sea dykes and introducing sheep grazing in an area that had hitherto been largely wilderness. The marshes were exploited for salt, hence Salt Cotes in Moricambe Bay. They had granges at Raby, Mawbray, Skinburness and Newton Arlosh, the latter two being locations for failed new towns.
- 2.57 Much of the framework of the present landscape was formed in the medieval period. The land was farmed by a small 'infield' around each hamlet and an 'outfield' of common fields several hundred acres in extent. These were divided into strips belonging to individual tenants. The pattern of the outfields is still reflected in many of the long, narrow fields, such as those around Burgh-by-Sands and Kirkbride and stand in stark contrast to the regular

layout of the 18th and 19th century enclosures. The era of peace and expansion came to an abrupt end in 1296 when the Scots invaded. The characteristic contribution to the landscape of the 14th century were the fortified towers of Newton Arlosh and Burgh-by-Sands churches, as well as the modern monument at the place where Edward I, the 'Hammer of the Scots', died in 1307 on yet another expedition to Scotland across the Solway waths.

- 2.58 With the dissolution of Holm Cultram Abbey in 1536 the area lost its principal economic and social focus. Despite piecemeal enclosure, some of it generated by the market in Holm Cultram's lands, the area remained agriculturally backward. New common fields were made out of the Abbey's parkland around Calvo and these continued to expand into the 17th century. Donald's map of 1774 shows large areas of unenclosed mire and marsh. In Holm Cultram parish the common fields were not enclosed until 1774 and the 2,400 ha of common wastes were enclosed in 1811. The old drove roads, such as those between Bowness-on-Solway and Wigton leading from Bowness Wath, are sunk below the surrounding field levels. They are bounded by earth banks topped by hedges and pass such landmarks as the Highland Laddie pub at Glasson.



Figure 2.6: Rural lanes bound by hedges with trees on banks are a feature across the farmland

Industrialisation and improvement

- 2.59 The Napoleonic wars of the early 19th century added new impetus to the ongoing process of agricultural improvement and land drainage. Modernisation continued with the development of a railway system that helped the growth of a dairying industry in the coastal plain, while simultaneously bringing to an end the centuries-old pattern of cattle-droving. In 1823 an attempt was made to create a new harbour at Port Carlisle,

connected to Carlisle by canal which was intended to be continued to Newcastle on Tyne. The port never flourished and the canal was filled in with a railway, built on its bed in 1854. It is still marked by the remains of staithe and the regularly laid out plots of the town that never developed. A second attempt at a new port was made at Silloth between 1857 and 1859, but the town found more success as a holiday resort in succession to Allonby.

- 2.60 The railways, now all disused, are the most obvious legacy of the 19th century: the Carlisle to Silloth railway was constructed in 1836-1837 together with a remarkable iron viaduct across the Solway in 1865. Damaged in 1887, it was repaired but soon fell into disuse. The ironwork was demolished in 1934-1935, but the stone embankments projecting into the firth still form a notable landmark. Eighteen hundred years after Hadrian's Wall was built, a new landscape of war was created during the First and Second World Wars with the construction of the huge munitions factory and armaments depot at Longtown, airfields at Silloth, Kirkbride and Anthorn: aircraft which did not make it to the airfield are still lying in the mud of the firth. The old hangars at Kirkbride and Silloth are still in use for local industries, while Anthorn is used by the Ministry of Defence for communication masts which dominate the surrounding landscape.

Rural industry and the landscape

Agriculture and fishing

- 2.61 The farming in the AONB has been characterised by the relationship between land held in individual tenancies and rights of common grazing on the marshes. Traditionally, since at least the 16th century and in a regulated way following the enclosures of 200 years ago, shares or 'stints' in the common grazing have been attached to individual land holdings. These are now regulated by a 'marsh committee', which employs marsh wardens or 'reeves' to manage the grazing. Sheep and cattle that wander freely on the saltmarshes form an inseparable part of the landscape, though their numbers have declined in recent years particularly since the outbreak of foot-and-mouth disease in 2001. The enclosed land lies mainly in holdings of 20-40ha. In contrast to the commons, such land has generally been vigorously improved for agriculture by drainage, fertilizing and reseeded, so that while its agricultural use has increased, its nature conservation value has become poor. Arable cultivation is found on the better-drained land particularly over the drumlins such as those at Crosscanonby and Burgh-by-Sands, but the area is predominantly pasture with some patches of wet, marshy, low-quality grazing. In recent years, one significant change has been the shift from hay to silage production. There is a substantial dairy industry, with beef cattle and sheep production also in evidence.
- 2.62 A modest fishing industry has existed along the north Cumberland coast ever since the union of the English and Scottish crowns made it a safe enterprise. Even before this, in 1586 Camden describes:

"The inhabitants thereabouts on both sides [of the Solway] with pleasant Pastime and delightful Sight on Horseback with Spears hunt Salmon whereof there is abundance".

- 2.63 Today, commercial fisheries are confined mainly to boats operating out of Silloth and Maryport catching plaice, skate and whitefish well out at sea. They have replaced the principal port of Annan, which is now restricted by siltation. At low tide fishermen used to dredge the intertidal areas by tractor for cockles. This has now ceased, except for instances of informal and non commercial collection. The most distinctive form of fishing in the firth is haaf netting for salmon and sea trout, carried out by local fishing families, under licence from the Environment Agency. The net is Scandinavian in origin and this form of fishing is regarded as an important local tradition. Fixed-stake netting is no longer practised in the Solway Firth. Sea anglers occasionally fish from the foreshore, but a more lively activity is the fluke or flounder paddling carried out at Cardurnock and Skinburness. Participants wander barefoot through shallow water at low tide, either probing the sea bed with a sharp prong fork, 'feeling' for the fish with their feet or catching them by hand. A hand-gathered mussel fishery is operational when stocks are plentiful.

Salt production

- 2.64 In medieval times, and later, salt was extracted locally. The Cistercian monks at Holm Cultram Abbey extracted salt from the sea at many sites along the stretch of coastline and remains of their salt works can be found at Saltcotes (cluster of buildings containing salt pans) and at Newton Marsh, where circular pits still gather sea water and hold it until the next high tide. The best preserved examples of salt works in Cumbria are found at the Crosscanonby Saltpans. The Solway Coast AONB Partnership is involved in ongoing restoration work to preserve and protect this site.



Figure 2.7: Remains of saltpans at Crosscanonby

Features of cultural interest

Settlements

- 2.65 The character of the built environment within the AONB is strongly influenced by the coast and sea, the historical pattern of cultivation and farming, the strategic location of the landscape as a frontier between England and Scotland as well as an industrial heritage and more modern 20th century development. The built environment contributes visible evidence of the Solway Coast's long history of settlement. The settlements in the AONB are predominantly small villages, ranging from closely assembled clusters of cottages and farms to linear villages with space between the buildings, strung along a minor country road. Villages are regularly spaced along the coastal margin and throughout the agricultural hinterland and are interspersed with isolated farms on the enclosed agricultural land.
- 2.66 There is a great variety in the size and form of traditional buildings in the AONB, ranging from substantial farmhouses, longhouses and square plan properties to small workers cottages. There is also great diversity in the building materials used in their construction which reflect the geographical distribution of the different resources available in the local landscape. These include Welsh and Buttermere slate, red sandstones, cobble, clay, straw, turf, wood, rendered rubble, freestone and limestone. Roofs of traditional buildings are usually covered in slate or sandstone pan-tile, with some limited examples of reed and heather thatch.
- 2.67 The Solway Coast AONB lies outside the west Cumbrian coalfields, with an economy still based on agriculture. The villages have therefore tended to grow little over the centuries and remained predominantly rural in character. Some of the settlements do however reflect different periods of growth, including Allonby which developed as a formal bathing resort, and Bowness-on-Solway. Port Carlisle includes Georgian terraces reminiscent of Carlisle, and the larger towns of Maryport and Silloth, also containing examples of Victorian and Georgian linked to their development as resort towns, lie just outside the AONB. Villages along the coastal strip between Maryport and Silloth have been influenced by their exposure to the sea, and have a strong linear form. The buildings are either terraced or close together to provide shelter. These settlements contrast markedly with the utilitarian style architecture of the village of Anthorn, associated with the development of the Ministry of Defence airfield on the Cardurnock Peninsula.



Figure 2.8: The coastal village of Allonby

- 2.68 Allonby is the largest village, and along with Mawbray and Beckfoot occupies a low-lying position adjacent to the coast. The settlements in this eastern section of the AONB have seaward frontages and have a strong linear form associated with the coastline. In contrast, the villages of Crosscanonby and Salta occupy more prominent, raised positions slightly further inland, located on ridges of glacial till overlooking the sea. Allonby contains a number of historic buildings. There are caravan sites adjacent to the village. The villages in the remaining part of the AONB north of Skinburness contrast with those in the eastern section. While some villages along the northern coastline, such as Bowness-on-Solway, are characterised by narrow winding streets and closely grouped buildings, villages in this section are generally less exposed, with houses are more widely spaced. There are fewer walls and a greater proportion of hedgerow boundaries creating a generally 'softer' character to the villages in this area.
- 2.69 A number of the settlements are located on the line of Hadrian's Wall and on the site of Roman forts, some of the buildings being built from stone taken from the wall or forts. These include Bowness-on-Solway, Drumburgh, Burgh-by-Sands and Beaumont. Cardurnock was also the site of a Roman fort, from which its name is derived 'fort of the stones'. Most of these settlements are located on higher ground making them particularly prominent in the mainly flat and open landscape. Many of the villages inland of Moricambe Bay and on the Cardurnock Peninsula owe their location to the more extensive areas of mosses that were present in these areas before they were drained and enclosed in the 19th century. Villages located along the fringes of former mosses include Abbeytown and Newton Arlosh.

- 2.70 The influence of the Solway's border location on the character of the settlements is not limited to that associated with Hadrian's Wall. Amongst the complex mixture of vernacular styles in these settlements are fortified stone buildings. The churches at Newton Arlosh and Burgh-by-Sands are strong focal points incorporating heavily fortified stone pele towers dating from the 14th century providing protection from the Scottish raiders. The Bastle at Drumburgh, which dates from the early 16th century, is an equally dominant feature located on a large drumlin elevating it from the sea. It was built on the ruins of a fortified Roman tower at the head of the Sand-wath crossing from Scotland and is an example of the fortified farm building, or 'Bastle', common in the borders area. A particularly poignant reminder of the influence of the border is also provided by the Esk Boathouse at Rockcliffe, which stands adjacent to the Sulwath crossing of the firth and bears the following inscription on its white walls:
- 2.71 *"Ere metal brig or rail were thowt on, Here honest Will the boatman rowt on. Gentle and simple he did guide, to either Scotch or English side, Wi'them on horseback he did ride An' boat the footman. An' none did ever dread the tide Wi' Will the boatman. Now tho' Wills work is done an' o'er An' Will himself lies quiet, Yet lives his SPIRIT here - step in, an try it, Ne'er time nor tide can half so pure supply it."*
- 2.72 Burgh-by-Sands has a different character to other villages within the AONB, displaying a variety of stone, brick and whitewashed buildings, most of which are set back from the road. In addition to the mainly slate-roofed houses is the occasional thatched cottage. The village also contains a number of cruck-framed houses probably dating from the 17th or 18th centuries. These are constructed from a frame of matching arched timbers set on large boulders. Bracing and roof timbers are dowelled and the walls are constructed in the original clay daub mixed with straw and pebbles known locally as 'clay dabbin'. They were originally thatched and although fairly common features in the AONB are unusual in Cumbria. Examples include Cross Farm and Lamonby farmhouse and barn.
- 2.73 Some evidence of the Carlisle Canal remains today, notably the entrance lock to the Solway, the lock keeper's cottage and remains of the staithes opposite. The outlet of the canal was at Port Carlisle, which contains some interesting buildings including the old customs house and sailors' baths. The villages within the AONB have remained largely untouched by 20th century housing development, apart from the estate development at Anthorn, built to house military personnel during the Second World War. However, the airfields at Silloth, Kirkbride and Anthorn are still evident today, with the old aircraft hangers at Kirkbride and Silloth and the communication masts and shooting butts at Anthorn forming features in the landscape.



Figure 2.9: The remains of the loch entrance to Carlisle Canal at Port Carlisle

Country lanes, tracks and waths

- 2.74 The system of lanes and tracks that existed in the 1700s would closely resemble the pattern of minor roads that exists today. Sunken lanes, constructed up to a metre below surrounding field levels are a characteristic feature of many sections of roads and farm tracks in the AONB. The excavated material has been used to increase the heights of the embankments to either side of the road. These characteristic mounds that form field boundaries across the area, known locally as 'kests', are topped by hedgerows and in western sections of the study area are faced with local cobbles and boulders. The hedgerows are laid in a locally distinctive and traditional North Cumberland style and are generally not species rich, dominated by gorse, blackthorn and hawthorn. Increasingly the hedgerows, 'kests' and cobble walls are being replaced by fence and post alternatives, particularly in western sections of the area.
- 2.75 An extensive Public Right of Way network crosses the area, often following sunken lanes and field boundaries. These are generally well signed and maintained and are of local importance. The Cumbria Coastal Way runs through the AONB from Carlisle to Maryport as part of its 199km route to Barrow-in-Furness. This mainly follows footpaths around the coastline. The Cumbria cycleway follows a similar route through the AONB as part of its 417km circular course around the outer edges of Cumbria. Part of the Hadrian's Wall Path National Trail and Hadrian's Cycleway, which stretches from Wallsend to Bowness-on-Solway, also crosses the northern area of the AONB, closely following the line of the Wall. Tracks across the mosses

include the 'Church Trod' from Campfield Marsh to Anthorn which crosses Bowness Common.

- 2.76 The Solway waths are historical crossing points over the firth. These are unmarked and change with the movement of estuary sediments. The crossing over the river channels of the Esk and Eden was a well-used crossing point by the armies of Edward I, and The Edward I's Monument near Sandsfield marks the approximate location of the Peat-wath. Crossing this part of the Solway at low tide risked a rising tide and considerable danger. In 1216 nearly 2,000 Scottish soldiers were drowned attempting to cross back to Scotland from Sandsfield over the Peat-wath. Other routes crossed wider expanses of the firth. The Sand-wath crossed the Solway from Drumburgh to Annan, and the Bowness Wath crossed from Bowness-on-Solway to Annan and was widely used by the Scots and English raiding parties. Famously, the bells of Bowness-on-Solway church were stolen by the Scots in one such raid, but abandoned in the channel on the route back to Scotland. Subsequent raids by the English stole the bells of Dornock and Middlebie churches on the Scottish side.

3 FUTURE ISSUES AND FORCES FOR CHANGE

Introduction

- 3.2 The landscape and seascape of the Solway Coast is dynamic and continually evolving. Forces and processes that result in landscape change involve physical changes to the fabric and balance of the landscape as well as those as a consequence of human use and interaction with the area. An understanding of future trends and the choices that need to be made will help manage change in a way that conserves and enhances the distinctive character and qualities of the AONB. The AONB LSCA has an important role to play in guiding management of these changes and, in so doing, protecting, managing and planning the landscape and seascape character and quality.
- 3.3 The main forces for change that have operated in the past and are likely to continue to shape the landscape of the AONB are listed below.

<p>Natural processes</p> <p>Climate change</p> <p>Development pressures, particularly</p> <ul style="list-style-type: none"> ○ renewable energy ○ housing and industry ○ leisure and tourism ○ traffic and transportation <p>Agricultural change</p> <p>Land management, particularly changes affecting</p> <ul style="list-style-type: none"> ○ trees and hedgerows ○ water bodies ○ habitats and species ○ settings to historic sites

- 3.4 Key issues are enlarged upon below.

Natural processes

- 3.5 The foreshore of the Solway Firth has changed significantly over the past fifty years, having been eroded away by the channel of the River Eden as it has swung closer to the southern coast. Conversely, the intertidal flats and saltmarsh are currently accreting at Rockcliffe Marsh on the east side of the Inner Solway. Natural cyclical processes such as the shifting channels in the Inner Solway, as well as the Human response such as construction of sea defences, will give rise to future changes.



Figure 3.1: Hard sea defences and groynes at Silloth

Climate change

3.6 Predicted changes are explored in detail as part of the North West Climate Change Project, but the key changes are likely to be:

- increase in the frequency of 'wet' winters with more rainfall than average. This has implications in relation to increased flood risk, and the possibly of rising water tables;
- increase in the frequency of 'dry' summers with less than average rainfall, and when water tables may fall;
- increase in the length of the growing season due to the climate being warmer;
- reductions in soil moisture availability, and possible soil erosion as a result of reduced summer precipitation and higher temperatures;
- changes in coastal regimes (sea level rise and erosion of sand dunes, flats and saltmarshes as a result both of rising water and increased storminess);
- potential inundation of low lying areas as sea level rises;
- increased storminess giving rise to tree loss and damage, particularly individual field trees which are vulnerable to gales;
- changes in species balances, with some species potentially dying out and being replaced by others which are better suited to new climates;
- changes to key sensitive habitats including the rain fed raised bogs and mires due to temperature changes and changes in the availability of water;

- potential changes in the physical size and appearance of the area, as the area of exposed coastal habitats (flats, sands, saltmarsh) may be reduced as a consequence of sea level rise. The general approach to sea level rise as advocated in the *Shoreline Management Plan* will be to manage realignment of the coast.



Figure 3.2: Robin Rigg, an offshore wind farm is visible on the horizon from along the western coast line of the Solway Coast

Development pressures

Renewable energy

- 3.7 A need to meet the requirement for 10% of UK electricity to be sourced from renewable energy by 2010 (with the ambition of doubling this by 2020) will have a significant effect on development in the county, as the west Cumbrian Coast has been termed Britain's Energy Coast, with the large tidal range in the Solway Firth and high offshore and onshore wind speeds.. Key pressures are:
- offshore wind turbines: 60 offshore wind turbines at Robin Rigg are already visible from the AONB, seen to the west of Maryport and additional sites have been identified as suitable north of Robin Rigg and at the head of Wigton Bay;
 - onshore wind turbine development affecting skylines and the setting of the AONB: several small groups of onshore wind turbines are visible at Great Orton, High Pow and Siddick, to the south of Maryport. Further proposals are in development including one at Hellrig just outside the AONB boundary;

- tidal energy schemes: a tidal barrage scheme in the upper reaches of the Solway Firth is being explored for the harnessing of tidal energy known as the 'Solway Energy Gateway';
- electricity grid requirements as a consequence of the need to improve Cumbria's grid to support the construction of renewable energy projects;
- small and domestic scale renewable and nuclear energy projects such as wind turbines and solar panels; and
- anaerobic digesters linked directly to farm holdings, with two existing schemes being located close to the AONB; and
- the introduction of energy crops changing agricultural practices within the AONB.

New housing and industrial development

3.8 Some parts of the towns and villages within the AONB of the Solway Coast are popular for retirement and pressure for residential development on the peripheries of villages is likely to continue. Housing may be needed in some villages to keep them vibrant and to support services in the future. Much of the development seen today occurred in the 1950's and 60's, bringing a number of modern bungalows into the area along the western coast. Key pressures are:

- demand for new housing plots;
- the suburbanisation of villages, alongside the associated garden, drive and boundary treatments;
- 'gentrification' which may change the character of the area, as farming units are amalgamated and farm buildings are sold off and converted to residential properties or for use as holiday accommodation;
- lighting of an area which is generally quite dark at night and which may change the character of night skies and introduce clutter into the villages;
- possible demands for larger scale or utilitarian buildings for industry and farming, including large barns and silos, and potentially glass houses or increased market gardening activities, perhaps in response to needs for food or energy crops driven by climate change.

Leisure and tourism

3.9 The AONB offers a wealth of visitor destinations and wildlife sites, which could be detrimentally affected by increasing visitor numbers, associated traffic, demand for infrastructure (including parking and the upgrading of roads) and accommodation.

3.10 Key pressures result from:

- the number of campsites and caravan parks and applications for alterations, including associated planting, decking, lighting, hard standing and parking;
- the bringing of large static caravans into the area by road, as well as use of the road network by lorries and other large vehicles which can cause

disruption, damage to narrow roads, and give rise to demands to 'upgrade' sections of road which can be out of character with the area;

- increasing popularity of the area for walking and cycling and associated pressures with the use of the existing network of Public Rights of Ways (PRoWs), including the Cumbria Coastal Way and the Hadrian's Wall Path and Cycle Way. The potential for erosion of path surfaces and desire lines, may result in damage to the fabric of historic sites and ancient monuments;
- management of paths, erosion and possible associated disturbance;
- new coastal access routes arranged as a consequence of the *Marine and Coastal Access Act*;
- pressure for roadside parking, and the presence of cars at busy times which can detract from the character of the area.



Figure 3.3: Small caravan park located at Tarns Dub

Traffic and transportation

3.11 There is a reliance on travel by car within the wider study area, although the train and public buses are also used to access the AONB from Carlisle and Maryport. Key pressures are:

- the impact of traffic and parked cars within the AONB, especially along the coast, which is likely to continue to be an issue, particularly in the tourist season;
- the suburbanising effects of road improvements incrementally changing the rural character of the area, particularly within villages, responding to a need for road markings, signs and parking controls, but also along the

lanes, as farm vehicle size increases, and in response to the need for vehicles to pass one another;

- the need for safe cycle and pedestrian routes introducing pressures for additional land alongside roads, or across farmland, including in response to the requirements of the *Marine and Coastal Access Act*;
- erosion of the saltmarshes, which may necessitate new coastal routes and the movement of coastal paths further inland;
- increased vehicle speeds and traffic danger leading to the removal of grazing animals, especially horses, from the unfenced common grazing areas including the dunes.

Agricultural change

3.12 EU Common Agricultural Policy has shifted support away from production subsidies towards agri-environment and wider rural development measures, providing positive opportunities for sustainable farming and rural economic diversification. Rural diversification is likely to have significant environmental effects and changes in agricultural production may shape the future character of the landscape. Key pressures are:

- changing demand for food or energy crops, and climate change altering the need for agricultural production, patterns of crops grown and the way they are grown, and consequently the look of the landscape;
- declines in farming incomes and increased financial pressures leading land owners to seek more profitable land uses, such as the use of agricultural land for caravan parks, tourism, flood alleviation, making and creation of wildlife habitats in appropriate locations;
- field boundaries degrading through lack of management, or removal and amalgamation of fields by more commercial land owners including:
 - the locally distinctive earth mounds or 'kests' in the area requiring ongoing upkeep;
 - hedges managed by flail cutting, as opposed to more traditional North Cumberland style laying, with the result that hedges are becoming gappy and losing their species diversity;
 - the replacement of traditional boundaries with wire fences changing the locally distinctive character;
 - ditches requiring management if they are to be retained;
 - gradual loss or decline of orchards.
- reduced grazing can lead to the development of scrub, reduction in the diversity of landscapes and habitats and ultimately succession to woodland, including:
 - wet meadows developing into rushes or wet woodland if no longer grazed;
 - the encroachment of scrub onto sand dune and heath communities as fewer animals are grazed on these areas;

- the spread of woodland into the mosses.
- demand for the installation of bio-digesters for sludge storage and treatment at farms;
- ongoing trends to harvest grass as silage instead of hay, and the storage of silage bales in polythene within fields across the area;
- amalgamation of farm units leading to there being a reduced number of working farm buildings in the landscape, and their conversion to houses or other uses;
- the promotion of management agreements and uptake of grant or stewardship schemes providing an opportunity to secure positive management, including through encouraging conservation grazing of small or difficult to manage sites, and providing funding for the management of walls, hedges, woodlands and historic buildings.



Figure 3.4: Replacement of traditional hedges and 'kests' with post and wire fencing has occurred across the Solway Coast

Land management

Waterbodies

3.13 Key pressures are:

- vulnerability of waterbodies and wetlands to runoff from agricultural areas, including from fields where agricultural chemicals are used;
- risk of saline incursion into low lying areas as a result of storms and sea level rise;

- ditches becoming blocked (potentially with consequent benefits for habitats and biodiversity) due to the withdrawal of flood defence work by the Environmental Agency;
- siltation of waterbodies, or loss of areas of open water: without ongoing management natural succession could affect landscape and habitat diversity.

Nature conservation and species

3.14 Key pressures are:

- climate change affecting habitats and species;
- changes in management affecting the balance and mosaic of different habitats throughout the area;
- development pressures or changes in agriculture and farm machinery;
- alterations and changes to wetlands, moss and mire habitats;
- changes in the management of grasslands and other unimproved grazing land and reduced grazing pasture;
- disturbance by people, pets and traffic;
- the extension of dominance by invasive species such as sycamore;
- grazing or competition by pests such as deer, rabbits or grey squirrels.

Fabric and setting of historic sites

3.15 Historic sites, such as the Edward I Monument and the fortified farms, and the excavated remains of the Roman mile fortlet at Swarthy Hill attract visitors and require maintenance, having implications for the condition and quality of sites. Protecting the fabric and setting of the Hadrian's Wall World Heritage Site is also a priority. Key pressures are:

- new development and additional housing changing settlement morphology and historic character and possibly causing damage or loss of archaeological remains;
- increasing agricultural intensification and a shift to arable crops, which may increase the pressure to amalgamate field boundaries resulting in the loss of historic field patterns and ancient hedgerows;
- changing agricultural practices, including a shift to arable crops as a result of climate change, with potential damage to archaeological remains by roots and machinery and damage to sub-surface archaeology by ploughing;
- development of tidal power renewables which may alter the pattern of sediment transportation and lead to archaeological sites being buried or eroded and exposed;
- new development, such as new barns, silos and biodigesters, altering landscape settings to sites;
- the effects of the provision of visitor facilities such as car parks, paths and signage on the setting of historic features;

- afforestation for carbon sequestration, measures to promote habitat connectivity and scrub growth which may affect cultural heritage and lead to sites being hidden or damaged by roots; and
- sea level rise and increased storminess, flooding and inundation which may erode shoreline archaeology and coastal features, such as the saltpans at Crosscannonby and Hadrian's Wall.

4 LANDSCAPE AND SEASCAPE CLASSIFICATION

Introduction

Overview of the Solway Coast landscapes and seascapes

- 4.2 The chapters which follow set out information relating to the landscape and seascape character types, and the specific geographical areas of each type, across the AONB. They are divided into seascape and intertidal landscapes, and lowland landscapes, and include those areas which form the setting to the AONB, as listed in the Landscape Classification on the next page.

Seascapes and intertidal landscapes

- 4.3 The Solway Coast AONB seascapes comprise extensive areas of both the Inner and Outer Solway Firth. This dynamic and changing coastline includes flats, intertidal creeks, sands and saltmarshes, and is bounded in places by shingle bays, sand dune systems and low earth cliffs. The transition between land and sea is marked by beach and dune systems, generally along the west coast, and the mudflats and saltmarshes of the more sheltered northern areas of the Inner Firth.

Lowland landscapes

- 4.4 Inland moorland and raised mires contrast with improved pasture, enclosed by hedges and 'kests'. Open areas of the raised mires, gentle rises in the landscape of the coastal plains and the hilltops of the rolling and undulating lowland hills afford panoramic views. Seaward views can be gained across the Solway Firth to the Scottish hills and coastline, including the distinctive outline of Criffel, and landward views across coastal plains towards the northern fells of the Lake District include the dramatic profile of Skiddaw. Settlements have developed along the coastline, including the seaside resorts of Silloth and Allonby. The area is important for seasonal tourism, and some of the coastal villages are popular destinations for holidays and retirement. Birds and flora attract visitors to nature reserves such as Campfield Marsh RSPB Reserve and Bowness Common and Glasson Moss National Nature Reserves. The landscape of the Solway Coast has a rich historic and cultural heritage closely linked to its historical position as a 'frontier' landscape on the border between Scotland and England. Evidence of a long and historic land use is seen in the field patterns, such as ridge and furrow on the grazed marshes, and the medieval pattern of 'infield' and 'outfield' farming linked to the agricultural improvements brought by the Cistercian monks of Holme Abbey.

The setting of the AONB

- 4.5 Open areas within the AONB and wider study area afford panoramic views south to the Lake District fells, including Skiddaw, and of the hills of Dumfries and Galloway, seen across the Solway Firth, particularly Criffel.

THE LANDSCAPE/SEASCAPE CLASSIFICATION

4.6 The landscape and seascape classification for the AONB and the landscapes which fringe the area is mapped on **Figures 11-12** and listed below.

- **Figure 11:** Landscape Character Types
- **Figure 12:** Landscape Character Areas

SEASCAPE/INTERTIDAL

Landscape Type A: Inner Firth Intertidal Flats and Saltmarsh

- Landscape Character Area A1 Rockcliffe and Burgh Marshes
- Landscape Character Area A2 Eden Channel
- Landscape Character Area A3 Moricambe Bay
- Landscape Character Area A4 Nith Estuary and Blackshaw Bank

Landscape Type B: Outer Firth Beaches and Dunes

- Landscape Character Area B1 Middle Bank to Dubmill Point
- Landscape Character Area B2 Dubmill point to Maryport

LOWLAND LANDSCAPES

Landscape Type C: River Floodplain and Marshy Grassland

- Landscape Character Area C1 River Eden Floodplain
- Landscape Character Area C2 Whitrigg Marsh and River Wampool Floodplain
- Landscape Character Area C3 River Waver Floodplain
- Landscape Character Area C4 Holme Dub
- Landscape Character Area C5 Black Dub

Landscape Type D: Coastal Mosses

- Landscape Character Area D1 Drumburgh Moss
- Landscape Character Area D2 Bowness Common and Glasson Moss
- Landscape Character Area D3 Wedholme Flow

Landscape Type E: Coastal Plain

- Landscape Character Area E1 Bowness to Boustead Hill
- Landscape Character Area E2 Cardurnock Peninsula
- Landscape Character Area E3 Newton Arlosh and Kirkbride
- Landscape Character Area E4 Mawbray
- Landscape Character Area E5 Rockcliffe and Mossband

Landscape Type F: Drumlinised Lowland Farmland

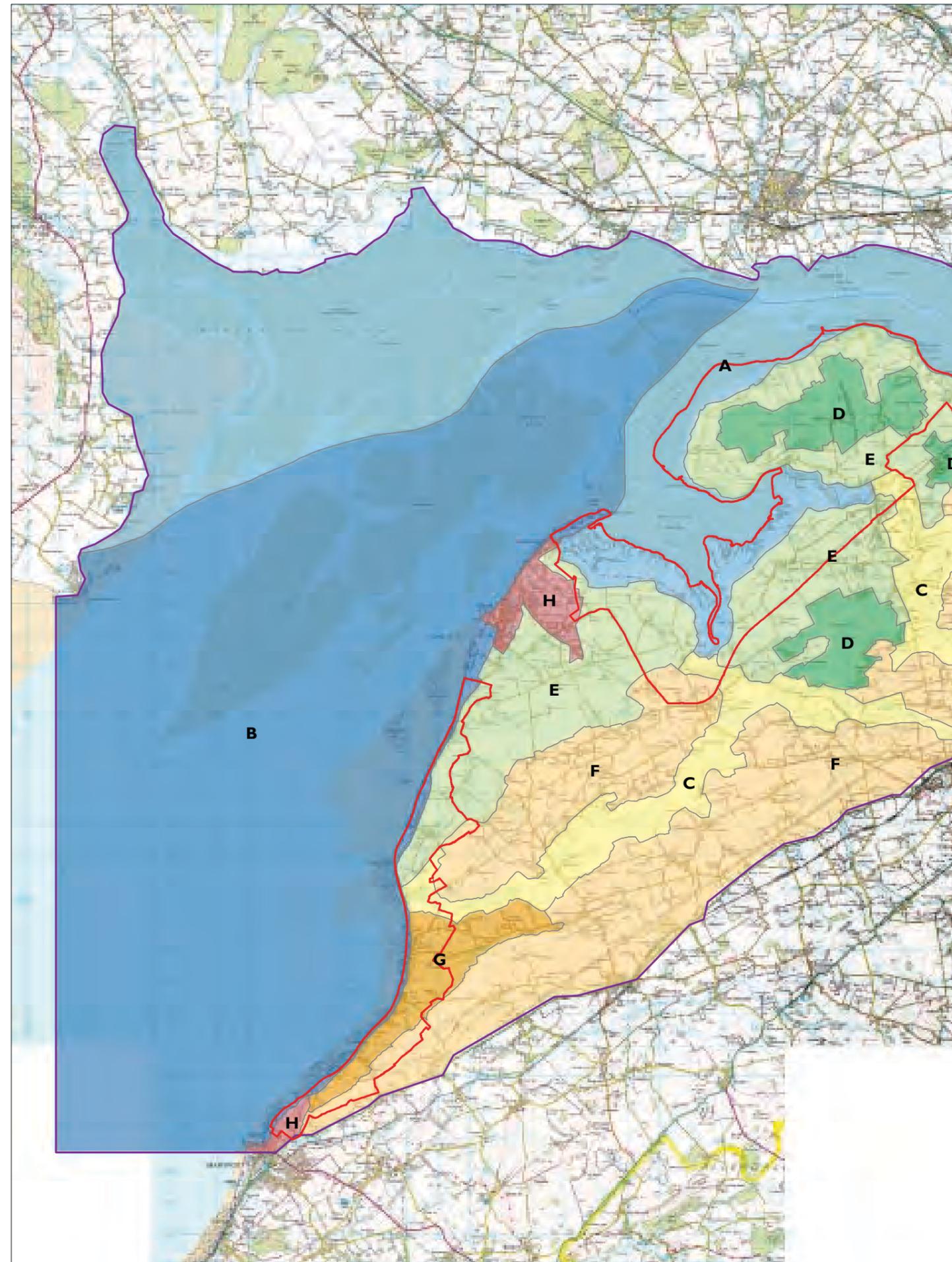
- Landscape Character Area F1 Abbeystown to Edderside
- Landscape Character Area F2 Maryport to Aspatria
- Landscape Character Area F3 Wigton and Bromfield
- Landscape Character Area F4 Aikton and Orton
- Landscape Character Area F5 Finland and Kirkbampton

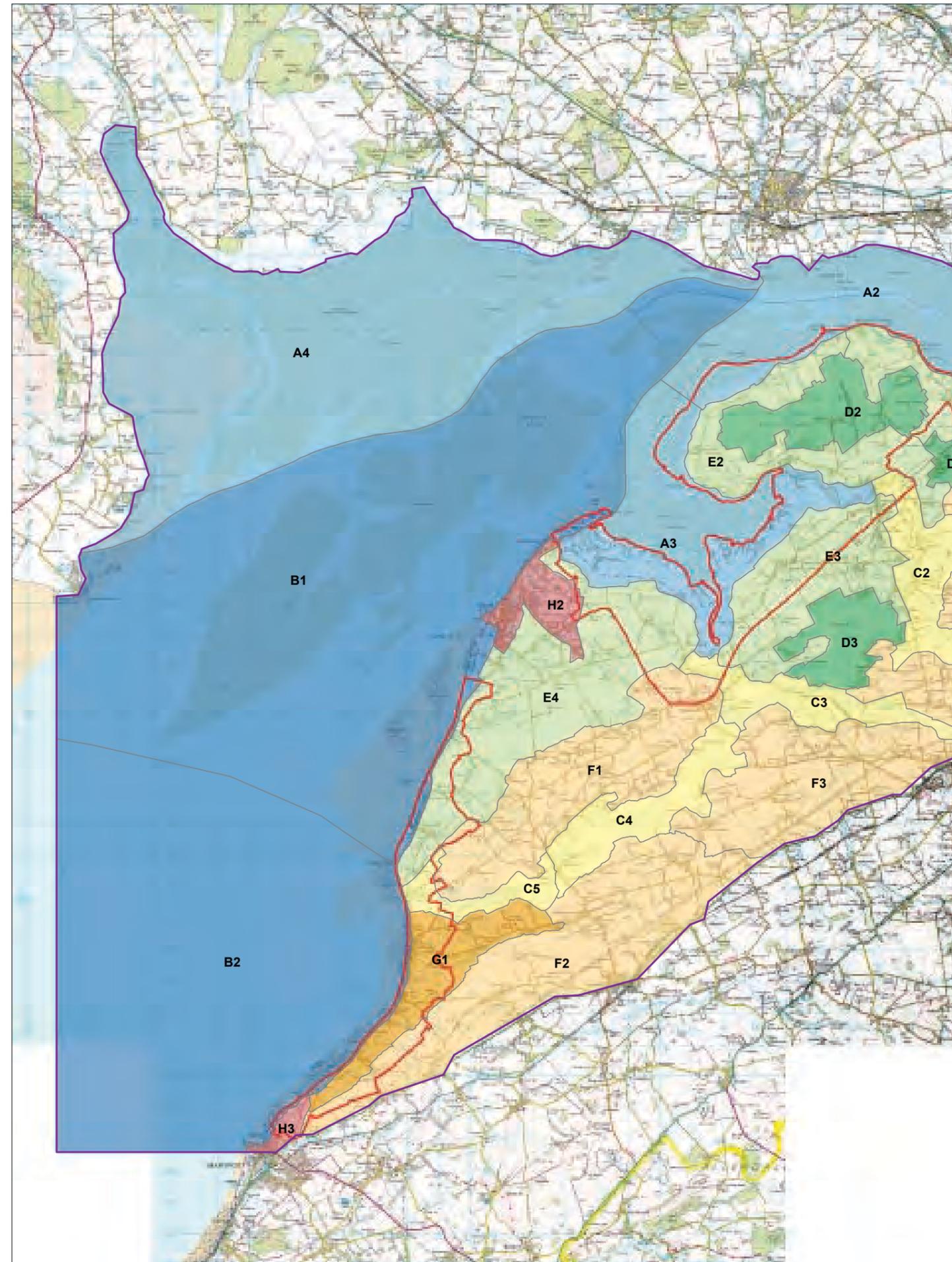
Landscape Type G: Undulating Coastal Farmland

- Landscape Character Area G1 Allonby
- Landscape Character Area G2 Burgh-by-Sands and Beaumont

Landscape Type H: Coastal Town and Urban Fringe

- Landscape Character Area H1 Kingmoor and Cargo
- Landscape Character Area H2 Silloth
- Landscape Character Area H3 Maryport





5 SEASCAPE/INTERTIDAL LANDSCAPES

SEASCAPE/INTERTIDAL LANDSCAPE CHARACTER TYPE A: INNER FIRTH INTERTIDAL FLATS AND SALTMARSH

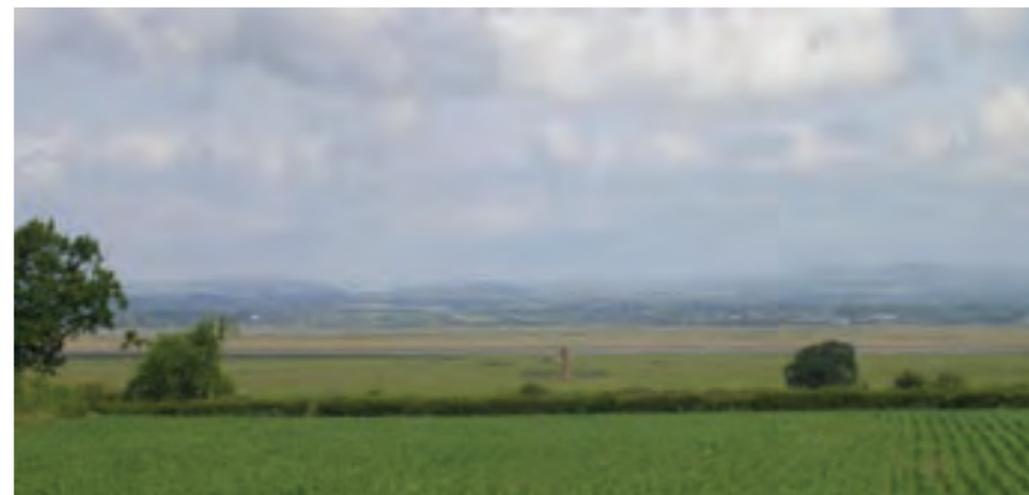


Figure 5.1: View towards Burgh Marsh, Edward I Monument and Dumfries and Galloway beyond.

Introduction and location

- 5.1 The northern section of coast within the Solway Coast AONB lies within the sheltered upper estuarine environment of the Inner Firth. This area, comprising water channels and expanses of intertidal flats, is enclosed by the landmass of Dumfries and Galloway to the north and the Cumbrian shoreline to the south and east. The large expanses of intertidal flats and channels are predominantly underwater at high tide. The intertidal flats are fringed by Rockcliffe Marsh and Burgh Marsh, amongst the most important saltmarsh systems in northwest Britain, representing an important range and sequence of saltmarsh communities, from the seaward edge moving inland. The saltmarsh vegetation reflects the age, type of substrate and management of the marshes. The older, more stable areas of marsh, infrequently inundated, are grazed by animals, and are transitional between the farmland surrounding these areas and the sea. The Inner Firth and Intertidal Flats fall within the Intertidal Flats and Coastal Marsh sub-types in the *Cumbria Landscape Character Assessment*. Maps of the location of this seascape/intertidal landscape type and the relevant seascape character areas are provided in **Figures 11-12**.

5.2 The landscape/seascape type covers the following areas:

- Character Area A1: Rockcliffe and Burgh Marshes
- Character Area A2 : Eden Channel
- Character Area A3 : Moricambe Bay
- Character Area A4 : Nith Estuary and Blackshaw Bank

Key characteristics

5.3 The key characteristics of the Inner Firth Intertidal Flats and Saltmarsh are:

- The dynamic and temporal character influenced by the state of the tide and changing with the longer term cycle of erosion and deposition. Large parts of the area are at times under water, at others exposed to reveal expanses of fine sands and mudflats dissected by dendritic creeks and channels.
- Open, flat expanses of saltmarsh are transitional to the flat coastal plains, mosses and enclosed farmland of the inland areas.
- The large scale of the landscape, with expanses of intertidal flats extending towards open sea and the skylines of Dumfries and Galloway.
- The open skies and sense of space are integral to the experience of the area.
- The mood is influenced by the movement of the tides and the quality of light that shifts with changing seasons, weather and time of day.
- An undeveloped landscape, with the influences of man confined to raised flood embankments, a disused railway line and small coastal roads that wind around the fringes of the marshes and pass along elevated embankments.
- Small, scattered farmsteads can be seen within the adjacent farmland areas, and settlements and other development on the opposite shores of the estuary are visible, but otherwise human development is limited across these areas.
- The saltmarshes which fringe the firth and bay comprise flat, open, green areas of fine grasses and saline tolerant species, which are often grazed by sheep and cattle and fringed with yellow gorse; the sights and sounds of large numbers of birds are characteristic.
- Dramatic views of the Lake District Fells to the south and of Criffel and the hills of Dumfries and Galloway.
- Low lying, extensive expanses of saltmarsh feel open and are often exposed to the wind.
- Ripples, pools and water patterns are a characteristic of the flats.

- Tranquillity, experienced by recreational walkers along the network of coastal paths and people enjoying the views over the marshes and flats to the Scottish shores beyond.
- The presence of distant development on the skyline, such as a power station and settlements along the Dumfries and Galloway coast, are reminders of a more developed world beyond the AONB.

Description

- 5.4 The inner firth comprises level, open and extensive areas of flats and water channels, into which the rivers Eden and Esk, Waver and Wampool drain. The intertidal flats extend to the more open Character Type B, Outer Firth, the open sea to the southwest and to the shores of Dumfries and Galloway to the north. This is a dynamic and quickly changing landscape, with large parts of the area at times under water, at others exposed to reveal expanses of fine muddy sands, and mudflats dissected by a dendritic pattern of channels. These are depositional landscapes of fine sand and silt, which change in extent with cycles of erosion and deposition.
- 5.5 The Inner Firth also includes large areas of saltmarsh. Tidal creeks flood and drain the marshes, forming a dendritic pattern, with the larger creeks crossed by bridges made of stone and wood to allow access for grazing. The lower seaward edges of the marshes are characterised by a fine system of creeks, channels and low eroded earth cliffs. These areas are frequently inundated by the sea. The colours and texture of the marshes vary, with shorter, finer grass swards of the lower marshes and, in more stable areas taller, salt tolerant species such as marsh samphire. The open and unsettled saltmarshes have historically been used for grazing livestock and domestic cattle and sheep. These areas provide an important habitat for breeding and overwintering birds including large numbers of whooper swan, pink-footed and barnacle goose, ducks such as wigeon and teal, the red breasted merganser and goosander. Bird-song is part of the character. Human features are limited to floodbanks at the edges, built in places to keep back the sea and built features on the margins. Along the landward edge of the marshes remnant medieval salt working lagoons and their associated linear fields and drainage ditches can be found.
- 5.6 The open skies and sense of space are integral to the experience of the area. The seascape and intertidal estuary environment within Type A differs from the outer firth environment of Type B, being less open, more enclosed by the landmasses of Dumfries and Galloway and the Cardurnock Peninsula, and the extensive areas of saltmarsh create a more gradual transition to the farmland further inland. Perceptual qualities include open views, the large scale, and horizontal nature of the area, tranquillity, dynamism and sounds of birdlife, in an area relatively unchanged by human activities. Some recreational access is available via public footpaths. The masts at Anthorn are large vertical structures visible across a large extent of the character areas of this type, and a distinctive feature in many views.

Sensitive features or characteristics

- The balance of open and undeveloped skylines above a flat sea, seen in panoramic open views from the coast.
- The tranquil nature of the intertidal landscape and fringing saltmarshes, and its natural character.
- Peaceful, pastoral scenes of grazing cattle, with the main sounds being those of bird song (notably oystercatchers and wildfowl and skylarks in spring).
- Dynamism of the intertidal flats and saltmarshes as part of the wider bay ecosystem, and its sensitivity to changes in the sea level and coastal dynamics.
- The sense that areas are protected refuges from human access and development, through the daily incursion of the sea, lending a timeless quality to intertidal flats and saltmarsh fringes.
- Contrast between open flats and marshes and the backdrops to the area: seaward views across the firth to the Scottish coast; landwards to rolling hills and drumlins and distant views of the Lake District fells.

Forces for change

- Pressures on what has been called the 'energy coast' for nuclear, low carbon and renewable energy development including onshore and offshore wind farms and other large scale development, particularly extension of developed skylines along open and undeveloped land or sea horizons.
- Development of projects such as tidal energy schemes, or on/offshore grid infrastructure, both in terms of visibility and possible alteration to the dynamic nature of the estuarine intertidal flats and marshes.
- Other types of development along the coastline, including that associated with improved access and provision for recreation, affecting the setting of the area.
- The effects of development on the character of the setting of the seascape, the views into the AONB from outside and those looking out of the AONB, particularly those along the coast of Dumfries and Galloway, around Carlisle and within the Outer Firth.
- Sea level rise leading to changing estuary dynamics and inundation of the intertidal flats and coastal marshes, a reduction in the area exposed at low tide, and possible seaward extension inland.
- Increased storminess leading to erosion of the coastal intertidal flats and saltmarshes.
- The natural cycle of change (sand to spartina to saltmarsh and vice versa) as a consequence of the movement of the Eden channel, and associated erosion and deposition, or possible interruption or change to this by sea level rise.
- Changes to grazing regimes on the marshes.

- Potential pollution of the pools at the landward edge of the saltmarsh, for example through agricultural runoff, which could threaten the rare natterjack toads.
- Turf extraction from the saltmarshes (largely historical, though currently practiced in areas within Moricambe Bay).
- Influences such as the *Marine and Coastal Access Act* which may require alterations along the coast to support a long distance coastal access route.
- The influences of the *Shoreline Management Plan* and any management recommendations which would affect the seascape or intertidal landscape.

Guidance for managing change

- A1. Seek to maintain a high proportion of undeveloped horizons and to restore (where opportunities allow) the undeveloped skylines which form the setting of the Inner Firth Intertidal Flats. These include the open water and land along the northern coast of the Solway Firth, the Lake District northern fells, and landscapes within the AONB.
- A2. Seek to influence future development within and close to landscapes forming the setting of the Inner Firth Intertidal Flats and Saltmarsh to reduce the extent of its influence upon the area. For example, preserving key sections of skyline that form the horizon to significant views.
- A3. Seek to influence future development within landscapes forming the setting of the Inner Firth Intertidal Flats so that the overall character and integrity of this seascape, its key characteristics, significant and sensitive views, defining features and the reasons for designation are not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- A4. Monitor changes in sea level and coastal erosion to determine any trends or patterns, including those as a consequence of climate change: manage the process of realignment and allow natural processes to act as advocated in the *Shoreline Management Plan* where appropriate. This should take into consideration the need in some instances to maintain or reinforce existing hard defences to protect key infrastructure, settlement and natural and cultural heritage interests.
- A5. Continue to conserve the Inner Firth Intertidal Flats for nature conservation (reflecting their status as SPA/SAC).
- A6. Conserve the extent of 'natural' saltmarshes, restoring drained and intensively farmed areas to marshes if opportunities arise, such as through the process of managed realignment.
- A7. Encourage 'integrated designation management', to help ensure the objectives of differing designations do not conflict with those for the seascape of the Inner Firth intertidal flats and saltmarshes.

- A8. Respond to the requirements of legislation such as the *Countryside and Rights of Way Act* and the *Marine and Coastal Access Act* to promote the positive development of a long distance coastal access route whilst ensuring any change is in line with the landscape management objectives of the Inner Firth Intertidal Flats and Saltmarshes.
- A9. Explore measures such as zoning or time/seasonal restrictions upon activities which may be at odds with the character of the Inner Firth Intertidal Flats and Saltmarsh seascapes (i.e. tranquillity) if needed to resolve issues.
- A10. Seek to influence any aspects of the management of fisheries and aquaculture, for example haaf netting, such that it does not conflict with the landscape and seascape objectives of the Inner Firth Intertidal Flats and Saltmarsh.

Seascape/intertidal landscape character areas

The relevant seascape character areas which make up this type are described below.



Figure 5.2: Burgh Marsh

A1 Rockcliffe and Burgh Marshes

- 5.7 The area lies in the easternmost part of the Inner Solway, where the rivers Esk and Eden meet the estuary at a complex of mud and sandflats. The marshes, mud and sand flats that extend across this area are extensive, open and undeveloped. The seaward edge of the area is highly dynamic, changing as channels, silt and sand move within natural cycles of erosion and deposition. This is linked to the shifting of the channels of the Rivers Eden and Esk, affecting the resulting extent of saltmarsh. Presently, Burgh Marsh is eroding, whilst the Rockcliffe Marsh continues to accrete.
- 5.8 The saltmarsh which is closer to the land is dryer, grassed and is grazed in places. Rockcliffe Marsh is the single largest expanse of saltmarsh in the Solway Coast AONB. The marsh is used for wildfowling and managed by the Cumbria Wildlife Trust and RSPB as a breeding area for birds in the spring

and summer. Wildfowl graze on the marshes in autumn and winter and waders use the river corridor for roosting and feeding. Birds of particular note are the whooper swan, pink-footed geese and barnacle geese, the goldeneye and goosander.

- 5.9 This area is rich in historical and cultural heritage, linked to the border and the Roman defences. Hadrian's Wall forms sections of the southern boundary and the area is backed by a series of mile fortlets. On Burgh Marsh the King Edward Ist Monument forms a local landmark.
- 5.10 Though public access to Rockcliffe Marsh is discouraged, there is some open access land over Burgh Marshes, which are crossed by a number of public rights of way, including a short stretch of the Cumbria Coastal Way and Hadrian's Wall Path.
- 5.11 The sound of bird calls and bird flight and movement are characteristic of this area. There are large open skies and uninterrupted views across the firth to Scotland. The settlements, Ministry of Defence structures, and the M6/A74 transport corridors visible at a distance along the Scottish coast are the main instances of development in a largely undeveloped landscape with a strong sense of space and remoteness. Haaf netting is practiced by single netsmen along this stretch of the coastal margin.

A2 Eden Channel



Figure 5.3: Campfield Marsh

- 5.12 The western part of the inner firth from Glasson to Scargravel Point, on the Cumbria coastline, comprises a narrower north facing stretch of coast and sea, including the channel of the River Eden and Bowness Wath. The area

comprises river channels and low lying and open intertidal flats, backed by narrow margins of saltmarshes.

- 5.13 This is the narrowest section of the Solway Firth and, from the northern coastline of the AONB, more intimate views are afforded of the Scottish coastline and hills to the north. To the south, areas of farmed coastal plain and small linear settlements rise up to overlook the firth, limiting views further inland. Views along the northern coastline of the AONB, west of Bowness-on-Solway include the dismantled railway of the former viaduct and its landfall at Herdhill Scar which form prominent landmarks. The villages of Bowness-on-Solway and Port Carlisle lie in close proximity and relate to this stretch of shore.
- 5.14 On the southern landward edge of the Eden Channel, the area is bound by the coastal road and the Hadrian's Wall Path and at low tide Kirkland Scar and Herdhill Scar are visible on the foreshore. The narrow margins of saltmarsh to the west of Bowness-on-Solway include a part of the RSPB Campfield Marsh Reserve.
- 5.15 Natural processes are affecting the extent of the foreshore, as mudflats and saltmarshes erode, and accrete elsewhere. Haaf netting is practiced by teams of netsmen along the coast.

A3 Moricambe Bay



Figure 5.4: Moricambe Bay from Sea Dyke End

- 5.16 Moricambe Bay is located to the south of Cardurnock Peninsula, where the rivers Wampool and Waver drain into the firth. The flat expanse of the bay is enclosed by Grune Point to the southwest and Cardurnock Peninsula to the north. The bay comprises large expanses of intertidal flats, dissected by systems of narrow water channels and creeks, and backed by large areas of

grazed saltmarsh between the embankment and the sea. The flats and marshes of the bay are extensive, open and undeveloped and become inundated when the tidal range is high. The saltmarsh closer to the land is drier, grassed and grazed by cattle and sheep. The area is noted for the large numbers of geese present in the spring as well as waders including dunlin and golden plover. Areas of mixed scrub, including gorse and bramble, are found at the extremities on the inland margins. The yellow flowers of the gorse are distinctive in the Solway Coast landscape.

- 5.17 Panoramic views across the bay are afforded from the roads running around the inland margins of the of the marshes, including views of the distinctive skyline of Criffel and the Lake District Fells rising dramatically beyond the flat hinterland of the Solway Coast in the southeast. Views to the masts at Anthorn on the Cardurnock Peninsula to the north of the area are characteristic.

A4 Nith Estuary and Blackshaw Bank

- 5.18 This area forms part of the setting of the AONB seascapes. It lies to the northwest of the AONB and comprises a complex of mud and sandflats and water channels, including the channel of the River Nith. The northwest of the area includes part of the designated Nith Estuary National Scenic Area. This area is more closely associated with the Scottish coast of Dumfries and Galloway.

SEASCAPE/INTERTIDAL LANDSCAPE CHARACTER TYPE B: OUTER FIRTH BEACHES AND DUNES



Figure 5.5: Views to the Scottish coast from the beaches at Allonby Bay

Introduction and location

- 5.19 The western coast of the Solway Coast AONB extends from the dunes and raised beaches at the coastal margins, across large expanses of intertidal flats to the open sea of the Outer Solway Firth to the southwest and the southern shores of Dumfries and Galloway. The intertidal flats are transitional between land and sea, depending upon the state of the tide. The seascape and intertidal estuary environment here within Type B differs from the inner firth environment of Type A, being closer to the influences of the open sea. It is more open, less enclosed by land masses, and includes sand and mud environments which, when the tide is in, appears to be part of the open sea. In addition it is more typically bound by beaches and dunes as opposed to the saltmarsh which forms the edges to the Inner Firth. Wave action and erosive forces operate and there are a range of sand dune systems, pebble beaches and low cliffs along its margins. The seascape is not classified as part of existing assessments, though parts of the seaward edge correspond to the sub-type 1a Intertidal Flats within the *Cumbria Landscape Character Assessment*. Maps of the location of this seascape/intertidal landscape type and the relevant seascape character areas are provided in **Figures 11-12**.
- 5.20 This landscape/seascape type covers the areas listed below.

- Character Area B1: Middle Bank to Dubmill Point
- Character Area B2 : Dubmill Point to Maryport

Key characteristics

- 5.21 The key characteristics of the Outer Firth Beaches and Dunes are:
- Large scale dramatic landscape of undeveloped flats and open water, with open skylines and long views.
 - Dynamic estuarine ecosystem, with fine silty sands and flats dissected with channels, intertidal areas being flooded at high tide, being present along some margins.
 - Dynamic and temporal character strongly influenced by and changing with the state of the tide and longer term cycles of erosion and deposition, with large areas of sand and mudflats at times under water and part of the sea, and at times exposed.
 - Areas of acidic dune heath and heather backing raised beaches and the mobile sand dune systems along the coastal margins, stretching southwards from Silloth, and formed at the interface with shingle ridges.
 - Consequences of historic sea level change are visible in the low earth cliffs (e.g. around Allonby Bay) where eroding coastal drumlins meet the coast, and in the raised beaches.
 - A visually and aurally dynamic seascape characterised by the sights and sounds of the sea, gently lapping water and large numbers of birds that feed on the flats, notably waders.
 - Large and open expanses of intertidal sand flats opening out to the open sea and backed by shingle and pebble beaches and dune systems to the south, and mudflats along more sheltered northern stretches of the coastal fringe.
 - A seascape that can vary from calm, mirror-like expanses of water to violent storms, with wave crests reaching six metres.
 - A large scale and open landscape, with panoramic views over the Solway Firth to the Scottish coastline and the distinctive outline of Criffel mountain in the distance.
 - The sea, and the expanses of intertidal flats at low tide, together with the vast open sky are the predominant elements in a dynamic seascape that changes dramatically with the tides and the weather, particularly affecting the mood of the seascape.
 - Views inland from the sea are largely contained by the raised areas of sand dunes and beaches.

- Seasonal recreational use of the beaches resulting in the tranquillity and activity of the coastal edge varying around the year.
- ‘Scaurs’ or pebble patches are distinctive along the beaches and support mussel beds and reefs providing important feeding grounds for wading birds.
- Influence of settlements, the small linear towns and villages which extend along the coast, and include hard sea defences at Silloth and Maryport. The presence of development, particularly the docks and lighthouses at Silloth and Maryport is prominent.
- The visibility of the offshore wind farm (Robin Rigg) seen from the coast on clear days, at sunset and when lit at night, and visibility of communication masts at Cardurnock.

Description

5.22 The Outer Firth encompasses the deeper open sea of the Outer Solway and comprises extensive shallow seas extending from the coastal margins to the open sea. The flat expanses of open water and intertidal flats are enclosed by raised beaches, pebble and shingle beaches, low cliffs and sand dunes to the Cumbrian landward edge, and contained by distant views of the hills of Dumfries and Galloway to the north and the Lakeland Fells to the south. The rich diversity of the dune and maritime heath communities are of particular ecological value and the Mawbray Banks and Silloth Dunes are designated as SSSIs. Views are open and panoramic, with skylines largely being undeveloped, although an offshore wind farm, Robin Rigg, is clearly visible in the distance. Linear settlements have developed along the margins of the Solway Coast, and the area is important for recreation. There are numerous camping and caravan sites, shoreside car parks, footpaths, and golf courses along the coastal margins.

Sensitive features or characteristics

- The open, expansive horizons and natural character of the sand and mudflats, ‘scaurs’ and open water of the Inner Solway.
- Views across the firth of the relatively undeveloped landscapes and skylines.
- The ecological value of the dunes and maritime heath communities, including the Silloth dunes and Mawbray Bank, designated as SSSIs.
- The important natural and cultural heritage, including Crosscannonby Salt pans, and sensitive intertidal and marine archaeology.
- The tranquil, peaceful character, with sounds and activities of bird life.
- Views of traditional seaside settlement of small grain, consistent character and siting in the landscape.

- Dynamism of the intertidal landscape and dune systems as part of the wider ecosystem of the Solway Firth, and its sensitivity to changes in sea level and coastal dynamics.
- North and westward views to the open sea and the distinctive outline of Criffel.
- The changing qualities of light, including dark, stormy skies and spectacular sunsets, where in the summer the sun sets behind Criffel, from some angles.

Forces for change

- Pressures for renewable energy development including onshore and offshore wind farms and other large scale development which changes the views from the coastal margins, particularly extension of developed skylines along open and undeveloped land or sea horizons, or within views of distant skylines.
- Increased storminess leading to erosion of the coastal intertidal flats and sand dunes.
- Sea level rise leading to changing coastal dynamics and inundation of the intertidal flats and sand dunes, a reduction in the intertidal area exposed at low tide, and possible seaward extension inland.
- Development of projects such as a tidal energy scheme, or on/offshore grid infrastructure.
- The requirement for further engineered coastal defences such as those along the western coast between Silloth and Maryport.
- Other types of development along the coastline, such as that associated with industry, housing and caravan parks affecting the setting of the area.
- The effects of development including around Carlisle and the southern extent of the study area on the character of the setting of the seascape, the views into the AONB from outside and those looking out of the AONB.
- Increasing demand for water sports, kite and windsurfing activities and visitor pressure along the coast requiring the management of access, and activities such as jet skiing affecting the tranquillity of the area.
- Influences of the *Shoreline Management Plan* and any management recommendations which would affect the seascape or intertidal landscape.
- Influences such as the *Marine and Coastal Access Act* which may require alterations along the coast through the requirement for a long distance coastal access route.
- Changes in areas outside the area, affecting the ‘naturalness’ and setting of this environment, e.g. large scale or non-traditional development in adjacent types.

Guidelines for managing change

- B1. Seek to maintain a high proportion of undeveloped horizons and to restore (where opportunities allow) the undeveloped skylines which form the setting of the Outer Firth Beaches and Dunes. These include the open water and land along the north and northwest coasts of the Solway, the Lake District northern fells, and landscapes within the AONB.
- B2. Seek to influence future development within, and in landscapes forming the setting of the Outer Firth Beaches and Dunes to reduce the extent of its influence upon the area. For example, preserving key sections of skyline that form the horizon to significant views.
- B3. Seek to influence future development within and in landscapes forming the setting of the Outer Firth Beaches and Dunes so that the overall character and integrity of this land/seascape are not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- B4. Monitor changes in sea level and coastal erosion to determine any trends or patterns, including those as a consequence of climate change: manage the process of realignment and allow natural processes to act as advocated in the *Shoreline Management Plan*, where appropriate. Taking into consideration the need in some instances to maintain or reinforce existing hard defences to protect key infrastructure, settlement and natural and cultural heritage interests.
- B5. Continue to conserve the dunes and heathland for nature conservation (reflecting their status as SSSI/SPA/SAC): encourage controlled grazing of the dunes and heathlands to help conserve the dunes and heathland communities.
- B6. Continue to conserve the Allonby Saltpans by the removal of scrub vegetation.
- B7. Explore measures such as zoning or time/seasonal restrictions upon activities like noisy water sports or trail biking to help resolve any issues which may be at odds with the character of the Outer Firth seascapes (i.e. tranquillity).
- B8. Encourage 'integrated designation management', to help ensure the objectives of differing designations do not conflict with objectives for the Outer Firth Beaches and Dunes.
- B9. Respond to the requirements of legislation such as the *Countryside and Rights of Way Act* and the *Marine and Coastal Access Act* to promote the positive development of a long distance coastal access route whilst ensuring any changes or development is in line with the landscape management objectives of the AONB.
- B10. Consider appropriate restoration or removal of land uses which may be at odds with the character of the Outer Firth Beaches and Dunes, such as the removal of remnant engineered sea defences where appropriate and where not in conflict with the need to protect key

infrastructure, settlement and natural and cultural heritage interests, in line with the *Shoreline Management Plan*.

- B11. In developing off-road sections of Hadrian's Wall Cycleway ensure design and implementation is sensitive to the natural character and sensitive archaeological sites of the Outer Firth Beaches and Dunes.
- B12. Seek to influence any aspects of the management of fisheries and aquaculture, for example wild mussel and oyster harvesting such that it does not conflict with the landscape and seascape objectives of the AONB Outer Firth Beaches and Dunes.
- B13. Seek to develop measures to discourage the practice of sharpening agricultural ploughs on shingle beaches where this conflicts with biodiversity.

Seascape/intertidal landscape character areas

- 5.23 The relevant seascape/intertidal character areas which make up this type are described below.

B1 Middle Bank to Dubmill Point**Figure 5.6: Silloth Bay**

- 5.24 This area comprises extensive mud and sandflats, backed by a shoreline comprising a complex of coarse sand and pebble beaches, and narrow stretches of dunes south of Grune Point.
- 5.25 Views over the Solway Firth to the coast of Dumfries and Galloway, and the Scottish hills, notably Criffel, are a distinctive feature. At low tide large expanses of intertidal flats are exposed and 'scaurs' can be seen further out from the coast line. These support mussel beds and reefs that provide

important feeding grounds for birds. Views to onshore and offshore wind farms to the south represent recent changes.

- 5.26 Hard sea defences have been built along a section of coastline at Silloth, and the structures and buildings of the port at Silloth are relatively prominent elements in an otherwise largely undeveloped landscape. Lees Scar Lighthouse, locally known as 'Tommy Legs' is a local landmark.
- 5.27 The Silloth Dunes and Mawbray Banks are designated as SSSI. The dunes lie at a dynamic interface between the sea and the land, influenced heavily by tidal movements and other coastal forces. The dunes, and the heathlands that back them, support a variety of dune and maritime heath communities, providing habitats for the natterjack toad, great crested newts and adders. Amongst the dunes, a more intimate, sheltered environment can be experienced which contrasts with the vast, open and exposed seascape that is the dominant characteristic of this area.

B2 Dubmill Point to Maryport



Figure 5.7: Allonby Bay

- 5.28 Dubmill Point marks a transition point where the shallower waters of the Solway Firth give way to the deeper, open sea. This is an area extending from the open sea to a foreshore of extensive mud and sandflats, backed by a shoreline comprising a complex of coarse sand and pebble beaches, narrow stretches of dunes and farmland on reclaimed sandy dune soils.
- 5.29 Views from along the coastline are panoramic, taking in the expanses of sea and intertidal flats at low tide, with dramatic views on clear days to Criffel rising up on the Scottish side of the Solway Firth. The hard sea defences built at Maryport, and the structures and buildings of the Port are visually prominent elements along the section of coastline. At low tide 'scaurs' can be

seen on the beach and further out. These pebble patches support mussel beds and reefs that provide important feeding grounds for several species of bird.

- 5.30 Along the landward edge the area is backed by a number of Roman Mile Fortlets and towers, which formed part of the Hadrian's Wall line of defence. The salt pans at Crosscannonby are some of the best preserved saltworks in West Cumbria and are of national significance and are an important landmark.

6 LOWLAND LANDSCAPES

LOWLAND CHARACTER TYPE C: RIVER FLOODPLAIN AND MARSHY GRASSLAND



Figure 6.1: The marshy grasslands of Black Dub

Introduction and location

- 6.2 Areas of low lying, flat floodplain, marshy grassland and improved pasture follow the courses of the Rivers Waver, Wampool and Eden and the glacial basin of Black Dub, Holme Dub and Crummock Beck across the study area. These areas are dissected by a network of drainage ditches, channels and watercourses which drain into the Solway Firth. The river floodplains and marshy grasslands lie within the Coastal Plain and Low Farmland Types of the *Cumbria Landscape Character Assessment* (although are not distinguished as a landscape character sub-type). Maps of the location of this landscape type and relevant character areas are provided in **Figures 11-12**.
- 6.3 This landscape type covers the following landscape character areas.

- Landscape Character Area C1: River Eden Floodplain
- Landscape Character Area C2 : Whitrigg Marsh and River Wampool Floodplain
- Landscape Character Area C3 : River Waver Floodplain
- Landscape Character Area C4 : Holme Dub
- Landscape Character Area C5 : Black Dub

Key characteristics

- 6.4 The key characteristics of the River Floodplain and Marshy Grassland type are:
- Low lying, flat areas of floodplain and wet pasture, with some areas of grazed marsh, which follow the course of rivers that flow into the firth.
 - Enclosure is partial and irregular, with fencing and occasional, fragmented hedges, creating an open landscape with long views along flat river valleys.
 - The green marsh grass is grazed by sheep and cattle in some areas, whilst others are characterised by rough grazing, rushes and scrub.
 - A dense network of streams, ditches and creeks dissect the areas, usually intensively managed and with eroded river banks in places.
 - The rivers themselves are not prominent features of the areas, and are not particularly visible from within the flat expanses of marshes.
 - Development is confined to the outer fringes of the areas as the land rises above sea-level, where dispersed farmsteads are scattered.
 - The presence of urban settlements is felt more in the eastern area to the west of Carlisle (Landscape Character Area C1), where long views to the northwest take in distant settlements along the Dumfries and Galloway coastline.
 - An open, flat landscape, contrasting with the undulating and rolling topography of the farmed lowland hills and drumlins surrounding it.
 - Fen peat soils are characteristic in the dubs and upper reaches of the broad and gentle river valleys.

Description

- 6.5 Extending inland from the Solway Firth, following the river corridors of the rivers Waver, Wampool and Eden, these landscapes comprise areas at the transition between a mixture of open coastal marshes, grazed by sheep and cattle, drained marshes and enclosed low lying and damp rushy fields and fens in the upper reaches of the valley. These are predominantly pastoral landscapes, with often irregular field patterns defined by networks of ditches, occasional hedgerows and, increasingly, wire fences. Several of the areas within this type are continuous with the saltmarshes and intertidal flats of the upper estuarine environments of the firth, but are relatively less open and exposed, enclosed by agricultural land which gradually rises above it. Elsewhere the agricultural land is based on drained fenland used for grazing, such as the areas surrounding Salta Moss and Common Moss.
- 6.6 Inland, most of the areas dissolve into surrounding lowland farmland landscapes. Some areas are intensively managed for grazing and silage production whilst in others a richer diversity of wildlife is supported in remnant mosses. The areas within this type vary in scale and enclosure. The River Waver is enclosed by extensive areas of flat improved pasture that rises very gently either side of the relatively broad valley, whilst the River Eden is enclosed by wooded embankments and in places steep eroded sandy banks of several metres in height, giving it a greater degree of intimacy and channelling views. The drainage channels, ditches and the meandering course of the rivers themselves are visually not very prominent. This type is virtually unsettled,

although the buildings and structures around the margins are significant features. The roads and dismantled railway that cross them are also prominent features, particularly when there are associated ribbons of trees and gorse.

Sensitive features or characteristics

- Tranquil and rural nature of the areas at the transition between the saltmarshes and the hinterland farmland.
- Horizontal character of the landscape and the large, open sky.
- The distant, horizontal and undeveloped skylines of the firth in seaward views across the marshes and intertidal flats, and the more varied skylines formed by the rolling farmed lowland hills and drumlinised landscape inland.
- Ecological diversity and visual and textural variety provided by the remaining remnant mossland; their undeveloped and 'naturalistic' character.
- The simple balance and mosaic of open water, rushes, and damp pasture which could easily be changed by sea level or water table rise, or changes in water quality.
- Long views along low lying mosses and open marshy pasture.
- Contrast of the flat landscapes with the surrounding rolling hills.
- Salty, estuarine influences at the mouths of the river estuaries, a reminder of the presence of the sea.
- Appreciated sunsets.

Forces for change

- Pressures for renewable energy development including onshore and offshore wind farms and other large scale development which changes the views across the firth and inland towards the rolling hills of the surrounding farmland approaching the Lakeland Fells.
- Development of projects such as a tidal energy scheme, or on/off shore grid infrastructure, both in terms of visibility and possible alteration to the dynamic nature of the balance between the estuarine intertidal flats and marshes and the low lying floodplains.
- The effects of development on the character of the setting of the river floodplains, the views into the AONB from outside and those looking out of the AONB to surrounding landscape and seascapes.
- Sea level or water table rise leading to flooding of areas, or saline intrusion into freshwaters which are currently drained and farmed and changes in the balance and character of these areas as a result of sea level rise.
- Drainage and 'improvement' of areas of marsh and remaining wetland mosses, intensification of agriculture across areas which are already drained, demand for different crops, or changes in grazing regimes in response to increasing demands for food or energy crops.
- Changes in field boundary and hedgerow management, such as neglect of hedges and blocking of drainage channels, flail-cutting versus traditional laying; or replacement with fencing.

- Changes to these landscapes as a consequence of the management objectives of conservation bodies such as the Cumbria Wildlife Trust (e.g. at Salta Moss or Common Moss).
- Changes in water quality influencing landscape character, for example through the presence of higher levels of nutrients which could alter vegetation.
- Drainage as a consequence of potential flood alleviation schemes.
- Sand and gravel extraction (e.g. of the sand pits at Round Hill south of Aldoth).
- The influences of the *Shoreline Management Plan* and any management recommendations which would affect the transitional landscape.
- Influences such as the *Marine and Coastal Access Act* which may require alterations along the coast through the requirement for a long distance coastal access route.

Guidelines for managing change

- C1. Seek to maintain a high proportion of undeveloped horizons and to restore (where opportunities allow) the undeveloped skylines which form the setting of the river floodplains. These include the surrounding intertidal flats and saltmarshes, the mosses, and the Coastal Plains, Drumlinised Lowland Farmland, and Undulating Coastal Farmland, as well as the higher areas of farmland to the south, outside the study area.
- C2. Continue to conserve the remnant lowland mosses and fens for nature conservation: discourage drainage; discourage peat extraction – seek to encourage restoration measures (such as blocking drains and repairing areas of erosion) and highlight the value of lagg fen habitats.
- C3. Seek to influence future development within, and in landscapes forming the setting of, the floodplains and wetlands so that the overall character and integrity of these landscapes is not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- C4. Conserve the extent of 'natural' remnant mosses, fen and marshes towards the coastal margins, restoring drained and intensively farmed areas to grazing marsh or wet mosses where appropriate.
- C5. Encourage the retention of floodplains as open and undeveloped areas, and the restoration of natural washland processes through the removal of flood banks. In certain locations such as at the edges or in areas of long established fields replacement of fences with traditional hedge boundaries may be appropriate. Manage those areas of hedgerows which exist already by laying.
- C6. Monitor changes in sea level/river outflows and riverine erosion to determine any trends or patterns, including those as a consequence of climate change: manage the process of coastal realignment through natural processes as advocated in the *Shoreline Management Plan*.
- C7. Ensure that projects relating to river catchment, river basin, or flood risk management do not conflict with the landscape objectives for the area, and where possible avoid the use of hard engineered details or urban-style solutions which would not be suited to the rural character of the area.

- C8. Encourage 'integrated designation management' to help ensure the objectives of differing ecological and landscape designations do not conflict with those of the river floodplain and marshy grasslands landscapes both within the AONB and the wider study area.
- C9. Encourage nature conservation in these areas and promote a vision for these areas to be restored to wetland habitats.
- C10. Respond to the requirements of legislation, such as the *Countryside and Rights of Way Act* and the *Marine and Coastal Access Act*, to promote the positive development of a long distance coastal access route whilst ensuring any changes or development is in line with the landscape management objectives of the floodplains and wetlands.

Landscape character areas

- 6.7 The relevant landscape character areas which make up this type are described below:

C1 River Eden Floodplain

- 6.8 The River Eden floodplain lies in the northeast of the study area and extends from the outer western fringes of Carlisle to where the River Eden enters the firth, where it becomes braided into sand and gravel banks at Old Sandsfield. In the southeast of the area the ground rises and becomes more undulating. The area comprises flat stretches of marshland and wet floodplain used as pasture, and bounded by raised wooded banks and low cliffs, which create an enclosed area contrasting with the large scale, open Solway Firth, as well as with the higher, undulating farmland of the surrounding farmland.
- 6.9 A distinctive escarpment of red sandstone, 'Red Rocks', designated a Regionally Important Geological Site (RIGS), forms part of the northern boundary of the area, close to the village of Rockcliffe. The floodplain is overlooked by Cargo and Rockcliffe to the east and forms part of the setting to the agricultural areas that surround these settlements. The raised, wooded bank that bounds the western edge of the area at Beaumont prevents views inland in this direction. This is a smaller scale, more enclosed landscape than other character areas of the same type, and it is bound by the more developed landscape of Carlisle to the east.

C2 Whitrig Marsh and River Wampool Floodplain



Figure 6.2: The River Wampool Floodplain, looking west from Whitrig Marsh

- 6.10 Located on the eastern edge of Moricambe Bay, this is an area comprising grazed marsh, including Whitrig Marsh, reclaimed marsh and wet pasture following the courses of the River Wampool and Bampton Beck. The area is flat and open, with unenclosed grazing areas and irregular field patterns across improved pasture. The area lies immediately north of the village of Kirkbride and continues to the east of the settlement towards Wampool.
- 6.11 The area is characterised by flat, open, and smooth textured bright green swards dissected by drainage channels, ditches and the meandering course of the River Wampool. There are very few hedges and trees, giving the area a strong sense of flatness and openness. It is enclosed by, and in some areas is contiguous with, low-lying farmed coastal plains, across which the wooded fringes of the Drumburgh Moss and Bowness Common are visible. Two disused railway lines run through the area, crossed by low bridges, and are marked out by narrow bands of trees in sections. These form distinctive breaks in the horizontal grain of the landscape, where there are otherwise few vertical features. Turf cutting is practiced in this area which contributes to the localised lowering of field levels.

C3 River Waver Floodplain**Figure 6.3: The floodplain of the River Waver**

- 6.12 Extending from where the River Waver enters the firth at Moricambe Bay, the area largely follows the River Waver floodplain. It comprises small areas of the flat, open marshland of Rabycote Marsh in the north, and open river floodplains of predominantly grazed pasture, some of which are reclaimed floodplain mire. These areas of reclaimed mire are found along the lower stretch of the River Waver, south of Abbeytown.
- 6.13 The land is crossed by drainage channels and fringed with occasional trees and untrimmed, gappy hedgerows. The enclosure pattern is irregular and open, with fields predominantly bounded by drainage channels and post and wire fencing, which contributes to the openness of the landscape. Large parts of the area are intensively managed, with very limited tree cover and river channels frequently eroded.

C4 Holme Dub

- 6.14 Holme Dub lies to the southwest of Abbeytown and comprises damp, rushy pasture that follows Holme Dub and Crummond Beck. It is divided predominantly by wire fences, and ditches without reeds. Across the northern extents, the sand and gravel extraction taking place in the adjacent farmland is visible. The landscape has a more varied landcover than in the surrounding areas of farmland, providing a wider diversity of habitats. Intensive agricultural practices are evident in parts of the landscape, though a number of areas are less intensively managed, with rush pasture and areas of scrub. Dispersed, fragmented and remnant areas of mossland are present throughout, including Common Moss, Chapel Moss and Cowper Bog. These

support a rich variety of habitats, which are of high nature conservation importance and significant for potential palaeo-environmental deposits and archaeological remains.

C5 Black Dub**Figure 6.4: View over Salta Moss and Black Dub from Salta**

- 6.15 The Black Dub area is located towards the western coast of the AONB, to the south of Allonby. The damp, marshy lowland landscape has a varied land cover that contrasts with the surrounding areas of farmland, providing a wider diversity of habitats. Intensive agricultural practices are evident in parts of the landscape, although a number of areas are less intensively managed, with rush pasture, and areas of scrub and gorse. Dispersed, fragmented and remnant areas of mossland are present throughout the area, including Salta Moss. The Salta Moss, which was once extensive, is located within the floodplain and supports a rich variety of habitats, which are of high nature conservation importance and significant for potential paleo-environmental deposits and archaeological remains. The mosses also provide a variety of colour and texture that contrasts with the smooth, green expanses of intensively managed pasture which characterises other parts of the floodplain. The Lakeland Fells form a dramatic backdrop to the rolling hills and drumlins of the lowland farmland in views to the south of the study area.

LOWLAND LANDSCAPE CHARACTER TYPE D: COASTAL MOSSES

Introduction and location

- 6.16 The mosses of the Solway Coast refer to the low lying raised mires with a raised peat 'dome', now rare habitats nationally and in recognition of this have been designated as Sites of Special Scientific Interest (SSSI) and Special Areas of Conservation (SAC). The largest mosses found within the study area are Glasson Moss, Bowness Common, Wedholme Flow and Drumburgh Moss. Together these form the South Solway Mosses National Nature Reserve (NNR), managed by Natural England. The poor acidic soils give rise to characteristic vegetation and the areas comprise a mosaic of raised bog, heathland, open water, reeds and some wet woodland. The coastal mosses have high ecological value and are also valued for their rarity and palaeoecological/archaeological interest. The areas within this type include the four largest mosses comprising the South Solway Mosses NNR and are concentrated on and around the Cardurnock Peninsula: Wedholme Flow; Bowness Common; and Glasson Moss and Drumburgh Moss. The mosses are included in the Coastal Mosses of the *Cumbria Landscape Character Assessment* and Raised Peat Bog in the *Solway Coast Landscape*. Maps of the locations of this landscape type and relevant character areas are provided in **Figures 11-12**.
- 6.17 The landscape type covers the following landscape character areas.

- Landscape Character Area D1: Drumburgh Moss
- Landscape Character Area D2: Bowness Common and Glasson Moss
- Landscape Character Area D3: Wedholme Flow

Key characteristics

- 6.18 The key characteristics of the coastal mosses are:
- Low-lying raised mires comprising flat or slightly undulating hummock-hollow mosaics, including water pools, marsh, moss, reeds and fringing wet woodland; usually stands of birch; heather and purple moor grass grow in the slightly drier areas.
 - Dynamic landscapes which change dramatically with the seasons, from green to browns and yellow/gold colours of grass foliage, seasonal flowering of the heather and with the time of day and weather.
 - The shifting qualities of light and the sunsets are often notable.
 - An absence of settlement and intrusion, contributing to a sense of remoteness and tranquillity.
 - Landscape of high ecological value, supporting rare assemblages of deep peat with sphagnum mosses, cotton-grass, carnivorous plants, including the uncommon great sundew, dragonflies, damselflies, moths and butterflies. It is also an important habitat for specialised bird species, most notably redshank and skylark.

- Variety of long views across the low-lying mosslands to the seascape of the Solway Firth or the fells of the Lake District, and short views across heath vegetation enclosed by wet woodland or reeds.
- Of high amenity value and increasingly promoted as an attraction for visitors to the area, causing occasional localised concentrations of activity in this otherwise tranquil landscape.
- The natural quality of the landscape, although modified by previous peat extraction, with very limited development within the mosses themselves.
- A small number of traditional farmsteads and cottages of a distinctive vernacular style associated with the Solway coast are located in adjacent areas, which can be seen from the edges of the mosses.
- Fringed by deciduous woodland, predominantly birch with a striking purple hue in the winter.

Description

- 6.19 The mosses of the Solway Coast are flat, low lying, landscapes which were once extensive across the Solway basin, before being drained and improved for agriculture. They are large areas of rain-fed peatland, forming shallow raised domes of peat at a depth of 6.5m in places. The four largest mosses in the study area are found on and around the Cardurnock Peninsula and include Wedholme Flow, Bowness Common and Glasson and Drumburgh Mosses. These form part of the South Solway Mosses NNR and are protected by a range of designations including: SSSI, SAC and, for the coastal mosses, Special Protection Areas (SPA) for their importance to migratory birds. Land cover comprises a mosaic of raised bog, mire, heathland, open water, reeds, and some wet woodland. The fringes of woodland typically include birch, alder and goat willow. Wetland and woodland habitats are of high biodiversity value and are rich in birdlife. Roads, paths and settlement are confined to the higher and dryer land around the margins.
- 6.20 This is a tranquil landscape, with a variety of long views available over the adjacent coastal plains and Solway seascape and up to the Lake District Fells, and short views contained by tall reeds or woodland. The mosses are generally not very visible from the surrounding areas of coastal pasture due to their low elevation and screening by fringes of birch woodland. Large parts of the mosses are managed by Natural England, whilst parts of the mosses form nature reserves managed by Cumbria Wildlife Trust and the RSPB, though others are still under private ownership. Several of the mosses have been subject and continue to be subject to projects to 're-wet' them, to improve them as wetland habitats for nature conservation (e.g. Wedholme Flow). The sound of birds is widespread (curlew, reed bunting and snipe) and the areas are popular with bird watchers. The mosses are also enjoyed by visitors for their attractive semi-natural landscapes.

Sensitive features or characteristics

- The undeveloped and 'naturalistic' character of the mosses.
- The delicately balanced mosaic of raised bog, wet and dry heathlands, open water, reeds, and wet woodland which could easily be changed by alterations in water availability or quality.

- The rich habitats of high ecological importance supporting a range of common and more rare species, with a visible presence of birds, insects and roe deer.
- Sense of openness, where there are few vertical features and a wide horizontal plane dominates, allowing long views along low lying mosses to the contrasting Lake District Fells, or short views into heath vegetation depending on variations in topography or tree cover.
- The high amenity value of the landscape which at the same time is particularly sensitive to disturbance or alteration by the presence of people, traffic or development within surrounding landscapes.
- Dramatic contrast of the flat landscapes with the surrounding farmland and distant hills and the fresh water mires with the seascape of saline marshes and intertidal flats.

Forces for change

- Pressures for renewable energy development including onshore and offshore wind farms and other large scale development which may change the views from the mosses, particularly extension of developed skylines along open and undeveloped land or sea horizons.
- The effects of development on the character of the setting of the Coastal Mosses, the views into the AONB from outside and those looking out of the AONB.
- Increased flows in water courses and increased winter rainfall, contrasting with increased summer drying potentially resulting in changes to the raised mire systems, such as cracking or erosion.
- Possible increases in the salinity or incidence of sea water incursion to the edges and deep basal layers of the mosses due to sea level rise.
- Drainage of areas of wetland moss, intensification of agriculture across areas which are already drained, demand for different crops, or changes in grazing regimes in response to increasing demands for food or energy crops.
- Changes to these landscapes as a consequence of the management objectives of conservation bodies such as the RSPB (e.g. at Bowness Common or Wedholme Flow).
- Increasing visitor pressure affecting tranquillity and biodiversity, for example at Glasson Moss and Drumburgh Moss.
- Changes in water quality influencing landscape character, for example through presence of higher levels of nutrients which could alter vegetation or reed growth which may affect the extent of open water.

Guidelines for managing change

- D1. Seek to maintain the high proportion of undeveloped views and skylines which form the setting of the Coastal Mosses. These include the surrounding Coastal Plains and Drumlinised Lowland Farmland within the AONB, and also the higher farmland to the south approaching the Lakeland Fells outside the AONB. Seek to reduce the extent of influence of development so that it

affects localised sections, rather than large portions, of skylines to avoid damage to key characteristics or intrusion upon valued views.

- D2. Seek to influence future development within, and in landscapes forming the setting to, the Coastal Mosses so that the overall character and integrity of these landscapes are not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- D3. Monitor changes in wetness and water quality to determine any trends or patterns, enabling the development of an appropriate and considered response to changes in seasonal wetting and drying and erosion of the mosses as a result of climate change.
- D4. Ensure that any projects in surrounding areas relating to river catchment, river basin, or flood risk management do not conflict with the landscape or biodiversity objectives for the areas.
- D5. Continue to conserve the Coastal Mosses and raised mires for nature conservation (reflecting the status of some areas as National Nature Reserves, and others as RSPB reserves): discourage drainage of the mosses or raised mires: discourage peat extraction and burning.
- D6. Conserve the extent of 'natural' mosses and raised mires, restoring drained or farmed areas on their peripheries to wet mosses where appropriate for reasons of landscape and biodiversity and if opportunities arise.
- D7. Encourage the retention of mosslands, mires and floodplains as open and unenclosed areas and encourage the softening of the edges of the mosses and transitions of enclosed agricultural land to fen carr and open water. Where possible encourage removal of any fences. In certain locations, such in areas of long-established fields, their replacement with traditional hedge boundaries may be appropriate.
- D8. Encourage the production of 'integrated management plans' helping, for example, to ensure that objectives associated with management of Drumburgh Moss as a Cumbria Wildlife Trust Nature Reserve are synchronised and consistent with the overall vision and objectives for AONB landscapes and the wider area.
- D9. Promote the creation of openings within the fringing woodland to allow public appreciation of views over open mosses and to maintain the landscape mosaic - where habitat network and conservation objectives allow. Take opportunities to remove exotic coniferous plantations and to replant with native species.
- D10. If required in the future, explore measures for visitor management, including traffic and parking, to help resolve any issues which may be at odds with the character of Coastal Mosses (i.e. tranquillity and naturalness).
- D11. Respond to the requirements of legislation such as the *Countryside and Rights of Way Act* to promote the positive development of access routes whilst

ensuring any changes or development is in line with the landscape management objectives of the AONB.

- D12. Promote sustainable reuse and restoration of vernacular buildings and barns on the settled margins of the mosses and floodplains where they are falling into disrepair.

Landscape character areas

- 6.21 The relevant landscape character areas which make up this type are described below.

D1 Drumburgh Moss



Figure 6.5: Drumburgh Moss

- 6.22 Drumburgh Moss, an area of raised mire, is part of the South Solway Mosses SAC and NNR and located southeast of Glasson Moss and Bowness Common. The area is managed by the Cumbria Wildlife Trust and designated a SSSI. The area contains both wet and dry heath, scrub and grassland, which are maintained by controlled grazing. It is fringed with narrow bands of broad-leaved trees; including stands of wet birch and willow carr. Parts of the area have been cut for peat in the past and restoration work has been carried out to 're-wet' the mossland.
- 6.23 The moss is bisected by a dismantled railway and is also crossed by the Cumbria Coastal Way. The small, nucleated settlement of Fingland occupies higher ground to the south of the moss.

D2 Bowness Common and Glasson Moss



Figure 6.6: Bowness Common

- 6.24 The two mosslands that make up this area are located on the elevated areas of the Cardurnock Peninsula and are part of the South Solway Mosses NNR. Glasson Moss represents the most intact and best preserved mossland of the South Solway and is under the management of Natural England. The mosses comprise wet and dry heathland fringed by stands of wet birch and willow carr and areas of open water. Parts have been cut for peat and restoration work has been carried out to 're-wet' the mossland. A road runs across the area, over the peninsula, flanked by a narrow strip of improved pasture separating the two mosses.
- 6.25 Views within these mosses are largely contained by the landform and the stands of birch that fringe the edges of the mosses and which follow the disused railway line that crosses Bowness Common. Rogersceugh Farm, situated on a small elevated area of improved pasture, lies within Bowness Common and forms a focal point in an area with an otherwise horizontal grain.

D3 Wedholme Flow

**Figure 6.7: Wedholme Flow**

- 6.26 Wedholme Flow is a flat and open lowland raised peat bog belonging to the South Solway Mosses SAC and NNR. It contains the largest area of intact raised mire in England and is designated as a SSSI. The moss is being managed for conservation and restoration work has been carried out across areas previously subject to peat extraction and drainage. This work is ongoing. The area includes a fringe of mixed deciduous and coniferous plantation woodland along the eastern and northern margins. The Flow is enclosed by surrounding areas of farmland which rise up to the south and east. Panoramic views are afforded from the moss, including to the Lake District fells to the south. Some human elements, including wind turbines, are apparent within these distinctive views to the south.

LOWLAND LANDSCAPE CHARACTER TYPE E: COASTAL PLAIN

Introduction and location

- 6.27 The coastal plains of the Solway Coast are a rural landscape of flat or slightly undulating, low lying farmland occurring along the coastal fringes of the study area, along the west coast and through the northern areas bounding the Inner Firth. The field structure is largely based around the medieval enclosures with a pattern of narrow strip fields and larger 'outfields' around the villages, as well as the regular geometric pattern of parliamentary enclosures. These flat landscapes contrast with the coastal margins of the marshes and dunes as well as the hills and drumlin landscapes of the Drumlinised Lowland Farmland (Type F) which rise above them, inland. The plains are a transitional landscape between the seascapes of the Solway Firth and the rolling landscapes of the Drumlinised Lowland Farmland. The coastal plain areas are included predominantly as sub-type 2c Coastal Plain in the *Cumbria Landscape Character Assessment*. Maps of the location of this landscape type and relevant landscape character areas are provided in **Figures 11-12**.
- 6.28 The landscape type covers the following landscape character areas.

- Landscape Character Area E1: Bowness to Boustead Hill
- Landscape Character Area E2: Cardurnock Peninsula
- Landscape Character Area E3: Newton Arlosh and Kirkbride
- Landscape Character Area E4: Seaville to Mawbray
- Landscape Character Area E5: Rockcliffe and Mossband

Key characteristics

- 6.29 The key characteristics of the Coastal Plain are:
- A large scale, flat, open landscape, with a strong relationship to the coastal margins and the rural farmland of the plains.
 - Wind sculptured trees lining roadsides along the coastal fringe, including avenues of beech.
 - Coastal pasture predominates, enclosed by ditches and hedgerows planted on raised banks, with a distinctive pattern of small 'inner fields', and larger 'outer fields'.
 - Medium to small fields of geometric parliamentary enclosures are interspersed with older field enclosure patterns of medium sized irregular fields and long narrow strip fields.
 - Strong time depth of the landscape reflected in the remains of Roman fortifications along the coastal edges, the Hadrian's Wall World Heritage Site, and the evidence of medieval cultivation and land use patterns. Later industrial heritage is also visible, for example the remains of the former railway and canal links and defence structures from the Second World War.

- Historic villages, such as Newton Arlosh, Kirkbride, Newtown and Mawbray are clustered within coastal pasture and closely related to the pattern of the fields.
- Attractive open views are seen across the firth, intertidal flats and marshes to the north and northwest, with Criffel and Scottish hills forming key focal points. Views inland across the higher areas of drumlinised farmland accentuate the flat and open character of the plains.
- Distinctive red sandstone gate stoops and hedgerows laid in the North Cumberland style with mounted 'kests'.
- A mixture of winding lanes and straight linear roads cross through the farmland, reflecting the localised pattern of fields and drainage ditches. Roads and lanes are often rectilinear and slightly raised above the surrounding pasture, or sunken beneath the level of adjacent fields, historically to help with droving animals.
- Settlements provide a variety of architecture styles and building materials, including: the traditional buildings of sandstone, cobbles and 'clay dabbin' in the historic villages, Newton Arlosh, Mawbray and Newtown; Georgian and Victorian architectural styles of the seaside resorts of Silloth and Port Carlisle; more recent chalet style bungalows and suburban housing.
- Development associated with holiday centres and caravan parks is evident within this type.

Description

- 6.30 Expanses of flat and open plains extend inland from the coastal margins of the Solway Firth in several parts of the study area. This is an agricultural landscape based on fluvial drift, marine alluvium, and occasionally boulder clay, and comprises predominantly improved pasture, with some limited areas of rough grazing around the Cardurnock Peninsula. Characteristic narrow strip fields and larger 'outfields' from the medieval enclosures are interspersed with the geometric pattern of later parliamentary enclosures. Fields lying on very flat areas are drained by a network of linear ditches, and fields on the outer seaward edges are often orientated towards the coastal edge. This agricultural landscape is strongly influenced by its coastal setting, with sparse tree cover and gappy hedges, also comprising gorse on particularly exposed coastal stretches. Hedgerow trees and beech trees lining the coastal roads and contorted by the wind are an attractive feature. Further inland the pasture is more sheltered, with occasional copses and shelterbelts, and well maintained hedges of hawthorn and blackthorn, sometimes mounted on stone banks locally known as 'kests'.
- 6.31 These landscapes have a well settled and historic character with features such as Holme Cultram Abbey in Abbeytown being land marks. The backdrop of the Drumlinised Lowland Farmland, farmed hills and the Lake District Fells beyond provides an attractive setting. Lanes, which can be elevated or sunken, pass through the farmland and can be busy with traffic at peak times, these areas being popular residential and holiday destinations. The population is seasonally increased through occupation of the numerous caravans, particularly around Silloth.
- 6.32 Lines of dismantled railways that cross the northern areas are visible and picked out further by the trees and scrub vegetation, which follow the embankments of cuttings. Remnants of defence structures from the Second World War and other 20th

century military sites, including the airfields at Kirkbride, Silloth and Anthorn are key features in the landscape, particularly around the south of Cardurnock Peninsula and inland from Moricambe Bay. The masts at Anthorn are distinctive vertical features across large areas of the Solway coast and indicate the continuity of the historical industrial and military use of the area.

Sensitive features or characteristics

- The continuity and intervisibility between the large scale, exposed, open seascape of the marshes and intertidal flats and the enclosed fields of the Solway plain.
- Rural and historic settled character in association with the villages and hamlets.
- Coastal wind sculptured hedgerows and lines and stands of contorted beech trees along lanes.
- Rich historical interest, including traditional village cores, industrial heritage and archaeological sites associated with the Roman frontier, the Cistercian monks of Holme Cultram Abbey and medieval monastic granges.
- Traditional hedges, laid in the distinctive North Cumberland style and characteristic 'kests'.
- The backdrop of the green farmed rolling hills that form the transition to the uplands of Cumbria and the Lake District fells beyond.
- The secret and peaceful sunken lanes with rich wild flowers along their edges.
- Strong sense of rural tranquillity and peacefulness in some areas.
- Distinctive views over expanses of intertidal landscapes to the vast open, undeveloped skylines of the Solway Firth and the Scottish hills.

Forces for change

- Changes in field boundary and hedgerow management e.g. strimming versus traditional laying, neglect of the raised 'kests', or replacement with post and wire fencing and the disappearance of the sandstone gate stoops.
- Pressures for renewable energy development including onshore and offshore wind farms, tidal energy schemes, electricity grid infrastructure and other large scale development which may change the views from the coastal plains, particularly extension of developed skylines along open and undeveloped land or sea horizons.
- Expansion of residential and commercial development including across the areas outside the AONB and around Kirkbride, to provide housing and industrial estates.
- The effects of development on the character of the setting of the AONB and wider area, the views into the AONB from outside and those looking out of the AONB, including the Lake District fells.
- Climate change, sea level rise, increased storms and coastal erosion and the managed realignment recommendations of the *Shoreline Management Plan*.
- The direct and indirect effects of climate change, such as storm damage to trees, changing vegetation/land uses and renewable energy development affecting the landscape character of the AONB, or its setting and outlook.

- Pressures associated with increased traffic and parking needs as a result of tourist development, in relation to the size of roads.
- Extension of and infill development in open areas between the housing areas of settlements, as a result of demand for new housing.
- Small scale yet incremental changes resulting from home 'improvements' and extensions, suburbanisation, road upgrading or alterations and new signage, etc.
- The influences of the Cumbria development policies in the emerging *Local Development Frameworks*, influencing new housing sites.
- Changes in farming practices and land use, demand for alternative land uses, alteration to grazing regimes and changing demand for food or energy crops (which may influence existing management agreements) as well as the increased use of large farming machinery, and tractors using the small narrow lanes and damaging gate stoops.
- Pressure for campsite development/redevelopment (including reduction in farmland extent due to the need for additional land) and the increasing size of caravans and incremental suburbanisation of caravan parks.
- Influences such as the *Marine and Coastal Access Act* which may require alterations along the coast through the requirement for a long distance coastal access route.
- Pressure for the expansion of industrial land uses which may be at odds with the rural landscape such as hard standing areas of disused airfields.
- Degradation of the concrete of military structures, of cultural and historical significance in the area, when not properly maintained or sensitively developed and falling into disrepair.

Guidelines for managing change

- E1. Seek to maintain the high proportion of undeveloped views and skylines which form the setting to the Coastal Plains of the AONB and those of the wider study area. These include the horizons to views over open sea, bay or firth as seen from the coastal roads and the coastal plains within the AONB, but also the Scottish hills and coast and the northern fells of the Lake District. Seek to reduce the extent of influence of development, for example so that it affects localised sections of rather than large proportions of skylines.
- E2. Seek to influence future development within and in landscapes forming the setting to the Coastal Plains of the AONB and wider area, so that the overall character and integrity of these landscapes, special qualities, key characteristics, cherished views, defining features, and the reasons for designation are not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- E3. Monitor changes along the seaward edges of the Coastal Plain to determine any trends or patterns in coastal erosion enabling the development of an appropriate and considered response to the consequences of climate change. Manage the process of realignment and allow natural processes to act, as advocated in the *Shoreline Management Plan*, where appropriate and taking into consideration the need in some instances to maintain or reinforce

existing hard defences to protect key infrastructure, settlement and natural and cultural heritage interests..

- E4. Seek to continue influence on the nature of highways and other transport/utilities related work in the Coastal Plains of the Solway and to encourage a sympathetic approach which is in keeping with the rural landscape, including keeping street lighting, signage, barriers and road lining to a minimum, avoiding the use of hard engineered details, and seek to protect and return the rich verge flora of the lanes.
- E5. Support measures which reduce landscape and visual impacts upon the Coastal Plains of the Solway, both within the AONB and the surrounding landscape that forms its setting, such as routeing power lines underground, sensitive siting of any communication masts, or appropriate siting and design of small and domestic scale renewable energy projects.
- E6. Remove or consider restoration of degraded areas of former military land uses (if not protected or of historic interest) when opportunities arise, including redundant concrete buildings, structures and the top soiling of concrete surfaces in disused airfields to promote wild flora.
- E7. Seek to restore or replace the traditional gate stoops so that these can accommodate the needs of larger farm vehicles, but so that they remain a characteristic features in the landscape.
- E8. Seek to maintain hedgerow trees and trees lining the coastal roads, replacing trees as they are removed and replanting when appropriate. Encourage the planting of trees along avenues, in hedgerows and within tree clumps, copses and woodlands to maintain these as features of the landscape in the future. Consider appropriate species to enhance robustness to the effects of climate change and build adaptive capacity in the landscape.
- E9. Promote carbon-neutral and domestic scale renewable projects in association with existing development within the coastal plains of the Solway and where they do not detract from the character of the area or compromise the special qualities of the AONB and wider area.
- E10. Continue to promote nature conservation through appropriate management such as encouraging de-intensification, a reduction in the use of agricultural chemicals and the production of hay instead of silage. Take opportunities for positive habitat creation arising from any reduction in intensity of agriculture, including encouraging the use of small herds for conservation grazing of small sites or those which are hard to manage, and promoting wild flora along verges and field margins.
- E11. Manage and influence the response to possible future demands for increased food and energy crops, and other knock on effects of climate change such that the character of the Coastal Plains of the Solway are not substantially altered.

- E12. Explore measures for visitor management, including traffic and parking, to help resolve any issues which may be at odds with the character and special qualities of the Coastal Plain (i.e. tranquillity and naturalness).
- E13. Where the Coastal Plains lie adjacent to the coast, respond to the requirements of legislation such as the *Countryside and Rights of Way Act* and the *Marine and Coastal Access Act* to promote the positive development of a long distance coastal access route whilst ensuring any changes or development is in line with the landscape management objectives of the AONB and wider area.
- E14. Work with the local authorities to influence policy and planning applications such that new development is appropriate to the landscape, in character with existing settlement, and when possible such that new proposals can be used to improve upon the existing situation.
- E15. Develop and adopt appropriate design guidance for housing and settlement within the Coastal Plains of the Solway, in partnership with the local authorities, including promoting the use of styles and materials to match or complement the local vernacular (e.g. two storey dwellings with red sandstone walls, with boundaries of cobbled walls).
- E16. Promote appropriate garden planting and other development boundary treatment promoting the use of native species, so that housing and other developed areas blend more sympathetically with the traditional vernacular.
- E17. Seek to advise upon and influence local planning authority policies and responses to planning applications so as to support the landscape objectives of the area. This includes policies which influence development in the countryside or in villages of the AONB and wider area, and those associated with visitor accommodation.
- E18. Consider the setting of Hadrian's Wall, Roman fortlets and earth works when commenting on planning applications, such that the landscape settings to historic monuments are not significantly affected.
- E19. Manage ditches and drainage channels along the roads such that their biodiversity value is retained (for example by clearance on one side only, or section at a time, or if appropriate blocking drains to improve biodiversity).
- E20. Seek opportunities to block ditches and drainage channels particularly in areas around the Coastal Mosses and where this might contribute to improving the condition of the raised bogs and mires.
- E21. Sympathetically restore derelict historic buildings if opportunities arise for funding or new uses of these.
- E22. Continue to repair and restore 'kests' and hedgerows throughout the area, such as through projects, competitions and suitable grant or stewardship schemes. Manage hedgerows in the traditional North Cumberland style.
- E23. Continue to repair and restore cobble and stone walls within and around the settlements.

- E24. Seek opportunities to remove modern wire fences or concrete gate posts and the replace with hedgerows and gate stoops in traditional styles.

Landscape character areas

E1 Bowness to Boustead Hill



Figure 6.8: The coastal road at Boustead Hill

- 6.33 Stretching westwards from Boustead Hill to Bowness-on-Solway, this area of Coastal Plain lies along the southern fringes of the Inner Solway. It comprises mainly flat to slightly undulating improved grazed pasture which rises and extends inland from the marshes and which fringes the firth. The fields are bound by hedgerows of hawthorn and gorse, ditches and occasionally by 'kests'. Views around the area are occasionally contained by hedgerows lining the roads. Wide, expansive views out to the Inner Firth and to the Scottish coast can be seen from the coastal road that forms the northern boundary of the area.
- 6.34 Along the northern edge of the area, a series of small linear settlements are dispersed, including the villages of Bowness-on-Solway and Port Carlisle. Bowness-on-Solway includes the former Edwardian promenade know as 'The Banks', consisting of a steep grassed bank affording views across the firth to Scotland. Port Carlisle comprises a small linear settlement of mostly Georgian buildings facing outwards towards the Solway Firth. The remains of the locks and red sandstone harbour walls of the port, silted up since the 19th century, are still visible as well as the canal and Victorian railway that once linked Port Carlisle to Carlisle.

- 6.35 'Haaf net' fishing occurs along the sea front. Along the northern boundary runs the Cumbria Coastal Way, a dismantled railway, and Hadrian's Wall Path National Trail which follows the route of Hadrian's Wall vallum. The Cumbria Wildlife Trust Gravel Pits Nature Reserve is located to the west of Bowness-on-Solway.

E2 Cardurnock Peninsula



Figure 6.9: The coastal road along the northern edge of Cardurnock Peninsula

- 6.36 This area comprises the small areas of coastal farmland that extend around the edges of the Cardurnock Peninsula, forming a transition between the coastal margins of the firth and the moorlands that lie on the higher ground of the peninsula. The farmland is flat or gently sloping, improved and intensively managed pasture, though some areas of rough grazing with gorse scrub exist to the west. A small coastal road runs around the peninsula, occasionally forming the boundary between the coastal margin and the plain. The fields of the coastal plain around the peninsula are small to medium scale, often narrow strip fields running perpendicular to the coastline. Field boundaries are either low hedges of hawthorn and gorse or more commonly post and wire fencing. The features of the area are strongly influenced by the coastal setting of the pastures, particularly discernable in the trees and vegetation contorted by the winds coming off the firth. Beech hedgerow trees that line fields along the northern edge are a particularly distinctive feature.
- 6.37 Isolated farmsteads are scattered around the peninsula, and small, linear villages and hamlets spread out along the coastal edges of Moricambe Bay. The communication masts that stand on the former military airfield at Anthorn are a large and distinctive human element, visible over long distances. Other features of the area include the distinctive MOD architecture of the buildings in Anthorn village and a number of

former military structures, some of which are in use for agricultural storage. Wide, expansive views across the firth take in the distinctive skyline of Criffel, and views southwards across the expanses of marshes and intertidal flats of Moricambe Bay extend to the Lake District Fells.



Figure 6.10: The masts now standing on the former airfield at Anthorn on Cardurnock Peninsula

E3 Newton Arlosh and Kirkbride

- 6.38 This area is located south of the Cardurnock Peninsula and extends to the southwest from the eastern fringes of Moricambe Bay. Flat pasture predominates, with narrow strip fields on the western margins, to medium size, regular square fields. An area of more gently undulating pasture and arable land lies to the west of Wedholme Flow. Views are afforded across the flat pasture westwards to the large, open and flat expanses of Newton Marsh and Moricambe Bay, as well as to areas of higher lowland pasture around Abbeytown. To the east and south the area is enclosed by the higher areas of lowland farmland and Wedholme Flow, limiting extensive views in this direction. The stands of birch are a feature of the views to the south, indicating the edge of Wedholme Flow, which is otherwise largely indiscernible due to its low elevation.
- 6.39 The area contains the historic linear settlements of Kirkbride and Newton Arlosh, which lie in the north and west of the area respectively. Kirkbride Airfield lies towards the centre of the area and represents a large wartime development in an otherwise rural landscape. The airfield is used for microlights, which can be noisy at times. To the south of Kirkbride, a more developed character predominates, with the former airfield hangers reused for storage and industrial units. These and a

number of new industrial sheds and buildings form prominent features across the open flat landscape. Silos and large farm buildings are also apparent.

E4 Seaville to Mawbray



Figure 6.11: Seaville to Mawbray Coastal Plain, view towards Silloth

- 6.40 This is a flat, relatively open area of improved pasture, which has strong visual connections to the coastal margin and seascape of Moricambe Bay and the firth. Views from farmland south to the Lake District Fells are widespread, especially from slightly higher ground of banks or bridge abutments. Hedgerows become increasingly gappy and replaced by fencing towards the coastal fringe and tree cover is very sparse, though some hedgerow trees occur further inland, notably ash, oak and beech. Settlements along this exposed coastal stretch are nucleated with the buildings tightly grouped. There are several historic stone buildings and strong vernacular architecture within the villages, hamlets and farmsteads scattered across the area, most of which are in a good state of repair and represent a mixture of architectural styles and materials. These include red sandstone as well as rounded cobble stones and red brick. Cobbled walls are common across this area, particularly at boundaries nearer the coastal edge.
- 6.41 The ground drops away towards the margins of the area to meet the marshes and flats that fringe the firth, allowing views out across water to the Scottish coastline beyond. The pattern of enclosures reflects both the older medieval land use structure of monastic granges and holdings and the later 19th century enclosures. This varied pattern is also apparent in the network of roads with a mixture of small lanes winding around the former common fields, and straight roads running through the more regular, rectilinear fields and reflecting the presence of field drains and ditches.

E5 Rockcliffe and Mossband



Figure 6.12: Road to the north of Castletown Wood and Castletown House

- 6.42 This area of flat, low lying Coastal Plain located at the easternmost end of the Inner Solway Firth to the east of Rockcliffe Marsh is separated into two discrete areas by the channel of the River Esk. They are bound to the west by Rockcliffe Marsh and the Inner Solway Firth and to the east by the M6, although the Coastal Plain extends eastwards beyond the motorway, beyond the study area. The Scottish border runs along the course of the river channel. The areas comprise arable farmland with some limited pasture and blocks of plantation woodland in the Rockcliffe area. This is a flat and open landscape, and is relatively unsettled. There are extensive views available to the west, taking in the Inner Firth and the Rockcliffe Marsh. It is crossed by a line of large overhead power lines and the M74 motorway and a railway line provide constant noise and movement.
- 6.43 The low farmland of Rockcliffe comprises improved pasture and some arable land which are part of the Castletown Estate. The land is managed for shooting and includes shelter belts and game coverts. The area is more wooded than many of the other areas within this type and includes coniferous plantation woodland as well as deciduous wet woodland including species such as alder. The Coastal Plain abuts Rockcliffe Marsh to the west, and the flat open pasture on the western edge rises gradually further inland to become more enclosed and with some undulation. The small linear settlement of Rockcliffe, and several small farmsteads are scattered across the area. The Cumbria Coastal Way and Hadrian's Wall Path passes through the western part of the area and along the River Eden. Views across the Drumlinised Lowland Farmland to the southwest extend to the Lakeland Fells beyond.

LOWLAND LANDSCAPE CHARACTER TYPE F: DRUMLINISED LOWLAND FARMLAND

Introduction and location

6.44 The Drumlinised Lowland Farmland is the most extensive character type in the study area. Large areas lie predominantly beyond the AONB boundary to the south and southeast and play an important role as the setting of character areas within the AONB. The smooth skylines of the rolling green landform and low elongated drumlins are characteristic of views looking inland from many parts of the AONB, with the upland Lakeland Fells forming a distinctive backdrop in views to the south. The subtle drumlin landform in the west of the study area is orientated from northeast to southwest, whilst the landform in the east is more irregular, though following a west to east orientation. The areas are classified as Type 5 Lowland, and fall within the sub-types 5B Low Farmland extending in parts into sub-type 5A Ridge and Valley in the *Cumbria Landscape Character Assessment*. Maps of the location of this landscape type and relevant landscape character areas are provided in **Figures 11-12**.

6.45 The landscape type covers the following landscape character areas:

- Landscape Character Area F1: Abbeytown to Edderside
- Landscape Character Area F2: Maryport to Aspatria
- Landscape Character Area F3: Wigton and Bromfield
- Landscape Character Area F4: Aikton and Orton
- Landscape Character Area F5: Fingland and Kirkbampton

Key characteristics

- A deeply rural, agricultural landscape, with green pastoral fields divided by hedgerows draped over the rolling drumlin landforms.
- Predominantly agricultural land, intensively managed for grazing and silage production with some arable crops.
- Large regular, geometric fields of parliamentary enclosures are interspersed with older field enclosure patterns of medium sized irregular fields and long narrow strip fields.
- The low relief drumlin landform creates areas of open fields with wide views from along the tops of the hills, and more sheltered and intimate landscapes contained by topography on the lower slopes, providing a sense of enclosure.
- Distinctive wide and sunken lanes, that are former drove roads, rise up and down across the farmland, with clear edge profiles of ditches and raised banks topped with hedges, locally known as 'kests'. Ferns and wild flowers grow in the hedgerow bottoms and ditches.
- A network of minor roads wind and 'roller coaster' over and around the rolling, low drumlins. The pattern of rectilinear roads and winding lanes reflects both a

rich mixture of field patterns and the orientation and profiles of the drumlin landform.

- Scattered linear settlements, villages/small towns such as Allerby, Westnewton, and Edderside, and farmsteads, comprising clusters of traditional and historic vernacular buildings, follow the orientation of the drumlins.
- Varied mixtures of architectural styles and building materials, with thatched roofs, 'crook' barns, and long houses built of 'clay dabbin' are found in the historic settlements. Farms often have large sheds, outbuildings and slurry tanks.
- Field boundaries are mainly of traditionally laid hawthorn hedges in the North Cumberland style with hedgerow trees, though the extent varies through the type with exposure to coastal winds and hedge management;
- A variation in tree cover across the different character areas according to coastal exposure, with the hedgerow trees and small copses being important features in areas with sparse tree cover.
- Traditional finger post road and direction signs are widespread, some of which have been restored.
- Views over series of rolling ridges to the Cumbria high fells, which rise up in the far distance to the south and southwest.
- Tranquil and peaceful areas of farmland, less exposed and influenced by the coastal setting and more enclosed than the adjacent coastal plains, with an attractive backdrop of upland hills.
- Historic features and buildings of the widely dispersed farms and settlements provide distinctive features in an otherwise relatively undeveloped and open landscape.
- The communication corridor following the ridgeline east to west from the coast at Maryport to Carlisle, followed by lines of pylons which form vertical features along the southern boundary of the study area.

Description

- 6.46 This is a peaceful, rural agricultural landscape of gently rolling pastures and arable fields extending across a drumlin field of glacial till and boulder clay, shaped by glacial ice sheets moving west then southwest to the sea. There is a coastal outlook from the northern and western slopes, with panoramic views being experienced over the lower lying coastal plains towards the Solway seascape beyond. In some areas the farmland is well enclosed with a secluded character and limited views outwards, although from the southeastern slopes of the areas, views are afforded out across the low, rolling drumlin farmland to the Lakeland Fells.
- 6.47 Islands of improved farmland and well dispersed settlements are divided by narrow boggy and poorly drained river valleys. Wide sunken lanes, formally drove roads, connect scattered farmsteads and historic villages, including the distinctive linear villages of Abbeytown, Hayton and Westnewton, with their characteristic medieval small strip fields and village 'greens'. Characteristic 'kests', or walled banks topped with hawthorn hedges, enclose a range of small to medium fields. To the east of Wigton areas were once part of the historic Allerdale Forest, a royal hunting forest. Along the A596 in the southernmost section of the study area, the landscape

becomes more urbanised in character with the influence of the busy transport corridor, large overhead power lines and the towns of Maryport, Wigton, Aspatria and the western fringes of Carlisle.

Sensitive features or characteristics

- A rural farmed landscape with historic linear settlements and characteristic small villages interspersed with traditional farmsteads of mixed vernacular architecture.
- Distinctive red sandstone gate stoops and the wide and sunken lanes, of former drove roads, with clear edge profiles of ditches and 'kests', raised banks topped with traditionally laid hedgerows in the North Cumberland style.
- The peaceful pastoral atmosphere, away from the busier parts of the area.
- The historic feel of traditional villages and farmland give a sense of stepping back in time.
- The presence of old field patterns demonstrating the layered and evolving history of the AONB and wider area.
- The contrast between the farmland and the mosses, distant inland hills and the more exposed coastal fringe.
- Distinctive views over rolling ridges to the Cumbria high fells, which rise up in the far distance to the south and southwest.

Forces for change

- Pressures for renewable energy development including onshore wind farms and other large scale development which may change the views from the farmland, particularly extension of developed skylines along open and undeveloped horizons which form distant backdrops and the focus of views.
- The influences upon farmland to the south of the Solway Coast AONB of the east to west transport corridor along the A596, and pressure for infrastructure development such as new electricity grid connections, and all associated ancillary development.
- Expansion of residential and commercial development across the areas outside the AONB including around Wigton and Aspatria, to provide new housing, industrial estates and retail outlets, primarily affecting areas to the south of the AONB.
- The effects of development and changes in land use to those of a more urban or suburban character, including of a piecemeal nature, on the character of the setting of the AONB, the views into the AONB from outside and those looking out of the AONB.
- The direct and indirect effects of climate change, such as storm damage to trees, soil erosion, changing vegetation/land uses and renewable energy development affecting the landscape character of the AONB and the wider area, or its setting and outlook.
- Changes in field boundary and hedgerow management, such as removal of hedgerows to enlarge fields, the neglect of 'kests', strimming versus traditional laying, or replacement with fencing.

- Changes in land use for example through increased or reduced demands for food and energy crops, and change of farmland to alternative uses in response to visitor demands.
- Farm diversification and development of new businesses such as letting land for wind turbines or horse paddocks leading to changes in the character of the landscape.
- Housing development and infill of open areas within intact historic villages (e.g. in Abbeytown), and localised barn conversions for example for residential use or holiday homes (e.g. around Bowness-on-Solway).
- Gradual removal of traditional and historic features such as stone walls, 'kests', finger post direction signs and gate stoops.

Guidelines for managing change

- F1 Seek to maintain a high proportion of undeveloped horizons and to restore (where opportunities allow) the undeveloped skylines which form the setting of the farmland within the AONB and wider area. These include the horizons to views of the mosses and coastal plains within the AONB, but also the Drumlinised Lowland Farmland extending to the northern fells of the Lake District to the south, outside the AONB. Seek to reduce the extent of influence of development, for example: restricting impacts to localised sections of, rather than large portions, of skylines in key views.
- F2 Seek to influence future development within, and in landscapes forming the setting of, the Drumlinised Lowland Farmland so that the overall character and integrity of these landscapes, key characteristics, significant and sensitive views, defining features and the reasons for designation are not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- F3 Monitor changes in flooding and erosion, enabling the development of an appropriate and considered response to the consequences of climate change.
- F4 Seek to influence the nature of highways and other transport/utilities related work in the AONB and surrounding farmland to encourage a sympathetic approach in keeping with the rural landscape. Suitable measures could include: keeping street lighting, signage, barriers and road lining to a minimum; avoiding the use of hard engineered detail; and restoring traditional 'finger post' direction signs.
- F5 Support measures which reduce landscape and visual impacts upon the AONB and wider area, such as routeing power lines underground, sensitive siting of any new communication masts, or appropriate siting and design of small and domestic scale renewable energy projects.
- F6 Promote low carbon and small and domestic scale renewable projects in association with existing development within the Drumlinised Lowland Farmland, and where they do not detract from the character of the area.
- F7 Promote nature conservation through management such as encouraging de-intensification, a reduction in the use of agricultural chemicals and the

- production of hay instead of silage to increase the presence of wild flowers which at certain times of year are a valued feature of the landscape, especially along the lanes.
- F8 Take opportunities for positive habitat creation arising from any reduction in intensity of agriculture, including encouraging the use of small herds for conservation grazing of small sites or those which are hard to manage.
- F9 Manage and influence the response to possible future demands for increased food and energy crops, and other knock-on effects of climate change to ensure that the character of the landscape is not substantially altered.
- F10 Encourage the production of 'integrated management plans', helping to ensure synergy between conservation and habitat creations measures and the vision and objectives for Cumbria's Lowland Farmland landscapes.
- F11 Explore measures for traffic management, to help resolve any issues which may be at odds with the character of the Drumlinised Lowland Farmland (i.e. tranquillity and naturalness), and the settlements within it.
- F12 Work with the local authorities to influence planning policies for landscape protection and to provide comment on planning applications to ensure that new development is appropriate to the landscapes of the AONB and wider area. Key inputs will include ensuring new development protects and enhances the character of existing settlements such as Silloth and Cargo.
- F13 Encourage opportunities for redevelopment and, where it is the most sustainable option, demolition of unsympathetic buildings within the Drumlinised Lowland Farmland. Seek to promote the use of more appropriate styles and materials which are beneficial to the wider character of the area.
- F14 In partnership with the local authorities, produce and adopt appropriate design guidance for development within the Drumlinised Lowland Farmland. Key guidance should include promoting the use of architectural forms, styles and materials which match or complement the local vernacular (e.g. two storey dwellings with red sandstone and cobble walls, with boundaries of cobbled walls). New development should also have regard to the traditional settlement morphology of the area and should aim to preserve and enhance successful street patterns.
- F15 Seek to advise upon and influence local planning authority policies and responses to planning applications so as to support the landscape objectives of the area. Key inputs may include avoiding infill of green spaces between buildings, and village greens which contribute to the character of the area. This includes policies which influence development in the countryside or in villages of the Drumlinised Lowland Farmland.
- F16 Promote appropriate garden planting and other development boundary treatment promoting the use of native species, so that housing and other developed areas blend more sympathetically with the traditional vernacular.

- F17 Continue to encourage land owners to repair and restore 'kests' throughout the area through site-specific projects, competitions and suitable grant or stewardship schemes. Promote traditional north Cumberland style hedge-laying and gap filling of hedgerows on a 5-10 year rotation, making the most of opportunities such as hedge-laying competitions to promote awareness and skills, and grants or stewardship schemes to help with funding. Conversely, discourage development which would affect the landscape such as the building of concrete tracks, prominently sited modern barns, slurry tanks or silos.
- F18 Encourage the planting of trees along avenues, in hedgerows and within tree clumps, copses and woodlands to maintain these as features of the landscape in the future. Consider appropriate species to enhance robustness to the effects of climate change and build adaptive capacity in the landscape.
- F19 Monitor and provide a positive approach to adaptation to any changes in species or the balance of species which arise as a consequence of climate change. Advise on suitable species for tree planting, ensuring that these reflect the traditional character of the Drumlinised Lowland Farmland, and that they are suitable given current trends in climate change.

Landscape character areas

F1 Abbeytown to Edderside

Figure 6.13: View to the Solway Firth from Edderside

- 6.48 An area of gently rolling Drumlinised Lowland Farmland stretching southwest from the historic village of Abbeytown, located to the south of Moricambe Bay. The area rises gently up from the surrounding coastal plains and floodplains, allowing extensive views to the southeast over low lying farmland. The off-shore Robin Rigg Wind Farm is visible in coastal views across the Outer Firth. Views extend to the fells of the Lake District from the southeast facing slopes of the area. An area of more varied and undulating topography and greater tree cover lies in the west. Here fragmented ridges, small rounded hills and drumlins with tree clumps are features. Land cover is predominantly pasture used for grazing and silage production, with fields being irregular in shape and ranging from small to medium scale in size. The winding wooded lanes increase the sense of enclosure in contrast to the open coastal plains below. Tarns Dub is an attractive, low lying lake, well used by birds. A number of sand and gravel quarries are dispersed along the southern edge.
- 6.49 Fields are bound by native hedges and hedgerow trees, with ferns growing in the damp ground at the base of hedges and road-side ditches. Roads through this area are predominantly straight, reflecting the regular, rectilinear field pattern. The fields surrounding the settlement at Abbeytown are more varied in shape and size, reflecting the medieval system of enclosure. Roads are orientated northeast to southwest following the grain of the landscape, as dictated by the orientation of glacial deposits and drumlins, moulded by glacial ice sheets during the last ice age.

F2 Maryport to Aspatria

Figure 6.14: Views southwards the series of rolling hills from farmland above Westnewton

- 6.50 This area lies in the south of the study area outside the AONB and is differentiated from the surrounding lowland farmland areas by the higher ground forming a system ridges and valleys running parallel, with a strong southwest to northeast grain. The distinctive historic linear 'green' villages of Hayton and Westnewton fall within this area, around which medieval strip fields remain. Outside these areas, where small scale, less intensive, medieval strip fields around the villages predominate, are large scale field enclosures associated with intensive farming practices. Along the southern boundary runs a corridor of a more developed character, dominated by overhead power lines, the A596 and associated developments, where the tranquillity and rural qualities of the more northern parts diminish. This area is largely classified as sub-type 5A Ridge and Valley in the *Cumbria Landscape Character Assessment*.

F3 Wigton and Bromfield

Figure 6.15: View across the Drumlinised Lowland Farmland of Wigton and Bromfield

- 6.51 This area lies to the south of the study area, forming a transitional landscape between the flat and low-lying floodplains of the River Waver and the Holme Dub basin and the more elevated agricultural land approaching the foothills of the Lakeland Fells. The landform is predominantly made up of low drumlins, following a clear east to west orientation.
- 6.52 Development and traffic along the A596 transport corridor makes part of the southern boundary more urbanised in character, particularly around the town of Wigton. The south of the area is crossed by several large overhead electricity lines and other significant developments include the wind turbines located on the disused wartime airfield at Great Orton. Beyond this southern corridor, views south include the Lakeland Fells in the distance.

F4 Aikton and Orton

Figure 6.16 Farmland and remnant mossland north of Oulton

- 6.53 A large area of inland Drumlinised Lowland Farmland, extending from the outer western fringes of Carlisle to Oulton. The area is intensively farmed agricultural land, predominantly pasture used for grazing and improved pasture/silage with some arable fields in drier areas based on boulder clay. Fields are bound by native hedgerows and hedgerow trees, with small extents of woodland scattered across the areas, contrasting with the sparse tree cover of the lower-lying coastal plains. The villages retain an historic character, mainly comprising tight knit clusters of buildings, either side of narrow lanes. In the western part of the area the topography has a gently drumlinised form, orientated predominantly southeast to northwest, whereas to the east a more east to west orientation is apparent.
- 6.54 Development and traffic along the A596 transport corridor makes part of the southern boundary more urbanised in character. The southern parts of the area are crossed by several large overhead electricity lines and other significant developments include the wind turbines located on the disused wartime airfield at Great Orton. Beyond this southern corridor, views south include distant views to the Lakeland Fells.

F5 Fingland and Kirkbampton



Figure 6.17: Former drove road leading north towards Thurstonfield

- 6.55 A large area of rolling farmland stretching from the western fringes of Carlisle to Biglands and the floodplains of the River Wampool. Lying immediately south of an expanse of undulating coastal farmland, the northern part of this area represents a gradual transition from the undulating and irregular farmland near the coast and the more markedly rolling drumlin landform further inland.
- 6.56 The area contains a number of small, linear villages and historic settlements including Kirkbampton and Little Bampton which sit along the broad ridge tops of the long drumlin hills that run through the area. Wide views from the slopes of the hills extend across the undulating coastal farmland to the coast or inland to the rolling hills and foothills of the Lakeland Fells. Small areas of remnant mosses and woodland are scattered across this area, including the National Nature Reserve at Finglandrigg Wood. High hedgerows of hawthorn mounted on banks, and hedgerow trees give the area a strong structure and greater sense of enclosure, particularly in lower areas between hills.

LOWLAND LANDSCAPE CHARACTER TYPE G: UNDULATING COASTAL FARMLAND

Introduction and location

- 6.57 This landscape of low lying undulating coastal farmland occurs immediately inland from the coastal margins of the Solway Firth, along a stretch bounding the Inner Firth in the northeast of the study area and along the western coast of the Outer Firth. The landscape comprises gently undulating pastures and occasional arable fields extending across a striated drumlin field of glacial till. The field pattern, predominantly of medium fields to small and narrow strip fields, is very irregular and follows the landform and winding becks and channels that dissect the farmland. This type lies largely within the Solway Coast AONB boundary, but also extends outside it. The relevant areas are classified as Type 2 Coastal Margin, within the sub-types 2C Coastal Plain in the *Cumbria Landscape Character Assessment*. Maps of the location of this landscape type and relevant landscape character areas are provided in **Figures 11-12**.
- 6.58 This landscape type covers the following landscape character areas.

- Landscape Character Area G1: Allonby
- Landscape Character Area G2: Burgh-by-Sands and Beaumont

Key characteristics

- 6.59 The key characteristics of the coastal farmland are:
- A deeply rural, agricultural landscape, with green pastoral fields divided by hedgerows, hedgebanks and drainage ditches.
 - Predominantly agricultural land, managed largely for grazing and silage production with some arable crops and occasional copses and woodland plantations.
 - Medium sized enclosures are interspersed with areas of older field enclosure patterns of medium to small sized irregular fields, contained by the undulating landform and winding becks that run through the area.
 - The low relief and irregular landform creates contrasting areas of open fields with wide views from the tops of the hills, and more sheltered landscapes contained within areas of lower topography.
 - Distinctive wide and sunken lanes, that are former drove roads, run through some parts of the farmland, with clear edge profiles of ditches and raised banks topped with hedges, locally known as 'kests'. Ferns and wild flowers grow in the hedgerow bottoms and ditches.
 - A network of minor roads wind through the undulating hills. The pattern of roads and winding lanes reflects both a rich mixture of field patterns and the orientation and profiles of the landform.

- Distinctive linear settlements, include the villages of Burgh-by-Sands and Beaumont in the northeast and Allonby and Crosscannonby in the southwest. They comprise clusters of traditional and historic vernacular buildings, strongly influenced by their coastal setting.
- There is a coastal outlook from some of the northern and western sections, with views out across the Solway seascape, although views are often contained by the varied undulating landform and the network of hedges planted on banks.
- Varied mixtures of architectural styles and building materials, with thatched roofs, 'crook' barns, and long houses built of 'clay dabbin' found in the historic settlements. Farms often have large sheds and outbuildings.
- Field boundaries are mainly of traditionally laid hawthorn hedges in the North Cumberland style with hedgerow trees, though the extent varies through the type with exposure to coastal winds.
- A variation in tree cover across the different character areas according to coastal exposure, with the hedgerow trees and small copses being important features in areas with sparse tree cover.
- Traditional 'finger post' road and direction signs, some of which have been restored.
- Views inland over series of rolling ridges to the Cumbria high fells, which rise up in the far distance to the south and southwest.
- Tranquil and peaceful areas of farmland, less exposed and open than the adjacent coastal plains.
- Historic features and buildings of the widely dispersed farms and settlements provide distinctive focal points in a deeply rural landscape.

Description

6.60 This is a peaceful, rural landscape of gently undulating pasture and occasional arable fields extending across a striated drumlin field of glacial till. The subtle undulating landform, dissected by small winding becks and drainage ditches, creates a varied and less exposed landscape than the wide, open and flat coastal plains and a more irregular and low-relief landform than the more pronounced drumlinised lowland farmland further inland. The transition from the intertidal flats and saltmarsh of the coast to these areas of farmland is more abrupt than that between the coastal plains and the coastal margins, with the steep banks forming the boundary between the two in some areas, and land quickly rising to elevations of 10-25m at the coastal edge. There remains a strong connection with the coastal setting of the landscape, visually and in terms of the pattern of features and historical land use. Views are sometimes contained by the topography, tall hedgebanks and small areas of woodland, and at other times are long and expansive, overlooking the seascape of the Solway Firth. Lanes wind through the landscape following the irregular land form, river channels and field patterns.

6.61 In some areas there are former drove roads comprising distinctive wide and sunken lanes, with clear edge profiles with ditches and raised banks topped with hedges, locally known as 'kests'. Strong cultural associations and historic features are present, including a number of Roman fortlets following along the coastal edge, the

course of Hadrian's Wall passing through the northern area around Burgh-by-Sands and the saltpans at Crosscannonby.

Sensitive features or characteristics

- Contrast between the exposed coastal margins and the sheltered fields further inland, and the distant inland hills and the more exposed coastal fringe.
- Coastal wind sculptured hedgerows and stands of contorted beech trees.
- Rural and historic settled character in association with the villages and hamlets where the historic feel of traditional villages and farmland give a sense of stepping back in time.
- Rich historical interest, including traditional village cores, industrial heritage and significant archaeological sites associated with the Roman frontier, including the Hadrian's Wall World Heritage Site.
- Distinctive red sandstone gate stoops and the wide and sunken lanes, of former drove roads, with clear edge profiles of ditches and 'kests', raised banks topped with traditionally laid hedgerows in the North Cumberland style.
- A tranquil pastoral atmosphere.
- The presence old field boundaries demonstrating the layered and evolving history of the farmland.
- Distinctive views over expanses of intertidal landscapes to the vast open, undeveloped skylines of the Solway Firth and the Scottish hills.
- Distinctive views over rolling ridges to the Cumbria high fells, which rise up in the far distance to the south and southwest.

Forces for change

- Pressures for renewable energy development including onshore wind farms and other large scale development which may change the views from the farmland, particularly extension of developed skylines along open and undeveloped horizons which form distant backdrops and the focus of views.
- Climate change, sea level rise, increased storms and coastal erosion and the managed realignment recommendations of the *Shoreline Management Plan*.
- The direct and indirect effects of climate change, such as storm damage to trees, changing vegetation/land uses and renewable energy development affecting the landscape character of the AONB and wider area, or its setting and outlook.
- The effects of large development on the character of the setting of the AONB and wider area, the views into the AONB from outside and those looking out of the AONB, including the Lake District fells and the Scottish coast line of Dumfries and Galloway.
- Pressures associated with increased traffic and parking needs as a result of tourist development, in relation to the size of roads.
- Changes in farming practices and land use, demand for alternative land uses, alteration to grazing regimes and changing demand for food or energy crops (which may influence existing management agreements) as well as the increase in

size of farming machinery and large tractors using the small narrow lanes and damaging gate stoops.

- Farm diversification and development of new businesses such as letting land for wind turbines or horse paddocks leading to changes in the character of the landscape.
- Housing development and infill of open areas within intact historic villages (e.g. in Burgh-by-Sands and Crosscanonby), and localised barn conversions for example for residential use or holiday homes.
- Pressure for campsite development/redevelopment (including reduction in farmland extent due to the need for additional land) and the increasing size of caravans and incremental suburbanisation of caravan parks.
- Influences such as the *Marine and Coastal Access Act* which may require alterations along the coast through the requirement for a long distance coastal access route.
- Extension of and infill development in open areas between the housing areas of settlements, as a result of demand for new housing.
- Small scale yet incremental changes resulting from home ‘improvements’ and extensions, suburbanisation, road upgrading or alterations and new signage, etc.
- The influence of development plan policies in the emerging statutory Local Development Frameworks influencing new housing sites. .
- Changes in field boundary and hedgerow management, such as removal of hedgerows to enlarge fields, the neglect of ‘kests’, strimming versus traditional laying, or replacement with fencing.
- Gradual removal of traditional and historic features such as stone walls, ‘kests’, finger post direction signs and gate stoops.

Guidelines for managing change

- G1 Seek to maintain a high proportion of undeveloped horizons and to restore (where opportunities allow) the undeveloped skylines which form the setting of the farmland. These include the horizons to views of the coastal plains within the AONB, but also the lowland farmland landscapes extending to the northern fells of the Lake District to the south and southeast outside the AONB. Seek to reduce the extent of influence of development, for example: restricting impacts to localised sections of, rather than large portions, of skylines in key views.
- G2 Seek to influence future development within, and in landscapes forming the setting of, the undulating coastal farmland so that the overall character and integrity of these landscapes, key characteristics, significant and sensitive views, defining features and the reasons for designation are not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- G3 Monitor changes along the seaward edges to determine any trends or patterns in coastal erosion enabling the development of an appropriate and considered response to the consequences of climate change. Manage the process of realignment and allow natural processes to act as advocated in the *Shoreline Management Plan* where appropriate, and taking into consideration the need in some instances to maintain or

reinforce existing hard defences to protect key infrastructure, settlement and natural and cultural heritage interests..

- G4 Seek to influence the nature of highways and other transport/utilities related work in the AONB and surrounding farmland to encourage a sympathetic approach in keeping with the rural landscape. Suitable measures could include: keeping street lighting, signage, barriers and road lining to a minimum; avoiding the use of hard engineered detail; and restoring traditional ‘finger post’ direction signs.
- G5 Support measures which reduce landscape, seascape and visual impacts upon the undulating coastal farmland, such as routeing power lines underground, sensitive siting of any communication masts, or appropriate siting and design of small and domestic scale renewable energy projects.
- G6 Promote low carbon and domestic scale renewable projects in association with existing development within the undulating coastal farmland, and where they do not detract from the character of the area.
- G7 Promote nature conservation through management such as encouraging de-intensification, a reduction in the use of agricultural chemicals and the production of hay instead of silage to increase the presence of wild flowers which at certain times of year are a valued feature of the landscape, especially along the lanes.
- G8 Take opportunities for positive habitat creation arising from any reduction in intensity of agriculture, including encouraging the use of small herds for conservation grazing of small sites or those which are hard to manage.
- G9 Manage and influence the response to possible future demands for increased food and energy crops, and other knock-on effects of climate change to ensure that the character of the coastal farmland landscape is not substantially altered.
- G10 Consider the setting and fabric of historic features, such as historic buildings, designated and undesignated archaeological sites, Roman fortlets, and churches, when advising on planning applications. Consider particularly applications related to the creation or improvement of paths, alteration of historical buildings, or changes in agricultural practices, that might damage or adversely affect the historic character of settlements, key features of historical and cultural interest or archaeological sites.
- G11 Seek to restore or replace the traditional gate stoops so that these can accommodate the needs of larger farm vehicles, but so that they remain a characteristic features in the landscape.
- G12 Seek to maintain hedgerow trees, copses and tree belts, replacing trees as they are removed and replanting when appropriate. Encourage the planting of trees along avenues, in hedgerows and within tree clumps, copses and woodlands to maintain these as features of the landscape in the future. Consider appropriate species to enhance robustness to the effects of climate change and build adaptive capacity in the landscape.
- G13 In areas of the coastal farmland that lie adjacent to the coast, respond to the requirements of legislation such as the *Countryside and Rights of Way Act* and the *Marine and Coastal Access Act* to promote the positive development of a long distance coastal access route whilst ensuring any changes or development is in line with the landscape management objectives of the AONB.

- G14 Encourage the production of ‘integrated management plans’, helping to ensure synergy between conservation and habitat creations measures and the vision and objectives for Cumbria’s coastal farmland landscapes.
- G15 Explore measures for traffic management, to help resolve any issues which may be at odds with the character of the undulating coastal farmland (i.e. tranquillity and naturalness), and the settlements within it.
- G16 Work with the local authorities to influence planning policies for landscape protection and to provide comment on planning applications to ensure that new development is appropriate to the landscape. Key inputs will include ensuring new development protects and enhances the character of existing settlements, such as the linear villages of Allonby, Crosscanonby and Burgh-by-Sands.
- G17 Encourage opportunities for redevelopment and, where it is the most sustainable option, demolition of unsympathetic buildings within the undulating coastal farmland. Seek to promote the use of more appropriate styles and materials which are beneficial to the wider character of the area.
- G18 In partnership with the local authorities, produce and adopt appropriate design guidance for development within the undulating coastal farmland. Key guidance should include promoting the use of architectural forms, styles and materials which match or complement the local vernacular (e.g. two storey dwellings with red sandstone walls, with boundaries of cobbled walls). New development should also have regard to the traditional settlement morphology of the area and should aim to preserve and enhance successful street patterns.
- G19 Seek to advise upon and influence local planning authority policies and responses to planning applications so as to support the landscape objectives of the area. Key inputs may include avoiding infill of green spaces between buildings which contribute to the character of the area. This includes policies which influence development in the countryside or in villages of the undulating coastal farmland.
- G20 Encourage land owners to restore or maintain traditional features such as ‘kests’, historic buildings (fortified farmsteads) and ponds through stewardship or grant schemes, to help to promote and assist with funding traditional management. Conversely, discourage development which would affect the landscape such as the building of concrete tracks, prominently sited modern barns or silos.
- 6.62 Continue to repair and restore ‘kests’ throughout the area through site-specific projects, competitions and suitable grant or stewardship schemes. Promote traditional north Cumberland style hedge-laying and gap filling of hedgerows on a 5-10 year rotation, making the most of opportunities such as hedge-laying competitions to promote awareness and skills, and grants or stewardship schemes to help with funding.

Landscape character areas

G1 Allonby



Figure 6.18: Undulating farmland south of Allonby

- 6.63 This area is located in the south of the study area, stretching from the small coastal town of Allonby to the seaside resort of Maryport. The topography is gently undulating and in some areas the landform becomes more rolling and has a strong north to northeast to south to southwest grain. The western parts of this area are more strongly influenced by the coastal location than the more inland area, with some parts likening to areas of coastal plain, though more elevated and topographically varied.
- 6.64 Where medieval field patterns remain, they are of a small scale, long and narrow, and rise above, and drop below the villages, running perpendicular to the contours, and to the linear villages which extend along them. The historical features of the area include the line of Roman fortlets and towers which follow the western coastline and the salt pans at Crosscanonby.

G2 Burgh-by-Sands and Beaumont

- 6.65 This area lies immediately south of Burgh Marsh and Rockcliffe Marsh in the eastern reaches of the Inner Firth. The course of Hadrian's Wall bounds the area to the north, and the area contains a number of historic settlements including Burgh-by-Sands, Beaumont and Kirkandrews-on-Eden. The landform is undulating and varied, providing areas with a sense of enclosure and intimacy that contrasts from the more open and exposure coastal edges. High hawthorn hedges mounted on banks, small areas of woodland and copses found around settlements also contribute the sense of enclosure and shelter particularly in lower areas. Views are largely contained by landform and within the sunken lanes that are lined by 'kests' and hedgerow trees. Views can be gained across the Firth from some of the higher areas and towards the coastal edge and these take in the large areas of marsh and estuary that lie to the north and the Scottish coast beyond.

LOWLAND LANDSCAPE CHARACTER TYPE H: COASTAL TOWN AND FRINGE**Introduction and location**

- 6.66 Lying outside of the AONB boundary, but in close proximity to it, are the larger settlements of Silloth, Maryport, and an area of urban fringe west of Carlisle between the Kingmoor Nature Reserve and Rockcliffe. Maryport and Silloth are small towns located on the western coastline, whilst Kingmoor and Rockcliffe lie further inland to the east of the study area. These are settled landscapes, characterised by the prominence of built development, infrastructure such as railway sidings, large roads, overhead power lines and development related to leisure activities. The coastal towns and fringe areas are included as Coastal Urban Fringe and Urban character types within the *Cumbria Landscape Character Assessment*. **Figures 11 and 12** indicate the location of these areas.

- 6.67 The landscape type covers the following landscape character areas:

- Landscape Character Area H1: Kingmoor and Cargo
- Landscape Character Area H2: Silloth
- Landscape Character Area H3: Maryport

Key characteristics

- Low-lying areas, generally flat and open in character.
- Linear settlements with old centres and a wider range of development types surrounding them, or areas of urban fringe with loosely dispersed developments of different types.
- Settlement cores and facades are characterised by distinctive architecture styles and building materials, including the Georgian and Victorian facades fronting onto the sea in the seaside resorts of Maryport and Silloth.
- Hard, man-made forms shape the shoreline and the coastal edge of the settlements of Maryport and Silloth.
- Buildings and structures, such as church spires, form prominent landmarks from the surrounding areas of flat, open coastal plains and locally form part of the setting to the landscape of the AONB and wider area.
- Urban fringe areas comprise a disparate collection of development with very mixed land uses including airfields, allotments, caravan parks, and railway sidings on the fringes of Carlisle.
- In places, a fragmented and sometimes discordant landscape which is influenced by the noise from busy roads, ports and railway lines.
- Rich historical interest, including industrial heritage and archaeological sites associated with the Roman frontier.
- Vast seaward views out across the Solway Firth, large skies with changing colours and moods depending on weather and seasonal changes.

- Small areas of agriculture interspersed with development at the edges of the settlements and areas of open mown grass within the settlements themselves.
- Views to the offshore wind farm at Robin Rigg, visible across the open horizon.
- This is not always a tranquil landscape and has areas of disturbance.
- Outlying recent chalet style bungalows and suburban housing extend along the coastal roads into the coastal farmland.

Description

- 6.68 These areas lie largely outside the AONB and occur in three places within the study area, at the western fringe of Carlisle and at the seaside towns of Maryport and Silloth. They represent a range of different settlement types, developments and land uses and have different relationships with other areas within the landscape and seascape of the AONB. The coastal towns of Silloth and Maryport are different in character and size, with Maryport having historically developed as a port and Silloth as a planned seaside resort. These towns lie adjacent to coastal beaches along the western coastline of the study area and have old cores, with Silloth based around a planned Victorian centre. The coastal edges within these areas are hard and characterised by sea defences, promenades and sea walls. The docks and large structures associated with them form an important part of the experience of the coast from within these areas and also form focal points from areas surrounding the settlements, particularly in views along the shoreline.
- 6.69 Large industrial structures are more of a feature in the urban fringe to the west of Carlisle, an area characterised by railway sidings, commercial units and other more industrial land uses, rather than housing.

Sensitive features or characteristics

- Traditional Victorian and Georgian facades on buildings associated with the sea front in Silloth and Maryport.
- Distinctive cobbled streets and street furniture details, such as lamp posts, contributing to the sense of place within the traditional seaside resorts of Maryport and Silloth.
- Sites and structures of historical interest, including archaeological sites associated with the Roman frontier in Maryport.
- The red cliffs along the coastline in the north of Maryport, which contribute to the geodiversity of the area.
- Seaward views from Maryport and Silloth, and in Silloth the distinctive views of the town from the coastal plain to the east, and 'The Green' and distinctive clump of pine trees west of the high street.

Forces for change

- Pressures for renewable energy development including on and offshore wind farms and other large scale development which may change the views from the shore at Silloth and Maryport, particularly extension of developed skylines along open and undeveloped horizons.

- The influences and pressure for infrastructure development such as major new electricity grid connections, and all associated ancillary development.
- The effects of development and changes in land use to those of a more urban or suburban character, including of a piecemeal nature, on the character of the setting of the AONB and wider area, the views into the AONB from outside and those looking out of the AONB.
- The direct and indirect effects of climate change, such as storm damage to street trees, species adaptation or alteration changing vegetation/land uses, and renewable energy development affecting the landscape character of the AONB and wider area, and its setting and outlook.
- Pressure for development/redevelopment/suburbanisation and increase in the number of static caravans; the visibility of these in the landscape especially in winter months, and any effects upon the character and integrity of the surrounding coastal plains and lowland farmland landscapes.
- Infill of distinctive open areas within Silloth and Maryport and an increase in the density of housing, or proposals for development outside the current settlement boundaries which may not always fit into the landscape or be in sympathy with historic townscape character.
- The development of large sheds, industrial units and other forms of inappropriate modern development on the fringes of Silloth changing local distinctiveness and sense of place.
- Influences such as the *Marine and Coastal Access Act* which may require alterations along the coast through the requirement for a long distance coastal access route.
- The influences of the *Shoreline Management Plan* and any management recommendations which would affect the coastline.

Guidelines for managing change

- H1. Seek to maintain the high proportion of undeveloped views and skylines which form the setting of the seaside resorts. These include views over lowland moorland and farmland, over the firth, bay and open water to the northern fells of the Lake District and the Scottish hills and coast. Seek to reduce the extent of influence of development, for example so that it affects localised sections, rather than large portions, of skylines.
- H2. Seek to influence future development within, and in landscapes forming the setting of the AONB landscape and wider area, so that the overall character and integrity of these landscapes are not significantly affected: consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
- H3. Monitor changes in coastal erosion enabling the development of an appropriate and considered response to the consequences of climate change.
- H4. Seek to influence proposed transport and utilities related work in the surrounding lowland farmland and coastal plain landscapes, including changes to roads such as: markings, signage, barriers, lighting or car parks and avoiding the use of hard engineered details to maintain the rural and undeveloped character of the area.

- H5. Support measures which reduce landscape and visual impacts upon the setting of the AONB and surrounding coastal plains, such as routeing power lines underground, sensitive siting of any communication masts, and appropriate siting, design and implementation of small and domestic scale renewable energy/carbon-neutral projects where they do not detract from the character of the area.
- H6. Influence appropriate development/redevelopment within towns and urban edge landscapes by providing guidance to developers on the siting and design of proposals. This will include issues such as form, massing, height, colour and materials used. Where advice has not been sought or taken, comment on planning applications to ensure development protects and enhances valued characteristics and features. Monitor for incremental expansion or change.
- H7. Consider the setting and fabric of historic features, such as historic buildings, designated and undesignated archaeological sites, Roman fortlets, and churches, when advising on planning applications. Consider particularly applications related to creation or improvement of paths, alteration of historical buildings, or changes in agricultural practices that might damage or adversely affect the historic character of settlements, key features of historical and cultural interest or archaeological sites.
- H8. Discourage development within towns and urban edge situations which would detrimentally affect the wider rural landscape.
- H9. Encourage the maintenance or creation of intact boundaries of hedges and wooded strips around development, including existing caravan parks and housing, to help reduce views of more utilitarian development in the rural landscape, and to use woodland to help screen buildings or structures, and to integrate them into the landscape.
- H10. Promote appropriate garden planting and other development boundary treatment which promote the use of native species, so that housing and other developed areas blend more sympathetically with the surrounding coastal plain and lowland farmland landscapes.
- H11. Work with land owners/land managers/farmers/tenants to promote nature conservation and management which is appropriate to the wider area, and which benefits landscapes, habitats and species, for example at the golf course south of Silloth.
- H12. Explore measures for visitor management, including traffic and parking, to help resolve any issues which may be at odds with the character of the seafronts of the seaside towns.
- H13. Increase access to and appreciation of geodiversity, for example by encouraging localised exposure of the sandstone cliffs at Maryport by removal of trees and scrub where appropriate.
- H14. Promote the agreement of appropriate access to and interpretation of historic sites to aid their understanding as features in the landscape: ensure any development associated with visitor access (such as car parks or interpretation panels) is sympathetic to the character of the landscape and townscapes and where it does not threaten to damage sensitive archaeological sites.

- H15. Consider the setting of historic features when advising on planning applications.
- H16. Work with the local authorities to influence policies for landscape protection and development, and by providing comment on planning applications, to ensure that new development is appropriate in nature, scale and design to existing land- and townscape character. Key inputs may include: promoting design which references the traditional vernacular; avoiding the creation of suburban character; enclosure within stone walls or rural native hedgerow boundaries (as appropriate to particular areas).
- H17. In partnership with local authorities, produce and adopt appropriate design guidance for development within Silloth and Maryport, in particular seeking to maintain the character of the Victorian villas along the waterfront, avoiding infill of fields between clusters of housing, or encroachment into rural areas.

Landscape character areas

H1 Kingmoor and Cargo

- 6.70 Located in the northwest of the study area, close to the Kingmoor Nature Reserve, this area comprises open agricultural land interspersed with a number of industrial developments, including a large area of railway sidings, industrial units, depots and a sewage works. Fringes of scrub land and areas of semi-natural grassland surround many of these units. The landscape is crossed by a railway line and several earth and concrete tracks. This area is largely inaccessible, crossed by minor roads and a very limited PRow network, with the railway sidings and large storage depots acting as barriers. Views within the area are contained and the area itself is not very visible from the surrounding landscape, because of the landform and filtering of views by vegetation.

H2 Silloth

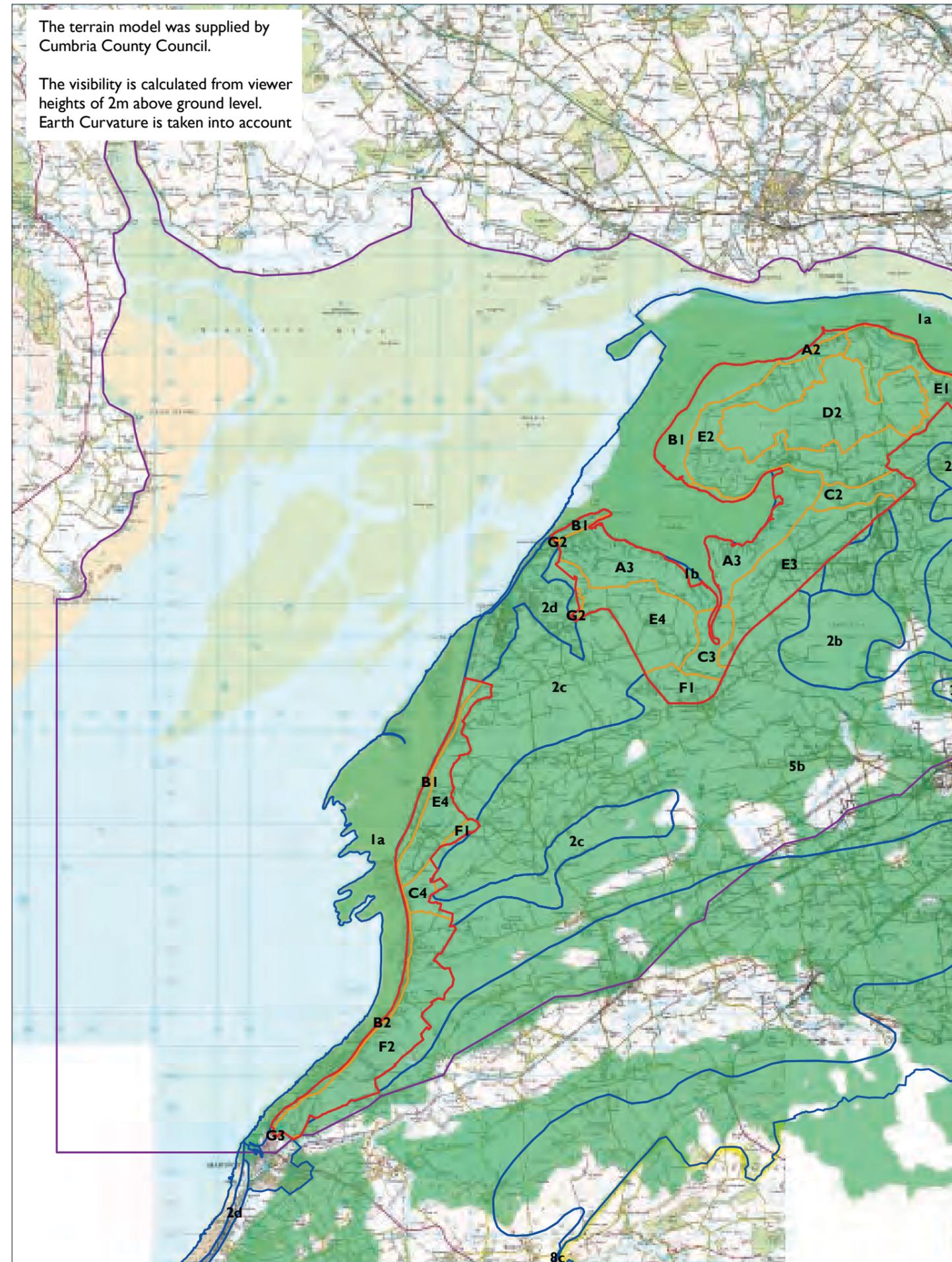


Figure 6.6.19: Silloth from 'The Green'

- 6.71 The area lies on the western coast close to Moricambe Bay and comprises the town of Silloth, a small port, and a number of different types of developments around its fringe. Silloth was originated a planned Victorian seaside resort and includes a Victorian facade of grand houses orientated to face onto the Solway Firth. A promenade extends along the western facing seafront towards the small dock of Silloth's port. A large open expanse green space lies between the Victorian frontage and the sea known as 'The Green' and a golf course is also located along the seaward edge of the town. The structures associated with the port and Christ Church are distinctive landmarks in views approaching the town from the east, seen across open meadows.
- 6.72 Some of the buildings in Skinburness were built as hotels and many of these are now divided, and include sheltered accommodation and retirement homes. Behind the old core more recent suburban style housing and bungalows extend along the coastal road, facing seawards. These modern homes and associated gardens and fencing contrast with the coastal pasture and natural environment of the coastal margins beyond. To the east at the fringes of Silloth are a disused wartime airfield and a number of large aircraft hangers. An extensive area of caravan parks and allotments are also very visible from the roads approaching Silloth, as are the industrial estates and factories dispersed around the eastern fringe.

H3 Maryport

- 6.73 Maryport is located in southwestern corner of the study area and this character area comprises a small section of the settlement of Maryport, including the pier. The area is located on the slopes of a drumlin that rises steeply from the shore, and includes steep west facing cliffs of sandstone forming a distinctive setting for the small dock and the pier located below it to the southwest. Maryport Golf Club extends along the coast to the north of the town and encompasses area of sand dunes. Maryport is located on the site of a Roman port, though the modern town developed during the 18th century around the port and ship yards which grew alongside other industrial developments, serving the foundries and coal mines in the area. The architecture and townscape that falls within the character area are distinctively Georgian in style and based on a planned grid. The Cumbria Coastal Way and the Allerdale Ramble run along the western edge of the area following the shore.



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7 SETTING TO THE AONB AND WIDER AREA

- 7.1 Views out of the AONB to the surrounding lowlands and hills, particularly across the Solway Firth to the southern fells of the Dumfries and Galloway, and in a southerly direction to the northern Lake District fells, are an essential and integral part of AONB, and one of its special qualities. The section below describes the setting to the AONB.
- 7.2 The setting of the AONB includes both those areas from where the AONB can be seen, i.e. when looking towards the AONB, and areas which are seen from the AONB, when looking out from within its boundaries. Views are available to and from the following areas.
- 7.3 To the north, the setting includes the coast and southern hills of Dumfries and Galloway, with Criffel to the northeast a key focal point in views in this direction.
- 7.4 To the east, lowland plains extend across the Solway Basin towards the Eden Valley.
- 7.5 To the south, the setting includes the northern foothills and fells of the Cumbrian Mountains, with Skiddaw forming a key focal point. Windfarms visible in this direction, against the backdrop of the fells, include High Pow and Wharrels Hill.
- 7.6 To the west, the setting includes the open water of the Solway Firth, with the off-shore windfarm Robin Rigg visible along the horizon.
- 7.7 **Figure 13:** indicates the Zone of Theoretical Visibility of the Solway Coast AONB, and its intervisibility with surrounding areas, and also shows the outlines of types/areas within the AONB and wider area.

Figure 13: Zone of Theoretical Visual Influence - indicating the areas visible from the AONB, and those areas it is visible from.

- 7.8 It will be very important to consider the effects of development in surrounding areas on the setting to the AONB, the views into the area, and those out of it, and in particular to seek to protect key views, skylines and backdrops to the AONB landscape from undesirable change, as described within the guidance provided within previous chapters.

Guidelines for managing change

- 7.9 The following guidelines are of relevance to the setting of the AONB.
- SI. Seek the opportunity to comment on or influence development applications which lie within view of the AONB, which could alter its essential or key characteristics, cherished views, defining features, or adversely affect the reasons or features for which the AONB was designated including from all areas which could affect the views from and setting of the AONB.

- S2. Consider siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects on the AONB landscape and its setting.
- S3. Seek to maintain the high proportion of undeveloped views and skylines which form the setting to the AONB. Seek to reduce the extent of influence of development, for example so that it affects localised sections of rather than large proportions of skylines.
- S4. Monitor changes in coastal erosion particularly those which could have associated effects on the AONB, enabling the development of an appropriate and considered response to the consequences of climate change.
- S5. Seek to influence proposed transport/utilities related work and changes to roads including road lines, signage, barriers, lighting or car parks within the close setting to the AONB, avoiding the use of hard engineered details such that it is appropriate to the rural and undeveloped character and avoids unnecessary suburbanisation of the countryside.
- S6. Support measures which reduce landscape and visual impacts upon the AONB and its setting, such as routeing power lines underground, sensitive siting of any communication masts, and appropriate siting, design and implementation of renewable energy/carbon-neutral projects where they do not detract from the character of the area.
- S7. Influence the appropriate development/redevelopment of any caravan sites near the edge of the AONB through commenting on applications, and providing guidance on their detailed siting and issues such as caravan colour (avoiding suburbanisation), as well as monitoring for incremental expansion or change.
- S8. Encourage the maintenance or creation of intact boundaries of layed hedges or stone walls around development to help reduce views of development in the rural landscape, and to use woodland to help screen buildings or structures.
- S9. Encourage the retention of the wind sculptured trees along the coastal fringes. Seek to ensure the retention of the remaining sections of undeveloped coast.
- S10. Promote practices to conserve and enhance nature conservation and encourage a diverse range of habitats and species in the wider landscape, including re-wetting low lying areas as a response to stopping drainage.
- S11. Monitor and provide a positive planned approach to adaptation to any changes in species or the balance of species which arise as a consequence of climate change.
- S12. Explore measures for visitor management, including traffic and parking, to help resolve any issues which may be at odds with the character of the rural landscape.
- S13. Maintain/clear open areas from elevated and open areas to enable public appreciation of open panoramic views.
- S14. Promote visibility and understanding of geodiversity.

- S15. Promote all aspects of traditional landscape management in the landscapes which form the setting of the AONB, such as maintenance of historic buildings or features, drystone walls, ponds, hedge laying, gapping up and planting of hedges, trees and woodlands, making use of suitable grant or stewardship schemes to help with funding. Conversely discourage development which would particularly affect the rural landscape such as the building of concrete tracks, prominently sited modern barns or silos.
- S16. Promote the agreement of appropriate access to and interpretation of historic sites such that they are better understood as features in the landscape: ensure any development associated with visitor access (such as car parks) is sympathetic to the settling of the designated sites and does not risk damaging the fabric of sensitive archaeological sites and historical features.
- S17. Consider the setting of historic features when advising on the determination of planning applications, including modifications to or redevelopment of caravan parks.
- S18. Encourage partial restoration of sand pits to promote natural regeneration of vegetation upon them.
- S19. Seek to influence policies for landscape protection and development, and by providing comment on planning applications such that new development is appropriate to the landscape and in character with existing settlement: promote the traditional vernacular, avoid creating a suburban character, enclose within rural native hedgerow or dry stone wall boundaries (as appropriate to particular areas).
- S20. Adopt appropriate design guidance for new housing and settlement within the countryside.

Appendix 1

Project brief

Brief for the Solway Coast Area of Outstanding Natural Beauty Landscape Character Assessment

Introduction

Solway Coast AONB would like to commission consultants to undertake a Landscape/Seascape Character Assessment for the Solway Coast Area of Outstanding Natural Beauty (AONB) and its setting, updating and improving the existing study. The study will inform the management of the area, effects of potential developments, assess the necessity of a comprehensive boundary review and will be available for use by partners, stakeholders and communities. The study is being jointly funded by Natural England (NE), Solway Coast AONB, Cumbria County Council, Allerdale Borough Council and Carlisle City Council.

A map of the AONB study area is attached.

Background

The Solway Coast AONB is one of 37 AONBs in England and occupies a coastal strip between Maryport and Rockcliffe near Carlisle, Cumbria. The area was designated in 1964 in recognition of its nationally important scenic, botanical and wildlife quality. It covers 115 sq km, following 59 km of the Cumbrian coastline. It is a nationally protected landscape and internationally important for roosting and feeding grounds for tens of thousands of over wintering wildfowl including geese, swans and ducks; the salt marshes, mud-flats and lowland raised mires having designations of Sites of Special Scientific Interest (SSSI) National Nature Reserves (NNR), candidate Special Area of Conservation (SAC), Special Protected Area (SPA) and Ramsar.

One of its most distinguishing qualities is its combination of different landscape types; the coastal landscape of open sea and river channels, foreshore, salt marshes, sand dunes and cliff features, with the contrasting inland landscapes of farmland and lowland raised mires (representing a nationally scarce habitat). Within each of these landscape types a range of important habitats exist for birds, invertebrates, reptiles, mammals and rare plants. The importance of these habitats is reflected in their high degree of protection.

Seascapes are also integral to the character of the AONB and are fundamental to its setting. The wildness and remoteness of the Solway Coast has remained relatively undisturbed with tranquillity being of high importance.

The landscape of the Solway Coast is also of great archaeological, cultural and historical importance, from the Bronze Age, through to the Roman era and Hadrian's Wall, a World Heritage Site; onto the Vikings, Medieval (Monastic), Post-Medieval, Agricultural and Industrial eras and into the 20th Century.

The AONB Partnership

The Solway Coast AONB Partnership comprises local, regional and national organisations representing, landowners, landscape groups, communities, the tourism sector, government agencies, local authorities and wildlife groups. Partners work towards a wide diversity of initiatives, with the common thread of conservation and enhancement of the Solway Coast Area of Outstanding Natural Beauty. It is the only organisation that looks after the AONB as a whole.

The Partnership works to:

- conserve and enhance the Solway Coast Area of Outstanding Natural Beauty;
- promote sustainable development and appropriate quiet enjoyment;
- enable provision to be made for recreation where it is consistent with the conservation of natural beauty and the needs of agriculture, forestry and other uses;
- promote public and political awareness and support for the Solway Coast AONB;
- enhance the relevance of the Solway Coast AONB to all who live and work in and around, or visit, the area.

The Countryside and Rights of Way Act (CROW) 2000 placed a statutory duty on local authorities to prepare a plan for AONBs in their areas and review the plans every five years. In addition the CROW Act also places a duty on public bodies and others, to have regard to the special purposes of the AONB designation when carrying out their work.

In 2006 the UK formally ratified the European Landscape Convention, which brings a commitment to

- recognise landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage and a foundation of their identity;
- to establish and implement landscape policies aimed at landscape protection, management and planning;
- to establish procedures for the participation of the general public, local and regional authorities and other parties;
- to integrate landscape into regional and town planning policies and also cultural, environmental, agricultural, social and economic policies, as well as in any other policies with possible direct or indirect impact on landscape;
- and to establish and implement landscape policies, establish procedures for stakeholder participation and integrate landscape into broader policy.

In 1995 the Countryside Commission (now Natural England) employed Chris Blandford Associates to produce 'The Solway Coast Landscape', a Landscape Character Assessment (LCA). This first report, the LCA, is an objective description and classification of the Solway Coast AONB landscape. Forces for change are considered and management priorities are identified.

This report is now 14 years old and is showing 'its age' compared to modern LCAs. Consequently it has been agreed with the Natural England to commission a new Landscape Character assessment for the Solway Coast AONB, with up to date environmental guidelines.

The AONB management plan (2009-14) identifies a need to carry out a new Landscape/Seascape Character Assessment for the AONB, which links closely to the wider county and regional work.

Cumbria

- **In addition to the above, there are a number of county wide landscape character documents. These include The Cumbria Landscape Classification (1995)** established a generic classification of Cumbria's landscapes into 13 broad character types with a number of these being subdivided, making 37 character types in all. This covers all AONBs in the county. This was produced and published by Cumbria County Council staff.
- **The Cumbria Landscape Strategy (1998)** reflects the landscape character types and introduced guidance on the impact of various types of management and developmental change on the landscape. It supported the need for 'countryside design summaries' to be produced for each District Council area to ensure that new development in the countryside would be sympathetic to local identity and regional diversity. It also included landscape guidance aimed at both developers and land managers. This was also produced and published by Cumbria County Council staff.

<http://www.cumbriacc.gov.uk/planning-environment/countryside/countryside-landscape/land/LS.asp>

- **Technical Paper 5 - Landscape Character** was commissioned from Capita as a Structure Plan Working Paper to support the Cumbria and Lake District Joint Structure Plan in 2003. It reviewed and updated the Cumbria Landscape Classification. It also incorporated a review of Landscape of County Importance carried out in 2001.

<http://www.cumbriacc.gov.uk/planning-environment/countryside/countryside-landscape/land/CA.asp>

Cumbria Landscape Character Guidelines and Toolkit – being developed 2009.

The Scope of the Guidance

The document will include:

- Information on landscape character and the classification of Cumbria's landscape by cross referencing to
- Cumbria Landscape Character (Technical Paper No 5 updated)
- Landscape Strategy – following a refresh to take into account changes in landscape during the last ten years and align with LDNPA guidelines and Technical Paper 5.
- The Lake District National Park Landscape Character Assessment and Guidelines
- General guidance on the 'character based' approach for policy formulation and development control, including the role of biodiversity and geodiversity features, ecological networks and semi-natural habitats and the historic environment on landscape character.
- Examples of criteria based policy and good practice approaches to landscape character for development around towns, villages, and hamlets.
- Advice on the need to move away from local landscape designations and the need to develop finer grained landscape character assessments for areas that might be considered locally sensitive.

- General guidance on carrying out district based landscape character assessments, sensitivity and capacity analysis.

The project will also draw on:

- Landscape character assessment for the Areas of Outstanding Natural Beauty.
- The Wind Energy Landscape Capacity Assessment (2006) identifies landscape sensitivity and value criteria that could have relevance to the landscape character guidance.
- Cumbria Historic Landscape Characterisation Project (January 2008) provides character information for the Lake District National Park area. The work will be finalised for the rest of the county by July 2008.
- Biodiversity of Cumbria - an evidence base is currently being prepared and will link into decisions on landscape character.

Collectively these could provide the environmental character evidence base for the whole of Cumbria. They also all have a role to play in determining the effects of development or land management regimes on landscape character. Benefits would be drawn from providing strategic guidance on landscape character that identifies the key, up to date documents that should be used to support policy formulation and implementation. The approach should accord with PPS7 and provide advice on the move away from the landscapes of county importance approach and give advice on general principles of landscape character assessment at the local scale.

North West Region

NE is working with Defra and English Heritage to develop and deliver the European Landscape Convention Implementation Plan. An important step for NW England is to develop a Regional Landscape Character Framework in association with regional landscape partners. For further details, please see:

http://www.naturalengland.org.uk/regions/north_west/ourwork/landscapecharacterframework.aspx

Aims

To provide an up-to-date and detailed district level Landscape/Seascape Character Assessment (LCA) of the whole of the Solway Coast AONB area fitting in with Cumbria County Council's LCA and the North West Landscape Character Framework

The LCA will be used to:

To identify factors in the Solway Coast AONB that have influenced landscape and seascape change in the past and to indicate those forces of change currently influencing landscape character or likely to in the future.

- inform the development and implementation of AONB Management Plan policies, conservation and grant aid schemes and land use planning policies
- act as a tool for spatial planning use within the AONB
- assist with the assessment of individual planning applications

- understand a location's sensitivity to development and change
- develop future strategies for conserving and/or enhancing the landscape, local distinctiveness and sense of place
- help formulate priorities and prescriptions for land management, biodiversity and heritage advice offered by the AONB and partners
- provide an assessment that can inform and respond to other landscape/seascape, wildlife, cultural and historical strategies
- engage with partners and communities to improve understanding of the character of the AONB's landscape
- monitor landscape change within the AONB
- form part of the emerging Cumbria Landscape Character Guidance and Toolkit, and complement the North West Landscape Character Framework

Objectives

- To provide an assessment of the character, distinctiveness and qualities of the landscape of the Solway Coast AONB, including cultural and natural heritage resources, and its component landscape types and character areas in accordance with the methodology set out in Landscape Character Assessment Guidance for England and Scotland, April 2002.
- Undertake a Landscape/Seascape Character Assessment (LCA) involving desk study, field survey, identification, mapping, classification and description of landscape character types and areas.
- To provide environmental guidelines to conserve and enhance the character of the Solway Coast AONB to guide policy development, landscape and heritage management and other strategic matters such as on and offshore wind energy development, and on and offshore development control. (Noting the interface of land and sea, reference, work on 'Connecting Land and Sea' by the Europarc Atlantic Isles, July 2008).
- To incorporate the results of any relevant existing studies such as the Cumbria Historic Landscape Character, Cumbria Wind Energy SPD and the 'up and coming' Historical Seascape Assessment by English Heritage.
- Identify key environmental features, biodiversity, heritage features, forces for change (particularly climate change), landscape sensitivity and capacity for change, make recommendations, develop guidelines and identify targets for identified landscape/seascape character types and areas to inform the future development of landscape policy, management plans and landscape strategies;
- Undertake a Landscape/Seascape Character Assessment (LCA) involving desk study, field survey, identification, mapping, classification and description of landscape character types and areas.
- Provide an evidence base for future monitoring of change within the landscape of the AONB, including base-line information and key indicators.
- Involve a range of communities, partners and stakeholders in the development of the LCA.

Scope of study

The LCA should cover the whole of the Solway Coast AONB area. It should also clarify and identify where landscape types and areas continue outside the AONB boundary, (to a standard of at least 5 kms) and consider areas which are key to the setting of the AONB.

It should take into account the following:

- the most recent planning policies, strategies and guidance available including PPS 1, PPS 7, PPS 22, emerging LDF policies and strategies, the North West RSS and emerging RS2010
- landscape character assessment guidance and topic papers produced by the former Countryside Agency
- National Character Areas
- Historic Landscape Characterisation for Cumbria
- Solway Coast AONB Management Plan 2009-2014
- Countryside Character study (former Countryside Commission)
- Countryside Quality Counts Initiative
- Regional Landscape Character Framework
- Cumbria Landscape Classification, Landscape Strategy and emerging Cumbria Landscape Character guidance and toolkit
- Biodiversity evidence base for Cumbria
- Campaign for the Protection of Rural England Tranquillity Mapping
- Natural England's National Character Area Climate Change Adaptation Project Phase 2 Guidance
- Any other relevant guidance/studies.

It should take into account the findings of recent developments in landscape characterisation particularly integrated characterisation studies, which give equal weight to landscape character, biodiversity, geodiversity, historic character, natural and man made features, air and water quality, recreation and accessibility.

Methodology

The consultants will be expected to develop a detailed methodology for the LCA based on guidance provided in Landscape Character Assessment, Guidance for England and Scotland (the Countryside Agency and Scottish Natural Heritage, 2002) and its accompanying Topic Papers and Guide to Best Practice in Seascape Assessment, (Marine Institute, Ireland, 2001 and Defra 2005).

The LCA must use as a starting point the landscape character assessments already produced by Countryside Commission, NE, and CCC: consultants should make clear how this will be achieved.

The LCA must also take into account the NE's Area Climate Change Project Phase 2 Guidance.

The LCA must include an assessment of the seascapes in the AONB.

The LCA should consider the landscape character of villages and other settlements in the AONB area in terms of their broad character and relationship to the wider landscape. A full detailed townscape study and identification of key features, local forces for change or strategies will not be required.

Requirements of the contract

The consultants will be required to:

1. General

Confirm the timetable, methodology, consultation requirements, milestones and outputs with a project steering group led by representatives from the AONB and including landscape specialists from Cumbria County Council and Natural England.

2. Desk Study

Complete a desk study which includes overlay mapping to review all relevant source materials including the existing studies. For the purposes of seascape assessment any existing national and regional seascape units with the study areas must be identified from the outset. In addition the area of seascape to be assessed needs to be clearly established. Material should be compiled onto detailed survey forms. All geographical data should be assembled in a Geographical Information System which must be compatible with the system used by the AONB Unit (Map Info). An approach should be used that provides an appropriate level of detail to meet the aims and objectives of the study and supports the approach to field survey and data collection that the consultants propose, (mapping to be 1:25,000 or less if possible). It should lead to initial ideas about the definition of types and areas of common character. Wherever possible the desk study will involve officers from the AONB and should draw on available local expertise. The results of the desk study analysis should be recorded in the Geographical Information System.

3. Field survey

The field survey component of the work should serve to test and refine the types and areas of common landscape and seascape character, inform the written descriptions of the landscape and seascape, and identify and record any aesthetic or perceptual characteristics that cannot be identified as part of a desk study. The field survey should also aim to note the relationship and contribution of buildings and other structures to landscape character and the relationship between three key components of the seascape: coastal, hinterland and marine. The field survey team should be made up of experienced and competent surveyors and provision should be made to utilise officer and volunteer time from the AONB unit and other specialist support staff, whilst ensuring that consistency is maintained. The field survey findings should preferably be captured electronically, for example through the use of data loggers in the field. Consultants will need to describe how they propose to do this in as cost-effective a way as possible. Digital photographic records will also be required, as an essential part of the field survey process. Records for each photograph should include the following: national grid reference (12 figures) and bearing, date, zoom and a description of the image and reference to the appropriate survey record.

4. Consultation

Devise and run a minimum of two events (each being a self-contained workshop) to involve relevant stakeholders from the AONB partnership and local communities. The events should serve to examine draft landscape character types and areas and to contribute to the understanding of forces for change, particularly climate change, sensitivity and capacity for change in the landscape and the ways in which these will lead to the development of landscape guidelines and, ultimately,

strategies. Workshops should be held at a minimum of two of locations within the AONB and focus on locally relevant landscapes. Consultation events should take place early enough in the process to enable feedback to be valuable and to genuinely contribute to the final product.

5. Classification and description

This part of the work should complete the characterisation process by identifying, mapping, and classifying the landscape into appropriate landscape character types and areas at a recommend scale of 1:25,000. For seascape assessments the appropriate seascape unit(s) and subdivision for types and areas must be identified, mapped, classified and described. This will be achieved by using the data collected to map their extent and provide clear and concise written descriptions of their character. Such descriptions should recognise other relevant factors recorded as part of the field survey and provided by AONB officers and members of partner and stakeholder organisations and communities. The future use of the LCA to inform other strategies and guidelines should be closely considered here. GIS should be used to aid both the statistical and manual analyses of the landscape. Landscape descriptions should be stored electronically, with appropriate inter-linkages.

For each landscape type the following should be provided:

- A description of the landscape character which includes an identification of key characteristics, ecological, physical and human influences (cultural and historic).
- A description of the character area(s) within the landscape character type identifying key characteristics and characterising local distinctiveness.
- Location map and photographs for the type and each area within it showing examples of key characteristics.

Ideally the areas should be nested within the types to give a hierarchical structure, dovetailing with the Cumbria Landscape Classification, Regional Landscape Character Framework and National Character Areas.

For each local seascape unit, the following should be provided:

- An identification and description of the coastal, hinterland and marine components and characteristics
- A description of the seascape character type(s) and areas(s) within the seascape unit identifying key characteristics and characterising local distinctiveness
- Location map and photographs for the unit, type and each area within it, showing examples of key characteristics.
- Consideration should be given to descriptions at both low and high water (tidal areas) where this has an effect on what features are exposed or concealed from view

Ideally the areas should be nested within the types to give a hierarchical structure, dovetailing with the national Joint Character areas. If this does not prove possible, a clear explanation needs to be provided.

6. Forces for change and landscape guidelines

Following the classification process, the forces for change (including past changes, current issues and future trends), sensitivity and capacity for change for each landscape/seascape type and area should be identified. Tender documents should outline what issues might be anticipated in identifying and dealing with forces for change etc. The identified forces for change etc. will then be used by the consultant to propose relevant landscape and seascape guidelines and target and any recommendation for landscape enhancement. These will be used at a later date to inform the development of appropriate landscape/seascape strategies for the AONB. This work needs to be carried out in a transparent manner with specific criteria identified. There must be a clear link between the landscape characterisation, stakeholder consultation and the forces of change identified.

Particular attention should be paid to the potential impacts of climate change on the landscape and the sensitivity and capacity for change for each landscape/seascape character type and area in relation to climate change, drawing on relevant information and studies. This work will be used as part of the landscape strand of Natural England's climate change adaptation project, so it is essential that their Phase 2 guidance is used as a basis for this work.

The mechanism used to develop the landscape guidelines and targets must be compatible with the Local Development Framework process so that this piece of work and ultimately the landscape/seascape strategies (to be developed at a later date) can be used effectively to guide and influence planning policy for the AONB.

7. Outputs

Draft report

The LCA must be presented initially as a draft report that can be edited and commented upon by the Project Steering Group, AONB partnership staff, the Solway Coast AONB Joint Advisory Committee, CCC, CaCC, ABC, NE and other relevant stakeholders including local communities.

The draft report should contain a contents breakdown, descriptions of the methodology, and the landscape/seascape units, types and areas provisionally identified, identify forces for change, sensitivity and capacity for change, and the ways in which these can be used to develop appropriate landscape guidelines, identify targets and should include GIS mapping. Two hard copies and, two electronic versions of the report, in both word and PDF format should be supplied. Consultants will be required to collate all the comments received and to make alterations to respond to them, including resolution of any conflicting comments. This process must provide an appropriate audit trail, demonstrating what comments have been made, how they have been taken into account or giving reasons why they have not been accommodated.

Final report

The LCA should be supplied as an electronic version in both word and PDF format and should include GIS data. The report should be prepared to a high graphical standard utilising the Solway Coast AONB brand guidance and should be engaging, fully illustrated and accessible to all. 10 hard copies of the final report are required

GIS data

GIS data should be supplied in Map Info format and ESRI Shapefile format. If a linked database is used it should be in Microsoft Access.

Metadata

To allow users to interpret and use the data correctly, care must be taken to ensure that suffi-

cient metadata is supplied with any LCA datasets. Metadata should follow the UK GEMINI Profile (www.Glgateway.org.uk). It is particularly important that categories and technical terms used in the database are clearly defined in the metadata. It is also vital that the purpose and scale of the study are described and that contact details for the owner of the dataset are clearly identified. Metadata will be created for each GIS layer forming part of the final report. Metadata will include all the mandatory elements defined within UK Gemini (version 2.1) and shall, in addition, include a description of each field within the attribute data.

Two hard copies and, two electronic versions of the draft report, in both word and PDF format should be supplied. Consultants will be required to collate all the comments received following a consultation period and to make alterations to respond to them, including resolution of any conflicting comments. This process must provide an appropriate audit trail, demonstrating what comments have been made, how they have been taken into account or giving reasons why they have not been accommodated.

A record describing the LCA should be completed in the Database of Landscape Character Assessments in England, which is accessible via the Landscape (previously Countryside) Character Network website. The database is structured into three main sections.

- Basic information about the LCA including the name, date, geographical extent and access details
- Summary of the LCA methodology
- Description of any existing or proposed applications of the LCA

Consultants will be required to complete at least the first two sections describing the basic information about the LCA and summary of the LCA methodology. A half day of consultancy time should be allocated to this task. The online collection tool can be found on the Countryside Character Network website (www.landscapecharacter.org.uk).

CD

Five copies of a CD should be supplied containing all project outputs. The CD should be suitable for circulation by the AONB.

8. Management

The Landscape Character Assessment (LCA) is seen as a joint project between the successful consultant and the AONB partnership.

A lead officer from the AONB will be able to work with the consultants on the study and at this stage it is anticipated that the equivalent of at least 10 working days will be available. Consultants should allow for this involvement in their tender preparation and costing.

It is further anticipated that key AONB partnership staff will also be available to provide information and support and 12 days field work in order to generate ownership of the outputs and outcomes. Consultants should allow for this involvement in their tender preparation and costing. The tender should include details of how you will be able to increase the understanding of AONB staff in the LCA process by maximising opportunities for work shadowing or training (although this aspect will not be a major part of the contract).

A maximum of 4 meetings with the project steering group should be costed into the contract, to be held at the Silloth offices of the AONB unit, to include:

1. Initial meeting to agree process, methodology, timetable, milestones, workshop outline and content, and outputs.
2. Interim meetings to assess milestones met
3. Final meeting and presentation on completion of workshops and final report

The chosen contractor will be required to liaise in the first instance with Brian Irving at the AONB Unit in Silloth.

The successful consultant shall indemnify Allerdale Borough Council against all claims in respect of injury to persons and property arising out of the execution of the contract. Evidence of public liability and professional indemnity insurance cover and premiums paid should be enclosed with your submission. Public liability insurance cover should not be less than £5,000,000 per claim with no limit to the number of claims.

Copyright and ownership of the report and any digitised information and photographs produced will rest with Solway Coast AONB (Cumbria County Council, Allerdale Borough Council, Carlisle City Council) and Natural England.

9. Health and Safety

The successful consultant will be expected to comply with current Health and Safety legislation, regulations, codes of practice and guidance. Please note that the field work in the area presents specific significant hazards, in particular the nature of estuarine environment, saltmarshes and wetland sites.

Soon after being appointed the consultant will be required to provide detailed risk assessment(s) and health and safety work method statement(s) for the field survey work. The field survey work cannot be undertaken until these key health and safety documents have been assessed and approved by Allerdale Borough Council.

10. Budget

There is a limited budget to fund an LCA for the Solway Coast AONB. Consultants need to be aware that these resources total £20,000 (excluding VAT and subject to formal approval from funders) for both phases and any tender needs therefore to be at or preferably beneath that sum, excluding the input to the project being provided through the AONB staff and volunteers. Although it is anticipated that the same consultant will be appointed for both phases, the two phases will be let as separate contracts. Consultants are therefore asked to make a clear distinction between the two phases when providing breakdown of costs.

11. Timescale

The draft reports and CDs should be submitted by 28th February 2010

The full, final reports and CDs should be submitted by 30th April 2010 draft Forces for change and landscape guidelines submitted by 30th July 2010.

It is expected that the LCA will be completed, signed off and all invoices processed by 30th September 2010.

Payment

The chosen contractor will be paid 45% on satisfactory completion of the desk and field study and satisfactory draft report, and a further 55% payment on satisfactory submission of the final report, payment on production of an official invoice.

Invoices must be supported with a detailed breakdown of time expenditure on fieldwork, desk top study, meetings, etc. for all those involved with the project.

Tender Submissions Should Include:

- A description of how the brief's requirements would be met, including a broad indication of the proposed methodology.
- Details of the relevant experience of staff, in particular the project manager, to be involved in the study, an outline timetable and details/costs of any sub-contractual arrangements.
- A fixed price cost for the work, including a breakdown of consultants' fees (number of work days and day rates per member of staff), overheads, travel and subsistence, VAT (where applicable).
- Names and contact details of three referees.

Selection of chosen contractor

Selection will be based on both value for money and the proposed approach and timescale for the project, based on the following criteria:

- A clear understanding of the brief and explanation of how it is to be carried out
- Ability to communicate in words and graphics.
- Previous experience in this field of work
- The ability to work to the agreed timescale and deadlines

The shortlisted consultants may be required to attend an informal selection meeting to make a presentation on their tender submission providing details of their response to the brief outlining proposed methodology, outputs, consultation, management of the work, health and safety management and answer questions from AONB partnership members.

Solway Coast AONB Partnership reserves the right not to make any appointment and not to accept the lowest tender.

Please send your submission, to arrive by 12 noon,

Friday 6th November 2009 and signed across the seal and clearly marked 'Sealed tender, not to be opened'

Dr Brian Irving
Solway Coast AONB Unit
Liddell Street
Silloth
Cumbria

For more information about the contract please contact Brian Irving on 016973 33055.

Appendix 2

Information sources/references

7.10 The following information sources were used to inform the study.

Document Name and Date	Author and Source
Solway Coast AONB Statutory Management Plan 2009 (2009-2014)	AONB
The Solway Coast Landscape (CCP) (1997) The Countryside Commission	Chris Blandford Associates for The Countryside Commission
Cumbria	
The Cumbria Landscape Strategy (1998)	Cumbria County Council http://www.cumbriacc.gov.uk
The Cumbria Landscape Character Assessment (1995)	Cumbria County Council http://www.cumbriacc.gov.uk
Technical Paper 5 - Landscape Character 2001-2016	Cumbria County Council http://www.cumbriacc.gov.uk
Cumbria Wind Energy Supplementary Planning Document (2007)	Cumbria County Council http://www.cumbriacc.gov.uk
Cumbria Landscape Character Guidelines and Toolkit	Toolkit is a merging of existing LCAs and Technical Paper 5 Cumbria County Council http://www.cumbriacc.gov.uk
Cumbria Historic Landscape Characterisation Project	Cumbria County Council
Biodiversity of Cumbria	Cumbria County Council
Natural England	
National Character Areas (updated 2005)	Natural England http://www.naturalengland.org.uk
North West Landscape Character Framework	Natural England
CPRE	
CPRE Tranquillity Mapping	CPRE

Appendix 3

Landscape classification hierarchy and fit with other assessments

Introduction

7.11 This section provides information about the assessments in existence at the start of the project, and shows how the new work integrates to comprise a hierarchy of assessment.

Existing assessments

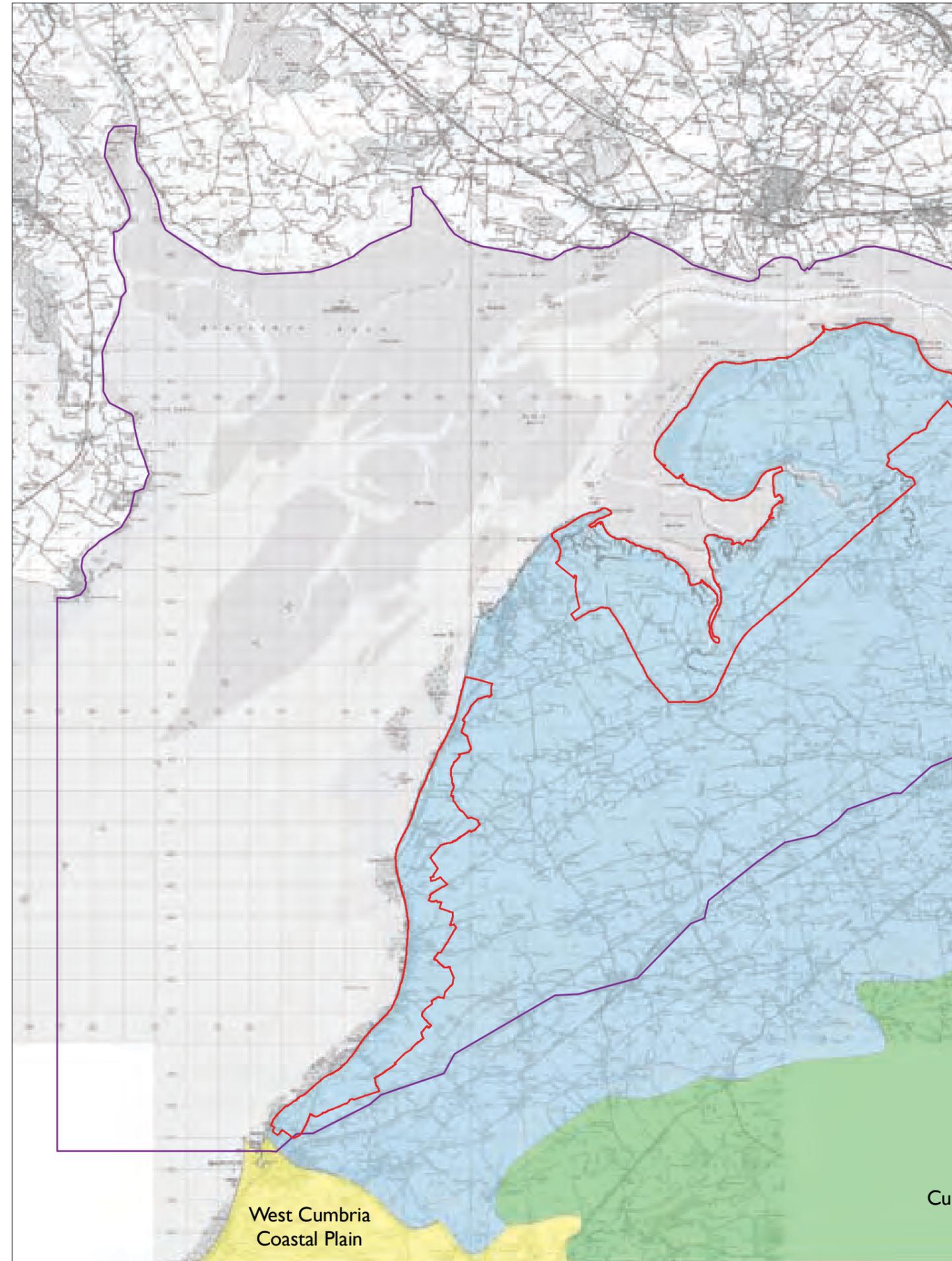
7.12 The following table provides a summary of assessments in existence at the start of this project.

Assessment	Scale	Accordance with 2002 Guidance	Additional Comments
National Seascape Assessments			
National scale seascape character areas	1: 250,000	n/a	See Fig 4.1 of Guide to Best Practice in Seascape Assessment. All AONB coast falls into Solway Firth
National Landscape Assessments			
National Character Areas (updated 2005), Natural England	1: 250,000	Updated since 2002	Original work is now dated. Based on broad scale character areas
National Landscape Typology, Natural England	1:50,000	Updated since 2002	A desk based study. Some subsequent updating. Broad scale landscape types (5 in the AONB)
North West Landscape Character Framework, Natural England	1:100,000	Ongoing work	Forms an intermediate tier between National Character Areas and County Assessments
County Assessments			
The Cumbria Landscape Strategy (1998) Cumbria County Council	1:50,000	Undertaken before 2002 Guidance or Interim 1999 Guidance (1997)	Types and sub-types based on the Cumbria Landscape Character Assessment (below)
The Cumbria Landscape Classification (1997) Cumbria Country Council	Not known	Undertaken before 2002 Guidance and Interim 1999 Guidance	Reviewed 2009-2010 and incorporated into the Draft Cumbria Landscape Character Guidance and Toolkit. The original types and sub-types including seascape types have been retained
AONB Assessment			
The Solway Coast Landscape (1995) for The Countryside	Not given - maps are schematic	Undertaken before 2002 Guidance or Interim 1999	Details 8 landscape types

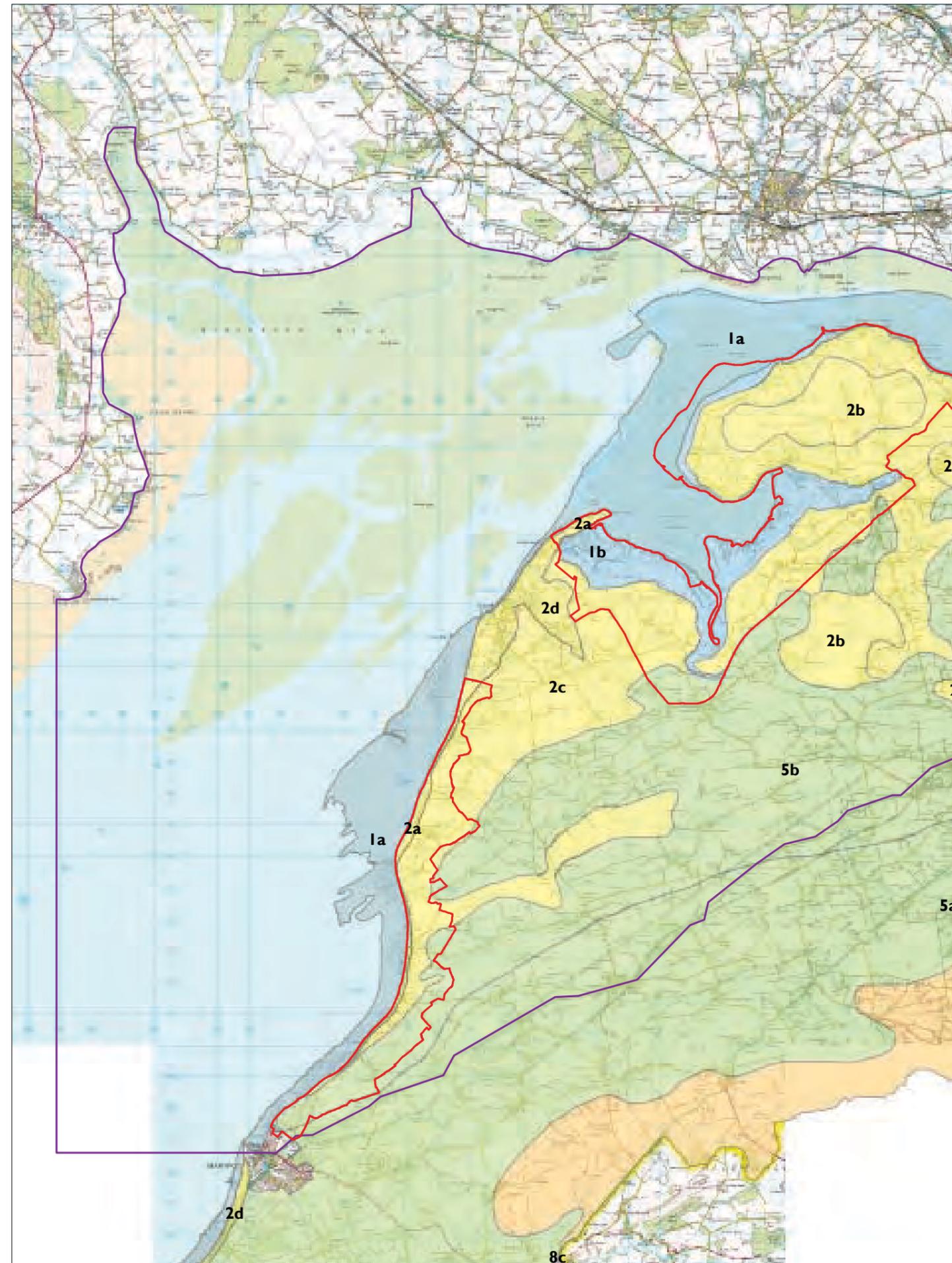
Assessment	Scale	Accordance with 2002 Guidance	Additional Comments
Commission		Guidance (1997)	

7.13 Maps of the National and County level landscape character areas and types present within and around the AONB are provided in **Figures 14-15**.

Figure 14: National Landscape Character Areas
Figure 15: Cumbria Landscape Types and Sub-Types

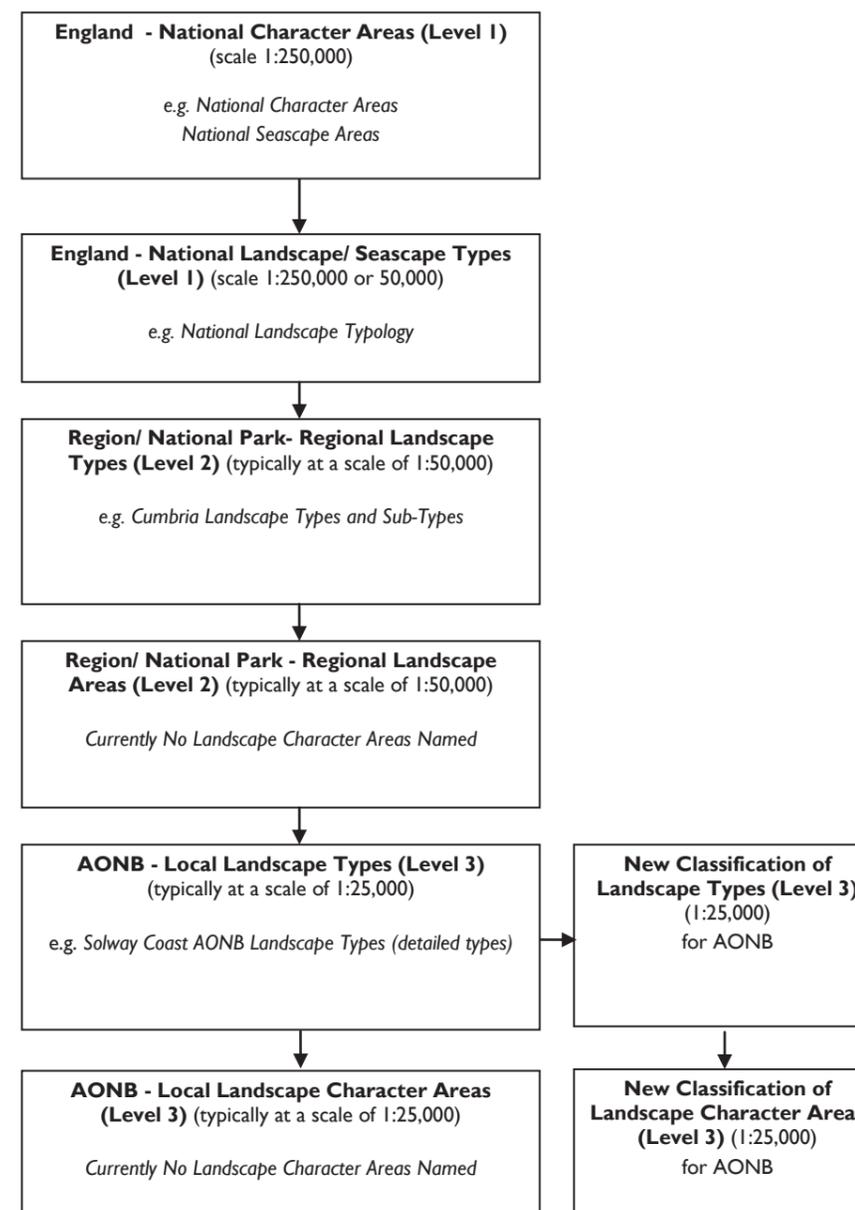


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 File: S:\4800\4808 Solway Coast AONB LCA\GIS\Themes\ArcGIS9\4808-01_010_NCAs_A3.mxd



The new AONB assessment

7.14 The following flow chart summarises the how the existing landscape character classifications fit into the assessment hierarchy, and where the new classification fits.



Fit with the previous AONB classification

- 7.15 The previous types which were presented in the *Solway Coast Landscape* (1995) are listed below. Some of these types are very general and do not convey the differences and variations that can be found within the specific areas within the types of landscape under consideration. The new classification uses more descriptive names and subdivides the character types into areas to bring out differences.

Previous and new Solway Coast AONB types

Existing Types	Proposed Types
<p>COASTAL MARGIN</p> <ul style="list-style-type: none"> • Open sea and river channels • Foreshore • Saltmarsh • Sand dunes • Cliff <p>MOSSLAND</p> <ul style="list-style-type: none"> • Raised Peat Bog <p>AGRICULTURAL LAND</p> <ul style="list-style-type: none"> • Improved pasture and arable land • Rough pasture 	<p>SEASCAPE/INTERTIDAL</p> <ul style="list-style-type: none"> • Type A: Inner Firth Intertidal Flats and Saltmarsh • Type B: Outer Firth Beaches and Dunes <p>LOWLAND LANDSCAPES</p> <ul style="list-style-type: none"> • Type C: River Floodplain and Marshy Grassland • Type D: Coastal Mosses • Type E: Coastal Plain • Type F: Drumlinised Lowland Farmland • Type G: Undulating Coastal Farmland • Type H: Coastal Town and Urban Fringe

The new classification of types and areas and relationship with existing LCAs

- 7.16 The following table explains how the new classification of landscape types and areas fits with previous classifications in the existing national, sub regional and local landscape character assessments.

New Solway Coast AONB Classification - Seascape/ Landscape Types	Relationship to Existing Classifications
Seascape/Intertidal Landscape Type A: Inner Firth Intertidal Flats	Included within Solway Basin NCA Included within Coastal Margin Landscape Types in Solway Coast AONB LCA Included in Estuary and Marsh in Cumbria LCA
Seascape/Intertidal Landscapes Type B: Outer Firth Beaches and Dunes	Included within Solway Basin NCA Part included within Coastal Margin Landscape Types in Solway Coast AONB LCA Part included in Estuary and Marsh in Cumbria LCA
Lowland Landscapes Type C: River Floodplain and Marshy Grassland	Included within Solway Basin NCA Part included within Improved Pasture and Arable Land Landscape Sub-Type in Solway Coast AONB LCA Part included within sub-types Coastal Plain and Low Farmland in Cumbria LCA
Lowland Landscape Type D: Coastal Mosses	Included within Solway Basin NCA Part included within Raised Peat Bog in Solway Coast AONB LCA Equivalent to Type 2 Coastal Margin, sub-type Coastal Mosses in Cumbria LCA in Cumbria LCA
Lowland Landscape Type E: Coastal Plain	Included within Solway Basin NCA Included within both Improved Pasture and Arable Land and Rough Grazing in Solway Coast AONB LCA Equivalent to Type 2 Coastal Margin, sub-type Coastal Plain in Cumbria LCA
Lowland Landscape Type F: Drumlinised Lowland Farmland	Included within Solway Basin NCA Part included within Improved Pasture and Arable Land in Solway Coast AONB LCA Part included within Type 5 Lowland, sub-type Low Farmland in Cumbria LCA
Lowland Landscape Type G: Undulating Coastal Farmland	Included within Solway Basin NCA Part included within Improved Pasture and Arable Land in Solway Coast AONB LCA Included within sub-type 2c Coastal Plain in Cumbria LCA
Lowland Landscape Type H: Coastal Town and Urban Fringe	Included within Solway Basin NCA Not classified in Solway Coast AONB LCA Equivalent to sub-type 2d Coastal Urban Fringe in Cumbria LCA

Appendix 4

Survey sheet example

LUC FIELD SURVEY FORM – Solway Coast Landscape and Seascape Character Assessment

NAME.....DATE:.....TIME:.....

WEATHER:

SURVEY LOCATIONS (include all if several)

DRAFT LANDSCAPE/ SEASCAPE CHARACTER TYPE:
DRAFT LANDSCAPE/ SEASCAPE CHARACTER AREA:

PHOTOGRAPHS (also mark location on map)

Number	GPS/Grid Ref	Location	Direction/Bearing/Notes

KEY WORDS/PHRASES FOR LANDSCAPE/ SEASCAPE/ VISUAL CHARACTER

.....

Key physical/human/visible characteristics and their significance/ contribution to character.
 Note their condition:

.....

PHYSICAL INFLUENCES - GEOLOGY AND SOILS

Solid	Drift/Soils
<input type="checkbox"/> New Red Sandstone	<input type="checkbox"/> Sand
<input type="checkbox"/>	<input type="checkbox"/> Peat
<input type="checkbox"/>	<input type="checkbox"/> Alluvium
<input type="checkbox"/>	<input type="checkbox"/> Warp
<input type="checkbox"/>	<input type="checkbox"/> Estuarine mud
<input type="checkbox"/>	<input type="checkbox"/> Raised gravel beach
<input type="checkbox"/>	<input type="checkbox"/> Boulder clay
Geological/ Geomorphological Forms	<input type="checkbox"/> Drumlins -height.....
<input type="checkbox"/> Raised beach	<input type="checkbox"/> Esker
<input type="checkbox"/> Shoal/sandbank/scar	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

ELEVATION - LAND

Sea level (0m)
 Flats (< 10m)
 Lowland (10- 50m)
 Transition (50-75m)

DEPTH - SEA

Shallow (0-2m)
 2-5m
 5-10m
 Deep (10-20m)
 Very deep (>20m)

LANDFORM/ SEASCAPE

<input type="checkbox"/> Flat	<input type="checkbox"/> Floodplain	<input type="checkbox"/> Escarpment	<input type="checkbox"/> Flat sands
<input type="checkbox"/> Coastal levels	<input type="checkbox"/> Gentle slopes	<input type="checkbox"/> Plateau	<input type="checkbox"/> Flat mosses
<input type="checkbox"/> Rolling	<input type="checkbox"/>	<input type="checkbox"/> Sand dunes	<input type="checkbox"/> Estuary
<input type="checkbox"/> Terraced	<input type="checkbox"/> Cliffs	<input type="checkbox"/> Shingle beach	<input type="checkbox"/> Flat mudflats
<input type="checkbox"/> Hills	<input type="checkbox"/> Rocky outcrop	<input type="checkbox"/> Sandy beach	<input type="checkbox"/> Flat salt marsh

HYDROLOGY/WATER/COASTAL

<input type="checkbox"/> River/stream/beck	<input type="checkbox"/> Bog/moss/mire	<input type="checkbox"/> Man made lake	<input type="checkbox"/> Estuary channel
<input type="checkbox"/> Spring/well	<input type="checkbox"/> Ditch	<input type="checkbox"/> Salt marsh creek	<input type="checkbox"/> Open sea
<input type="checkbox"/> Lake/tarn/water/pool	<input type="checkbox"/> Meander	<input type="checkbox"/> Brackish lagoon	<input type="checkbox"/> Other.....

VISIBLE FEATURES

Tick if present. Make note if seen in another character area or type beyond.

Communications	Buildings	Settlement/Industrial	Other
<input type="checkbox"/> Motorway/Dual	<input type="checkbox"/> Farm buildings	<input type="checkbox"/> Suburb/town edge	<input type="checkbox"/> Tumuli
<input type="checkbox"/> Main road	<input type="checkbox"/> Hall/parkland	<input type="checkbox"/> Village/hamlet	<input type="checkbox"/> Historic field bdry.
<input type="checkbox"/> Rural road/lanes	<input type="checkbox"/> Landmark bldg/mon.	<input type="checkbox"/> Nucleated settle.	<input type="checkbox"/> Ridge and furrow
<input type="checkbox"/> Tracks	<input type="checkbox"/> Tower/bastle	<input type="checkbox"/> Linear settle.	<input type="checkbox"/> Earthworks
<input type="checkbox"/> Railway/station	<input type="checkbox"/> Church	<input type="checkbox"/> Dispersed settle.	<input type="checkbox"/> Roman site
<input type="checkbox"/> Disused railway	<input type="checkbox"/> Fortifications	<input type="checkbox"/> Quarry	<input type="checkbox"/> Airfield
<input type="checkbox"/> Bridleway/footpath	<input type="checkbox"/> Ruins	<input type="checkbox"/> Workings	<input type="checkbox"/> Industrial building
<input type="checkbox"/> Car park	<input type="checkbox"/> Bridges	<input type="checkbox"/> Wind farms	<input type="checkbox"/> Coastal defence
<input type="checkbox"/> Masts/poles	<input type="checkbox"/> Pier/harbour/dock	<input type="checkbox"/> Caravan/campsite	<input type="checkbox"/> Lighthouse

Comment on road lining/ signposting/ any roadside clutter

.....

LAND USE/LAND/VEGETATION COVER (Including sea).

Tick if present. Make a note on the form if seen in another character area or type beyond.

Land use	Woodland	Settlement	Commercial
<input type="checkbox"/> Rough grazing	<input type="checkbox"/> Mixed woodland	<input type="checkbox"/> Houses	<input type="checkbox"/> Industrial units
<input type="checkbox"/>	<input type="checkbox"/> Decid. woodland	<input type="checkbox"/> Bungalows	<input type="checkbox"/> Mineral Working
<input type="checkbox"/> Permanent pasture	<input type="checkbox"/> Yew woodland	<input type="checkbox"/> Residential care	<input type="checkbox"/> Active quarry (+ size)
<input type="checkbox"/> Wet meadow	<input type="checkbox"/> Stunted wood	<input type="checkbox"/> Gardens	<input type="checkbox"/> Disused quarry (+ size)
<input type="checkbox"/> Ley/improved	<input type="checkbox"/> Coppice	<input type="checkbox"/> Parks	<input type="checkbox"/> Transportation
<input type="checkbox"/> Arable	<input type="checkbox"/> Scrub	<input type="checkbox"/> Amenity grassland	<input type="checkbox"/> Military
<input type="checkbox"/> Paddocks	<input type="checkbox"/> Orchard	<input type="checkbox"/> Common	<input type="checkbox"/> Nursery
<input type="checkbox"/> Historic parkland	<input type="checkbox"/> Conif. plantation	<input type="checkbox"/> Green	<input type="checkbox"/>
<input type="checkbox"/> Relict parkland	<input type="checkbox"/> Parkland trees	<input type="checkbox"/> Other.....	<input type="checkbox"/> Recreational
<input type="checkbox"/> Heathland	<input type="checkbox"/> Avenues	<input type="checkbox"/>	<input type="checkbox"/> Golf course
<input type="checkbox"/> Moss/Wetland	<input type="checkbox"/> Copses/clumps	<input type="checkbox"/>	<input type="checkbox"/> Campsite/caravan
<input type="checkbox"/> Saltmarsh	<input type="checkbox"/> Scattered trees	<input type="checkbox"/>	<input type="checkbox"/> Holiday camp
<input type="checkbox"/> Mudflat	<input type="checkbox"/> Hedgerow trees	<input type="checkbox"/>	<input type="checkbox"/> Marina
<input type="checkbox"/> Sand	<input type="checkbox"/> Belts/shelterbelts	<input type="checkbox"/>	<input type="checkbox"/> Other.....
<input type="checkbox"/> Sea	<input type="checkbox"/> Wood pasture	<input type="checkbox"/>	<input type="checkbox"/>

FIELD PATTERNS AND BOUNDARIES

Tick if present. Make a note on the form if seen in another character area or type beyond.

Rural	Settlements	Shape	Size
<input type="checkbox"/> Strip fields	<input type="checkbox"/> Walls –mortared	<input type="checkbox"/> Geometric	<input type="checkbox"/> Small
<input type="checkbox"/> Banks	<input type="checkbox"/> Fence – post & wire	<input type="checkbox"/> Sinuous	<input type="checkbox"/> Medium
<input type="checkbox"/> Ditches/drains	<input type="checkbox"/> Railing	<input type="checkbox"/> Irregular	<input type="checkbox"/> Large
<input type="checkbox"/> Walls – dry stone	<input type="checkbox"/> Hedges ornamental	<input type="checkbox"/> Regular	<input type="checkbox"/> Unenclosed
<input type="checkbox"/> Kests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Hedges - native	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Fences.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sandstone gatepost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SETTLEMENT WITHIN THE LANDSCAPE

Tick if present. Make a note on the form if seen in another character area or type beyond.

Pattern	Density	Materials/style	Era/age/style
<input type="checkbox"/> Nucleated	<input type="checkbox"/> Dense	<input type="checkbox"/> Sandstone	<input type="checkbox"/> Medieval
<input type="checkbox"/> Linear	<input type="checkbox"/> Low density	<input type="checkbox"/> Brick	<input type="checkbox"/> Georgian
<input type="checkbox"/> Dispersed	<input type="checkbox"/> Other.....	<input type="checkbox"/> Cobbles	<input type="checkbox"/> Victorian
<input type="checkbox"/> Compact	<input type="checkbox"/>	<input type="checkbox"/> Tile roof	<input type="checkbox"/> 1920s
<input type="checkbox"/> Other.....	<input type="checkbox"/>	<input type="checkbox"/> Slate roof	<input type="checkbox"/> Modern
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Rendered	<input type="checkbox"/>

Settlement edge character (defined/loose)

Relationship to the landscape and sea (eg note if facing onto estuary, downslope etc)

.....

PERCEPTUAL CHARACTERISTICS [See definitions in p.35 of LCA guidance]
 Focus on how specific elements contribute to the aesthetic characteristics eg does unity arise from consistent use of materials? How does the landscape make you feel? Circle descriptor.

FORM LINE	Vertical/ sloping/ rolling/ horizontal Straight/ angular/ curved/ sinuous
GRAIN SCALE	Strong orientation of landform/apparent/weak/none Intimate/ small/ large/ vast
PATTERN	Random/ organised regular/ formal
TEXTURE COLOUR	Smooth/ textured/ rough/ very rough Natural/ colourful/ garish
ENCLOSURE	Tight/ enclosed/ open/ exposed
DIVERSITY	Unified/ simple/ diverse/ complex
BALANCE	Harmonious/ balanced/ discordant/ chaotic
MOVEMENT	Dead/ still/ calm/ busy
NATURALNESS/WILDNESS	Wild/natural/tamed/man modified
VIEWS	Panoramic/open/focused/glimpsed/no views
HUMAN IMPACT	None/ limited/ widespread/ continuous
DIFFUSION OF PEOPLE	Few/ localised/ dense/ everywhere
TRANQUILLITY	Tranquil/active/disturbed
NOISE/DISTURBANCE	Silent/ peaceful/ noisy/ disturbed
ARTIFICIAL LIGHTING	Absent/ apparent/ evident/ dominant
EVIDENCE OF CULTURAL AND HISTORICAL DIMENSION / HERITAGE	Continuous/ widespread / limited/ none Good condition (maintained)/fragmented/ruined (neglected)
EVIDENCE OF FUNCTIONING NATURAL ECOSYSTEMS / BIODIVERSITY	Continuous/ widespread / limited/ none Good condition (intact)/fragmented/absent (damaged)
SCENIC BEAUTY	Outstanding/good/moderate/poor

VIEWS (include nature eg enclosed, contained, glimpsed, focussed, open, panoramic)
 Views within this landscape:

 Views to:

 Views from:

LANDSCAPE/SEASCAPE CONDITION - the physical state of landscape and intactness from visual/functional and ecological perspectives. State of repair of features and elements
 Note if widespread or localised

Features and attributes	Item/feature - add others as required	State of repair/direction of change. Circle as appropriate, and join line to relevant feature
Semi-natural habitats and biodiversity - including wetlands and drainage systems	Waterbodies Mosses Ditches	Stable: maintained/neglected/damaged Changing: enhancing/declining
Trees and woodlands - including historic management (eg coppice)	Woodland Coppice Avenues/field trees/clumps	Stable: maintained/neglected/damaged Changing: enhancing/declining
Farmed landscape - agricultural land cover	Historic field patterns Current agricultural land use	Stable: maintained/neglected/damaged Changing: enhancing/declining
Boundary features From which era are features intact?	Hedgerow trees Hedges Walls Railings Historic field patterns	Stable: maintained/neglected/damaged Changing: enhancing/declining
Settlements/buildings and development pattern - unity of materials and style, and intactness of character	Farm buildings Settlements	Stable: maintained/neglected/damaged Changing: enhancing/declining
Historic and cultural features/heritage	Historic buildings Historic parkland Relict field systems/pattern	Stable: maintained/neglected/damaged Changing: enhancing/declining
Rivers and coastal features - including naturalness and cleanliness of shorelines	Rivers Sea / estuary Mudflats/ sands Salt marshes Natural shores	Stable: maintained/neglected/damaged Changing: enhancing/declining
Views within area and to surrounding areas Any detracting features (masts/quarries/industry)	Views within area Views to surrounding areas	Stable: maintained/neglected/damaged Changing: enhancing/declining
Landscape/seascape character - overall integrity/intactness	Scenic beauty	Stable: maintained/neglected/damaged Changing: enhancing/declining

WHAT FEATURES OF THE LANDSCAPE/ SEASCAPE AND VIEWS ARE SENSITIVE TO CHANGE, AND TO WHAT CHANGE?

Natural factors (eg woodlands, semi-natural habitats, sensitive to what?):

.....
.....
.....

Human factors (land/sea use, settlement, field boundaries, historic elements, sensitive to what?):

.....
.....
.....

Perceptual factors (eg naturalness, openness, wildness, sounds, tranquillity, balance, sensitive?):

.....
.....
.....

Landform/ seascape influences/ tree and woodland cover/ scope to mitigate potential visual impacts (ie would woodland screen views, state scale at which mitigation would work):

.....
.....
.....

Inter-visibility with surrounding landscape/ seascape (include consideration of importance of skylines and effects of development or change, including wirelines/poles/fences/lighting/signage):

.....
.....
.....

KEY ISSUES/ VISIBLE FORCES FOR CHANGE/PRESSURES

Visible past changes (past development, past management etc):

.....
.....
.....

Visible present change (note any recent development and changes due to changes in management (eg neglect) etc):

.....
.....
.....

List any specific issues relating to climate change/sea level rise/increased storminess/temperature change (including any evidence of erosion, health of vegetation, views of wind farms etc):

.....
.....
.....

LANDSCAPE/ SEASCAPE GUIDELINES (note any evident needs, including maintenance)

Conserve and enhance (list any specifics apparent in field eg maintain walls):

.....
.....
.....
.....
.....

Restore (list any specifics apparent in field eg restore elements of degraded landscapes/dead vegetation/derelict buildings/drained areas to wetlands):

.....
.....
.....
.....

BROAD MANAGEMENT OBJECTIVE/VISION FOR THIS AREA (if apparent in field)

.....
.....
.....

END

SOLWAY COAST AONB
LANDSCAPE CHARACTER
ASSESSMENT
STAKEHOLDER WORKSHOPS

Prepared for
Solway Coast AONB
by
Land Use Consultants

March 2010

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1. INTRODUCTION

- 1.1. In 2009 Solway Coast AONB commissioned Land Use Consultants (LUC) to undertake a landscape character assessment (LCA) for the AONB. The study builds upon the landscape character assessment undertaken for the AONB in 1995 and the *Cumbria Landscape Classification* (1995), and incorporates areas within the surrounding landscape that are of key importance to the setting of the AONB.
- 1.2. Effective stakeholder consultation is key to the process and success of landscape character assessment, ensuring a wide range of views and values are represented. For the AONB, a participatory afternoon workshop was held on February 25th 2010 at the AONB Visitor Centre, Silloth. A total of 21 participants and 6 facilitators attended.
- 1.3. The consultation technique aimed to achieve active participation and to generate information appropriate to inform the AONB-wide landscape character assessment. The overall aim was to allow people who live and work in the district to understand and contribute to the process of LCA.

OBJECTIVES OF THE WORKSHOP

- 1.4. The objectives of the stakeholder consultation were to:
- explain the process and purpose of LCA and relevance to Solway Coast AONB;
 - understand what people value as important/special about the AONB and the reasons why;
 - validate the characterisation map – boundaries, names, key characteristics and perceptual experience.

WORKSHOP EXERCISES

- 1.5. Three exercises were carried out during the workshops, the results of which are presented in the following chapters of this report.

Exercise 1: What Is Special about the AONB Landscape and Why?

- 1.6. The purpose of this exercise was to determine “what is special” about various aspects of the landscape; what needs to be conserved and why. The information will be used to add local perspectives on the landscape to the report.

Exercise 2: Testing the Character Maps and Descriptions

- 1.7. The purpose of this exercise was to seek participants’ opinions on the landscape character areas identified by the assessment; the boundaries, the area names/titles and the key characteristics and the perceptual experience of the landscape.

Exercise 3: Pressures and Future Change

- 1.8. The purpose of this exercise was to seek participant’s observations and experiences of the changes that they have seen taking place in the landscape since they have known it. The information will be used to add information on the forces for change in the report and provide input into the guidance for the future landscape.

2. EXERCISE 1: WHAT IS SPECIAL ABOUT THE AONB LANDSCAPE AND WHY?

- 2.1. The following tables show the features of the AONB landscape which participants consider to be important and why. These comments were prompted by the following headings:

- Natural environment/landscape features/wildlife locations;
- Seascape, views, beaches and skies;
- Special Views and Landmarks;
- Historic Heritage and Cultural Identity;
- Places to enjoy: access & recreation, tourist facilities.

NATURAL ENVIRONMENT/LANDSCAPE FEATURES/WILDLIFE LOCATIONS

What is important	Why is it important
Dunes at Mawbray and Silloth	The special habitat it provides for birds and insects and the flowers that grow there.

SEASCAPE: VIEWS, BEACHES AND SKIES

What is important	Why is it important
All seascape in the Solway	The variation and change in the climatic conditions that is part of the drama and dynamism of the landscape.
The promenade and beaches at Allonby and Silloth	Popular with families, these are tourist attractions which brings money and employment to the area
The masts at Anthorn	A large presence in the area around which opinion is split. Some see it as a ‘blot on the landscape’, others like the large structures and the way they contrast with the ‘natural’ setting and contribute to the ‘wildness’ of the area.
Grune Point	The wide open spaces, the scale of large skies and seascape together with the views to Scotland make it a scenic and ‘wild’ place to visit.
Sunsets and sunrises around the coast	Spectacular colours and variations in light that change with different seasons. In the summer the sun sets behind Criffel.

What is important	Why is it important
Storms and stormy skies	Fantastic experiences of storms and grey, steely and storm skies eg. at Dubmill Point and Grune Point.
Sand dunes	Ecological interest and biodiversity as well as an attractive feature of the coastline.
Haaf netting along the shore at Bowness	Part of the cultural heritage of the coast.
Tranquillity	This is the reason why people visit. Should be conserved (problems with power boats, motorcycles).
Heritage interest	The grazing marshes are part of a long history of the use of the land. Also remnants of industrial structures and structures from WW2.
Coastline road from Allonby to Silloth	The dynamic experience you get looking outwards to the sea and shoreline and the views towards Silloth on the approach to the town. This is a particularly attractive view of Silloth with the elegant church spire on the skyline.
Raised beaches at Dubmill Point	Indicates the continual change and the dynamic nature of coast in the process of material being moved and deposited.
Intertidal mudflats and saltmarshes	Bird feeding grounds and diversity of wildlife.
Coastal path/cycleway	Good path system, which allows access to the coastline and affords large scale views outwards, of the sea and marshes, and inland with a natural setting, including wildlife and tranquillity.

SPECIAL VIEWS AND LANDMARKS

What is important	Why is it important
Edward I st Monument at Newton Arlosh Marshes	Important historic monument that relates to the historical links with Scotland.
Dismantled railways and route along Port Carlisle Canal	Structures such as the bridges at Abbeytown, the network of dismantled railways across the area, and the road along the former canal at Port Carlisle speak of the history of transport and manufacturing in the area during the industrial revolution.

What is important	Why is it important
Panoramic views of seascape and inland eg. from Rodgersceugh Farm on Bowness Common	Large scale, 360° views across the Firth to Scottish coast and Criffel and then round to the Lakeland Fells, with the mosses and flat plains in the foreground contrasting with them.
Views to Criffel across the Firth	Distinctive part of the seascape and the setting for renowned sunsets in the summer.
Views to the Lake District	Part of the setting and sense of place of the AONB.
Views along the western coastline and beaches	The dunes and the sense of wildness they bring are a characteristic part of the AONB.
The golf course at Silloth	Part of the coastal walk.
The TV masts at Sandale and Caldbeck	Can be seen from all around the Solway coast and forms part of the scenery.
The masts at Anthorn	Contrasting man-made structures that can be widely seen around the area.
Wind turbines at Moota	Thought of as being detrimental to the views and setting of the area.

HISTORIC HERITAGE AND CULTURAL IDENTITY

What is important	Why is it important
Churches at Abbeytown and Holme St Cuthbert	Buildings, structures and archaeology that relate to the historic influences of the Abbey on the surrounding area.
Historic villages eg. Mawbray, Allonby, Newton Arlosh and the planned towns of Maryport and Silloth	Range and variation of architecture and distinctive settlement patterns, from the mediaeval settlements to Victorian planned seaside resorts. The change and continuity of historical settlements evident in the area.
Hadrian's Wall and Roman fortlets	Roman influences, relating particularly to the defences on the northern shoreline, and the history of the area as a frontier. The Roman influence is reflected also in place names.
Salt pans at Allonby and Crosscanonby	Best preserved in Britain. Part of the areas old industrial heritage.
Submerged forest off Dubmill Point	Indicates a depth of history in the changing landscape and sea-level change.
Solway Viaduct between Bowness and Annan	Historical interest and the cultural and historical exchange/ links with Scotland.

What is important	Why is it important
World War 2 airfields at Orton and Anthorn	Large hangers, landing strips and other structures, such as the remnants of aircraft markings on some of the beaches, are all part the history of the areas through WW2. Historical value.
Quaker burial grounds at Beckfoot	Part of cultural and religious history of the area.
Ports at Maryport and Silloth and Port Carlisle	Strong historical links to shipbuilding and the movement of people and goods by sea. Maryport also has historical links to the Titanic.
Heritage of fisheries, including Haaf netting	Traditions unique to the Solway.

PLACES TO ENJOY

What is important	Why is it important
Ornithology at Grunepoint, RSPB reserves, and other locations around the coast	The area offers birdwatchers enormous variety and large numbers of birds visit the area to feed and breed along the coast.
Roman mile fort and Hadrian's Wall Trail	Historic interest and significance.
The plants and flowers along the dunes	Natural setting and for the wildlife.
The Green at Silloth	Open space that is very popular.
Solfest/Kite festival/Beer festival	Kite surfing, kite flying, windsurfing, horse riding on the beaches and other seasonal activities along the coast that draws visitors each year.
Abbeytown	The architecture, the historic church and the use of local sandstone in the buildings.
Maryport	Historic sea town resort. The Aquarium, visitor centre, marina, harbour, promenade and Roman fort are all attractions.
Crosscanonby Nature Reserve	The walks, birdlife and the wetlands.
Cumbria Coastal Way and Cycle Routes	Some routes are dangerous and there are problems with the narrow roads. Limited facilities, few pubs or even toilets and limited amount of accommodation along Hadrian's Wall path. There is an issue with access, with some saying it needs to be improved and others saying access should perhaps not be improved.

What is important	Why is it important
Footpath network/bridleways/quiet roads	For walking and enjoying the countryside of the area. Important access routes across the area, but there are issues about access surrounding them.
Watchtree Nature Reserve	Man-made nature reserve that is relatively newly established.
Microlights and gliding at Kirkbride Airfield	Recreational opportunities.

3. EXERCISE 2: TESTING THE CHARACTER MAPS AND DESCRIPTIONS

NAMES, BOUNDARIES, KEY CHARACTERISTICS, SPECIAL QUALITIES AND LANDSCAPE CHANGE

- 3.1. The following tables takes each character type in turn and details participants' comments on boundaries, the key characteristics and the perceptual/experience of the landscape. Any changes to the landscape are also summarised.

LANDSCAPE TYPE A: UPPER ESTUARY INTERTIDAL FLATS AND SALT MARSHES
Workshop comment
Name
Perhaps more widely understood as the "Inner Estuary"
A2 could be referred to as the Bowness Coast
Boundaries
A1 and A2 could be viewed as a single area, belonging to the inner estuary
Key Characteristics
Ripples, pools and patterns of the water are a characteristic of the flats
Quality of light is also an important influence on the mood of the area, including very dark skies
Spectacular sunsets and sunrises are a particularly important feature of the area
Open skies, sense of space and expanse are an integral part of the experience of the area
A1 and A2 Haaf netting on the Bowness coast
Mile fortlets back the areas A1 and A2 along the shoreline
Sounds are amplified across the estuary making the sounds of birds a particularly strong feature
The noise, flight and movement of birds is also a feature of A1
Uninterrupted views across the firth in A1 and A2 to Scotland
Special Qualities
Peaceful, pastoral scenes of grazing cattle and the impression of a peaceful, natural setting.
Sense of tranquillity
Future Change
Mudflats and saltmarshes will change because of their dynamic nature
Tidal energy development and the impacts this will have on the natural processes and habitats in the estuary
Development of tourism in the area and intrusions of new development related to this around the edges of the area

LANDSCAPE TYPE B: LOWER FIRTH BEACHES AND DUNES
Workshop comment
Name
Could refer to them as the "Outer Firth"
Boundaries
The types perhaps include too many different things. The beaches and dunes should maybe be a different type, distinct from the outer firth and foreshore
B1 should be smaller, with A2 extending further westwards
Key Characteristics
Add reference to the prehistoric forests off Dubmill point
The sand dunes are designated SSSI
Eider Duck should be identified as an important species
Include reference to hard sea defences as Dubmill, not just at Silloth
Masts at Cardurnock are a very large presence across the area so should be mentioned
B1 description should include reference to the sense of wildness specific to the sand dunes and the wide open expanse of sandflats
Reference to the spectacular sunsets should be made in B1
B2 should include mention of the views to Robin Rigg
Silloth and the Mawbray Bank dunes belong to B1 not B2
Remnants of concrete marks for aircraft and anti-tank structures on the marshes around Cardurnock could be included as part of the area's historical heritage
Special Qualities
Sense of remoteness, large open space are a special quality of the Cardurnock marshes
Storms that can be experienced at Dubmill point
Basking sharks, dolphins and porpoises visit the area
Future Change
Expansion of caravan parks is a concern and the impact it will have on the perception and tranquillity of the area.
Development associated with the existing villages and towns and related to expansion of tourism in the area, should be sensitive.

LANDSCAPE TYPE C: RIVER FLOODPLAIN, MARSHES AND DRAINED MOSSES
Workshop comment
Name
The type includes floodplain and wetland rather than marshes, which should be reflected in the naming of the type and the areas
Boundaries
Should C3 be split into two or three separate areas to reflect the distinction between the floodplain following the course of the river Waver and the glacial basin of Black Dub, Holme Dub and Crummock Beck
Should C2 be extended southwards further along the course of the River Whampool
C1: Should this be extended to follow the course of the River Waver
Should more emphasis be placed on the drained enclosed farmland around the mosses or define these as separate character types, distinct from the floodplains
Views are also possible from C3 and C1 to the coast of Dumfries and Galloway
Future Change
The grubbing up of hedgerows and replacement with wire fences is very common and a concern

LANDSCAPE TYPE D: COASTAL MOSSES
Workshop comment
Name
Names reflect the character type and the areas well
Boundaries
Should Salta Moss be included as an area within this type
Key Characteristics
The reference to the mosses being RSPB reserves is incorrect. They are part NNR, part RSPB and some areas are privately owned
More emphasis needed in the Key Characteristics on the draining of bogs for peat extraction and more detail should be provided about the damage to the mosses and subsequent restoration programs to allow the sphagnum to recover
Not sure of the use of the work “naturalised” to describe the type as cultural landscapes that have been modified by man
Areas are occasionally fringed by wet woodland, and stands of birch occur mostly on areas of drained peat
Mention the hard edges define the boundaries to the areas
Not just short views in these areas. The descriptions of the views should be modified to include the large vistas, open skies available from the tops of the drumlins, and the long views across areas of bog.
Some modifications should be made to the species of birds mentioned in the descriptions, including the mention of reedbunting around the edges of the mosses
Medieval farms lie adjacent to D3
Should refer to bogs not mires
Future Change
Agri-environment schemes could change character and should help to continue to improve the condition of the peat bogs

LANDSCAPE TYPE E: COASTAL PLAINS
Workshop comment
Name
E4: Wedholme doesn't really mean much locally. “Waver Plain suggested as an alternative
E5: Wolsty may useful be a meaningful addition to the name of the area (Wolsty Hall, Wolsty farm and also former site of Wolsty Castle all lie within the area)
E1: Bowness, Drumburgh and Boustead suggested as more resonant names
E5: “Edderside” may be a better name
Boundaries
Inconsistency where “town fringe” characteristics of G2 are also found in E5 around Kirkbride, such as the old airfield and large hangers, though still classed as type E. Should E5 be extended to include parts of G2 and the airfields/modern developments included as part of the characteristics of Type E Coastal Plain
E6: Arable land, not pasture
Key Characteristics
It is important that the vernacular architecture of the settlements, farmsteads and buildings in this area is brought out, particularly as there is great pressure to change this (or ignore it in new developments)
Reference to the technique of Westmoreland style hedge laying is incorrect . It is in fact North Cumberland style is used across the area
E1: Sunken lanes are also a key characteristic in this area

E2: the links to WW2 and the airfields should be mentioned as well as the masts at Anthorn erected in the 1960s
E5: the flatness and open character of the area is accentuated by the ridge that rises up inland (F1 and F2). The ridge as a feature of the area
E4: parts of the central area are more akin to C3, if drained and improved farmland. Should this be a separate area of type C
Special Qualities
Peaceful, pastoral qualities, particularly in E3 and E1
Tranquil and quiet landscape
Large open skies
Views of the Isle of Man possible on clear days
E2 and E3: could draw out the historic field pattern more. Medieval, nucleated villages and associated field systems where enclosed narrow strips are surrounded by 18 th and 19 th century enclosed common pasture
The medieval settlements around the Cardurnock peninsular, including Bowness-on-Solway
The sight of sheep and cattle grazing the pasture: friesians, ayrshires, houshires, blonds belgium blues. Scottish blackface sheep, kendal roughs, cheviots, swaledales, herdwick (native to Cumbrian Lake District and brought down in winter)
Future Change
Tradition of hedge laying becoming weaker, leading to loss of distinctive feature across the area
Small incremental changes are of concern
Traffic intensification and road side parking
Removal of field boundaries effecting the character
Sandstone gateposts gradually disappearing
Kirkbride and the prevalence of turf production having an effect on the character of the area, but part of a diversification of farming practices

LANDSCAPE TYPE F: LOWLAND FARMLAND
Workshop comment
Name
Names for F2, F3 and F6 ok
F2/1: Should this be called Holme Abbey “Tarns”
F4: Maryport to Wigton
F5: Not very familiar, though no suggestions for a better name
Boundaries
Should boundary between F4 and F5 be further east (so the River Wampool forms the boundary) to reflect the historic settlement and field patterns more accurately (see note below)
Should boundary between F2 and F1 lie further west
Key Characteristics
It is important that the vernacular architecture of the settlements, farmsteads and buildings in this area is brought out, particularly as there is great pressure to change this (or ignore it in new developments)
Could describe a common pattern across F4 and F5 of raised areas of settlements (“islands of improved farmland and settlements) divided by boggy valleys
The Watchtree Nature Reserve a DEFRA owned site established at Great Orton. The disused airfield become the burial ground for livestock during the foot and mouth crisis in 2001, and has since been transformed into one of the largest man-made nature reserves in

Europe.
F2: Unsure about the area being referred to as more wooded
F5: Formerly included Ingelwood Forest, a major hunting area that remained unsettled for a long time
F6: Largely 19 th Century enclosure with some small ancient settlement and field systems (notably Rockcliffe)
F4 and F5: more detail should be given about the mixture of enclosed common field (ancient enclosure pattern) and outfield enclosure
F4 and F5: could a distinction be made between the two areas. F5 contains more nucleated settlements and larger field system, whilst F4 has more of a mixture of small villages and dispersed individual farms with more outfields and varied field patterns
F4 and F5: There are some parks located across the area
F5: Included the Finglandrigg Wood NNR. Is this more like Type C than F as part of a river valley system
Special Qualities
F4: The Roman fortlet at Swarthy Hill is a distinctive feature
The strip fields and ancient enclosures, particularly in the west of F2
The geological features and drumlin nose in the west of F2
Future Change
Concerns over the large farming machinery and tractors that now use the narrow lanes and that they may damage these old lanes

LANDSCAPE TYPE G: TOWN FRINGE
Workshop comment
Name
G1: Kingmoor perhaps a better and more specific name than “West Carlisle”, referring to the Kingmoor Nature Reserve and Kingmoor House which lie within the area
Boundaries
G2: should be smaller, with the road running through East Causewayhead forming a clearer boundary between the outskirts of Silloth and the farmland of Type E. A perceived inconsistency where the area around Kirkbride contains a lot of the similar elements found in the ‘fringe’ area around Silloth but still regarded as belonging to the farmland type.
Key Characteristics
The historical depth in associated with the WW2 airfields
Change
Continued industrial developments and increase in lorry traffic through the area

4. EXERCISE 3: CHANGES AND PRESSURES IN THE LANDSCAPE

HOW HAS THE LANDSCAPE CHANGED IN YOUR LIFETIMES, GUIDANCE FOR THE FUTURE

- 4.1. The following tables show the key changes that participants identified as having taken place within the AONB landscape in recent memory.

What has changed?
Workshop comment
Decline in dairy farming since the foot and mouth outbreak
Larger farming machinery and vehicles using the narrow lanes

- 4.2. The following table lists the pressures and drivers for change that participants identified as continuing to act on the landscape and possible future changes that might be seen.

Future change	Guidance for the future
TOURISM	
Potential change is the development associated with a rise in the number of people visiting the area, improved facilities and sheer volume of people travelling through and walking around the area	There should be guidance that will encourage sensitive development of tourism in the area.
The type of tourism, such as more cyclists, bird watchers and walkers may alter with the Coastal Cycle Route, Hadrian’s Wall and improved paths and access to and along the coast for this type of recreation	Some parts of the area are in private ownership and some opposition to improving interpretation and access to places like Hadrian’s Wall which needs overcoming.
The increasingly important role of Hadrian’s Wall for the local tourist industry	Would like to see Hadrian’s Wall be made more readable to the public because it is an internationally important site and intrinsic to the character (and identity?) of the AONB.
	Need to continue to preserve a well preserved historic landscape.
TRAFFIC & ROADS	
Increase in heavy agricultural machinery using the roads, tractors etc., which are not suitable for the current structure of the farmland and the small, narrow lanes	

Delivery of goods in bulk across the area to the towns and to the farms, so big lorries and vehicles are using the small network of roads and damaging the lanes/making it dangerous for walkers and cyclists	Need for traffic management on unclassified roads
The speed cars travel at along the coastal roads is an issue for the attempt to manage the SSSI sites (dunes and coastal heaths) by grazing. A lot of animals have been killed on the busy/fast road, which has resulted in the owners withdrawing their animals from the scheme and the condition of the SSSI site declining or not improving as hoped.	Need for traffic calming measures, signs and speed cameras along the coastal road
CLIMATE CHANGE	
Rewetting of drained land and loss of enclosed landscape might occur with sea level rise. This will change the landscape as people will be living closer to wetlands and mosses	Will require guidance to steer changes to shoreline management and river basin management
Increased risk of flooding and need for tidal flood defences related to sea level rise	Plans and strategies that will protect homes
RENEWABLE ENERGY DEVELOPMENT	
Tidal Barrage	
Onshore and offshore windfarms	The big undeveloped skies are a key characteristic of the area and needs to be maintained. The retention of sensitive views to Scotland should be a priority
The building of 'too many' wind farms offshore to 'beyond the carrying capacity' (of the landscape/seascape)	
Biomass plants – aerobic digesters at Kirkbride and Blackdyke	
'Community renewable energy' production in the form of sludge digesters, anaerobic digesters, which also use grass. A plan for one to be established in Silloth	
LANDUSE	
The re-wetting of the mosses through Higher Level Stewardship (HLS) agreements	The proper enforcement of this scheme and commitment to it on the part of landowners.
Flooding and flood defences related to changes in rural land drainage system	Protecting property as well as the unique habitats in the area. Dealing with water on roads through things like culverts.
'Polly-tunnel agriculture' and glass houses could become more widespread as crops such as new crops of potatoes and maize are grown under plastic	

The decline of the traditional Cumberland style hedge laying, the disappearance of the traditional 'kests' and issues over who manages the ditches and 'gutter' clearance across the area. The Environment Agency used to take responsibility for this, but as funds have been cut they haven't been clearing the ditches which has affected the drainage systems across the area. No clear agreements or pressure on land-owners to deal with this problem	Encouragement of traditional forms of hedge laying and management of water courses. There needs to be a clearer understanding of who is responsible for the clearance of the ditches, ie the land owners.
Since the 1980's the boards have gone – the united utilities and Environment Agency. Utilities charging for waste water. Pump drainage schemes turned off (there are two pumps in the AONB) with affects on the water course management of the area.	Farmers will need to drain their land themselves, but there needs to be engagement and consensus on approach.
Water quality affected by agricultural run-off	The management of pollution and water which addresses changes in the drainage system across the area brought about by changes in the sea level, new policies regarding the rewetting of the mosses and the structure of who manages the ditch clearance.
Shift to large scale, industrial farming and the amalgamation of farms: bigger dairy herds, large chicken sheds and larger agricultural buildings being erected. The building of concrete platforms for silage/erecting of grain silos	
Change to tenant farming – fewer of them	
QUARRIES AND EXTRACTION OF MATERIALS	
Increased number of sandpits – which are all under the same ownership	

5. WORKSHOP PARTICIPANTS AND FACILIATORS

John Martin	Solway Coast Community Volunteer Group
Pauline Goodridge	Carlisle City Council
Val Halbert	Resident in AONB
K. Melville	Resident in AONB
Richard Wood	Allerdale Borough Council
Chris Puxley	Port of Silloth Harbour Master
Bill Angell	Volunteer and Resident
John Redgate	Natural England
Pam Taylor	Solway Firth Partnership
Anthony Markley	Cumbria County Council
John Collier	Carlisle City Council
Caron Newman	English Heritage
John Molyneux	Joint Advisory committee AONB (Parish Councillor)
Alasdair Brock	Natural England
Tim Heslop	Leader, Allerdale Borough Council
Mr and Mrs K Rudkin	Resident and Volunteers
Mike Faulkner	Allerdale Borough Council
Brian Melville	Resident in AONB
Drop in Session	
Anne Pattinson	Burgh Marsh Committee
Dorothy Hallsworth	Resident AONB, Burgh by Sands Parish Council
Kevin Newe	Resident AONB

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