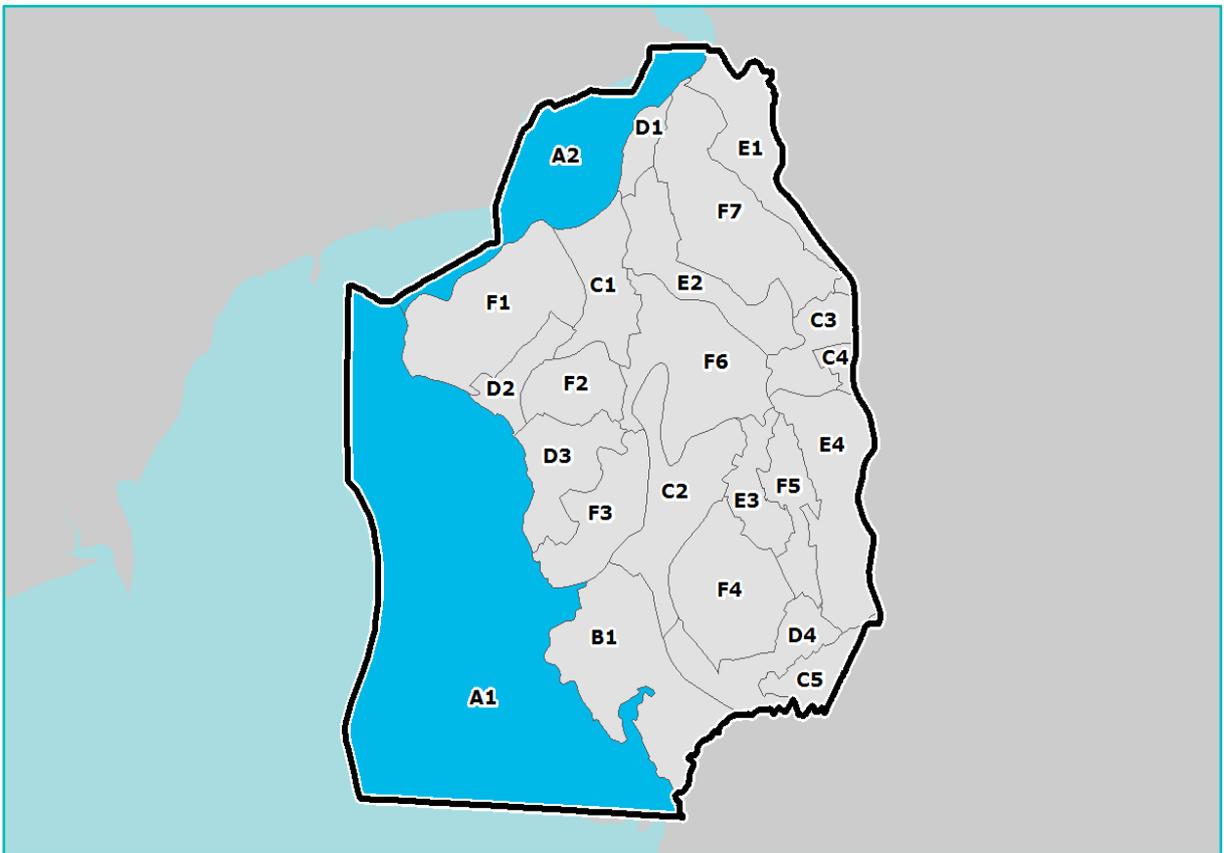


# 6 Seascape

## Introduction and location

- 6.1 Arnside & Silverdale AONB seascapes combine extensive areas of Morecambe Bay with the River Kent and the River Keer estuaries. The dynamic and changing coastline includes flats, cockle sands and saltmarshes, bounded in places by shingle bays, rising to low cliffs with caves. The transition between land and sea is marked by characteristic windswept and stunted Oak woodland such as that which hugs the coast south of Arnside.
- 6.2 The identified seascape character types are:
  - Seascape Character Type A: Intertidal Flats
  - Seascape Character Type B: Bay Saltmarshes and Lagoons

## Seascape Character A: Intertidal Flats



View across Morecambe Bay to Heysham



Kent Estuary, looking north from Arnside Station

## Location and Character Type Description

- 6.3 This seascape character type comprises two distinctive parts of the AONB: a large expanse of intertidal flats and skeers (channels) at the north east end of Morecambe Bay (SCA A1 East Morecambe Bay); and the Kent Estuary to the north (SCA A2 Kent Estuary, Milnthorpe Sands and Hazelslack Marsh). These intertidal seascapes are usually underwater at high tide and comprise extensive areas of shallow seas, drainage extending from the estuary to the open sea.
- 6.4 The River Kent Estuary, to the north of the AONB, provides a sheltered estuarine environment, with intertidal flats, and narrow fringes of saltmarsh. Areas of grazing and 'improved' fields lie beyond (outside the AONB). There is a strong north east to south west orientation followed by the estuary and in the grain of the surrounding land. These flat landscapes contrast strongly with the wooded limestone hills and pavements (LCT F) and drumlin farmland (LCT G) which rise above them.
- 6.5 East Morecambe Bay is large in scale and has a strong relationship with the sea. The flat landform of the area is enclosed by low limestone cliffs, shingle bays and wooded limestone hills to the landward edges, with distant views of fells available to the north.
- 6.6 The bay, estuary and areas of estuarine saltmarsh are part of a dynamic and changing ecosystem, at the interface of the land and sea. They are influenced by the seaward movement of water and depositional materials as freshwater drains from the fells, and by upward movement of water from the bay when the tide rises. The estuary was formed from an over-deepened valley, eroded by ice, and subsequently filled with muds and sands.
- 6.7 The landform is flat, comprising a mosaic of water, sands, mud, silt and damp soils, with mossland peat in places. The saltmarshes are drained by a dendritic pattern of channels, which enter the shifting estuarine channel. Marsh vegetation comprises fine grasses and species tolerant of saline conditions. Some of the marshes are grazed; other areas (outside the AONB) have been drained for agriculture (LCT I Lowland Valley and Coastal Margins).
- 6.8 The intertidal flats are dynamic, open, undeveloped, tranquil, characterised by birdsong, and at times windswept and exposed. The estuary and narrow fringes of saltmarsh are enjoyed for recreational activities such as walking, and fishing, or enjoying views along the coastal edge.
- 6.9 Views are open and panoramic, with vast, open skylines formed by the seaward horizon. Views are generally uninterrupted and skylines largely undeveloped, although Heysham Power Station and an offshore wind farm are clearly visible in the distance, in clear weather and the distinctive Arnside Viaduct is a feature of the Kent Estuary. Wave action and erosive forces operate and there are coves with pebble beaches, low limestone cliffs along its margins and skeers, the positions of which move cyclically.
- 6.10 The open and exposed character and the dynamic nature of the area contribute to its distinctive and valued perceptual qualities. These include the shifting patterns of light, textures and colours which change with different seasonal and weather conditions, and with tranquil or stormy seas; a sense of wildness and remoteness; and the perception of natural processes at work. The presence of wildlife and large numbers of birds and their calls are also important to the experiential qualities here.
- 6.11 Settlement is apparent along the margins of the bay, and the coast is important for recreation. There are a number of camping and caravan sites, shoreside car parks, footpaths, and favoured fishing spots where people enjoy the interface between land and sea.
- 6.12 The intertidal bay environment (SCA A1 East Morecambe Bay) differs from the estuary environment (SCA A2 Kent Estuary, Milnthorpe Sands and Hazelslack Marsh), being closer to the influences of the sea. The bay is more open, less enclosed by land masses, includes sand and mud environments and when the tide is in appears to be part of the open sea.
- 6.13 The Intertidal Flats fall within both Cumbria and Lancashire. Within Lancashire, part of the area is classified in the Lancashire Character Assessment as Open Coastal Marsh (LCT 18), with the westerly part unclassified. Within Cumbria it is classified in the Cumbria Landscape Character Guidance and Toolkit as Type 1 Bay and Estuary (and includes parts of Sub-Type 1a Intertidal Flats and Sub-Type 1b Coastal Marsh).

## Key characteristics

The key characteristics of the Intertidal Flats Type within Arnside & Silverdale AONB are:

- the dynamic and changing seascape and foreshore, with shifting and quick sands backed by low limestone cliffs and occasional shingle bays, and in other areas by bay saltmarshes (Type B);
- the vast open character of the intertidal flats which extend to the sea and skylines of the estuary;
- the low limestone cliffs and caves backing small limestone shingle beaches, with strongly characteristic wind-sculpted coastal woodland and limestone pastures providing a rural and undeveloped margin to the area;
- the movement and turbidity of the water, reflected in its silty brown colour;
- the seasons, weather conditions, and time of day having a strong influence on the area, including the mood of the sea and sky;
- the sight and sounds of gently lapping water, birds feeding on the flats and at times water moving more swiftly along skeers with standing waves; and
- the presence of distant development on the skyline, such as Heysham Power Station, an offshore wind farm, settlement along the west coast of the bay, are reminders of a more developed world beyond the AONB.

## Evaluation

### *Valued attributes*

#### 6.14 Key valued characteristics and qualities of the Intertidal Flats Type:

- Interest associated with tidal changes (Arnside bore, shifting sands, feeding birds);
- The dynamism of the ever changing tides and weather conditions;
- As important feeding grounds for birds;
- Interplay of the sea and sky;
- Expansive views from cliff edges and the coastal edge over Morecambe Bay, with a backdrop of the wooded hills of the AONB and distant Lakeland Hills;
- Sense of exposure to the elements at times of high winds and rough seas, whilst in calm conditions it becomes a peaceful environment, with a strong sense of tranquillity;
- Local history of the 'crossing of the sands';
- Inspiring landscape;
- Tranquillity, particularly experienced by recreational walkers along the cliff edge and the aspect and westward views over the bay;
- Notable features such as the railway viaduct, Hazelslack Marsh and the embankment path; and
- Good access opportunities for recreational activities, including walking, fishing and bird watching.

## Sensitive Features or Characteristics

- The balance of open and undeveloped skylines above a flat sea, seen in panoramic open views from the coast.
- The distinctive and undeveloped skylines formed by the wooded hills within the AONB and by the more dramatic distant hills of the Lake District;
- The natural and highly tranquil nature of the landscape, where natural sounds predominate, such as bird calls (notably oyster catchers).
- Dynamism of the intertidal flats as part of the wider bay ecosystem, and its sensitivity to changes in the sea level and coastal dynamics.
- Westward views and sunsets over the sea.
- Distant views of Lake District fells.
- Seaside settlements fringing the area which are of a strong traditional and vernacular style.
- Dynamic extent, mood and character with the tide and weather, and the fine balance between land and estuary.

## Forces for Change Affecting Seascape Character

- 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.
- Sea level rise or breach of banks, and flooding of areas which are currently drained and farmed.
- Increased storminess leading to erosion of the coastal intertidal flats and saltmarshes.
- The influences of the Shoreline Management Plan<sup>31</sup> and any management recommendations which would affect the seascape or intertidal landscape.
- Further development of the England Coastal Path along the coastal corridor creating opportunities for enjoyment of the local environment.
- Requirement for further coastline defences, including hard engineered coastal defences.
- Drainage and 'improvement' of marshes and use for intensive agriculture.
- Possible renewed pressure for shellfish harvesting using tractors on the sands.
- Pressures for renewable energy development including onshore and offshore wind farms and other large scale development, which could change the character of the open and undeveloped land or sea horizons.
- Development of projects such as tidal energy schemes, a bridge across the bay, or on/off shore grid infrastructure, both in terms of visibility and possible alteration to the dynamic nature of the estuarine intertidal flats and marshes.
- Pressure for other types of development along the coastline including that associated with industry, tourism and leisure, and new housing.
- The effects of development on the character of the setting of the AONB, the views into the AONB from outside and those looking out of the AONB.
- Increasing demand for water sports and visitor pressure along the coast requiring the management of access, and ongoing activities such as trail biking on the saltmarshes (LCT B Bay Saltmarshes and Lagoons), affecting the tranquillity of LCT A Intertidal Flats.
- Changes in areas outside the estuary and marsh, affecting the 'naturalness' and setting of this landscape, e.g. quarrying, large scale or non-traditional development in adjacent settlements.

## Current Seascape Condition

The overall condition of the Intertidal Flats Seascape Character Type is considered to be **good**. The seascape is a dynamic and changing environment with an overwhelming sense of 'naturalness'. The condition of key features is largely determined by the effects of natural forces. Where change does occur, e.g. shifting sands, invariably a new 'pristine' natural feature is created minimising impacts on the seascape's patterns. There is little evidence of the seascape being changed by human activities. There are no significant issues relating to the state of repair of the limited number of visible man-made structures. Land use change is evident in areas beyond the seascape type, e.g. Heysham Power Station and an offshore wind farm are visible on the distant skyline but, their impacts are substantially mitigated by the effects of distance.

## Sensitivity and Capacity for Change

The Intertidal Flats Seascape Character Type is considered to have very high visual sensitivity overall, as a result of the strong sense of openness, generally uninterrupted skylines and strong intervisibility with the dramatic distant hills of the Lake District and wooded hills within the AONB. The key features of the seascape, especially the semi-natural and natural habitats are intact and clearly recognisable. This seascape type has very high ecological sensitivity; the exceptional quality of the coastal habitats and the species that they support are recognised through national (SSSI) and international (SAC, SPA and RAMSAR) designations. In addition there is a strong sense of wildness and tranquillity (only partially interrupted by power generating structures on the distant horizon).

**For all these reasons, the Intertidal Flats Seascape Character Type is considered to have a very high level of inherent sensitivity.** As a result, overall capacity to accommodate change without compromising the key characteristics of the Seascape Character Type is considered to be very limited, apart from change which reinforces positive attributes such as habitat enhancements.

<sup>31</sup> Halcrow, 2010. *North West England and North Wales Shoreline Management Plan SMP2*. Report prepared by Halcrow Group Ltd for the North West and North Wales Coastal Group [pdf]. Available at: <https://www.gov.uk/government/publications/shoreline-management-plans-smpps/shoreline-management-plans-smpps> [Accessed 09 July 2014].

## Guidelines

**Table 6.1 Guidelines - Seascape Character Type A: Intertidal Flats**

Guidelines	
Climate Change and Coastal Processes	
A1	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 far as possible, as advocated in the Shoreline Management Plan <sup>32</sup> , where appropriate, taking into consideration the need in some instances to maintain or reinforce existing coastal defences to protect key infrastructure, settlement and natural and cultural heritage interests.
Coastal Features	
A2	Continue to manage the intertidal flats for nature conservation (reflecting their status as SPA/SAC/RAMSAR sites): continue monitoring in order to provide information about sea 'health'.
Development	
A3	Influence future development within the AONB, and in landscapes forming the setting to the AONB intertidal flats, in ways to reduce the extent of its influence upon the area, for example so that development affects localised sections of, rather than large proportions of skylines which form horizons to views. Seek to maintain a high proportion of undeveloped horizons and to restore the currently more developed parts of skylines which form the setting to the intertidal flats. These include the open water and land along the west and south east coasts of Morecambe Bay, the Lake District southern fells, Furness Peninsula and landscapes within the AONB.
A4	Ensure that built development and infrastructure is kept to an absolute minimum.
A5	Avoid vertical structures such as wind turbines and communication masts.
A6	Influence future development within and in landscapes forming the setting to the intertidal flats so that the overall character and integrity of this seascape, its key characteristics, cherished views, defining features, and the reasons for designation are not significantly affected. Ensure that consideration is given to siting, design and appropriate mitigation measures to avoid or reduce adverse effects.
A7	Ensure that development does not result in a net loss of key features and characteristics.
Management Practices	
A8	Ensure an 'integrated designation management' approach to help ensure the objectives of differing designations do not conflict with those of the AONB intertidal flats.
A9	Influence the management of fisheries, for example mussel and cockle harvesting such that it does not conflict with the seascape objectives of the AONB intertidal flats.
Access and Recreation	
A10	Respond to the requirements of acts such as the Countryside and Rights of Way Act <sup>33</sup> and the Marine and Coastal Access Act <sup>34</sup> by promoting the development of a long distance coastal access route, making use of existing networks of paths whilst ensuring any changes or development is in line with the landscape management objectives of the AONB intertidal flats.
A11	Ensure measures such as zoning or time/seasonal restrictions are in place for activities like car racing, trail biking, or noisy water sports to maintain the character of the AONB intertidal flats (i.e. tranquillity).

<sup>32</sup> Halcrow, 2010. *North West England and North Wales Shoreline Management Plan SMP2*. Report prepared by Halcrow Group Ltd for the North West and North Wales Coastal Group [pdf]. Available at: <https://www.gov.uk/government/publications/shoreline-management-plans-smpls/shoreline-management-plans-smpls> [Accessed 09 July 2014].

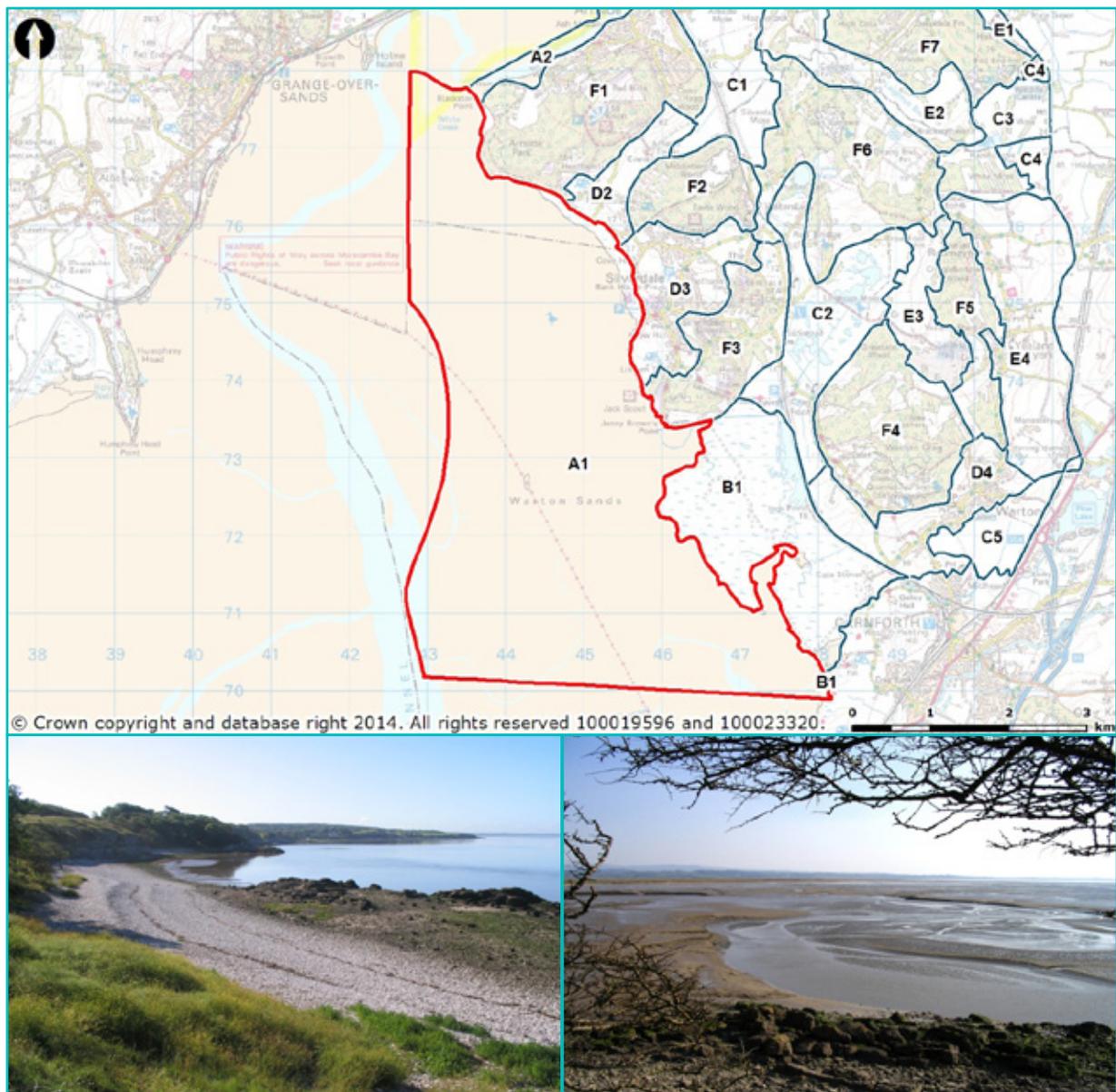
<sup>33</sup> Countryside and Rights of Way Act 2000.

<sup>34</sup> Marine and Coastal Access Act 2009.

## Seascape Character Areas: Intertidal Flats

Seascape Character Area: A1 East Morecambe Bay

Figure 6.1 A1 East Morecambe Bay



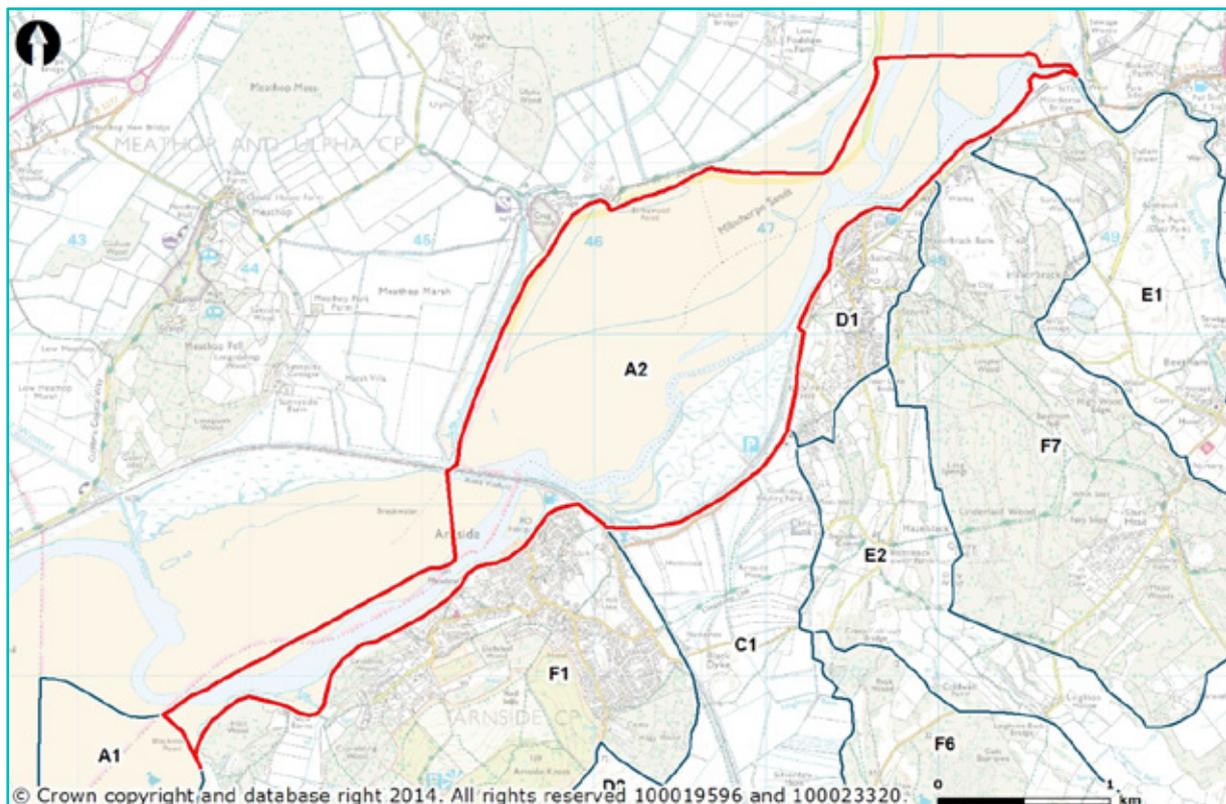
View from below Leeds Children's Home, Silverdale

View across Morecambe Bay from Jenny Brown's Point

### Location and Character Area Description

- 6.15 The character area comprises extensive areas of intertidal flats at the north east end of Morecambe Bay. It comprises a broad south west facing stretch of coast extending from Blackstone Point in the north to the Keer Channel in the south. It includes extensive low lying and open intertidal flats and saltmarshes which are regularly covered at high tide. Drainage extends south-west down the River Kent Channel to the open sea, with skeers moving cyclically. The north east coast of Morecambe Bay is defined by limestone hills, limestone cliffs and the shingle beaches of the northern part of the Arnside and Silverdale AONB.
- 6.16 Views out across the wide expanse of Morecambe Bay are characteristic of this area. Views are open and panoramic with largely undeveloped skylines. Morecambe and Heysham Power Station can be seen to the south; Ulverston and an offshore windfarm in the far distance can be seen to the west. Grange over Sands on the far side of the estuary is clearly visible.
- 6.17 When standing on the flats, the grassland and wind sculpted tree topped fossiliferous limestone cliffs, backing small shingle bays, clearly define the boundary between Morecambe Bay and the land around Silverdale. Further to the south, areas of bay saltmarshes and lagoons (LCT B) lie east of the sands and flats of East Morecambe Bay.

Seascape Character Area: A2 Kent Estuary, Milnthorpe Sands and Hazelslack Marsh  
**Figure 6.2 A2 Kent Estuary, Milnthorpe Sands and Hazelslack Marsh**



**View across Kent Estuary towards Sandside and Grange**



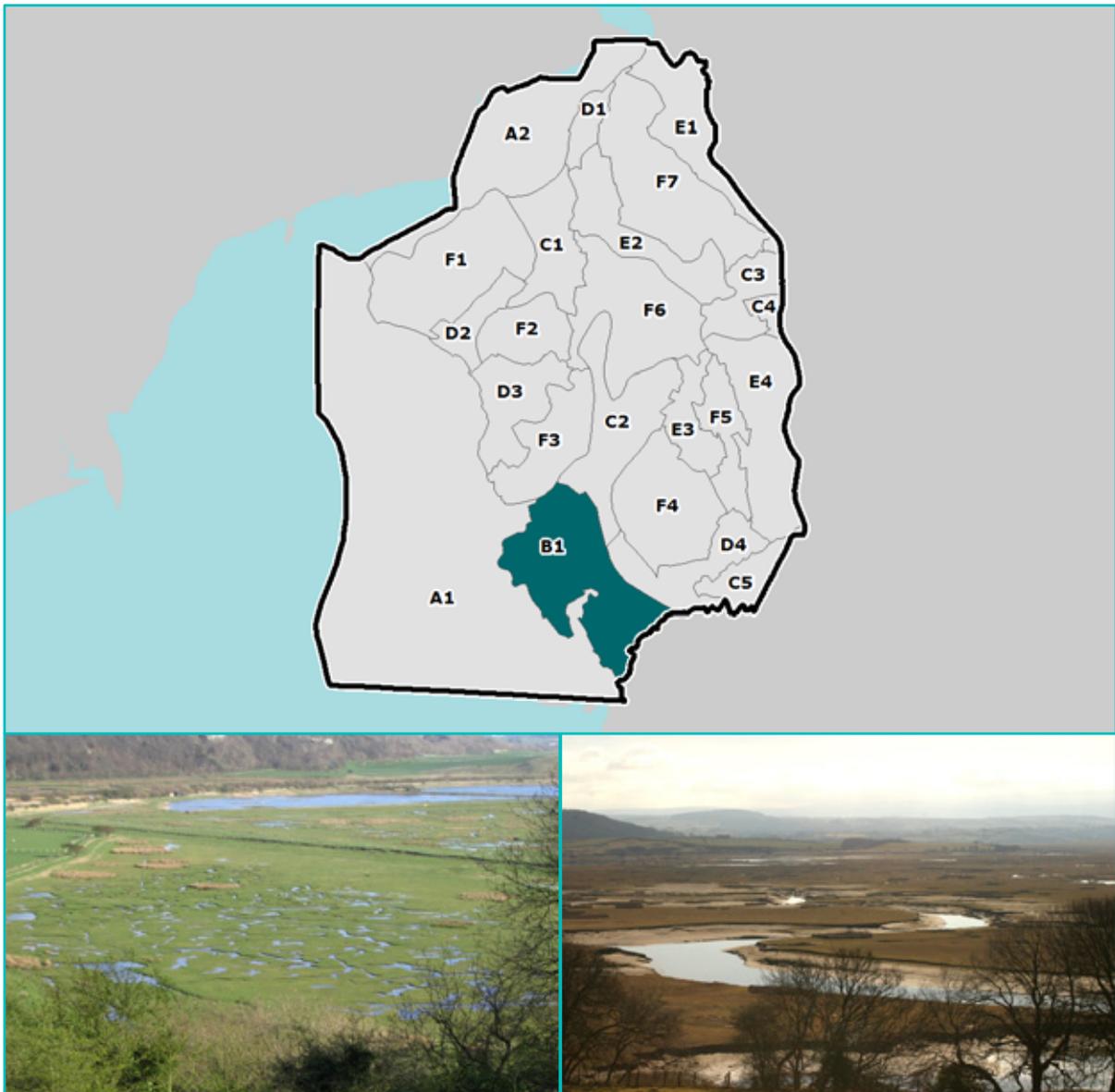
**View from railway embankment towards Guard Hill**

**Location and Character Area Description**

- 6.18 The Kent Estuary extends from Blackstone Point, under the Arnside Viaduct, north east up the River Kent to the limit of the intertidal zone near Sampool. It comprises an over deepened glacial trough which has been infilled with sediments forming an extensive area of flats and sands divided by channels, and fringed by saltmarshes, dissected by muddy channels. The saltmarshes are contained by constructed embankments which separate the saline areas from the agricultural land beyond, and in places are grazed by sheep. The flats and marshes are undeveloped, except for the distinctive Arnside Viaduct. The coastal defences and a railway embankment define the southern boundary of the area.
- 6.19 The sound of regular trains marks the passage of time in this otherwise peaceful landscape. Sandside Quarry above Sandside is clearly visible from the north. A small tidal bore (Arnside Bore) occurs in the estuary, signalled by a Claxon type alarm to mark the turn of the tide and to warn people off the sands. Between Arnside Viaduct and Blackstone Point the estuary widens, and gradually takes on the more open character of the bay. Saltmarshes fringe the northern side of the Kent Estuary south of Meathop Fell.

6.20 Hazelslack Marsh is located to the south west of Storth and comprises areas of grazed saltmarsh between the railway embankment and the sea. The saltmarsh is part of a dynamic ecosystem, constantly changing and evolving, and whose character alters with the state of the tide, and the weather. The marshes provide important habitat for overwintering wading birds, which come up with the tide, and whose calls contribute to the character of the area. Long, panoramic views are available in a north westerly direction, looking up the Kent Estuary, towards the Lake District, and north to the characteristic Whitbarrow Scar limestone escarpment. Views south west extend to Grange-over-Sands. The area is bounded to the south and east by a disused railway branch line, along an embankment which also serves to prevent ingress of the sea further inland. Historically sea-washed turf was won from the marshes and this continues today in places.

## Seascape Character Type B: Bay Saltmarshes and Lagoons



**View across Warton Saltmarsh to Barrow Scout**

**View across Warton Saltmarsh from Heald Brow**

### Location and Character Type Description

- 6.21 There is one example of this seascape/intertidal type in the AONB; Warton Marshes (SCA B1) which extends south west from the railway embankment into Morecambe Bay. These intertidal saltmarsh and lagoon areas fringe the extensive Morecambe Bay (SCT A Intertidal Flats) and are transitional between land and sea, depending upon the state of the tide.
- 6.22 Saltmarshes result from the deposition of silt, and these areas change in extent with cycles of erosion and deposition. The predominant area is the vast Warton Marsh where there is remnant saltmarsh. It includes the saline lagoons west of Crystal Well, above the high tide line. Saltmarshes are also found bordering the Kent Estuary, but these are smaller areas with a more enclosed and estuarine outlook and so are classified as being part of SCT B Bay Saltmarshes and Lagoons.
- 6.23 The intertidal flats, bay saltmarshes and brackish lagoons make up an extensive and dynamic flat, open and expansive area on the sheltered eastern coast of the bay. These are depositional landscapes of fine sand and silt, which are being eroded due to the cyclical shift of the channels. They are drained by a series of dendritic creeks. Landcover includes *Spartina*, fine grasses, and salt tolerant species such as Marsh Samphire in more stable areas. In places the open saltmarshes are used for grazing livestock.

- 6.24 These areas provide important habitat for breeding and overwintering birds including redshank, oyster-catchers and lapwings, and their bird-song is a key part of the character. Man-made features are limited to floodbanks at the margins, built to keep back the sea, tracks across the marshes, deposited materials (e.g. eroded slag heaps), and built features on the margins. Perceptual qualities are influenced by the large scale, open and wind-swept character of the landscape and include expansive views, tranquillity, dynamism and sounds of birdlife, and a strong sense of the landscape being relatively unchanged by human activities. The area is closed to public access to reduce disturbance to birdlife. Views across the area are available from the Lancashire Coastal Path which passes to the south east close along a bank that marks the edge of the marshes (just outside the AONB boundary).
- 6.25 The area is part of the Morecambe Bay Limestones National Character Area and is classified in the Lancashire Landscape Character Assessment as Open Coastal Marsh (LCA 18b Hest Bank-Silverdale Marshes).

### Key characteristics

The key characteristics of the Bay Saltmarshes and Lagoons Type within Arnside & Silverdale AONB are:

- large scale dramatic landscape of undeveloped saltmarshes and lagoons, with open skylines and long views;
- dynamic and temporal character strongly influenced by and changing with the state of the tide and longer term cycles of erosion and deposition of the saltmarsh - large areas at times under water and part of the sea, and at times exposed and contiguous with the agricultural land beyond;
- characterised by the sights, sounds and smells of the sea, gently lapping water and birdlife, notably oyster-catchers, lapwing and redshank, which feed and nest across the marshes, and other species which gather after storms;
- a visually and aurally dynamic seascape, changing with the tide, seasons and presence of the birds which use the area;
- influence of the railway, settlements, and distant views to development are reminders of less rural areas beyond;
- the shape and extent of saltmarshes and the coastal margin is dynamic, with the channel shifting as part of a natural cycle;
- more stable areas of saltmarsh comprise natural flat open 'green' landscapes dissected by channels, and in places grazed by sheep and cattle. Erosion of saltmarshes has taken place along the margins.

### Evaluation

#### *Valued attributes*

- 6.26 Key values of the Bay Saltmarshes and Lagoons Type:
- Dynamic, ever changing with tides, seasons and the saltmarsh cycle;
  - Wide views of Morecambe Bay across flat expanse of marshes with a backdrop of the wooded hills of the AONB and distant Lakeland Hills;
  - Important feeding and nesting grounds for waders and wildfowl;
  - Sensory experiences of expansive views, light reflecting on pools and lagoons, sounds of birds, trains and the wind; and,
  - Limited accessibility lends a sense of remoteness.

### Sensitive Features or Characteristics

- The open, expansive horizons and natural character, vegetation and biodiversity of the bay saltmarshes and lagoons.
- Views across the estuary of relatively undeveloped landscapes and skylines.
- The tranquil character, with sounds and activities of bird life being punctuated by passing trains on the railway.
- Dynamism of the intertidal landscape and saltmarsh as part of the wider bay ecosystem, and its sensitivity to changes in the sea level and coastal dynamics.
- Westward views and sunsets.

## Forces for Change Affecting Seascape Character

- Sea level rise potentially causing inundation of the bay saltmarshes and saline lagoons.
- An increase in the salinity or incidence of sea water incursion to the brackish lagoons due to increased storminess and tidal flooding as a consequence of sea level rise.
- The natural cycle of change (sand to *Spartina* to saltmarsh and vice versa) as a consequence of the movement of the Kent Channel, and associated erosion and deposition, and possible interruption or change to this by sea level rise.
- The influences of the Shoreline Management Plan<sup>35</sup> and any management recommendations which would affect the seascape or intertidal landscape.
- Changes to grazing regimes on the marshes.
- Change to the balance of open water/reed beds in lagoons as siltation occurs.
- Potential pollution of lagoons for example through agricultural runoff.
- Pressures for renewable energy development including onshore and offshore wind farms and other large scale development which changes the views from the marshes, particularly extension of developed skylines along open and undeveloped land or sea horizons.
- Development of projects such as tidal energy schemes, a bridge across the bay, or on/off shore grid infrastructure, both in terms of visibility and possible alteration to the dynamic nature of the estuarine intertidal flats and marshes.
- Pressure for other types of development along the coastline including that associated with industry, tourism and leisure, and new housing.
- The effects of development including as far away as Morecambe and Heysham, on the character of the setting of the AONB, the views into the AONB from outside and those looking out of the AONB.
- Influences such as the Marine and Coastal Access Act<sup>36</sup> which may require alterations along the coast through the requirement for a long distance coastal access route.

## Current Seascape Condition

The overall condition of the Bay Saltmarshes and Lagoons Seascape Character Type is considered to be **good**. The seascape is a dynamic and changing environment with an overwhelming sense of 'naturalness'. The condition of key features is largely determined by the effects of natural forces. Where change does occur, e.g. erosion arising from the cyclical shift of the channels, natural features are gradually relocated minimising the overall effect on the landscape's patterns. There is little evidence of the seascape being changed by human activities. There are no significant issues relating to the state of repair of the limited number of visible man-made structures. Land use change is evident in areas beyond the seascape type, e.g. Heysham Power Station and an offshore wind farm are visible on the distant skyline but, their impacts are substantially mitigated by the effects of distance. Limited areas have been used for the deposition of materials but the effects on the overall condition are not significant.

## Sensitivity and Capacity for Change

The Bay Saltmarshes and Lagoons Seascape Character Type is considered to have very high visual sensitivity overall, as a result of the strong sense of openness, generally uninterrupted skylines and strong intervisibility with the wooded hills within the AONB. The key features of the seascape, especially the semi-natural and natural habitats, are intact and clearly recognisable. This seascape type has very high ecological sensitivity; the exceptional quality of the coastal habitats and the species that they support are recognised through national (SSSI) and international (SAC, SPA and RAMSAR) designations. In addition there is a strong sense of wildness and tranquillity (only partially interrupted by power generating structures on the distant horizon).

**For all these reasons, the Bay Saltmarshes and Lagoons Seascape Character Type is considered to have a very high level of inherent sensitivity.** As a result, overall capacity to accommodate change without compromising the key characteristics of the Seascape Character Type is considered to be very limited, apart from change which reinforces positive attributes such as habitat enhancements.

<sup>35</sup> Halcrow, 2010. *North West England and North Wales Shoreline Management Plan SMP2*. Report prepared by Halcrow Group Ltd for the North West and North Wales Coastal Group [pdf]. Available at: <https://www.gov.uk/government/publications/shoreline-management-plans-smps/shoreline-management-plans-smps> [Accessed 09 July 2014].

<sup>36</sup> Marine and Coastal Access Act 2009.

## Guidelines

**Table 6.2 Guidelines – Seascape Character Type B: Bay Saltmarshes and Lagoons**

Guidelines	
Climate Change and Coastal Processes	
B1	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 far as possible, as advocated in the Shoreline Management Plan <sup>37</sup> . Consider potential environmental impacts of flood defence schemes, including loss of marshy habitats, and the need in some instances to maintain or reinforce existing coastal defences to protect key infrastructure, settlement and natural and cultural heritage interests.
Coastal Features	
B2	Continue to conserve and manage the bay saltmarshes and lagoons for nature conservation (reflecting their status as SPA/SAC/RAMSAR sites): discourage drainage of the estuarine saltmarshes.
B3	Conserve the extent of 'natural' bay saltmarshes and lagoons, by re-creating saltmarsh on drained and intensively farmed land where opportunities arise, such as through the process of managed realignment.
Development	
B4	Ensure future development within the AONB, and in landscapes forming the setting to the AONB bay saltmarshes and lagoons, reduces the extent of its effects upon the area, for example so that localised sections are affected rather than large proportions of skylines which form horizons to views. Maintain a high proportion of undeveloped horizons and restore the currently more developed parts of skylines which form the setting to the bay saltmarshes and lagoons. These include the open water and land along the west and south east coasts of Morecambe Bay, the Lake District southern fells, Furness Peninsula and landscapes within the AONB.
B5	Influence future development within and in landscapes forming the setting to the AONB bay saltmarshes and lagoons so that the overall character and integrity of this land/seascape, its key characteristics, key views, defining features, and the reasons for designation are not significantly affected. Ensure that consideration is given to siting, design and the implementation of appropriate mitigation measures to avoid or reduce adverse effects.
B6	Ensure that built development and infrastructure is kept to an absolute minimum.
B7	Avoid vertical structures such as wind turbines and communication masts.
B8	Consider appropriate restoration or removal of land uses which may be at odds with the objectives of the AONB bay saltmarshes and lagoons, such as the landfill site to the south of Warton Marshes.
B9	Ensure that development does not result in a net loss of key features and characteristics.
Management Practices	
B10	Encourage 'integrated designation management' to help ensure the objectives of differing designations do not conflict with those for the AONB bay saltmarshes and lagoons.
B11	Manage reed beds in the brackish lagoons through rotational clearance or mowing to maintain a mosaic of open water habitats; consider excavation if areas dry up due to siltation; monitor water quality in lagoons in order to provide a positive response to issues such as water pollution.
B12	Promote controlled conservation grazing of the saltmarshes.
Access and Recreation	
B13	Respond to the requirements of acts such as the Countryside and Rights of Way Act <sup>38</sup> and the Marine and Coastal Access Act <sup>39</sup> by promoting the development of a long distance coastal access route, making use of existing networks of paths whilst ensuring any changes or development is in line with the landscape management objectives of the AONB saltmarshes and lagoons. Continue with seasonal access restrictions to the bay saltmarshes and lagoons to prevent disturbance of wading birds.
B14	Ensure measures such as zoning or time/seasonal restrictions are in place for activities like car racing, trail biking, or noisy water sports to maintain the character of the AONB bay saltmarshes and lagoons (i.e. tranquillity).

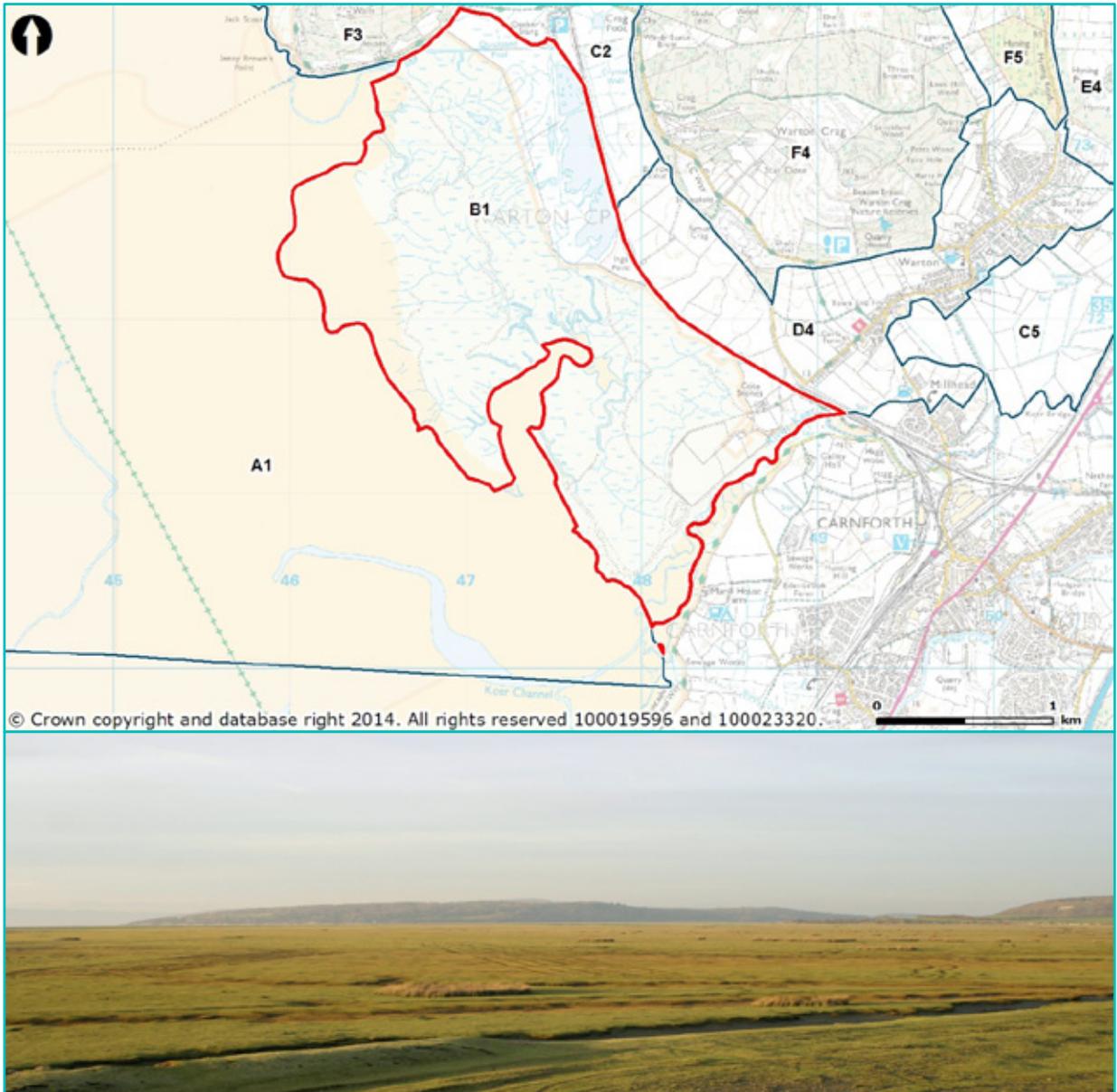
<sup>37</sup> Halcrow, 2010. *North West England and North Wales Shoreline Management Plan SMP2*. Report prepared by Halcrow Group Ltd for the North West and North Wales Coastal Group [pdf]. Available at: <https://www.gov.uk/government/publications/shoreline-management-plans-smps/shoreline-management-plans-smps> [Accessed 09 July 2014].

<sup>38</sup> Countryside and Rights of Way Act 2000. <sup>39</sup> Marine and Coastal Access Act 2009.

# Seascape Character Areas

Seascape Character Area: B1 Warton Marshes

Figure 6.3 B1 Warton Marshes



View from Warton Crag across Warton Saltmarsh

## Location and Character Area Description

- 6.27 The Bay Saltmarshes and Lagoons landscape character type occurs in a single area within the AONB. Warton Marshes and associated brackish lagoons extend south west from the railway embankment into Morecambe Bay. The saltmarsh, which is closer to the land, drier and grassed is grazed in places, with flats beyond frequented by birds, public access being discouraged to protect against disturbance.
- 6.28 The intertidal flats are important for breeding and overwintering birds. Warton Marshes are extensive, open and undeveloped, dramatic and varying with the seasons. The seaward edge of the area is highly dynamic, changing as channels, silt and sand move within an estimated natural 70 year cycle of erosion and deposition. This is linked to the shifting of the Kent Channel, affecting the resulting extent of saltmarsh. Presently, the marshes are eroding, as the Kent Channel moves east, and corresponding deposition is occurring near Grange-over-Sands. Slag heaps are associated with former iron works at the southern end of the marshes. These provide rich habitats, reflected in their biodiversity and fauna, with iron and limestone being present. The area includes an old landfill site, and Warton stock car club track occupies the site of a Victorian bay barrage project.

- 6.29 Long views across the flat expanses of saltmarsh and the bay to the west are distinctive. The dynamic nature of the weather and light conditions are important to the perceptual qualities of the area. Sunsets in the westward views are particularly noted. Views to on and offshore wind farms, and south to Morecambe and its associated industrial areas represent a recent change.
- 6.30 East of the marshes and west of the railway embankment are Warton brackish lagoons, extending between Quaker's Stang and Ings Point. Open water is fringed with reeds providing a further important bird habitat, transitional in nature between the coastal marshes and freshwater wetland mosses to the east of the railway.
- 6.31 The southern boundary of the marshes is formed by the River Keer Estuary, which extends out into the bay as the Keer Channel. The Lancashire Coastal Way follows a bank at the south-eastern edge of the marshes, which lies at the edge of the AONB.
- 6.32 Morecambe and Heysham Power Station can be seen to the south; an offshore windfarm in the far distance can be seen to the west and Grange over Sands is visible on the far side of the estuary.