

# Touching the Tide Landscape Character Assessment

Final Report

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### Landscape Character Drawings

Drawing Number 1: North

Drawing Number 2: Central

Drawing Number 3: South

## Non Technical Summary

This landscape character assessment for the Touching the Tide (TtT) Partnership was carried out during 2012. It covers an area defined by Suffolk Heritage Coast but extends inland along the Deben Estuary as far as Melton and south to the Landguard Peninsular at Felixstowe. It therefore includes coastal landscapes and three distinct estuaries - the Blyth, the Alde-Ore and the Deben and the majority of the area falls within the wider Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB).

The Study Area is characterised by a low-lying coast and coastal features including shingle beaches, spits, estuaries, fresh- and salt-marshes and mudflats. It is a dynamic and changing environment.

The purpose of the landscape character assessment is to provide an understanding of the variety of landscape within the area and to record what is special and distinctive in order to inform and provide a framework for future Partnership work, as well as to inform wider AONB work including the review of the Management Plan.

The assessment subdivides the Study Area into landscapes which have a distinct and recognisable character, called Coastal Character Areas (CCAs). The assessment describes these landscapes, which are locally distinctive and recognisable to both resident and visitor alike, revealing aspects which can be celebrated, conserved and enhanced through the Touching the Tide Partnership initiatives.

This assessment also describes the different types of landscape which occur repeatedly throughout the area. These landscape types are generic and may also be found elsewhere along the coast of Suffolk, Norfolk and Essex e.g. Sand Dunes and Shingle Ridges or Saltmarsh and Intertidal Flats. Understanding the types of landscape which occur helps to plan for their future management.

Finally, this study takes a look at how an understanding of the different character areas can help shape and direct initiatives developed and taken forward by the TtT Partnership. It is anticipated that the landscape character assessment and in particular the Coastal Character Areas form a framework for the development of special initiatives within the Study Area which celebrate the distinctiveness of the individual landscapes identified and the processes which shape them.

## 1.0 Introduction

### 1.1 Appointment

- 1.1.1 Alison Farmer Associates was appointed by the Touching the Tide (TtT) Partnership in November 2011 to undertake a landscape character assessment of the project area, which broadly comprises the Heritage Coast between Covehithe and Felixstowe. The landscape assessment was carried out as part of a recently awarded Stage 1 pass from the Heritage Lottery Fund (HLF). A Stage 2 submission will be made to HLF before January 2013, and if successful, the project initiatives will be implemented over a subsequent three-year period.
- 1.1.2 The Touching the Tide Partnership aims to inspire and engage people with Suffolk's Heritage Coast, enabling them to play an active and informed role in shaping the future of this exceptional landscape. The project focuses on the past, the present and the future to improve understanding and appreciation of the area, capturing and telling stories about the changing coastal landscape. The preparation of a landscape character assessment for the area is directly relevant to these aims and provides a robust context for TtT which can be used to help develop and deliver initiatives as part of the scheme.
- 1.1.3 This report sets out how the landscape character assessment has been prepared, explains what past actions and events have helped shape the landscape we see today and goes on to provide detailed descriptions of unique Coastal Character Areas<sup>1</sup>(CCA) and Landscape Character Types<sup>2</sup> (LCT). These descriptions celebrate the special qualities of the coast and the changes shaping it, and explore how we might best manage change into the future. The Coastal Character Area descriptions are written in an accessible narrative style to assist in building understanding and connection to the coast, whereas the landscape character type descriptions are more technical in nature and aimed at providing detailed information to guide conservation work outwith the TtT initiative.

### 1.2 The Brief and Scope of Work

- 1.2.1 The aim of the project was to provide the TtT Partnership with a detailed understanding of the landscape. The initial Study Area comprised the Suffolk Heritage Coast between Covehithe and Felixstowe with an extension inland to include the whole of the Deben estuary as far as Melton and as far south as the Landguard Peninsular, Felixstowe.
- 1.2.2 At the start of the project this initial Study Area was broadened to include a wider area defined by the visual unit of the estuaries, and particularly the Deben. The extent of the final Study Area can be seen on Figure 1.
- 1.2.3 From the start the study also included provision for observations and recommendations that would help to inform other aspects of the AONB's work, rather than restricting the scope of the study only to characterisation and guidance directly relevant to Touching the Tide.

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<sup>1</sup> Coastal Character Areas occur in specific locations and are unique. They help to celebrate what is special about a place. Usually they are called Landscape Character Areas but in view of the coastal focus of this study they have been called Coastal Character Areas here.

<sup>2</sup> Landscape Character Types (LCTs) are distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but where ever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern.

- 1.2.4 The overall scope of work included four broad stages – firstly a familiarisation stage including a site visit and gathering background data from the client team; secondly a desk study stage where digital data and background documents were reviewed and Landscape Character Types and Coastal Character Areas defined in draft; thirdly site assessment where the draft character types/coastal areas were verified in the field and public consultation undertaken as part of the Touching the Tide Conference; fourthly a write-up phase where the written descriptions for landscape types and coastal areas were developed.
- 1.2.5 Key sources of information used during the course of this study have included:
- GIS datasets supplied by Suffolk County Council;
  - East of England Regional Typology;
  - Suffolk County Typology;
  - Waveney District landscape assessment;
  - The Suffolk Coast and Heaths Landscape (1993) Countryside Commission;
  - The Suffolk Coast and Heaths Management Plan (2008) Suffolk Coast and Heaths AONB Partnership;
  - The Suffolk Coast and Heaths Landscape Guidelines (2001) Suffolk Coast and Heaths AONB Partnership<sup>3</sup> and;
  - The Suffolk Shoreline Management Plan (Jan 2010) Lowestoft Ness to Felixstowe Landguard Point.
- 1.2.6 An early draft of the character area maps and Coastal Character Descriptions were also used as a public consultation tool at two conferences<sup>4</sup> organised by Touching the Tide, as well as to take advantage of the local knowledge and expertise of the Touching the Tide Partnership Board. Over 130 people attended the two conferences and they provided significant feedback and information which have been incorporated into the final report.

### 1.3 Existing Landscape Classifications

- 1.3.1 Landscape Character Assessment is a useful tool, recognised by Government and promoted by Natural England, to identify the special character that gives a landscape its sense of place and through this understanding, inform planning and management of future change. Landscape Character Assessment recognises that all landscapes matter, not only designated areas.
- 1.3.2 The Study Area is covered by three existing character assessments which identify Landscape Character Types, namely the East of England Regional Typology<sup>5</sup>, the Suffolk County typology<sup>6</sup> and the Waveney District landscape assessment<sup>7</sup>. Although all three assessments have been referred to, it has been the Suffolk County assessment that has formed the basis for this study, with character type boundaries being amended where necessary to reflect local variations in character.

<sup>3</sup> [http://www.suffolkcoastandheaths.org/uploads/SCH%20Landscape%20guidelines\(1\).pdf](http://www.suffolkcoastandheaths.org/uploads/SCH%20Landscape%20guidelines(1).pdf)

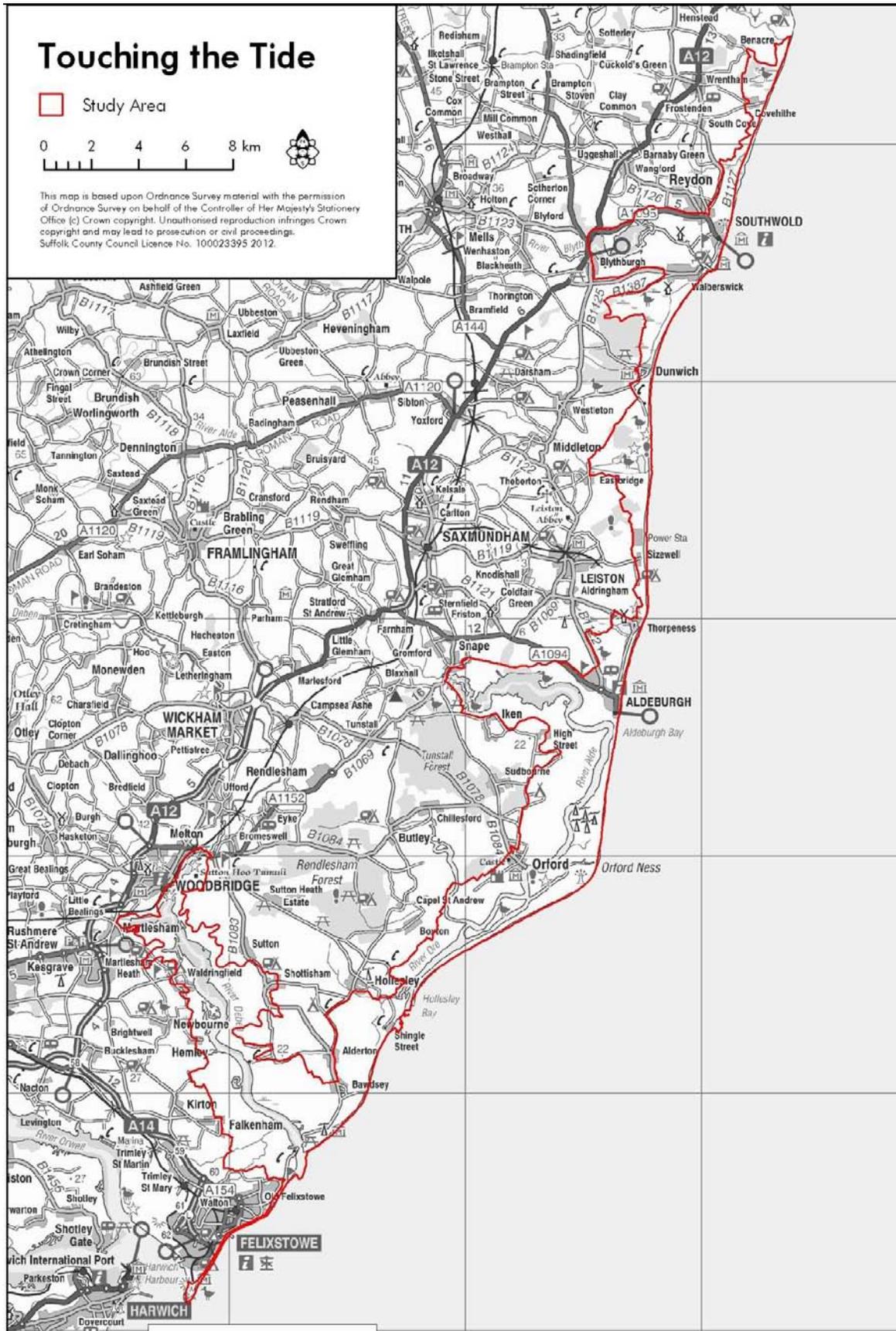
<sup>4</sup> These conferences were held on the 19 and 23 May 2012

<sup>5</sup> <http://landscape-east.org.uk/east-england-landscape-typology>

<sup>6</sup> [http://www.suffolklandscape.org.uk/landscape\\_map.aspx](http://www.suffolklandscape.org.uk/landscape_map.aspx)

<sup>7</sup> <http://www.waveney.gov.uk/site/scripts/download.php?fileID=742>

Figure 1: Study Area Boundary



## 1.4 Approach to Study

- 1.4.1 This assessment is based on national guidance<sup>8</sup> and reference to other seascape assessment approaches, such as Maritime Ireland/Wales INTERREG Report no.5 'Guide to Best Practice in Seascape Assessment' 2001, and the recently published 'Welsh Seascapes and their Sensitivity to Offshore Developments: Method Report'.
- 1.4.2 As part of this assessment the identification of Coastal Character Areas has considered coastal, inshore and offshore waters and where feasible recognition of views from land to sea, sea to land and along the coastline. In the CCA descriptions reference is made to landmark features, designated shipwrecks and factors which affect coastal processes and perceptions such as significant off shore sand/shingle banks, cultural associations, quality of light and views of container ships and passenger ferries. Recent seascape assessment work undertaken by URS Scott Wilson on behalf of Defra/Natural England as part of a pilot study was also consulted. The relevant extracts for areas defined as Suffolk Coastal Waters and East Anglian Shipping Waters can be found in Appendix 1. Information on seascape is integrated into the Coastal Character Descriptions.

## 1.5 Structure of the Report

- 1.5.1 This report is divided into four sections and appendices as follows:
- Section 2 sets the scene for the whole of the Study Area, considering how it has been shaped and looking specifically at its natural influences, cultural evolution and nature conservation value;
  - Section 3 provides detailed descriptions of the ten Coastal Character Areas;
  - Section 4 offers a perspective on broad themes and initiatives which may be taken forward as part of the TtT Partnership;
  - The appendices provide information on seascape assessment, definition of nature conservation designations and detailed landscape character type descriptions specific to the Study Area.

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<sup>8</sup> Landscape Character Assessment – Guidance for England and Scotland, Countryside Agency/Scottish Natural Heritage, 2002.

## 2.0 About the Landscape

The Suffolk coast and its river estuaries are constantly changing as a result of natural and man-made processes. Some of these changes may occur as a result of a single event such as a storm, while others may be more subtle and gradual, such as coastal erosion or land reclamation and the construction and development of coastal defences over the centuries.

A key challenge to communities and wildlife that depend on the coast is the likelihood of rising sea levels as a consequence of global warming combined with the additional effect of isostatic land sinkage. This means that the area has been impacted by rising sea levels since the end of the ice age and that a changing coast here is nothing new. However it is likely that changes that have been occurring over a long period of time are accelerating due to factors such as increased frequency and severity of storms. Within this context flooding from storm surges and overtopping are as much a risk to current land uses as full-scale breaches.

Today more than ever before there is an unspoken expectation that we can control our environment, but increasingly communities and statutory bodies are recognising that this cannot be achieved regardless of cost. The result is a need to face difficult choices while living with constant change and to understand the processes at work on the coast in order to successfully plan for the future.

### 2.1 Geology, Soils and Coastal Processes

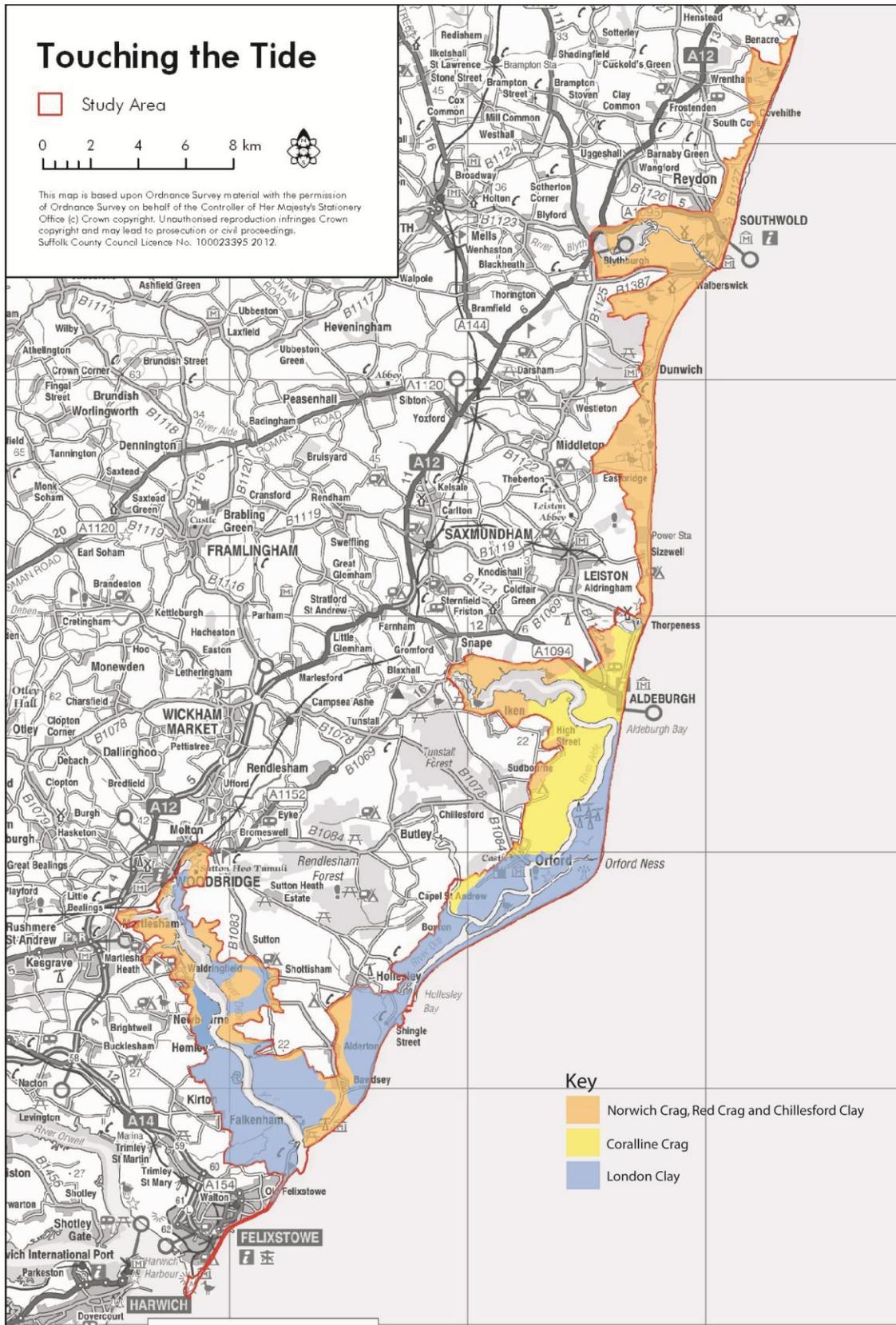
The combination of the geology of the area and the coastal processes at work has given rise to a gentle coastal landscape, made up of a series of estuaries and broads dissecting a gently-rolling plateau which is rarely more than 15m above sea level within the Study Area.

The solid geology of the Study Area is relatively simple, comprising rocks formed by sedimentary processes and including Norwich Crag, Red Crag and Chillesford Clay in the north above Thorpeness; Coralline Crag in the central section between the Butley River and Alde estuary; and London Clay along the Alde-Ore estuary at Orford Ness and along the Deben estuary. These soft rocks are responsible for the subtle and gentle undulations along the coast and are seldom visible except where exposed along the coastal cliffs or within the estuaries. The higher land which fringes the coast and estuaries is capped by sandy deposits of glacial outwash gravels, which give rise to the sandy soils now supporting farmland, remnant heaths and conifer plantations.

The estuaries (Blyth, Alde-Ore and Deben) were formed through a combination of subsidence, climatic changes and sea level rise following the retreat of the ice sheets of the Anglian Glaciation over 400,000 years ago. These processes resulted in the 'drowning' of coastal river valleys and the formation of estuaries.

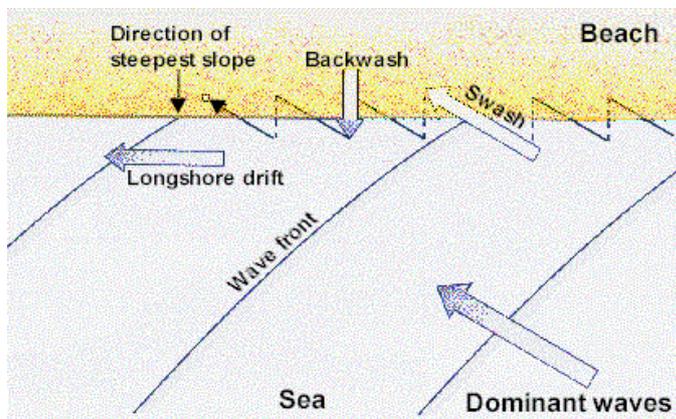
However, the distinctive character of the coastal landscape is also the product of marine erosion and deposition, natural processes which are extremely complex. The sandy shelly crag geology is soft and easily eroded by the sea and wave action, which has meant that the Suffolk coast has seen considerable change over the centuries. Erosion, as a result of the rising and falling tides and the annual cycle of storms, is contrasted by the deposition of often steep and shelving shingle beaches, which also characterise the coastline in the Study Area. Shingle spits are a feature of the area and Orford Ness is a dramatic example of longshore drift - the process of movement and deposition of eroded material, in a predominately southwards direction, along the coast. The spit at Orford Ness gradually formed at the mouth of the River Alde just to the south of Aldeburgh and over centuries has grown in length, forcing the river further south and parallel to the sea before eventually meeting the ocean at Shingle Street. In the north of the Study Area, a similar process has resulted in the deposition of sand and shingle bars across the mouths of rivers and estuaries, creating freshwater broads.

Figure 2: Simplified Geology



In response to these dynamic processes many sea defences have been constructed along the coast and rivers. In some places these take the form of hard defences such as sea and river walls, rock armour (permeable piles of boulders and rocks), groynes (long structures running perpendicular to the shoreline) revetments and gabions (cages filled with rocks), while in others soft defences such as salt marshes, shingle ridges and beach nourishment (replacing eroding sand or sediments from sources outside the area) protect areas from erosion by the sea.

While other hard defences aim to prevent erosion or flooding by providing a solid barrier, groynes work differently, breaking up the power of incoming waves and reducing the amount of material removed from beaches by longshore drift. They do this by trapping sand and sediments, preventing them from moving further down the coast. However, the construction of hard defences on a 'soft', dynamic coast means that the coast can no longer change naturally, causing unforeseen and sometimes undesirable consequences, including negative impacts on unprotected areas "downstream" which can erode at faster rates than would have otherwise naturally occurred.



Coastal process of longshore drift

## 2.2 The Cultural Landscape and Historic Evolution

### Settlement and land use

The Suffolk coast is an area that has been transformed by the impact of people from the Neolithic period right through to the present day. Archaeological evidence suggests that after the Ice Age prehistoric people first settled here in the areas of light sandy soil and along the river valleys; although their impact on the landscape was relatively slight, the clearance of woodland from the Neolithic period onwards began the process of heathland creation. Some areas of previously cleared heathland have since become re-wooded with birch forest due to lack of grazing management, reflecting a continually changing landscape. Thus the patterns and extent of heathland have varied over the centuries according to prevailing management regimes and remnants of this heathland can be seen up and down the coast today.

In the Roman period there is evidence of changes in settlement patterns along the coast, including the establishment and growth of what later became Felixstowe in the 13th century. Here, excavation has revealed evidence of Roman walls along the seafront area and a Roman fort, which may have been part of the 'Saxon Shore' defensive strategy in the later Roman period. Evidence of Roman salt-making activities can also be found in estuary areas.

The Study Area is perhaps best known for its archaeological evidence dating to the Anglo-Saxon period. The royal cemeteries at Sutton Hoo, with their wealth of fantastic finds, are the most famous, and a similar smaller cemetery has also been found at Snape.

A clearer picture of the character of the Suffolk coast only emerges around 400 years later with the Domesday Book of 1086. What is striking is the continuity of what is described with the present day; this is still essentially a landscape based on the medieval pattern. The Domesday Book gives a picture of settlement patterns including churches, watermills on rivers and salt pans on the estuaries, with the heaths becoming a central part of medieval society. The construction of Orford Castle and religious centres such as Dunwich Friary as well as numerous churches reflected increased prosperity and a healthy economy which flourished as a result of the growing wool trade. This was also a period of expanding ports and shipbuilding, fisheries and trade based out of coastal settlements such as Aldeburgh, Orford, Dunwich and Southwold. However, by the 17th century much of the shipbuilding industry had declined.

The Medieval period also marked the start of enclosure, where landowners sought to increase their acreage of pasture and arable land. This marked the beginning of the process that has gradually reduced the extent of heathland in the area and seen the draining of marshes fringing the rivers and estuaries. In an area of poor sandy soils, the drained marshland represented a golden opportunity in the form of fertile alluvial sediment. Amongst the largest areas of marsh drainage took place along the Alde/Ore south of Aldeburgh, on Sudborne and Gedgrave Marshes. Marshes around Orford are thought to have been first drained in the 12th century. Similarly, John Norden's maps of 1601 show a complex pattern of irregular enclosures along the sides of the River Alde, particularly in Sudborne and Town (Orford) Marshes, which are probably medieval in origin.

The 20th century has witnessed considerable intensification of land use, including the further draining of saltmarsh and mudflat to form coastal levels or grazing marshes. In places improved drainage has also led to the ploughing of marshes for arable crop production. Linked closely to this has been the growth of more substantial and extensive sea and river defences. The continual intensification of agriculture has been a major force in the transformation of the landscape and has resulted in the loss of structural landscape features such as hedgerows, ditches, banks, copses and lines of trees. It has also resulted in the progressive loss of the visual distinction between estuary valley sides and estuary valley floor. For example, historically there would have been a greater visual difference between land uses and enclosure pattern on the valley floor as opposed to the valley sides, and the break in slope between the two would often be marked by woodland or the start of hedgerows.

### **Artistic significance**

The Suffolk coast has been important for its artistic community at least since the turn of the 18<sup>th</sup> century. Many artists, including Turner, painted the coastline, providing a valuable record not only of past lives but also of the physical form of the shoreline. Writers, notably Dickens and Crabbe (not to mention the inventor of the modern cookery book, Eliza Acton), also popularised the Suffolk coast.

Benjamin Britten's move to Suffolk soon after the Second World War reinvigorated the artistic community in the area, and art and music have remained an important and distinctive part of the culture and economy of the whole of the Suffolk coast ever since.

### **Military history**

The Study Area has long played a strategic role in military defence. A key repetitive feature and characteristic landmark of this section of coast is the Martello tower. The towers were built in response to the threat of French invasion from 1808 during the Napoleonic Wars. 74 towers were constructed in total, 18 of which were in Suffolk and of which 11 survive to varying degrees in the Study Area. Although they were never needed to fight the threatened invasion, they have continued to serve defence and observation purposes from time to time,

including use by the Revenue to combat smuggling along the coast and also in the two World Wars, when they were used to house radio and radar equipment and were used as observation posts. Most have been now converted to domestic use while others stand redundant, but they provide an important sense of continuity along a changing coastline and are affectionately known as the 'bulldogs' of the coast.

Within the Study Area there is also considerable evidence of other military activity during WWII, with the construction of pill boxes along the river embankments and the development of more substantial coastal gun batteries at East Lane, Bawdsey, and at Landguard. The radar research centre on Orford Ness and later at Bawdsey Manor played a crucial role in developing Britain's air defences. Cold War era activity is also prominent in the form of the iconic "pagodas" and other buildings still visible on Orford Ness.

### **The protection of coastal settlements**

Coastal settlements which have been known to have been completely or substantially lost due to coastal erosion within the Study Area include Covehithe, Dunwich, Sizewell and Slaughden. In contrast, others have grown, particularly those favoured by the Victorians as seaside resorts, including Southwold, Aldeburgh and Felixstowe, and a little later, the planned resort of Thorpeness. Many of these towns have had some form of sea defence works since the Victorian period and so have been less affected by erosion.

A renewed burst of sea defence construction followed the 1953 storm surge floods, extending and strengthening the walls and barriers that were already in place. The devastation and loss of life caused by that flood shocked the nation; 307 people died and 1200 miles of the east coast were flooded. Unsurprisingly it made sea defence a top priority and it is a major concern that still dominates plans for the area today. See section 2.4 for more details of the current and future management of sea and flood defences.



Flooding at Shingle Street

## **2.3 Important Habitats and the Effect of Human Activity**

Many parts of Suffolk's coastline and estuaries within the Study Area have special protection, either because of their importance for wildlife or because they contain unusual or important natural features. The basic unit of UK wildlife designation is the 'Site of Special Scientific Interest' (SSSI). However, there are a number of other designations, some national, others the product of various international agreements that apply to areas of our countryside.

Because the conservation designations are often designed to serve different purposes, it is possible that more than one may apply to a particular area. A full list of designations, what they mean and how they apply to the Study Area can be found in Appendix 2.

The coastline is a dynamic environment where habitats and species, under natural conditions, are able to respond to changes such as inundation and erosion. Human activity, particularly the construction of coastal defence systems, may interfere with and constrain these natural processes and, hence, the ability of habitats to respond to change.

The Suffolk coastline and its associated estuaries clearly illustrate this classic cause and effect relationship and the interaction between man's activities, modification of natural processes and habitat response. Significant areas of the Suffolk coastal inter-tidal area, particularly the Alde-Ore and Deben estuaries, were subject to extensive "reclamation" between the 15th and 19th centuries. Integral to this phase of reclamation was the construction of coastal defences in order to protect the fertile new agricultural land from flooding. The presence of these man-made defences and the decrease in the width of the estuarine channel (due to reclamation) has constrained the ability of intertidal habitats (notably saltmarsh) to move landward in response to sea-level rise. This inevitably results in habitat loss and the term 'coastal squeeze' has been coined for this effect.

To illustrate the scale of this change, a recent survey by the University of Newcastle for the Environment Agency (University of Newcastle, 2001)<sup>9</sup> found that 93ha of salt marsh from the Suffolk estuaries had been lost in the previous 27 years, 80% of this loss due to erosion probably associated with coastal squeeze.

With a predicted significant increase in sea level due to climate change, this process is likely to continue, resulting in the loss of greater areas of intertidal habitat. In some locations, such as Minsmere, areas protected by man-made coastal defences or natural beach systems are designated for their freshwater features. There is therefore a potential conflict between the maintenance of ecological interests either side of artificial boundaries, one of the key issues facing the conservation of habitats and species in this coastal environment.

## 2.4 Changing Management of Sea and Flood Defences

It is now generally accepted that sea levels will continue to rise during the next century, although it is still unclear how great the rise may be. Even the most optimistic predictions could have very serious implications for the Study Area, both for human communities and for the internationally important wildlife of the estuaries, beaches and coastal wetlands.

The sea and river defences constructed following the 1953 floods have performed well, but there is an on-going need to maintain and periodically renew them if they are to continue to function effectively in the face of rising sea levels and storm events. In many cases, they are beginning to reach the end of their intended life span.

Over recent years there has been a shift in the relationship between communities and national agencies that in the past would have undertaken the maintenance and management of flood defences along the coast. The Environment Agency (like its predecessors), along with Local Authorities, have had the *power* to build and manage flood defences but not the *duty* to do so. Communities have nevertheless come to assume that they were obliged to continue to fill that role, but as finances have become increasingly constrained that expectation is no longer being met.

Many of the present River Walls were rebuilt by the government after the 1953 floods, although often based on much older structures. Until now they have been maintained by the

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<sup>9</sup> Royal Haskoning (Oct 2002) Suffolk Coast and Estuaries Coastal Habitat Management Plan. Final Report (page 1).

Environment Agency under permissive powers, but they are likely to become the responsibility of landowners and communities in the future.

Both short and longer term maintenance of the extensive existing defences is a considerable task owing to their sheer extent, and the costs involved. Early versions of Shoreline Management Plans (which set broad policies for management over a 100 year period) and Estuary Strategies (traditionally produced by the Environment Agency) did not meet local communities' expectations of replacement and reinforcement of all the existing defences and so met with some resistance. In addition to this, changes in government policy and reductions in public funding for coastal protection are factors which are also contributing to the current debate and are likely to have a profound influence on future management and decision making.

In response, a series of local partnerships have been created, including the Deben Estuary Partnership (DEP) and the Alde and Ore Estuary Partnership (AOEP). These partnerships reflect a bottom-up approach that aims to represent the diverse interests of the estuary landscapes and local communities and compliment the top-down approach of Shoreline Management Plans and Estuary Strategies.

It is increasingly widely recognised that maintaining the coast in its present form is neither viable nor realistic. However the issue of rising sea levels has also created a perceived tension between the legal requirement to protect designated wildlife habitats and sites and the lack of an equivalent statutory requirement to protect lives and property. The situation is in fact more complex than this "conflict" would suggest – but one of Touching the Tide's objectives is to support the Estuary Partnerships and others by raising the general level of understanding of the challenges ahead.

Although the threat of sea level rise poses a real challenge for the Suffolk coast, it also holds many opportunities for both people and wildlife. There is a growing consensus that while some losses of land and property may be unavoidable, a flexible approach to coastal management that works with nature is likely to be one which has the greatest longevity.

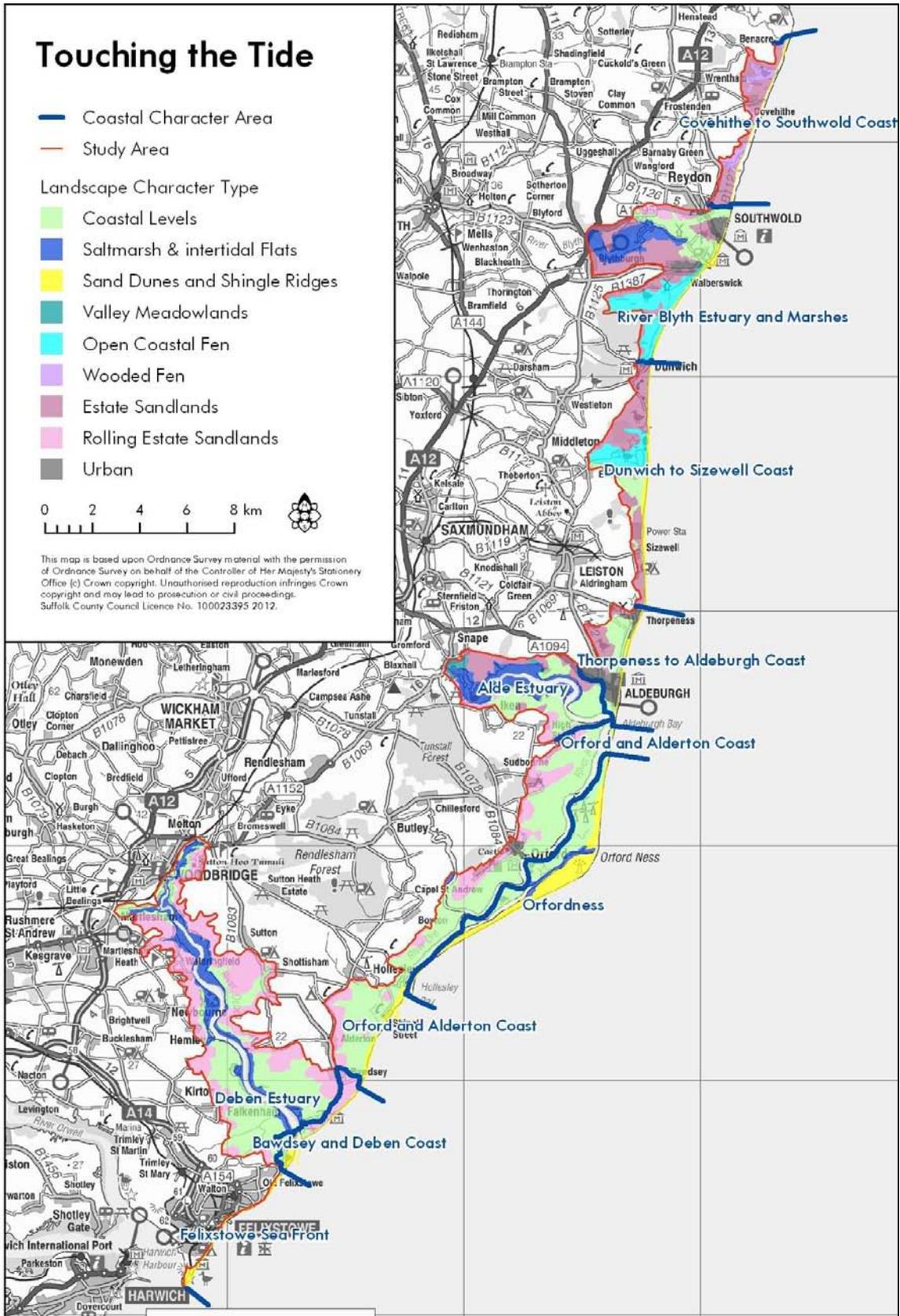
### 3.0 Coastal Character Areas (CCAs)

The Touching the Tide Study Area has been divided into ten Coastal Character Areas which reflect local variations in landscape character and are illustrated on Figure 3. These areas are unique due to a combination of special landscape/coastal characteristics and features and serve to demonstrate the considerable variation in landscape and coastal character over a relatively short distance. Each CCA comprises several Landscape Character Types, for example an estuary landscape may comprise saltmarsh and intertidal flats as well as coastal levels and estate sandlands (these landscape types are described in detail in appendix 3).

The CCA descriptions provide information on the coast and coastal change in an accessible way covering aspects of its past evolution, its present day character, current values, and how change may occur in the future. As such these descriptions assist and enable communities to interpret the past, be inspired by the present environment and to imagine the character of the coast into the future.

Each CCA is described below in terms of its location, what makes it special, notable highlights and features of particular value and then a description of what is changing and how we might manage that change. In the descriptions the inseparable nature of natural heritage, cultural heritage and the present day landscape as well as the relationship between sea and land is expressed.

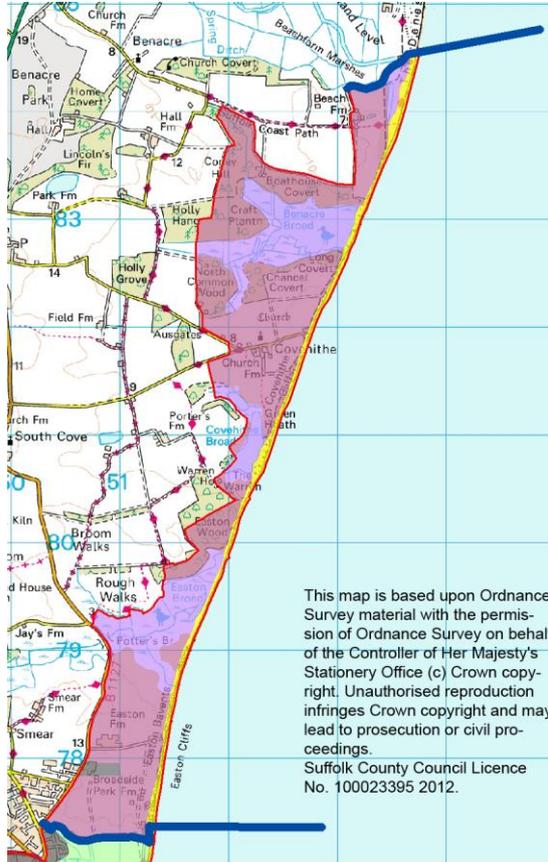
Figure 3: Coastal Character Areas



### 3.1 Covehithe to Southwold Coast

This area lies at the far north of the Study Area between The Denes and Reydon.

In the Covehithe to Southwold Coast area, the landscape is made up of a low undulating landscape of estate sandlands which is dissected by wooded fens and separated from the sea by shingle ridges and beach.



#### What makes Covehithe to Southwold Coast special?

This area is defined by a repetitive pattern of land use and unique combination of sandy farmland and shallow former river valleys which extend to the sea. The dynamic nature of this section of coast is clearly apparent. The area has a strong sense of remoteness with habitation now limited to isolated farmsteads due to the loss of villages to the sea. The presence of truncated roads at the coast, danger signage and dead trees are testimony to the power of coastal erosion. The Grade I listed St Andrew's Church at Covehithe stands alone, and is a local landmark.

The coast is characterised by low, yellow, sandy cliffs with sandy and shingle beaches and is notable for flooded valleys and former estuaries which are blocked by coastal sediment.

Within the former river valleys which extend inland at Benacre, Covehithe and Easton, open water broads comprise fresh and brackish water and support extensive areas of reeds. Birch woodland fringes the valleys, in places creating a tree-covered horizon.

The sheltered nature of the broads and valley landscapes inland contrasts with the exposed coast. Field boundaries are commonly well-trimmed hawthorn hedges and the sandy soils of the area support arable and open-air pig farming.



#### Action of the sea

This is a landscape undergoing dramatic change as a result of rapid coastal erosion where significant areas of coast can be lost within a single storm. The movement of beach material southwards due to the prevailing wind (known as *longshore drift*), combined with wave action,

causes serious erosion but has also contributed to the uniqueness of the landscape. This process has resulted in the deposition and build up of shingle material and ridges across the mouths of the former river valleys, which in turn has caused fresh water to back up, forming extensive areas of open water, reedbed and wet grazing marsh as well as wet woodland within the shallow valleys. This is clearly seen at Benacre, Covehithe and Easton Broads. In places where seawater has found its way through the shingle, brackish water is also present.

### **Woodland and vegetation**

Areas of semi-natural woodland, including ancient oak woods, and particularly birch with its purple haze of branches in winter, form a distinctive wooded horizon inland. The undulating sand geology and soils is reflected in vegetation patterns including bracken in the lane verges and more extensive areas of bracken, heath and grass on the valley sides of the fens/broads. Golden reeds in the flooded valleys also add to the colour of the landscape.

### **Perceptions and human presence**

This landscape feels remote, with the Broads relatively enclosed and sheltered while the coastal cliffs and beach are exposed to the elements. Footpaths along the coast and around the Broads (which are designated for their nature conservation) offer a range of contrasting landscape experiences over relatively short distances. But there is also an ominous character to this landscape, one borne out by dead trees at the cliff edge (where the water table has dropped due to coastal erosion), danger signs along the cliff warning of sudden collapse, and the carcass of medieval church at Covehithe reflecting a time of past prosperity. Unusually, set within the ruins, is a smaller more recent thatched church built in 1672.

This landscape also holds secrets including the buried archaeological resource, particularly artefacts from prehistory, and evidence of former settlement i.e. well shafts, which are revealed from time to time in the newly eroded cliffs. There is also the little-known nuclear bunker at Covehithe.

### **Highlights of this area**

- Outstanding nature conservation value reflected in Special Protection Area (SPA), Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) designations
- Benacre Lagoon is a National Nature Reserve (NNR)
- Grade I church of St Andrew at Covehithe, a local landmark for area
- Rare freshwater lagoons and brackish habitats not found in the southern part of the Study Area
- Regular exposure, through erosion, of new archaeological finds in the coastal cliffs

### **What is changing in this area?**

Continued erosion means the progressive loss of reedbed, wetland valleys and coastal habitat, loss of productive farmland and loss of features and settlement on the coastal edge. Coastal footpaths have to be rerouted and access to the coast altered. This will only continue as the shingle bar/beach systems fronting the broads roll back in line with the retreating coast as a whole. Farmland gullies which drain over the cliff edge also accelerate coastal erosion in localised areas. Diffuse pollution and sediment runoff may also affect the broads and fen habitats.

Within 30–40 years it is likely that the hamlet of Covehithe, with its historic church and important conservation areas, will be lost, although the erosion does allow finds of archaeological significance in the cliffs to be revealed.

The windfarm development at Kessingland, although lying beyond this character area, is visible from it and influences perceptions of the area.

### **How should we manage the change?**

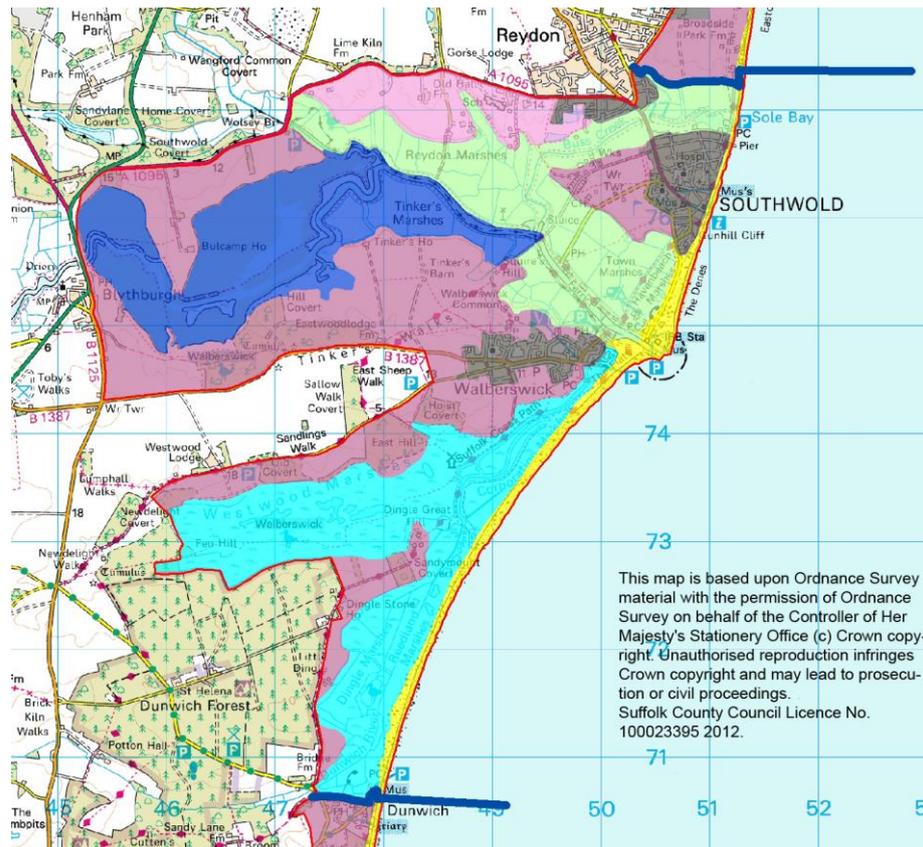
- Protect the wooded skyline and inland fringe to the broads.
- Protect this landscape from visual intrusion and light pollution associated with growth in adjacent settlement areas, and other major developments outside of the area.

- Manage the use and introduction of signage to avoid visual 'clutter'.
- Manage areas of wet woodland.
- Plan to explore and record the threatened historical and archaeological heritage of areas like Covehithe which are likely to be lost over the coming decades.
- Plan for the re-routing of the coastal footpath where necessary due to cliff erosion.
- Plan for the relocation of the community at Covehithe and the future of its historic buildings and archaeological heritage.
- Plan for habitat relocation and managed realignment of the landscape in situations where it is no longer possible or economical to halt erosion and flooding.
- Plan for the regular removal of inorganic litter from the strandline through community action and involvement.
- Plan to use the opportunities presented by coastal change to increase wider understanding and appreciation of the history of the area and as an artistic resource.

### 3.2 River Blyth Estuary and Marshes

This area extends from Sole Bay in the north to the edge of Dunwich in the south and stretches inland to include the Blyth estuary as far as Blythburgh and the Walberswick and Dingle Marshes.

In the Blyth estuary and marshes area, the landscape is made up of saltmarsh and intertidal flats and coastal levels backed by estate sandlands which form the estuary valley sides and inland landscape, while on the coast there are coastal dunes and shingle ridges and to the south an extensive area of open coastal fen.



#### What makes the River Blyth estuary and marshes special?

This area is very scenic, with its mix of historic settlement, grazing marsh and areas of heath, common and woodland on the estuary valley sides with opportunities for elevated views. This contrasts with the shingle ridges at the coast, and areas of open coastal fen at Walberswick and Dingle Marshes.

The area is defined by the Blyth estuary and the Dunwich River, their confluence at Southwold harbour and the extensive areas of drained grazing marsh, saltmarsh and intertidal flats on the estuary and reedbed and freshwater lagoons within the National Nature Reserves to the south.

Within the estuary the flat valley floor comprises drained grazing marshes behind sea walls. These drained marshes are defined by both regular (e.g. Dingle Marshes) and irregular (e.g. Robinson's Marshes) networks of open ditches. The sandy shallow valley sides are used for arable farming and grazing while conifer and birch woodland clothe the upper slopes, with remnant areas of common/heath also present providing a visually pleasing juxtaposition of textures, colours and seasonal variation.

Landmarks include Blythburgh Church, Southwold lighthouse and the water towers and churches at Southwold and Walberswick.



### Settlement

Settlement has historically developed on the slightly elevated sandy farmland which frames the Blyth estuary, namely Southwold and Walberswick. At the head of the estuary is the historic settlement of Blythburgh, probably an Anglo-Saxon royal residence (*villa regis*) and reputed to have been the burial place of King Anna of the East Angles in AD 654. Despite its relatively inland position, it was thought to have been a port in the Middle Ages and was important for receiving coal and manure from Southwold and distributing it inland. A small Augustinian priory was established here in 1125 and dissolved in 1537; its remains are a significant local landmark at the head of the estuary today.

### Coastal recreation

Southwold has significant Victorian architecture including a promenade, villas and pier, reflecting its growth as a seaside resort. The beach has become urbanised with colourful beach huts, a pier, wooden groynes and a promenade. At Walberswick the beach remains more natural, although parking and access to the beach mean that both settlements are important holiday destinations and busy in summer. Between Southwold and Walberswick lie the remains of the formerly prosperous Southwold Harbour; the ramshackle collection of black fishing huts along the edge of the water are evocative of former trade and activity and create a pleasing visual contrast against the extensive backdrop of surrounding drained grazing marsh. A short distance south from here is the old ferry crossing, which is still in use in the summer months as a foot ferry between Walberswick and Southwold. There is also evidence of Roman salterns (salt-making areas) along the northern edge of the estuary.

### Management of the estuary area

The Blyth estuary has been altered and manipulated over many generations, both in terms of the water channel – which was canalised in 1727 and used for transporting goods inland – but also the draining and re-draining of saltmarshes to create fresh water grazing areas for cattle and sheep. In places there are distinctive patterns of regular and irregular drainage ditches and old sea walls, as well as the remnants of old wind pumps, reflecting the reclamation of large areas from the salty water over the years. However, inundation and breaching of the coastal sea defences has also led to the loss of some former grazing areas and the re-creation of extensive areas of saltmarsh and intertidal flats, most visibly at Bulcamp Marshes. These areas have a very different character in terms of colour and texture to the drained grazing marshes, and their location is unusual in that they are located so far inland – visually and physically separated from the coast by productive grazed farmland.

### Creation of Walberswick and Dingle Marshes

In the early Middle Ages the port of Dunwich lay on the south side of the mouth of the Dunwich River and close to the mouth of the (originally) south-flowing River Blyth. Storms in 1286-8 brought about the periodic blocking of the harbour mouth with sand and shingle. In 1328 the original river mouth was finally blocked by a storm and the Dunwich River was forced to flow northwards along the old course of the lower Blyth to a new mouth east of Walberswick. The original port of Walberswick had lain on the north side of the lower Blyth,

but the changes led to its abandonment in favour of a new port, on the new river mouth. The Dunwich River still exits at the mouth of the Blyth, but coastal erosion has moved the course westward, leaving fragments of the old course in the coastal marshes and flats.

The date of the enclosure of Oldtown Marshes, so-named because of its proximity to the old port of Walberswick, is unknown, but the sinuous nature of its dykes suggests a relatively early date. Corporation Marshes (formerly Kings Holm) to the east of the Dunwich River was already embanked along the river edge by 1587. To the west, Walberswick Marsh (formerly East Marsh and Pauls Fen) was reclaimed from salt marsh by the erection of a sea wall around 1590. Early, probably curving, drains seem to have been augmented by later straight ones, but mid-20th century reflooding has led to the loss of many of the drains. To the south, Dingle and Reedland Marshes were embanked from the river by 1587. The area has a mixture of sinuous and straight drains, suggesting drainage works over an extended period of time. Included in the area is a rectangular decoy pond that was in existence by the 1880s; other ponds have been added in the 20th century for wildlife interest. The modern landscape is dominated by cattle grazing on low intensity wet grassland and is dissected by a network of dykes with scrub growing along them in places. The northern end is maintained as reedbed for conservation purposes.

### **Views and lookouts**

From the elevated sandy farmland fringing the lower lying wetlands there are extensive scenic views of the estuary and marshes interspersed with areas of greater enclosure formed by mixed woodland and forestry. Here the changing view of open water at high tide and mudflats at low tide, with snaking remnant flood defences criss-crossing the area, is memorable.

Lookouts and elevated positions across this landscape have been important throughout the centuries; in prehistory tumuli were located on the ridge overlooking the Blyth estuary, as are WWII pill boxes. From these elevated locations there is a real sense of place and openness as well as a remote and isolated character; the extensive areas of inaccessible saltmarsh and water help to reinforce this feeling.

Military activity is not limited to the elevated land surrounding the estuary; there is also evidence along the coast and particularly at The Denes south of Southwold, where gun emplacements and lookouts were established during WWII.

### **Highlights of this area**

- Scenic quality of heath and wetland landscapes and views across the estuary
- Strong sense of timelessness and naturalness
- Historically significant remnant sea defences and drainage ditches have created visual layers of activity across the estuary reflecting different periods of reclamation and inundation
- Conservation areas for Southwold, Walberswick, Blythburgh and Southwold Harbour
- Significant nature conservation importance: Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Special Protection Area (SPA), Ramsar (conservation of wetlands) and Special Area of Conservation (SAC) designations; Walberswick Marshes are the largest area of reedbed in England; Tinkers Marsh is a Natura 2000 site
- Blythburgh Priory is a Scheduled Monument
- Landmarks include water tower and lighthouse at Southwold and church towers in each of the settlements
- Importance of drained grazing marshes for productive agriculture
- Important remains of Roman salterns on the northern edge of the Blyth River
- Southwold is famous for Adnams brewery

### **What is changing in this area?**

The nature of activity and settlement has changed and is changing. The reduced use of Southwold Harbour is one obvious change. Second homes are increasing in this area, with impacts on the fabric of local communities.

Most other landscape changes are due to inundation by the sea. For example, the extent of saltmarsh within the Blyth Estuary increased by 16% between 1971 and 1998. It is also possible that there will be a breach of the shingle ridge south of Walberswick, resulting in the inundation of Walberswick Marshes and a change from freshwater habitats to salt water habitats.

Breaches will also mean the loss of productive farmland on drained marshes as well as loss of grazing marshes. Management of existing sea defences along the Blyth River helps to delay such losses.

#### **How should we manage the change?**

- Protect the variety of views across lower land/marshes.
- Protect the historic character of the villages and coastal settlement from inappropriate development.
- Protect Southwold and Walberswick from coastal erosion and inundation.
- Manage marshes and consider inundation and restoration of natural processes where opportunities arise.
- Manage, where appropriate, existing old clay sea defence walls to ensure longevity.
- Manage former common and heathland habitat.
- Plan further research and excavation of the river waterfront, telling the story of the changing coastline here.
- Plan research and archaeological work to better understand the complex history of the marshes and rivers and its implications for the future and consider links with the ongoing study of Underwater Dunwich.
- Plan interpretation, telling the story of the changing face of the estuary through visible evidence in the landscape, e.g. pattern of old sea walls, salterns and harbour, churches and ports and the use of pillboxes as interpretation points and lookouts.

### 3.3 Dunwich and Sizewell Coast

This area stretches from Dunwich in the north as far as Thorpeness in the south and comprises the longest straight piece of coast in the Study Area, Minsmere Haven.

In the Dunwich and Sizewell Coast area, the landscape is made up of estate sandlands which in places extend as far as the coast to form low sandy cliffs backing a steeply shelving shingle ridge. In the centre of this area this pattern is broken by the valley of the Old Minsmere River - an area of coastal levels and open coastal fen.



#### What makes Dunwich and Sizewell Coast special?

The landscape here has a remote and isolated feel, sometimes desolate. The gently undulating estate sandlands support predominately sandy arable farmland enclosed by low trimmed hawthorn hedges with areas of conifer plantations and birch/oak woodland and heath e.g. Dunwich Heath, Sizewell and Thorpeness Commons which can extend as far as the cliff edge.

The central section of this area is the valley of the Minsmere Old River and comprises drained grazing marsh and, north of the old river channel, the Minsmere RSPB reserve with extensive freshwater wetland and fen habitat.

In terms of human activity, the limited amount of settlement belies the previous extent of occupation, the former settlements/ports of Sizewell and Dunwich having been lost to the sea. Nevertheless the remains of the Franciscan priory of Greyfriars at Dunwich reflects the former significance of activity in this area in the Medieval period. Similarly the protected wreck at Dunwich Bank, the resting place of a 16th-century armed merchant vessel, reflects the former trading activity which would have been visible from the cliffs along this coast. Today it is the distant container vessels in the offshore waters that are visible out to sea and closer inshore boating activity associated with the fishing fleets. On the coast itself it is the white dome of Sizewell B and the concrete hulk of Sizewell A power stations which are a key landmark.

#### The coast

This coastal landscape is perhaps less visited by tourists than some other parts of the Study Area,

however key hotspots such as Dunwich and Minsmere attract large numbers of visitors, and south of Sizewell a couple of caravan parks have developed along the coast. In this landscape the interface with the sea comprises a long relatively straight section of shingle bank which, where adjacent to the sandy farmland/heath, is backed by shallow sandy cliffs and where adjacent to grazed marshes or wetland forms a raised ridge which physically and visually separates the inland wetland landscape from the sea.



### **Minsmere**

The Minsmere Levels, which lie at the centre of this area, were once the valley of the Minsmere Old River, but this has been extensively drained since 1810 and the river canalised to enter the sea at 'The Sluice'. Unlike other river valleys along the coast, this area is not estuarine and the control of water through the sluice is significant both in terms of coastal protection and the conservation of adjacent freshwater wetlands. In recent years the northern part of the levels has been managed by the RSPB as a nature reserve through the reduction in pumping and drainage and the creation of scrapes and areas of open water. Today it comprises a mosaic of lagoons, acid grassland, arable land reverted to grassland, and woodland. It has become a flagship reserve and a Mecca for bird watchers.

### **Farming and heathland**

Surrounding the marshes is higher sandy farmland, where there are remnants of former commons and heaths (open access land) such as Dunwich Heath and areas of mixed (including ancient oak woodland and hazel coppice) and plantation woodland, interspersed by intensive farming including arable and pig rearing. The extent of heathland in this area has reduced over the years with some areas reverting to birch woodland due to lack of grazing or being lost to the sea due to coastal erosion.

### **The power station**

The construction of Sizewell A power station was started in 1961. Today the complex comprises two power stations and exerts a strong influence across this section of the coast. In close proximity to the power station the scale of the buildings and associated power lines dominate the landscape such that other landscape features and activities feel small and insignificant.

Along this section of straight coast the beach consists of a steep and narrow shingle bank backed by low sandy cliffs. The sight of fishermen on the beach with their umbrellas and fishing lines, stretching off into the misty haze, is commonplace. This section of coast is particularly valued for fishing in part because the used cooling water from the power station, which is pumped back in to the sea, is reputed to make the sea warmer attracting more fish.

### **Dunwich**

This is not a heavily populated landscape now, but the villages of Dunwich and Sizewell are testament to past populations. The name Dunwich means 'a port with deep water' and reflects the former importance of this settlement as the second largest port in England, after London, in the Middle Ages. At its height it had a high city wall and contained churches and chapels, religious houses, hospitals, merchant houses, a mint and many houses. Its decline began in 1286 after a storm combined with a high spring tide battered the cliffs and significantly damaged the port and buildings closest to the sea. Subsequent coastal erosion undermined the settlement's significance and by 1587 maps of the settlement show no sign of a harbour. Buildings are known to have been dismantled and their stone used elsewhere. Today Dunwich is only a small village, the remains of the Greyfriars priory reflecting the former glory and significance of the port. The story of Dunwich is a graphic tale of depopulation and the loss of community and settlement along the coast due to the ravages of the sea, a process which will continue over generations to come.

**Highlights of this area**

- Outstanding nature conservation importance, reflected in Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar (conservation of wetlands) and County Wildlife Site (CWS) designations
- Minsmere regarded as an 'ark' for rare species of birds
- Greyfriars at Dunwich is a Scheduled Monument
- Dunwich is a Conservation Area and the site of an iconic and famous "lost city"
- Only place in study area where heathland meets the coastal cliffs

**What is changing in this area?**

Loss of settlement, productive farmland and clifftop heathland due to coastal cliff erosion has occurred and is continuing; south of Dunwich the cliffs are eroding at an estimated 1–2m per year. The footpath network and access to the coast is changing to take this into account. It is possible that there could be a breach of the shingle ridge resulting in the inundation of Minsmere and a change from freshwater habitats to salt water habitats, although recent works to the shingle ridge should protect all but North Marsh for many years to come.

There is also pressure for the development of a Sizewell C power station and the use of Sizewell as the landfall for energy generation for the Greater Gabbard offshore windfarm and potential location for other additional grid connections.

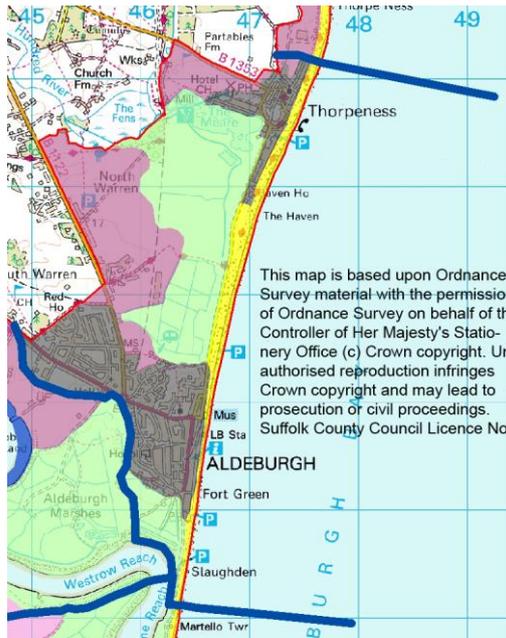
**How should we manage the change?**

- Protect the unspoilt character of much of this coastline from intrusive major infrastructure development which may penetrate areas currently devoid of such influences.
- Manage public access and activities in order to minimise surface disturbance, particularly along the coastal shingle beach/ridge.
- Manage scrub and areas of dry heath, e.g. Dunwich Heath, in order to maintain areas of open heathland and keep them clear of scrub, bracken and birch.
- Plan for habitat creation of heathland inland to compensate for the loss of heath habitats at the coast.
- Plan for the further improvement of drained marshes and the restoration of areas to saltmarsh and freshwater habitats.
- Plan to complete the underwater survey of the lost town of Dunwich, increasing understanding of the timing and intensity of historical coastal change.
- Plan for the improved interpretation of Dunwich alongside the existing museum's work; story-telling through the use of phone applications etc.
- Plan for the regular removal of inorganic litter from the strandline through community action and involvement.

### 3.4 Thorpeness to Aldeburgh Coast

This area comprises the settlements of Thorpeness and Aldeburgh, the straight section of coast between them, and the shallow valley of the Hundred River, which stretches inland. It is the smallest coastal character area in the Study Area.

In the Thorpeness to Aldeburgh Coast area, the landscape is made up of estate sandlands which form the backdrop to the valley and the higher land on which Thorpeness and Aldeburgh sit, coastal levels within the Hundred Valley and sand dunes and shingle ridges along the coast.



#### What makes Thorpeness to Aldeburgh Coast special?

This is an expansive, open, windswept landscape and this sense of scale is strongly contrasted with the small-scale, sheltered character of the settlements.

The flat, open valley floor of Hundred River, which comprises mainly reclaimed drained marshes used for grazing, is divided by regular, reed filled ditches and wetland areas, and dissected by a disused railway embankment which used to connect Aldeburgh with Saxmundham. Within the drained marshes, along the railway and around the lake associated with Thorpeness (The Meare) are areas of scrub vegetation which provide visual structure.

Inland the topography rises slightly onto the estate sandlands where firmer, sandy soil support gorse, heather, birch and oak and areas of heath (North Warren, Sandlings Heath and South Warren).

This area is known for its historic coastal settlements of Thorpeness and Aldeburgh, connected by a straight, unenclosed coast road offering views inland and out to sea. The beach comprises a shingle ridge which close to Thorpeness supports rare vegetation. There is a strong focus on recreation and coastal holidays, evident in the caravan parks and the 1900s planned seaside village of Thorpeness. Fishing boats and fresh fish outlets are scattered along Aldeburgh beach and coupled with wooded groynes and Victorian villas give rise to a more settled and urbanised coastal character. From the beach and seafront there are open views across open water with boating activity focused around the fishing fleets and occasional views to distant container vessels in the North Sea.

Landmarks attracting tourists include the 'House in the Clouds' at Thorpeness and its associated Windmill, Aldeburgh Church and Maggi Hambling's 'Scallop' sculpture on Aldeburgh beach, and the area is strongly associated with Benjamin Britten, the Aldeburgh music festival and artists including J.M.W. Turner.

#### Aldeburgh and Thorpeness

The settlements of Aldeburgh and Thorpeness are key components of this landscape. They have very different histories, exerting a significant influence on the overall character of the area and shaping people's experience and recreational focus.



The name Aldeburgh means 'old fort', the former site of which has been long lost to the sea as a result of coastal erosion, along with the majority of the original Tudor town. In the 16th century, Aldeburgh was a leading port and had a flourishing ship-building industry. Sir Francis Drake's ships *Greyhound* and *Pelican* (later renamed *Golden Hind*) were both built in Aldeburgh. The flagship of the Virginia Company, the *Sea Venture*, is also believed to have been built here in 1608. Similarly the small settlement of Slaughden to the south of the town performed an important trade function, with a valued quay on the Alde. When the River Alde silted up and was unable to accommodate larger ships, both settlements went into decline.

Aldeburgh survived principally as a fishing village until the nineteenth century, when it became popular as a seaside resort, in part as a result of the construction of a new branch railway from Saxmundham in 1860. Much of its distinctive and whimsical architecture derives from this period and of particular note are the colourwashed buildings in soft pinks, yellows and blues, which face straight onto the shingle beach where boats are beached and small wooden huts sell freshly caught fish. Further south, Slaughden is all but lost to the sea and today has a recreational focus, housing the Aldeburgh sailing and yacht clubs. Aldeburgh also has connections with a large number of famous names, including Elizabeth Garrett-Anderson, Benjamin Britten and Peter Pears. It also has a strong 'arts' focus.

In contrast, the village of Thorpeness is a planned seaside resort village created in the early 20th century by Glencairn Stuart Ogilvie. In November 1910 the small boggy landlocked mere, which was fed by the Hundred River, flooded creating a large area of shallow standing water. This inspired Ogilvie to block the river permanently and construct sluices to contain a 64-acre lake, now known as the Meare. At the same time Ogilvie conceived the notion of building a holiday resort adjoining both the new lake and the sea, providing houses for self-catering family holidays controlled by leases usually of not less than one month's duration. Many of the buildings are half-timbered and today this village is valued for its unique genesis; the quality of its buildings; its distinctive form and layout and its relationship with the wider landscape. Westbar, the Windmill and the House in the Clouds all form eye-catching landmarks in the surrounding area.

#### Highlights of this area

- Leiston to Aldeburgh Site of Special Scientific Interest (SSSI) covers much of the area, comprising a rich mosaic of acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle, which is rare in the Study Area
- North Warren is a SSSI and Sandlings Heath is a Special Protection Area (SPA)
- The coastal area is of value for nature conservation; Thorpeness beach is valued for its vegetated shingle beach and there is a Local Nature Reserve (LNR) north of Aldeburgh
- The disused railway is a County Wildlife Site (CWS) for its species rich grassland
- Thorpeness and Aldeburgh are conservation areas and contain many landmark buildings

#### What is changing in this area?

Changes which are related to tourism can be seen in linear housing development along the coast, pressure for recreational development including caravan parks and access to the coast, and urbanisation of the seafront and beach between settlements. As well as this, the increase in second homes is having an impact on local communities. Vegetated shingle

habitats are also suffering due to recreational disturbance and beach litter can sometimes be an issue due to the large numbers of people who frequent this stretch of coast.

There is concern about the implications of a potential new mouth for the River Alde at Slaughden, which could occur if there was a breach of the shingle bank.

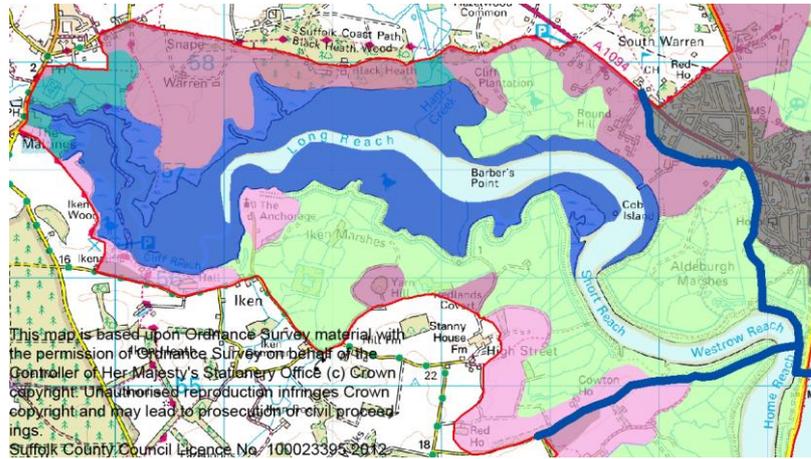
#### **How should we manage the change?**

- Protect the sense of separation and openness between the settlements of Aldeburgh and Thorpeness and avoid *ad hoc* and incremental development which urbanises this coastal landscape, particularly along the open coast road.
- Protect the natural character of the foreshore and its vegetated shingle, and remove inorganic litter from the strandline through community involvement and action.
- Manage the use of this area for recreation, protecting its nature conservation value, facilitating access where appropriate but channelling visitor pressure away from more sensitive areas.
- Manage areas of existing scrub and woodland, protecting the mosaic of habitats and variety of contrasting open and enclosed spaces found in this landscape.
- Plan for the growth of settlement ensuring that the special qualities of Thorpeness and Aldeburgh are retained.

### 3.5 Alde Estuary

This area is defined by the Alde estuary, comprising meandering watercourses flanked by areas of intertidal mudflat, backed by coastal grazing marsh and gentle valley sides of rolling arable farmland with areas of remnant heath and plantation woodland beyond.

In the Alde estuary area, the landscape is made up of saltmarsh and intertidal flats, coastal levels, valley meadowlands, rolling estate sandlands and estate sandlands.



#### What makes Alde estuary special?

This is an inland landscape comprising the Alde estuary and defined by a broad valley and gentle, shallow valley sides with notable promontories. Extensive inland saltmarsh and mudflats are a result of the tidal waters. There are also extensive areas of drained marsh within the estuary, particularly east of Iken where the estuary broadens out, supporting both pasture and arable. From down on these drained marshes there are views across to the town of Aldeburgh but the river is rarely seen hidden behind flood embankments and the passing sail of a boat is often the only indication that the river is there at all.

Settlement in the area is limited to dispersed farmsteads and the former port at Snape Maltings, which is now the venue for Aldeburgh music festival and has a concentration of quirky and upmarket shops. A former line of river sea walls snake across the expanse of water and mudflats and older historic evidence in the form of Roman salterns (salt-making sites) can be found along the river edge. Yarn Hill copse and Iken church are local landmarks.

#### Tranquillity and remoteness

The quietness of the Alde is interrupted only by the sound of reeds in the breeze, or birdsong. The broad expanse of the estuary, lack of settlement, limited accessibility across the estuary except at Snape and expansive views from the valley sides give this landscape a strong sense of remoteness and isolation.

#### The upper reaches

In the Alde's upper reaches is the former port of Snape with its distinctive malting buildings, which are now used to host the annual Aldeburgh Music Festival. The river was used in the past to transport coal and manure from the coastal ports of Orford and Slaughden (Aldeburgh's historic port) inland to Snape for wider distribution. Today extensive reed beds lap at the edges of this former busy inland port and from here there are views eastwards down the estuary.

The river in these upper reaches makes broad meanders, curving around low promontories that extend into the mudflats. Within these mudflats it is possible to pick out the remnants of former flood defences snaking across the area. Many of the sea walls within the estuary, current and remnant, are of considerable antiquity, some being more than 500 years old. In

places the battle between man and nature is clearly evident; land which was once reclaimed for grazing has again been reclaimed by the sea.

### The lower reaches

The Alde estuary is unusual because although tidal, it does not connect to the sea south of Aldeburgh but is forced to turn 90 degrees and flow parallel to the coast, due to the development of a long shingle spit (Orford Ness). Where it turns to flow south, it becomes the River Ore and forms part of the Orford and Hollesley Landscape Character Area.



### Other landscape features

A key feature in this broad landscape is the church tower of Iken, which sits as a lonely landmark on a shallow promontory in the estuary, surrounded by trees. On the shallow valley sides above sits the woodland copse of Yarn Hill, distinctive on the skyline, while from upper slopes of the southern shores of the river there are views northwards across the estuary to a line of pylons that signals the proximity of Sizewell power station.

### Highlights of this area

- Remnant sea defences and drainage ditches have created layers of significant historical activity across the estuary, reflecting different periods of reclamation and inundation
- Landmark features including Iken Church and Yarn Hill
- Conservation area at Snape
- Outstanding nature conservation value: the tidal river, mudflats and saltmarshes form part of Alde-Ore estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar site (site for the conservation of wetlands)
- Snape Marshes and Aldeburgh Golf Course are designated County Wildlife Site (CWS) for their mosaic of habitats
- Early Anglo Saxon cemetery (c. 650AD) and other features found at Barber's Point
- The Alde-Ore is the only bar-built/restricted mouth estuary in the UK

### What is changing in this area?

Significant areas of grazing marsh have been converted to arable farming in previous decades and many of the remaining grazing marshes are well drained, so reducing their wildlife value. However, at some point there is likely to be future loss of this productive farmland due to inundation, and creation of new mudflat and saltmarsh habitat as a result. At the same time, mud flats and saltings are eroding, in part due to the rise in sea level.

Management of sea defences continues, and there is concern about the implications of a potential new mouth for the River Alde at Slaughden, which could occur if there was a breach of the shingle bank.

### How should we manage the change?

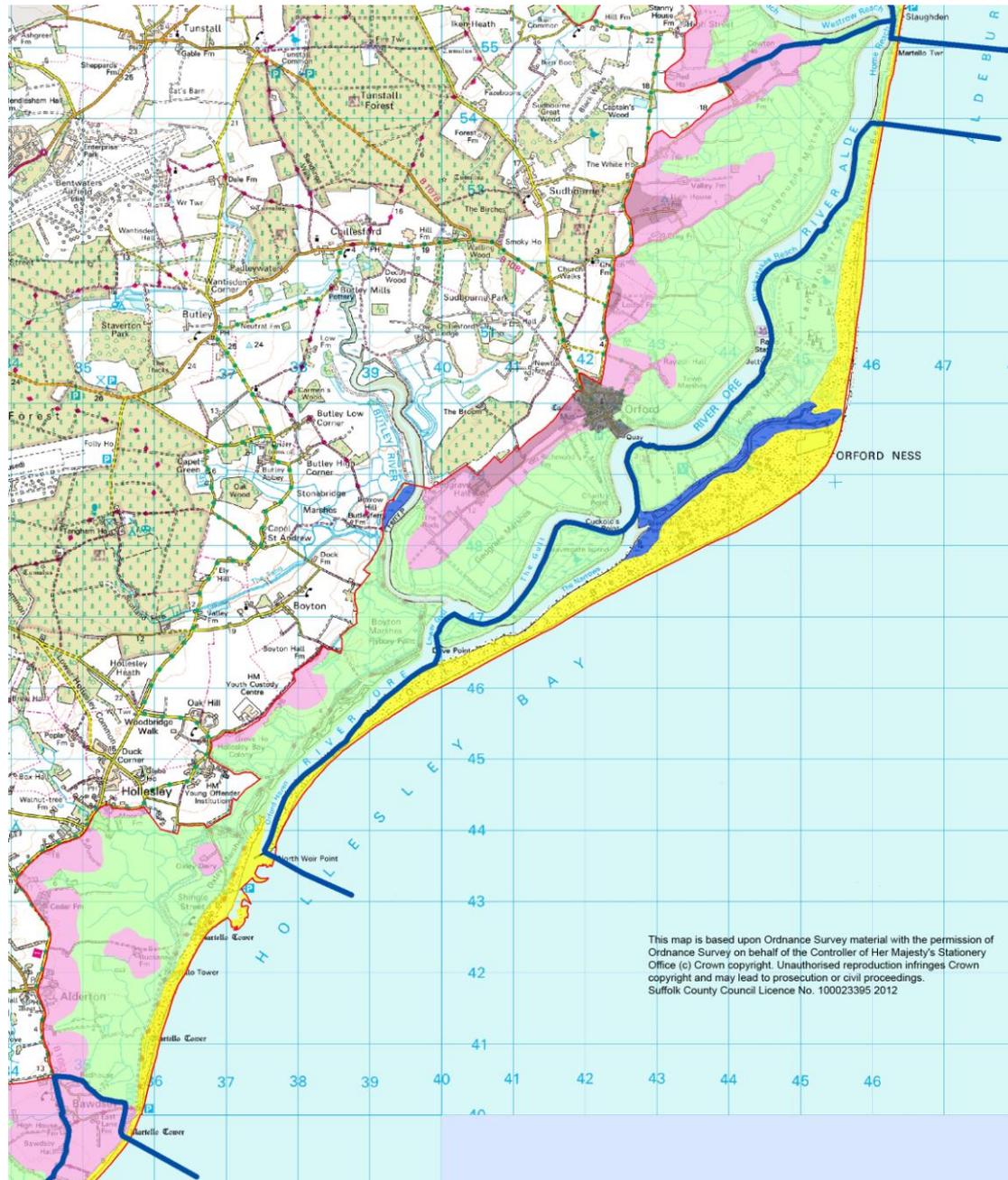
- Protect open views across the estuary, particularly to key landmarks.
- Plan for future changes at Slaughden and consider the implications of a breach of the shingle bank and creation of a new mouth to the River Alde, and/or the development of sea defences to retain the Alde's current course.

- Plan to explore and interpret the history of the estuary as an example of an area where the tidal envelope has changed significantly over time, helping to inform planning for the future.
- Plan for 'managed retreat' of estuarine habitats (saltmarsh and mudflat) onto suitable areas of reclaimed land behind the current sea wall where the landowner is in agreement.

### 3.6 Orford and Alderton Coast

This area is defined by the River Ore, which runs parallel to the coast separated from the sea by Orford Ness. The gently meandering course of the river is flanked by open grazing marshes and backed inland by slightly rising farmland, on which the historic settlement of Orford is located.

In the Orford and Alderton Coast area, the landscape is made up of sand dunes and shingle ridges backed by coastal levels and then by the gently rising land of rolling estate sandlands, and small areas of estate sandlands inland.



#### What makes Orford and Alderton Coast special?

This is a coastal landscape separated from the sea by the large shingle spit of Orford Ness. It is also a landscape with a very linear feel, with the River Ore running parallel to the coast

flanked by drained marshes and rising sandy farmland inland. The River Ore itself is often not visible, but there is a strong visual association with Orford Ness and the sea beyond. This is an open, exposed and expansive landscape, in parts often inaccessible.

Where this landscape interfaces with the sea - in the north around Slaughden and in the south between Shingle Street/mouth of the Ore and East Lane, the landscape includes stretches of shingle beach. Along these stretches of shingle coast there are open views out to sea. In the south of the area around Shingle Street the shipping lanes for container vessels converge and the associated shipping activity becomes more visually dominant. North of Shingle Street this influence diminishes and boating activity is more focused around small fishing fleets.

This area is of geological significance with a large number of pits exposing the Coralline Crag formation; these are designated Sites of Special Scientific Interest (SSSIs).

Settlement is located mainly on higher land including Orford (a conservation area) Hollesley (just outside Study Area) and Alderton. Shingle Street is a tiny windswept hamlet on the shingle close to the mouth of the Ore. There are many tales of smuggling in this landscape in the 18th and 19th centuries, probably due to this landscape's isolated nature, including stories of battles between customs men and 'free traders'. Martello towers are inter-visible along the coast and from out at sea while Orford Castle and St Bartholomew's church are other key landmarks in this area.



### **The river**

The River Ore runs for approximately 16km alongside a shingle spit (Orford Ness) and is narrower, deeper and faster flowing than the Alde to the north. The river is technically part of the Alde-Ore estuary and although tidal, its river flood defences and the predominance of adjacent reclaimed grazing marshes mean its tidal character is often not evident unless walking close by on the flood defence embankments.

### **Farming and land reclamation**

This landscape is predominately farmed; it is open and expansive and appears empty apart from settlements such as Orford and Alderton, which are focal points. The marshes adjacent to the river have long been drained and have created valuable farmland in terms of grazing and crop production, more so than any other part of the overall Study Area. The dispersed pattern of farmsteads through the area and the repetitive pattern of farm reservoirs are a reflection of this land-use pattern.

Within the drained marshes and farmland there are both regular and irregular patterns of drainage ditches, reflecting different periods of reclamation. Close to where the land starts to rise inland there are frequent small copses of woodland carr (wet woodland), which create a greater sense of enclosure. From the gently rising land there are open views to the Ness, where former military structures are visible on the skyline, notably the 'pagodas' and masts.

## Orford

Although a village is known to have existed at Orford in the 12th century, it was not until King Henry II chose Orford as the site on which to build a new castle that the town developed. In the medieval period it had at least one church (of Norman origin), an Augustinian friary, two hospitals and was a busy port exporting wool and dairy produce and importing coal. However, economic conditions worsened over time as a result of a downturn in the fishing industry, continental wars disrupting trade, and piracy, as well as increasingly difficult access due to the shifting shingle bar at the tip of Orford Ness. In the medieval period the River Ore entered the sea very close to Orford but over the centuries the course of the river has been deflected southwards by the development of the long shingle spit of Orford Ness, and today the Ore enters the sea five miles further downstream. The quay at Orford is now used mainly by fishermen and the yachting fraternity and there is a foot passenger ferry to Orford Ness during the summer months. Orford's situation is a clear example of the power of coastal erosion and longshore drift (the movement of beach material southwards due to the prevailing wind combined with the washing in and washing out of waves) in shaping both the environment and economic fortune.

## Military activity

Also significant and unique to this stretch of coast is the variety of defensive structures that are evident from many different centuries. There are also five Martello towers along the coast; these were constructed in the Napoleonic era as a strategic defence and deterrent against a possible French invasion which never happened. The four towers south of Shingle Street form a rare and intact group where their inter-visibility is readily apparent. There are further WWII defence structures in the area, notably at East Lane Battery in the south and numerous pill boxes along the river embankments.

## Highlights of this area

- Martello towers: one south of Slaughden and four south of Shingle Street. All are Scheduled Monuments
- Conservation Area at Orford
- Orford Castle is a Scheduled Monument
- County Wildlife Site (CWS) at Oxley Marshes is a habitat 'mosaic' (many different habitat types in one area); Cauldwell Hall Farm Marshes is an area of ornithological interest, and Middle Alde and adjacent marshes are a habitat mosaic and area of ornithological interest
- Rivers Ore and Butley are of outstanding nature conservation value, forming part of the Alde Ore estuary SSSI, Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar (site for the conservation of wetlands)
- SSSIs at Bickaney Farm Pit, Gedgrave Farm Pit, Richmond Farm Pit, Crag Farm Pit and Valley Farm Pit. These pits expose Coralline Crag, marine sands laid down between 2.6 and 5 million years ago
- The Alde-Ore is the only bar-built/restricted mouth estuary in the UK

## What is changing in this area?

The shingle spit at Shingle Street is continuously changing and there is potential for the loss of historic landmark features along the coast, including the Martello towers, due to coastal erosion.

There is also concern about the implications of a potential new mouth for the River Alde upriver at Slaughden, which could occur if there was a breach of the shingle bank.

In addition there is concern about recreational pressure on the vegetated shingle at Shingle Street.

## How should we manage the change?

- Protect the natural character of the foreshore and remove inorganic litter from the strandline through community involvement and action.
- Protect the open and unspoilt character of this part of the coast from development which is visually intrusive over long distances.

- Protect views to key landmark features, including those beyond this character area.
- Manage recreational pressures where necessary in co-operation with the landowners.
- Manage the existing areas of woodland carr (wet woodland).
- Manage remnant areas of reedbed through cutting and grazing marshes through appropriate water management and stocking levels.
- Manage and restore features such as ditches, dykes, and hedgerows in arable areas.
- Plan to tell the story of the iconic Martello Towers along this coast, bearing in mind that they cannot be made physically accessible but are visible from key views.
- Plan to increase interpretation and understanding of the significant geological interest in this area.

### 3.7 Orford Ness

This area is defined by the isolated, open, expansive pebble spit and salt marshes between the River Ore and the North Sea. The shingle spit physically and visually separates the River Ore and grazing marshes from the sea, forming a sweeping curve of coastline known as Hollesley Bay.

The Orford Ness area is made up of sand dunes and shingle ridges, saltmarsh, intertidal flats and coastal levels.



#### What makes Orford Ness special?

The Ness is unique both for its conservation value and its unusual military history. There is neither settlement nor tree cover here and access is limited, creating the air of a forbidden landscape and a strong sense of remoteness and eeriness. Birdsong and expansive skies are strong elements of the windswept landscape; sky, shingle and the disused military installations form a backdrop palette of muted, weathered colours.

Orford Ness is the largest shingle spit in Europe. It is internationally important both geomorphologically and for nature conservation, comprising pristine marshland and some of

the best preserved vegetated shingle in the European Union. The area includes Havergate Island, 'The Narrows' water channel, Stoney Ditch and associated mudflats and saltmarsh, with areas of sheep grazed marshes with pools of water. There are clear views out to sea to container ships and also inland across the River Ore to drained coastal marshes and more elevated sandlands.

Military research in the 20th century, particularly during the Cold War, is reflected in the remnant disused structures including the 'pagodas' and radio station.



### **The spit**

This is a landscape that demonstrates the ability of the sea to move and shape shingle, forming the longest pebble spit of its type in Europe. It has been created by the process of longshore drift (the movement of beach material southwards due to the prevailing wind combined with the washing in and washing out of waves), resulting in the piling up of a broad pebble spit which is extending in length year on year.

This is an open, weathered and dynamic landscape where features that appear solid may in time be lost to the sea. The lighthouse is one such landmark and may be lost in the near future as the Ness continues to evolve.

### **Access and military history**

Orford Ness is not an easily accessible landscape, being separated from the mainland by the River Ore and accessed by boat only in the summer months. The spit still has the air of a forbidden landscape; its military history and the veil of secrecy that surrounded it for so long have combined with its remoteness to give this landscape a special quality. For much of the 20th century Orford Ness was a top-secret military test site, and played a vital but little known strategic role in Britain's WWII defences. The remains of Cold War buildings, most now in an advanced state of decay, add to the rather unsettling atmosphere and strike a strong contrast with their pristine marshland and shingle setting. The 'pagodas' were used for perfecting the A and H bomb firing mechanisms and, along with the huge Cobra Mist building and associated radio masts, are key landmarks both in this landscape and inland in the Orford to Alderton Coastal Landscape Character Area. Although the area's role in WWII has not left such visible remains it was at least as important and included the development of two types of radar without which the war may have been lost.

### **Nature conservation**

The majority of the area is owned and managed by the National Trust, with the Havergate Island nature reserve being managed by the RSPB. The Orford Ness nature reserve is internationally recognised for its shingle and marshland habitats and species. The fragile shingle habitats and their associated species are extremely vulnerable to damage and disturbance. Proactive management by the Natural Trust and the RSPB has enabled the retention of these important habitats.

**Highlights of this area**

- Havergate Island is Suffolk's only island
- The spit is one of the largest and finest examples of vegetated shingle in the world, supporting a range of rare plant species
- One of the most important historic military research and development sites in the UK
- Key landmarks include the pagodas, the Cobra Mist building, masts and lighthouse
- Wide views inland to landmarks such as Orford castle and out to sea
- Outstanding nature conservation importance including Orford Ness-Havergate Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar (site for the conservation of wetlands) and National Nature Reserve

**What is changing in this area?**

Physical damage to the vegetated shingle caused by visitors' footfall is a problem and erosion by the sea may result in the loss of landmark structures.

Conservation work including the creation of new freshwater wetlands and re-flooding of areas of drained grazing marshes are bringing benefits to wildlife, however, the changing weather patterns are also causing the marshes to dry out in spring and summer, which affects the ability of birds to breed there successfully.

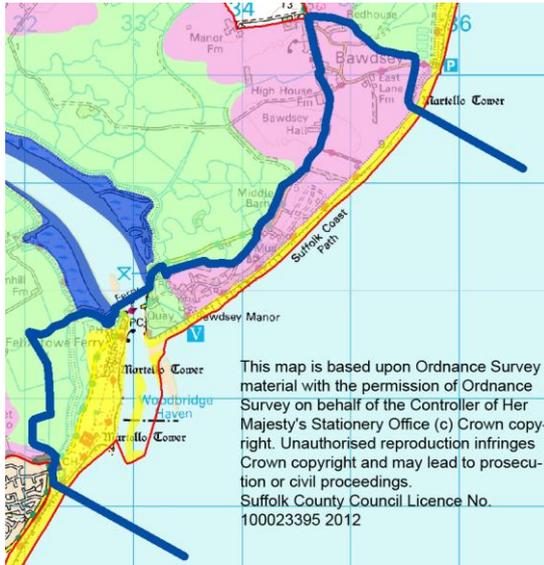
**How should we manage the change?**

- Manage human impact on vulnerable habitats through better communication and restricted access.
- Manage water levels across the marshes and lagoons.
- Plan for improved visitor information and interpretation of the shingle geomorphology and the extremely rare coastal vegetated shingle habitat.
- Plan for the loss of key landmark features (e.g. Orford Ness Lighthouse) to coastal erosion including community involvement and recording.
- Plan to reveal and celebrate the largely unknown historical importance of the site in ways that do not also promote greater demand for physical access to the area.
- Plan for the regular removal of inorganic litter from the strandline through community action and involvement.

### 3.8 Bawdsey and Deben Coast

This area is defined by the mouth of the Deben estuary and is flanked either side by headlands of sandy farmland. Bawdsey sits on a peninsula fronted by the sea and backed by drained marshland within the Deben estuary.

In the Bawdsey and Deben Coast area, the landscape is made up of coastal dunes and shingle ridges, with coastal levels and rolling estate sandlands.



#### What makes Bawdsey and Deben Coast special?

This Coastal Character Area is situated at the point where the Deben estuary narrows before it enters the sea.

The historic parkland and associated trees at Bawdsey Manor located on the north shore/estuary headland has a strong visual influence on the character of this coast. Field boundaries include well-trimmed hawthorn hedges and some belts of pine, breaking up sandy farmland along the coast which terminates in shallow cliffs and narrow beaches. Bawdsey Cliff is a Site of Special Scientific Interest (SSSI) and is one of the best exposures of the Red Crag geological formation, deposited about 2-3 million years

ago. There are extensive views out to sea and along the coast to the south. In these views container ships arriving and departing Felixstowe to the south are clearly visible in the converging shipping lanes as are passenger ferries travelling to and from Harwich.

The mouth of River Deben and The Knolls (shingle ridges) form a unique dynamic ebb tidal delta (where sand or shingle banks form at the seaward mouth of tidal inlets as a result of the meeting of tidal currents and waves).

To the south of the Deben mouth on the southern estuary headland is an area of sand dune which is used as the Felixstowe golf course which supports a mosaic of varied habitats. This course played a key role in the growth of Felixstowe as a seaside town. Further round into the mouth of the estuary is the small community of Felixstowe Ferry, associated with a ferry crossing to Bawdsey which has been operating since the 12<sup>th</sup> century, where moored boats within the channel add local interest and colour.

Military activity is represented by Martello towers, inter-visible along the coast and from out to sea; there is also a strong military association with Bawdsey Manor and its Radar Transmitter Block, and the remains of a WWII 6" coast defence gun battery and an observation post can be seen at East Lane.

#### East Lane rock armour

One notable new feature of this Character Area is the armouring of several hundred metres of coast at East Lane, Bawdsey, with Norwegian granite boulders. The armour protects houses and a Martello Tower as well as vulnerable areas of agricultural land. These defences were in part paid for by three enabling developments of housing inland at Bawdsey and elsewhere. The rock armour itself, the way it was funded, and the impact it may have on rates of erosion immediately south of the defence, are all still controversial, but it does enable people to see first hand one possible vision for the coast's future and judge for themselves whether the overall benefits outweigh the negative impacts.

### The mouth of the Deben

The Knolls (a series of shingle banks at the mouth of the estuary) play a key role in the characteristics and behaviour of the Deben here, providing shelter for the estuary mouth by absorbing wave energy. They are continually changing and care is required to navigate in and out of the estuary. Numerous small boats moor at Bawdsey Quay and the small passenger ferry plies between here and Felixstowe Ferry.

The benefits of the shelter provided by the Knolls are most evident at Felixstowe Ferry, where the Knolls, which normally extend southward from the Bawdsey frontage, provide protection further south along the Felixstowe Ferry frontage. The existing coastal defences here have been under severe pressure in recent years due to the arrangement of the Knolls during this time, resulting in a heightened risk of coastal flooding at Felixstowe Ferry.

Sea defences created along the coast include rock revetments and concrete walling, both present at Felixstowe Ferry and Bawdsey. However, defences such as rock armour (permeable defences made up of boulders and rocks) also impact upon the behaviour and alignment of the Knolls and have their own visual influences on landscape character.



### Military activity

Bawdsey Manor stands in a magnificent position on a Red Crag cliff. Built of red brick in Victorian Gothic style it is set within parkland and also includes extensive formal gardens, a large Victorian kitchen garden, and most notably, the 110-metre artificial cliff and rockery created by the Pulham factory. In 1936 Bawdsey Manor became a top-secret research establishment for the MoD and it was here that Sir Robert Watson Watt and his team developed the new RADAR technology into an operational system after early experiments at Orford Ness. It was here too that the first of the Chain Home Low towers was constructed as part of a series of radar stations that protected Britain during the Second World War. After the War, Bawdsey Manor remained in the hands of the MoD as a training school until 1994, when it was bought by the present owners.

This area is also notable for the high concentration of Martello towers – two on the southern shoreline which are inter-visible and form clear landmarks when looking back at the coast from the sea, and one which has since been lost, but the footprint of which forms part of the formal gardens at Bawdsey.

#### Highlights of this area

- Two Martello towers at the head of the estuary, which are visually interlinked and Scheduled Monuments
- Red Crag, Pleistocene geological formation. This fossil-bearing cliff is a Site of Special Scientific Interest (SSSI)
- Registered Park and Garden at Bawdsey Manor
- High scenic quality and extensive views out to sea and along the coast
- The Knolls – a globally unique and very dynamic ebb tide delta

**What is changing in this area?**

The impact of new coastal defences at East Lane is still uncertain, and there is a continued flood risk at Felixstowe Ferry. The ever changing Knolls are a particular feature – currently (2012) they are larger than they have been in living memory. Over recent decades they have extended and pushed the mouth of the Deben southwards past the Ferry, resulting in strong near shore currents which are eroding the base of the beach there. It is hoped that their size is a sign of instability and that a more direct, east facing entrance to the estuary will reform and remove this threat.

Cliff erosion means prehistoric land surfaces and artefacts as well as fossils are being revealed, and future coastal erosion will lead to the loss of farmland and historic features along the coast including the Martello towers. Recreational activities are also causing disturbance to wildlife and generating litter.

There is also the possibility of significant impacts from the cabling needed to support offshore windfarm development on sea banks in the future, at Cutler Bank and Bawdsey Bank.

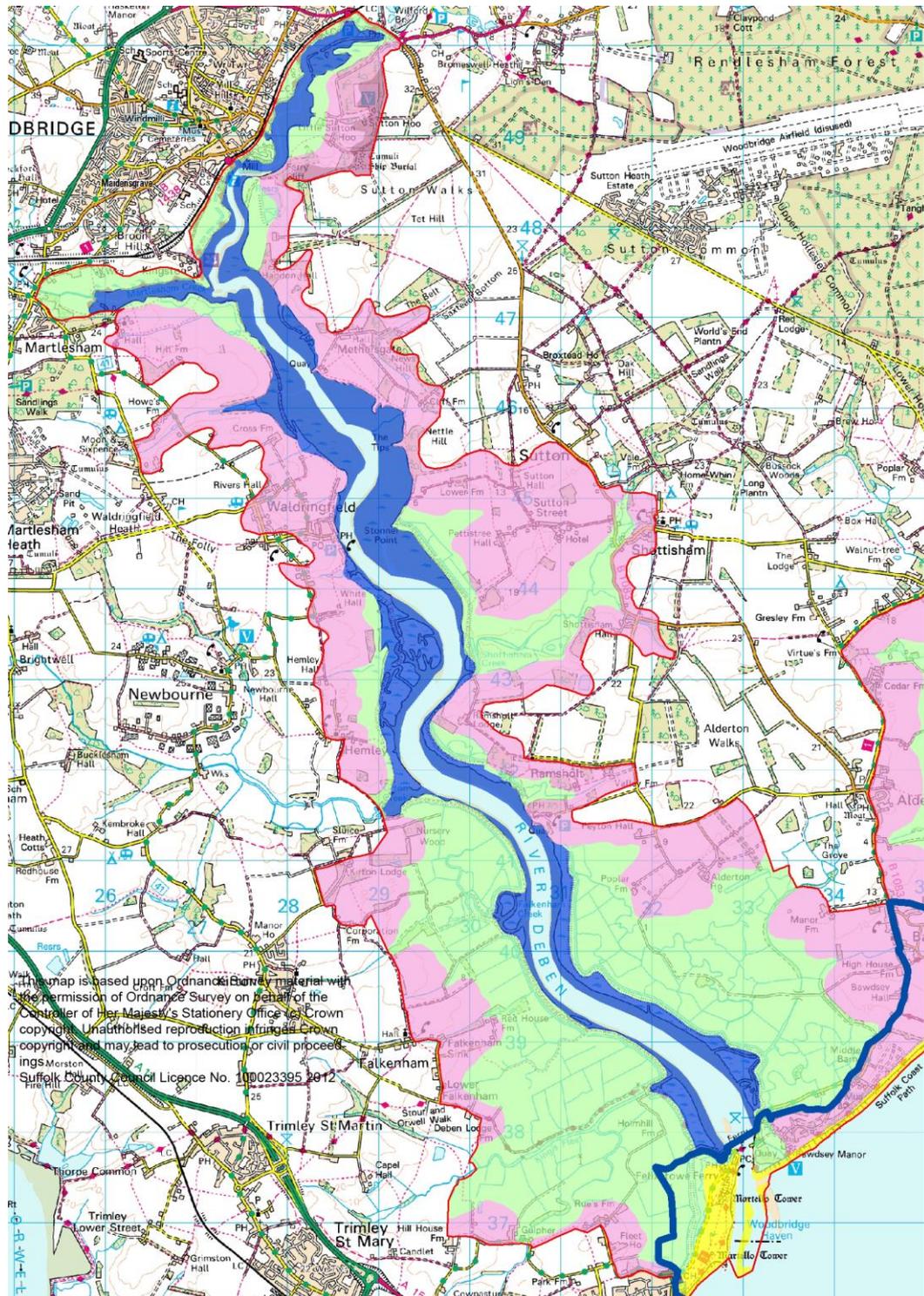
**How should we manage the change?**

- Protect open views along the coast.
- Manage parkland trees at Bawdsey, especially skyline trees and Scots pines.
- Plan to explore and interpret past landforms and coastal change through opportunities presented by the cliffs at East Lane.
- Plan for increased access to and interpretation of Martello towers.
- Plan to use the new East Lane coast defences to illustrate the costs and benefits of potential responses to future coastal changes.
- Plan the development of a military history trail connecting Felixstowe with Orford Ness and Orford and Alderton Coastal Character Areas, including evidence from the Roman period, WWII and the Cold War.

### 3.9 Deben Estuary

This area is defined by the River Deben, which is fringed by intertidal mudflats. The valley sides comprise gently rising topography, often well wooded. Woodbridge sits at the head of the estuary.

In the Deben estuary area, the landscape is made up of saltmarsh and intertidal flats backed by coastal levels with valley sides comprising rolling estate sandlands.



### **What makes the Deben estuary special?**

This is a tranquil and sheltered, narrow, sinuous and often intimate estuary landscape, where it is easy to experience a feeling of solitude. Well-defined sandy valley sides, which boast commanding views across the estuary, flank the river channel and multiple tributaries feed in through narrow creeks. Saltmarsh and mudflats formed through unplanned breaches during the 20th century, especially after the 1953 floods, extend to the edge of the valley sides and there are areas of drained marshes closer to the estuary mouth, supporting predominately arable land use and also forming an important habitat for birds. The valley sides support arable farming, with fields divided by hawthorn hedges, hedgerow oaks and pine shelterbelts.

A key feature of the Deben estuary is its relatively narrow extent and sinuous form, weaving around defined promontories of land. This leads to scenic and ever-changing views up and down the estuary. Views of Scots pine on promontories and areas of shallow cliffs, where the river has undercut the banks into the Red Crag geology, are characteristic of this area. A woodland skyline is also a common feature, reflecting the significant areas of woodland on the sandy farmland to the north beyond the estuary itself.

This is an outstanding area for nature conservation, with Special Protection Area (SPA), Ramsar (site for the conservation of wetlands) and Site Of Special Scientific Interest (SSSI) designations. The estuary comprises some 40% of Suffolk's saltmarsh.

Sutton Hoo, a Scheduled Monument, and famous Anglo Saxon seat of power, sits at the head of estuary. Close by, the historic port of Woodbridge stands out in an otherwise dispersed pattern of hamlets along the valley sides. The estuary is valued for boating and recreation, and boats moored in the channel are a common feature of the river view.



### **The river and its environs**

The course of the Deben River has been manipulated over the centuries for purposes of navigation as well as flood defence. Today, the Deben is notably constrained by flood defences over its lower section, but distinctively free in its upper reaches, except where tributary valleys have been encapsulated by flood defences. The upper reaches have a relatively natural development of salt marsh, which contrasts with the expansive areas of grazing marsh, and in places arable land use, along the lower reaches. The result is open fields which sweep down from the valley slopes into the drained valley floor, creating an open and expansive landscape across Bawdsey Marshes to the north and Felixstowe Marshes to the south. It is here that a real sense of remoteness can be felt. The flood defences along the river often conceal the water channel from view, leaving the openness of the grazing marsh and arable land with its trickling streams and birdsong to epitomise the peaceful estuarine landscape.

Further inland, where the river defences are less constraining and have failed in places, there is evidence of inundation, with areas of saltmarsh and mudflat habitat recreated. The area south of Waldringfield is a good example of this. Here, dead oak trees along the estuarine shore illustrate the sudden change in salinity.

### **Settlement**

A dispersed pattern of clustered hamlets and villages peppers the valley sides. Waldringfield, Martlesham Creek, Ramsholt and others are largely hidden from view, but may be picked out by the clusters of boats anchored midstream in the estuary. Although these settlements sometimes have churches, their towers are not landmarks in the wider landscape, often remaining hidden from view until coming upon them.

At the head of the estuary is the larger historic settlement of Woodbridge. This market town was once a major ship-building town, providing ships for the English fleet fighting the Spanish Armada in 1588. Smugglers also used the town to land their stolen goods; folklore and stories abound. The majority of the town is included in a conservation area. The historic quay, with its white clapperboard malting buildings and particularly Tide Mill, set against a backdrop of sailing vessels moored there, is iconic, making a significant contribution to the character and focus of this part of the estuary.

### **Sutton Hoo**

On the opposite side of the river from Woodbridge lies the Anglo-Saxon cemetery of Sutton Hoo, dating to the 6th and early 7th century. It comprises two cemeteries, the first containing an undisturbed ship burial including a wealth of Anglo-Saxon artefacts of outstanding art-historical and archaeological significance. The quantity and completeness of the finds, their far-reaching connections, and their quality and beauty are exceptional. But there is also rich historical meaning in the two separate cemeteries, their position in relation to the Deben estuary and the North Sea, and their relationship to other sites in the immediate vicinity. The raised burial mounds of the first cemetery are visible rising slightly above the horizon of the hill-spur when viewed from the opposite bank. The second cemetery, which was discovered more recently during the construction of the new Exhibition Hall, had remained undiscovered because its mounds had long since been flattened by agricultural activity.

Sutton Hoo is of primary importance because it sheds light on a period of English history that is on the margin between myth, legend and historical documentation. It has been vital in understanding the Anglo-Saxon Kingdom of East Anglia and the whole early Anglo-Saxon period.

#### **Highlights of this area**

- High scenic quality derived from relatively narrow twisting estuary, Scots pine promontories and pattern of landuse on the valley sides
- Stillness, tranquillity and the slow pace of recreational sailing boats on this estuary are distinguishing characteristics
- Outstanding area for nature conservation – Deben estuary SSSI, SPA and Ramsar
- Marshes adjoining the mudflats – Corporation Marshes, Ramsholt Marshes and Lodge Plantation, Shottisham Creek – are of ornithological value and designated County Wildlife Sites (CWS)
- Meadows within tributaries are of value for their mosaic habitat (many different habitat types) and are designated CWS, notably Cliff Farm Meadows and Nettle Hill Wood
- Sutton Hoo is the most significant Anglo Saxon burial site in the UK
- The Tide Mill at Woodbridge is the only survivor of its kind in Britain, built in 1793 and now restored
- The saltmarsh and intertidal mud represent the most complete range of saltmarsh habitat/community types in Suffolk
- The productive farmland, particularly that towards mouth of the estuary, has considerable economic value

**What is changing in this area?**

Habitats have been altered through inundation of seawater, largely due to unmanaged historical breaches. Footpaths along the estuary and flood defence banks are also being lost due to breaches and inundation.

The low-lying marshes are very vulnerable to rising water levels and there is some loss of saltmarsh habitat due to coastal 'squeeze'. The drainage of coastal marshes to create productive agricultural land has also put further pressure on saltmarsh habitats.

The development of tall structures outside of this Study Area may have an adverse visual and landscape impact on this estuary, as views are so far-reaching.

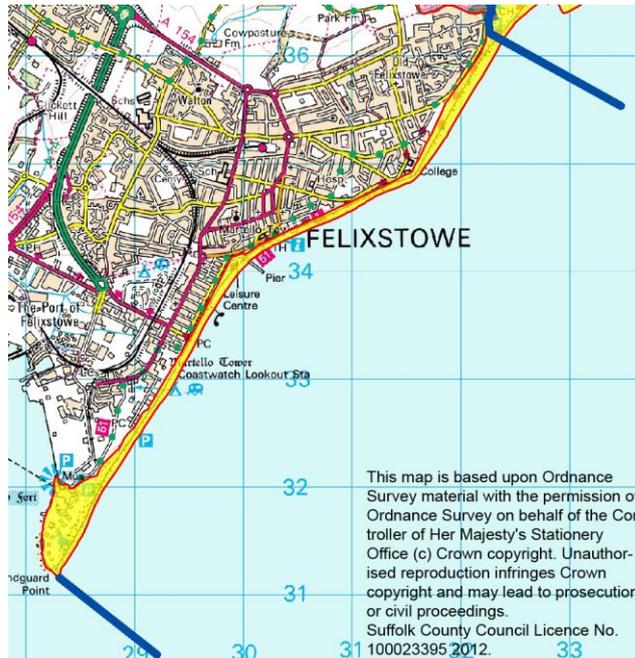
**How should we manage the change?**

- Protect the strong sense of tranquillity within the estuary and avoid inappropriate recreational development or development beyond the estuary which may have a significant visual impact affecting perceptions of the area.
- Protect the pattern of hedgerow oaks on the valley sides through appropriate management of trees and encourage the planting of new hedgerow trees.
- Protect the pattern of woodland on estuary valley sides, including wooded horizons and groups of Scots pine on headland promontories.
- Manage areas of arable farmland where reversion to grazing marsh is not desirable; restore features such as ditches, dykes, and hedgerows and ensure their continued value as important feeding and roosting areas for waterfowl species.
- Manage small wet grassland areas adjacent to the estuary, which are an important supporting habitat to the SPA, although not designated.
- Manage and maintain river walls and other estuarine flood defences.
- Plan to restore saltmarsh especially where scour from historical damage to sea walls has damaged the vegetation.

### 3.10 Felixstowe Sea Front

This area is defined by the coastal edge of Felixstowe between the Deben and Orwell estuaries and comprises shingle and sand beach backed by shallow cliffs (often urbanised) and the built up areas of Felixstowe. To the south is the Landguard Peninsula, jutting into the mouth of Harwich Harbour.

The Felixstowe Sea Front area is made up of coastal dunes, shingle ridges and urban development.



#### What makes Felixstowe Sea Front special?

This is a strongly urbanised coastal landscape associated with seaside town and port of Felixstowe, mixing a busy urban character with the feel of the open sea. Its architecture reflects the town's heyday at the turn of the 19th and early 20<sup>th</sup> centuries, with street lighting, a promenade and a pier. Victorian villas flank the seafront gardens between Cobbold's Point and Manor End, while the narrow, sandy/shingle beach at The Dip is divided by long wooden groynes.

Landguard Peninsula is home to Landguard Fort, a Scheduled Monument, and is also a nature reserve. The peninsula offers extensive views out to sea and of

container ships and passenger ferries arriving and departing from the Felixstowe Port and Harwich respectively.

#### An urbanised landscape

This is a coastal landscape which has been significantly altered by the growth of a seaside resort. It has been strongly urbanised and has a focus on seaside recreation. The coastal strip comprises areas of sand backed by shingle with sea defence structures ranging from concrete walls to wooden groynes that stretch out to sea and visually break up the line of the coast. There are quiet beaches at The Dip and Brackenbury and a more traditional promenade, formal seafront gardens and pier between Cobbold's Point and Manor End, flanked by classic seaside Victorian villas and lines of painted beach huts. The pier is long and supported by a plethora of thin columns, and has a rather deserted appearance.

#### Views

Views in this landscape are focused out to sea. In the near distance, sailing boats show white sunlit sails against the grey clouds on the horizon, while, in the distance, huge container ships and passenger ferries can be seen making their slow progress out to sea or into Felixstowe/Harwich harbour/port. Views of the large cranes associated with Felixstowe port are also visible from parts of this area.

#### Landguard Peninsula

At the southern end of this area is Landguard Peninsula. Landguard Fort was built here in the mid-16th century and has been adapted and modernised several times, most recently during WWII. It is now a Scheduled Monument. Located at the tip of the headland overlooking the mouth of the Stour, it has a commanding position and the spot is valued for bird watching and

observing ships as they enter and leave Felixstowe container port. The windswept shingle spit at the tip of the peninsula is also a nature reserve, an important habitat for rare plants and migrating birds.



#### Highlights of this area

- Landguard Fort is a Scheduled Monument and has associated earthworks
- Landguard Common on the peninsula is a Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSSI), valued for its pioneer shingle plants, vegetated shingle and breeding sites for shoreline birds
- Felixstowe conservation area flanks much of this coastal area and contributes to its sense of place and character
- Felixstowe has five remaining Martello towers, two converted to residential properties
- Archaeological evidence of early settlement of the area, with Beaker period finds at Chepstow Road and remains of Roman walls belonging to a Saxon Shore Fort, which are now eroded into the sea

#### What is changing in this area?

Sea defences on the urban beachfront have been restored and updated, combined with other improvements resulting from seafront regeneration projects. A dedicated ranger manages the Landguard Peninsula and signage for the area is improving, with more interpretation of cultural and wildlife subjects. However, pressures from recreational activity and dog walkers means there is some disturbance of fauna and flora.

Felixstowe port is undergoing expansion, resulting in increased shipping activity and also greater visual dominance in the landscape. There are also increasing offshore wind farm developments.

#### How should we manage the change?

- Protect the visual integrity of the promenade sea front and avoid inappropriate new development.
- Protect the area on Landguard Peninsula from *ad hoc* urbanising influences such as unnecessary unplanned signage, so it has a more natural character.
- Manage areas that are important for shoreline birds and vegetated shingle areas through controlled access.
- Plan to provide access to one of the Martello Towers along the seafront as part of the overall promenade restoration effort, and use it as a focus for interpreting the wider history of Felixstowe's development.
- Plan for the regular removal of inorganic litter from the strandline through community action and involvement.

## 4.0 Looking Forward

### 4.1 Contributing to Touching the Tide Special Initiatives

4.1.1 The previous section has divided the Touching the Tide Study Area into areas of distinctive coastal character. This section takes a look at how an understanding of the different character areas can help shape and direct initiatives developed and taken forward by the TtT Partnership. It is anticipated that the landscape character assessment and in particular the Coastal Character Areas form a framework for the development of special initiatives within the Study Area which celebrate the distinctiveness of the individual landscapes identified and the processes which shape them.

4.1.2 Although this assessment will help to provide context and an important evidence base for initiatives identified and taken forward as part of the TtT Partnership it will be relevant to other organisations engaged in the conservation and management of the area including the Suffolk Coast and Heaths AONB and estuary partnerships.

### 4.2 Themes for Consideration

4.2.1 All Landscape Partnership Schemes such as Touching the Tide must have a suite of projects addressing four standard themes:

- Conserving or Restoring the heritage
- Increasing Community Participation
- Access and Young People
- Training and Skills

4.2.2 Initiatives may not be limited to one theme but may address a number at the same time. To date a range of different initiatives have been identified by the TtT partnership including the following:

- Restoration and enhancement of the natural and historic heritage – this focuses particularly on some of the most iconic elements identified in this Landscape Character Assessment; the natural habitats of saltmarsh, reedbed, coastal grasslands, shingle, and the historic legacy of the Martello Towers.
- Bringing together different understandings of the area – social, political, and geographical – by encouraging people to take a wider view of the Suffolk Coast (not just the areas they already know well) and to appreciate the way that coastal change has shaped this coastline over millennia. For instance, the story of the lost city of Dunwich is one with many lessons for current coastal defence planning.
- Involving more people in the heritage, using hands on arts and archaeological events as well as more formal learning to increase levels of knowledge and understanding.
- Using stories, particularly stories about local people, to impart a sense of the historical landscape history. This is a coast that has always been shaped by man and nature and which cannot now be fixed in space and time without damaging the very qualities that make it special.

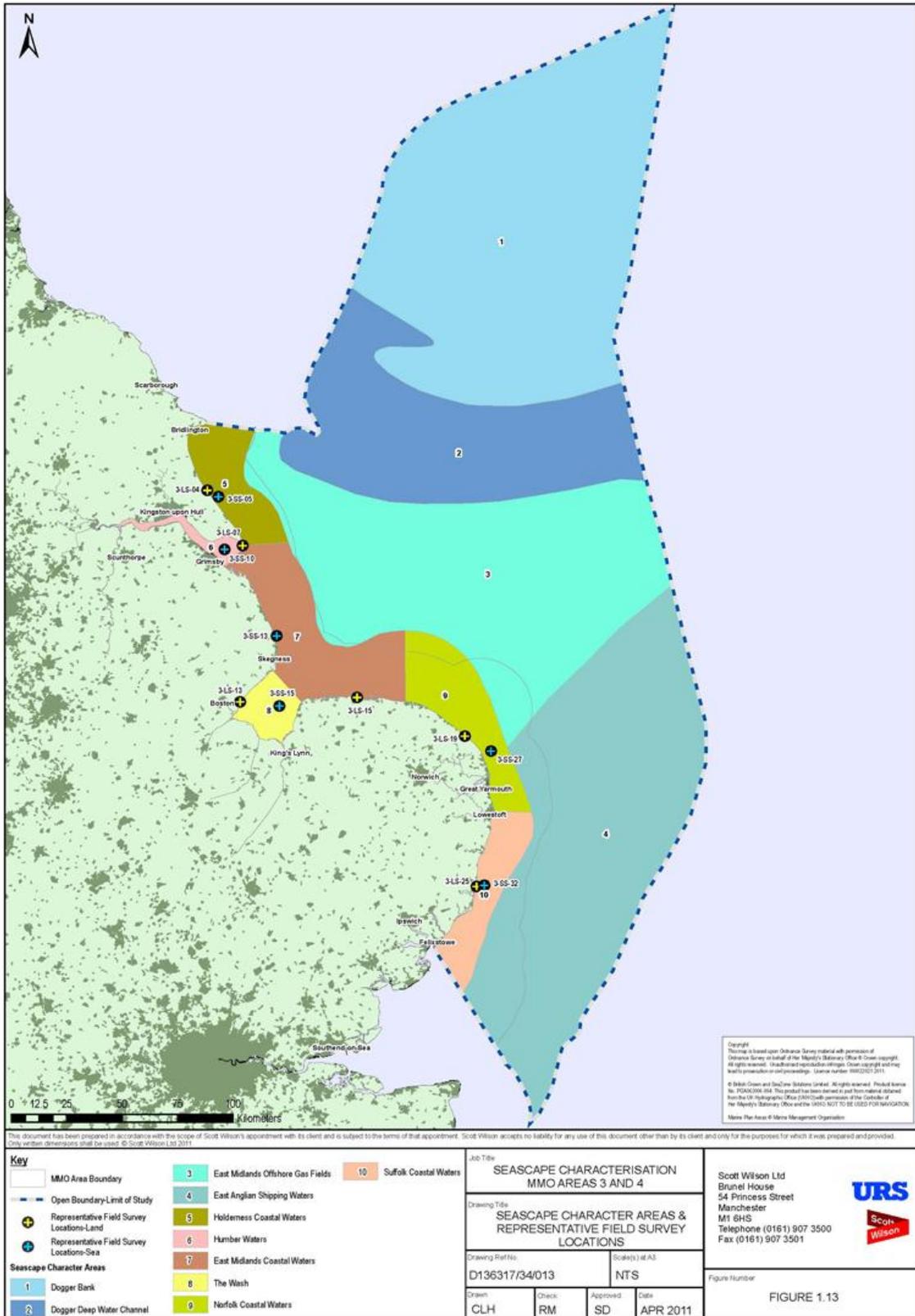
4.2.3 Perhaps the greatest challenge facing this particular landscape is the need for society at large to come to terms with the nature of coastal change. At a time of rising sea levels and storm surges it is increasingly apparent that the fixed defences built after the 1953 floods cannot be sustained indefinitely. There is however a natural resistance to accepting, let alone celebrating change, partly because of the homes and livelihoods at risk from the sea but also because of a lack of knowledge about the

inherently dynamic nature of this coast. Inevitably change threatens what is currently valued but it also creates what will be valued into the future.

Suffolk leads the UK in community led coastal management but there is still a need to build wider credibility and engagement in the decisions that the Estuary Partnerships must take. A key objective for Touching the Tide is to support this process by increasing the levels of understanding of coastal change, empowering more people to play an active and informed part in the decisions that have to be made about how to adapt to the challenges ahead. By celebrating the characteristics that give rise to distinctive and special coastal areas, the TtT project aims to achieve this in a non confrontational and non partisan way. The success or failure of Touching the Tide in protecting the unique landscapes along this stretch of coast will lie in the extent to which it succeeds in achieving increased awareness and engagement, far more than in any direct physical legacy. This coastal landscape will change; Touching the Tide aims to ensure it changes for the better, and is not destroyed by either neglect or excessive intervention.

### Appendix 1: Extract from Seascape Pilot Study

(Taken from appendix 1: Character area map (URS Scott Wilson Report, Figure 1.13)



This URS Scott Wilson report was completed in March 2011. It comprised a pilot study to undertake a seascape character assessment at a strategic scale for the Marine Management Organisation's marine plan areas 3 and 4 and part of 6. The work was commissioned by Natural England, and resulted in the identification of 10 character areas and associated key characteristics. The key characteristics for Character Areas 4 and 10 are relevant to this landscape character assessment for Touching the Tide and have been repeated here for information and background.

#### **Character Area 4 – East Anglian Shipping Waters**

##### **Key characteristics**

- Dense concentration of shipping activity.
- Consistently deep water between 20 and 50 metres.
- Designated shipping routes.
- Visually unified and expansive open water character with few surface features.
- Large areas designated for Round 3 wind farms.
- Extensive offshore commercial activities such as fishing and dredging.
- Large military practice area.
- Wind farm developments and gas fields.

#### **Character Area 10 – Suffolk Coastal Waters**

##### **Key characteristics**

- Suffolk Coast and Heaths Area of Outstanding Natural Beauty and heritage coast designations recognise a rich mixture of unique and vulnerable coastal lowland landscapes.
- Low-lying coastline dominated by coastal processes and estuarine influences.
- Unified coastal interface with a nationally significant concentration of vegetated shingle structures and coastal lagoon habitats.
- Colourful seafront coastlines lined by brightly painted beach huts.
- Steeply sloping shelved shingle beaches.
- Prolific wildlife value, particularly bird life.
- Dramatic and contrasting developments such as Sizewell nuclear power station, Orford Ness transmitting station and commercial dock development at Felixstowe.
- Historically heavily defended coastline.

## Appendix 2: Nature Conservation Designations

### National Designations

#### Sites of Special Scientific Interest (SSSIs)

SSSIs are a representative sample of the United Kingdom's finest wildlife and geological sites and support our most characteristic, rare and endangered species, habitats and geological features. The purpose of SSSI designation is to safeguard our remaining natural heritage for future generations, often by protecting plants and animals that struggle to survive in the wider countryside. Areas designated as SSSIs are extremely varied and can include land that is either privately or publicly owned. Consequently, some SSSIs are inaccessible but, on others, the public are welcomed and these sites provide wonderful opportunities for people to enjoy and appreciate nature. In the Study Area they include some of the UK's most spectacular and beautiful habitats - large wetlands teeming with waders and waterfowl, gorse and heather-clad heathlands and windswept shingle beaches.

#### National Nature Reserves (NNR)

The legislation that created our National Parks and AONBs (the National Parks and Access to the Countryside Act 1949) was also responsible for creating our National Nature Reserves. This protection was strengthened by the Wildlife and Countryside Act of 1981, giving NNRs the highest level of protection under UK legislation. NNRs are usually chosen because they represent the best examples of particular wildlife habitats and, as the name suggests, are consequently of national importance. Those in the Study Area include some of the most interesting and beautiful parts of the AONB: Benacre NNR, Suffolk Coast NNR (including Dingle Marshes, Hen Reedbeds and Walberswick) and Orfordness and Havergate Island NNR. All of these sites have significant access restrictions,

### European Designations

#### Special Areas of Conservation (SAC), Special Protection Area (SPA) and European Marine Site (EMS)

SACs are sites that have been given special protection under the European Union's Habitats Directive. Together with Special Protected Areas (SPA - see below), they form a network of protected sites across the European Union called collectively "Natura 2000 sites". Compared with other designations SACs tend to be large, often covering a number of separate but related sites. They provide increased protection for rare, endangered or threatened flora and fauna (but not birds, which are covered by SPAs) and are a vital part of efforts to conserve the world's biodiversity. In the UK, all terrestrial SACs and SPAs are based on SSSIs but, unlike them, can stretch beyond the low tide mark, into the marine environment - indeed, some are almost entirely marine. In planning terms, SACs and SPAs are afforded the very highest level of protection - higher than an SSSI. In the Study Area the following sites are SACs: The Alde, Ore and Butley Estuaries, Benacre to Eastern Bavenets, Minsmere to Walberswick, and Orfordness and Shingle Street.

Special Protection Areas are designated under the European Union's Directive on the Conservation of Wild Birds (the "Birds Directive"). Member states have a duty to safeguard the habitats of migratory birds and certain other particularly threatened species. The SPA designation is usually added to sites that have already been designated at a national level. Thus, in the UK, SPAs can be made up of one or more SSSIs and include the Alde and Ore estuary (including Orfordness and Havergate Island), Benacre to Eastern Bavenets, the Deben estuary, the Minsmere to Walberswick area and the Stour and Orwell Estuaries, all located within the Study Area.

Where an SPA or SAC incorporates sub-tidal and/or intertidal areas, it is also referred to as 'European Marine Sites' (EMS)

The main requirements for Natura 2000 sites is that:

- the sites should be managed in 'favourable conservation status' for species specified in the designation
- steps shall be taken to avoid the deterioration or disturbance of habitats and species
- activities, plans and projects that are likely to have an impact on the features for which the site is designated shall be subject to formal assessment
- a programme of monitoring of each site's key habitats and species shall be undertaken
- management of the site shall take account of the economic, cultural, social and recreational needs of local people.

### **Other International Designations**

#### **Ramsar**

The Ramsar Convention is an international treaty for the conservation and sustainable use of wetlands, signed in Ramsar, Iran, in 1971. Its full title is The Convention on Wetlands of International Importance, especially as Waterfowl Habitat. Over the years the Convention has broadened its scope to cover all aspects of wetland conservation, recognising their importance both as ecosystems that are important for natural biodiversity and for the well-being of human communities. There are over 1500 Ramsar sites throughout the world and the UK has been a particularly strong supporter of the Convention, designating over 160 sites. Ramsar sites in the Study Area include: the Alde-Ore estuary (including Orfordness and Havergate Island), the Deben estuary, and Minsmere to Walberswick.

### Appendix 3: Landscape Character Types

Eight Landscape Character Types (LCT) have been identified within the Study Area and are described below and illustrated on drawings 1 to 3. Of these eight, there are four which account for the majority of the landscape in the Study Area namely Coastal Dunes and Shingle Ridges, Saltmarsh and Intertidal Flats, Coastal Levels, and Estate Sandlands. The other four are subsidiary and comprise smaller areas namely Open Coastal Fens, Wooded Fen, Rolling Estate Sandlands and Valley Meadowlands.

The descriptions utilise information from existing character assessments and in particular that of the Suffolk County Typology. The key characteristics set out what is typically found within the landscape type. This is followed by more specific written descriptive text based on the Suffolk County typology but developed and refined to reflect the character of the landscape within the Study Area.

Whilst the LCTs repeat across Suffolk, it is notable that within the Study Area Estate Sandlands form the dominant inland landscape fringe to the coast in the north, whereas in the south it becomes Rolling Estate Sandlands. In addition the Wooded Fen and Open Coastal Fen types occur only in the northern half of the study area while Valley Meadowlands occur only in the Alde estuary.

## Key Landscape Character Types

### Coastal Dunes, and Shingle Ridges

#### Introduction and Location

This is a low lying, dynamic landscape of sand and shingle ridges sometimes backed by low crag cliffs which form the outward 'land edge' facing the North Sea. This is a narrow landscape type, in the north comprising a sandy beach which on reaching Dunwich has become increasingly dominated by shingle to form a steeply raked ridge. It occurs all along the coast and is at its broadest at Orford Ness. South of Felixstowe Ferry there is a small area of coastal dune which has been developed as the Felixstowe Ferry Golf Links.

#### Key Characteristics

- Coastal edge adjacent to open expanse of sea
- Gently sloping sandy beach or steeply raked pebble ridges or terraces
- Warm tones of blue, orange, black and grey reflecting the geology of the Sandland landscapes inland
- Dynamic landscape exposed directly to coastal processes of erosion and deposition
- Low, fragile, flower-rich marine vegetation on the finer single ridges
- Historic military structures including Martello towers and World War II defences
- Beach huts, boats and fishermen
- Coastal settlements of Southwold, Aldeburgh, Walberswick and Felixstowe about this landscape
- Pockets of 20th century tourist related activity - beach huts, piers, golf course
- Some areas of coastal defence structures - groynes and concrete blocks
- Strong ephemeral character due to tidal movement, reflected light and influence of the weather
- Vast, open and uncluttered landscape which often feels remote, wild and windswept
- Views inland contained by low cliffs, rising shingle bank/ridge or urban area
- Strong visual association with the open sea including changing weather conditions, shipping and water recreation activity
- Distinctive sound of the waves as they break or 'scrunch' on the pebble ridges

#### Physical/Natural

This Landscape Character Type mainly comprises shingle ridges with a smaller area of sandy beach in the north and coastal dunes around Southwold and in the far south of the study area. The pattern and distribution of material along the coast is formed by wave action eroding the estate sandland landscape and transporting the sediments along the coast by the process of longshore drift. At Orford Ness a succession of shingle ridges has coalesced to form a broad and very flat plain which extends into a shingle spit. The spit has been developing since Middle Ages although its nose or ness is known to have been more prominent in the past and been lost since 1601.

There is essentially no soil on the shingle, creating extremely arid and salty conditions, difficult for plants to colonise. Over time wave action sorts the stone and ridges of finer material occur which are most readily colonised by plants including the sea pea, yellow horned poppy and sea kale.

#### Historic and Cultural

Much of this landscape type feels relatively wild, divorced and separate from areas of human influence and activity. This changes adjacent to the coastal settlements where houses appear to rise out of the shingle banks or where features such as colourful beach huts, wooded groynes, coastal promenades and piers add colour and interest and break the unremitting sweep of shingle beach.

Scattered throughout this landscape type are also military features reflecting former military defence activity. From 1809 a string of Martello towers was built along the coast as a defence against Napoleon - many of these towers still stand and form squat landmarks from Shingle Street to Felixstowe. The two World Wars of the 20th century also left behind large numbers of structures along the coast including concrete gun batteries, pillboxes and anti-tank blocks. There is also the vast and complex range of Cold War military buildings at Orford Ness, including the Cobra Mist building and the World Service transmitter array.

Large built structures such as Sizewell power station and the presence of holiday settlements such as Southwold, Aldeburgh and Felixstowe, which lie inland of this landscape, can also have a profound effect on the character of the area.

#### **Past and Current Processes and Change**

- Continued coastal erosion and long shore drift/deposition altering the composition, width and location of this landscape
- Rising sea levels and coastal squeeze may be exacerbated by the effects of climate change resulting in faster coastal erosion and changes to shingle ridges/spit
- Development of coastal sea defences including groynes
- Development of beach huts and piers and urbanisation of beach in places
- Disturbance of shingle causing matrix of plant roots and fine gravel to break down resulting in vegetation loss on the shingle
- Decline in fishing industry leading to a changing economic character and reducing activity within this landscape
- Recreation development including car parks, golf courses, caravan parks are impacting upon the remote character of this landscape

#### **Future Management Needs**

- Protect the habitat value and integrity of this landscape, minimising disturbance to the vegetated shingle from visitors and works machinery where possible using signage, discreet temporary fencing and access management
- Protect and maintain the historic features associated with this landscape, including the military features and coastal defences which illustrate the human relationship and cultural/ historic values of this landscape
- Protect the remote character of this landscape from development off-shore which may undermine its sense of scale and isolation
- Manage the remote and open character of this landscape and ensure that this wildness is not further impacted by urbanisation, such as fencing or domestic gardens
- Manage and enhance opportunities for recreation and access: Maintain access to and along the coastal path
- Manage the vegetation matrix by allowing bare ground to vegetate naturally or through the use of locally native seed mixes. Do not use standard amenity or commercial grass mixes
- Plan for future landscape retreat or change associated with the dynamic, changing coastline
- Plan for future flood defences where required. Where possible the flood defence should be managed naturally and artificial defences should be minimised and when needed should be sensitive to the character of the area
- Plan future car parking facilities which are in keeping with the surrounding landscape, located and designed in a manner which will reduce their visual impact and erosion risk and are screened
- Plan for the celebration/recording of landmark features which are lost to the sea through coastal erosion
- Plan for the regular remove inorganic litter from the strandline through community involvement/action

## Saltmarsh and Intertidal Flats

### Introduction and Location

Saltmarshes and intertidal flats are the tidal areas found within the estuaries along this coastline and subject to the saline influence of the sea and varying periods of inundation each day. Human intervention over many centuries has reduced the extent of estuaries restricting them within miles of man-made walls, which separate them from the surrounding land. Where inundation is infrequent within the intertidal area, specialist salt marsh plants and reeds thrive. Where inundation is more frequent, and especially where the tidal action is erosive, few plants will survive and open mudflats predominate. As a result the extent and distribution of saltmarsh and mudflats is in a state of flux.

This Landscape Character Type exists as small areas throughout the Study Area along the estuaries of the River Blyth, River Alde, between Orford and Orford Ness, and along much of the River Deben.

### Key Characteristics

- Intertidal or littoral zone adjacent to inland stretches of water away from the coast
- Marine alluvium with outcrops of clay, forming mud flats between mean high water to mean low water spring tide lines
- Flat, open landscape where saltmarshes and mudflats are dissected by meandering creeks and rivulets
- Often backed by manmade sea defences or reclamation land
- Sinuous banks of former flood defences snake across inundated areas of saltmarsh or mudflat
- Open areas of mud are alive with wading birds at low tide, providing movement and interest in an otherwise deserted landscape
- Birdsong and running water are common sounds of this landscape
- Colours are muted and texture varied
- A wild, unsettled and unimproved landscape with a powerful sense of isolation
- Little obvious human influence except where yachts pepper mudflats at low tide
- Dead trees and decaying habitat where inundation of salt water has destroyed plant communities
- A constantly changing landscape - shining mudflats and reflective water
- Wide views across this landscape to open water and rising estuary valley sides
- Limited to no visual connectivity to the open sea
- Important for archaeological artefacts preserved by anaerobic muds
- Former Roman saltworkings and remnants of the later oyster industry are evident

### Physical/Natural

The majority of this landscape comprises marine alluvium and some outcrops of clay forming mudflats with only a few comparatively small areas of saltmarsh. The saltmarsh consists of inter-tidal flats dissected by creeks and covered with low vegetation consisting principally of cord grass and samphire with sea lavender and sea purslane. These marshes extend from the intertidal zone, where salt tolerant plants can survive, through reed beds to dry land marked by a line of trees.

This Landscape Character Type supports a range of specialist biodiversity and is an important resource for wading birds. This value is highlighted by the number of nature conservation designations covering the Landscape Character Type: Deben estuary Ramsar and SPA; Orfordness-Havergate National Nature Reserve and Alde-Ore estuary Ramsar and SSSI sites.

### **Historic and Cultural**

There is no visible enclosure pattern in this unsettled landscape. Remnants of human exploitation range from saltworkings, former fish traps and the oyster industry to causeways and flood defence banks as well as the occasional ship wreck.

Where there are small quays or jetties associated with settlement on the slopes of the estuaries then clusters of boats on swinging moorings are common and along with the occasional passing sailing boat give a feeling of activity.

### **Coastal Processes and Change**

- Other than at Orford Ness, remnant saltmarsh has been affected, and will continue to be affected, by coastal squeeze and associated erosion
- This is an important sailing area, especially the Deben and Alde-Ore estuary, with extensive moorings and boatyards contributing to the local economy
- Recreational land uses such as marinas, moorings and bait digging create pressures on the fragile habitats which are already under threat from the dynamic nature of this landscape
- Areas which have become inundated may contain former sea walls which create distinctive patterns across mudflats and salt marsh habitats

### **Future Management Needs**

- Protect the saltmarsh habitat: ensure that adjacent land uses do not impact negatively on this resource and wherever possible maintain the coastal processes which enable the formation of this landscape type
- Protect the mudflat habitat and ensure that adjacent land uses do not impact negatively on this resource or cause disturbance likely to affect wading birds and other species which use this landscape
- Manage recreational use to avoid impacts on wintering and breeding waders, in particular by encouraging dog owners to keep their pets on the lead
- Manage the historical resource of derelict boats and old structures where they create a feature and provide cultural character in this unsettled landscape
- Manage the mudflat structure and minimise the impact of boat wash wherever possible
- Plan for the dynamic nature of this landscape by allowing a managed retreat of estuarine habitats onto adjacent land, behind sea walls when necessary or where the landowner desires
- Plan for the continued use of water channels for boating and recreation without loss of the special qualities and character of this landscape
- Plan for improved interpretation of estuarine habitats and changing extent of mudflats and salt marsh due to past reclamation and future inundation

## Coastal Levels (drained marsh)

### Introduction and Location

The Coastal Levels Landscape Character Type comprises drained/reclaimed salt marsh to form flat coastal grazing land which occurs behind sea and river walls where it is protected from inundation. This landscape has a number of differing characteristics depending on the period in which it was drained, resulting in either sinuous or more rectangular drainage patterns - some areas are managed as traditional grazing marshes while others have been further drained and improved for arable cultivation.

This Landscape Character Type exists throughout the Study Area at Southwold, Eastbridge and Thorpeness and the mouth of the River Deben. The largest stretch runs along the River Alde from Aldeburgh in the north to Bawdsey in the south.

### Key Characteristics

- Large scale, open, flat landscape adjacent to the coast and estuaries - land often at sea level or lower
- Marine alluvium soils and drift deposits of peat over Crag
- Former marsh which has been drained for grazing and cultivation
- Few trees and woodland at the edges on rising ground (carr woodlands or plantations)
- Occasional pools and muddy areas have been created to encourage more wetland birds to use the grazing marshes
- Cattle-grazed wet grassland predominates although there is also widespread modification of the hydrology for arable production
- Fields defined by sinuous and complex medieval dyke networks or uniform 19th century dyke networks which control stock in place of fencing
- Important wildlife conservation areas and ornithological value
- Long distance vistas punctuated by derelict wind pumps
- Other notable features include water towers and, masts of sail boats
- Former enclosure walls and military defence structures
- Unsettled landscape with some domestic buildings on the fringes
- Areas of adjacent open water are screened from view by flood defences
- Remnants of Roman salt industry
- Large-scale fields which join seamlessly with fields on the valley slopes of the estuaries give a expansive feel

### Physical/Natural

These landscapes consist of low-lying flat grazing marshes beside estuaries and coastal valleys. Underlying the marshes are alluvial deposits of marine origin. The predominant land use is agricultural (both grazing and arable in places) providing an important habitat for a range of bird species including lapwing, snipe, brent and white fronted geese and the marsh harrier. The drainage dykes play host to a range of plant species including lines of colourful flag iris.

### Historic and Cultural

Marshland reclamation began in the Middle Ages. In general, former coastal marsh which was drained pre 18<sup>th</sup> century results in enclosures which frequently have curvilinear boundaries and drainage ditches, often reflecting pre-existing channels and creeks. This pattern is particularly clear around Orford and John Norden's maps of 1600-1 confirm this early reclamation activity showing a complex pattern of irregular enclosures along the sides of the Ore, particularly in Sudbourne and Town (Orford) Marshes. Similar irregular patterns can be found at Bawdsey Marshes and Iken Marshes.

In contrast, former coastal marsh which was drained post 18<sup>th</sup> century or later usually was reclaimed through drainage and embankment and converted into farmland, usually pasture,

but also arable when conditions are suitable. The drainage pattern usually appears planned, with straight ditches or drains. Substantial sea banks normally protect the reclaimed land. Sluices and pumping mills frequently occur. The land may previously have been held in common and may have been subject to earlier reclamation attempts. This pattern is particularly clear at Reydon Marshes, Gedgrave Marshes and Falkenham Marshes.

Ancient settlement in this wet environment is limited to the edges of the marshes and to the islands of Rolling Estate Sandland within it: there are virtually no domestic buildings within the landscape.

### **Coastal Processes and Change**

- Substantial parts of this landscape type have been converted from grassland to arable farmland, leading to more intensive production methods
- Associated with arable conversion is degradation of the cultural pattern with the simplification of the dyke network and the subsequent loss of the medieval dyke network in places
- Grassland units are small and more influenced by the features of the landscape that surrounds them
- Grazing marshes have often been significantly drained which reduces their wildlife value. This is associated with a lack of grazing herds able to cope with the rougher and wetter marshes where wildlife value tends to be greater
- The reversion of agriculturally managed land to wildlife sites adds texture and wildlife value to this landscape, but usually at the cost of reduced income for the landowner
- Large-scale structures such as Sizewell and the Port of Felixstowe will have a continuing and significant visual impact on the character of this landscape type
- Sea level rise may cause inundation of this landscape and consequent loss or change of character
- Historically the distinction between former marshland and the valley slopes of the estuaries has been lost by drainage of these marsh areas for grazing
- Loss of visual distinction between valley sides and valley floor within estuaries

### **Future Management Needs**

- Protect the open character of this landscape by preventing development or woodland planting on the open grazing marshes: where essential, development should be located on the edge of the floodplain and should be well screened if appropriate
- Protect the open character by preventing development on the valley sides that would significantly impact on undeveloped character of this traditional landscape
- Protect the existing grazing marshes, with grazing by cattle to ensure a relatively short, well managed sward and encouraging an end to the conversion of grazing marsh to arable land
- Protect the existing dyke system and associated flora, particularly where the medieval dyke system is evident and manage with a high water level where possible
- Manage sympathetically and maintain traditional earth flood banks
- Manage wildlife value in this landscape by raising the water table where possible, encouraging winter flooding and scrapes in winter
- Manage the open landscape by limiting fencing and relying on the dyke network to act as stock barriers
- Plan for the enhancement of biodiversity through de-intensifying management and returning arable farming to less intensive grazing or saltmarsh land uses through controlled inundation of saltwater in some places
- Plan for the continuation of the woodland elements (wet woodland and plantation woodland) of this landscape. Carr woodland is most appropriate and can regenerate naturally in suitable locations, plantation woodlands should only be created if appropriate as its ecological value is more limited. Ensure woodland is encouraged at the break between the grazed land and rising slopes of the valley sides

- Plan for the extension of wetland habitats inland along river valleys/tributaries to compensate for loss within Coastal Levels as a result of sea level rise and salt water ingress

## Estate Sandlands

### Introduction and Location

The Estate Sandlands Landscape Character Type is a farmed landscape of acidic, sandy and free-draining soils giving rise to large geometric fields, plantation woodlands and areas of remnant heathland. Today the area is of considerable commercial value, particularly for vegetable growing but this is very dependent on irrigation.

The Estate Sandlands are a flat or gently undulating landscape running along much of the length of the Suffolk coast and extending inland beyond the Study Area. Within the Study Area, this Landscape Character Type exists mainly north of the River Alde forming a backdrop to the estuaries and valley fens and in places extends as far as the coast forming low sandy cliffs.

### Key Characteristics

- A flat to very gently rolling plateaux of free-draining sandy soils, overlying drift deposits of either glacial or fluvial origin
- Absence of watercourses
- Land use comprises mixed farmland, extensive heathland/ acid grassland, gorse scrub and birch pioneer woodland, Scots pine lines and isolated blocks of coniferous plantation
- Dead or dying trees at coastal margins due to coastal erosion and fall in water table
- Wide grassy banks and verges to roadside hedgerows containing gorse and bracken
- Strong geometric structure of fields enclosed by hedgerows and pine lines in the 18th & 19th century
- Buildings constructed from red brick with pan-tiled roofs, often black-glazed
- Views are often framed by the density of field boundary vegetation, with mature Scots pine line forming prominent skyline elements
- Indivisibility with Wooded Fen valleys
- Tranquil, sparsely settled landscape, with settlement confined to the hamlet of Covehithe or coastal resorts/villages e.g. Southwold, Walberswick, Dunwich, Sizewell, Thorpeness, Aldeburgh and Orford

### Physical/Natural

All the parts of this landscape type consist of flat or very gently rolling plateaux of freely-draining sandy soils, overlying drift deposits of either glacial or fluvial origin, uniformly acid and sandy consisting mainly of relatively soft formations known as Crag – shelly sand, gravels and clay. There are surface layers of variable thickness of fine-grained loess deposits (windblown dust and sand), derived from windblown material from glacial sources. This creates a landscape of remnant heathland and associated vegetation such as regenerating birch and gorse scrub on former heathland sites, in addition to dense, bracken filled hedgerows with grassy roadside banks, and twisted Scots Pine tree lines (windbreaks) which mark field boundaries in places. Mixed farmland includes outdoor pig rearing which is prevalent across the area, with expanses of muddy fields and pig arks. Landscape structure is provided by woodland blocks including coniferous plantation, by pine lines and an enclosure pattern of mixed hedgerows, which define a rectilinear field pattern of often medium to large scale.

### Historic and Cultural

Since the early clearance of the trees from the Neolithic period onward, farming has often been temporary or marginal in this landscape. Extensive ‘sheep walks’ dominated the area in medieval periods. These lowland heaths, known locally as the Sandlings, were not a natural landscape, but evolved as a result of the way the land was managed. Sheep roamed the heaths by day but were folded (fenced in) on the surrounding arable land at night, so their dung could improve its fertility. This process allowed the land to be periodically cultivated for cereals if the prices were favourable. Enclosure of this heathland and sheepwalk landscape occurred from the medieval period onwards, with more formal acts and arrangement in the

17th, 18th and 19th centuries. Enclosure was driven by technological changes, fashion for improvement and higher cereal prices. The impact on the landscape was profound, creating a network of rectilinear fields with belts and coverts to reduce soil movement and improve shooting. Elm hedges form many boundaries with shelterbelts and lines of pine trees. Adjacent to the main coastline settlements, which developed on the slightly raised land afforded by this landscape, are remnant heaths and commons which today are often areas of open access e.g. Dunwich Heath and Walberswick and Southwold Commons. This landscape has also seen the growth and decline of settlement. Raydon for example has experienced growth in the 1970's whereas Covehithe has been all but lost to the sea. Coastal erosion has also severed road routes and lanes which end abruptly at the coast are characteristic.

### **Coastal Processes and Change**

- In places, the use of farmlands for outdoor pig rearing, together with associated huts creates visual clutter
- A steady pressure of suburbanisation and tourism related development associated with coastal settlement is evident within this landscape, eroding the rural character
- Golf courses help to maintain the ecological value of the landscape but have a significant visual impact with 'tidy' and improved grassland contrasting with the wider landscape character of farmland with patches of heath and acid grassland
- The regeneration of areas of unmanaged heathland to woodland and scrub is reducing the ecological value and strength of character in this landscape
- There is a decline in the amount of heathland and acid grassland due to agricultural intensification, development pressures and scrub growth. This is reducing the ecological value of the landscape and leading to the fragmentation of existing habitat patches
- Loss of heathland where it lies above the sandy cliffs due to coastal erosion
- Increasing recreational pressure with adverse impacts on tranquillity and on designated species, and leading to tensions between recreational users and the needs for habitat management such as tree clearance and grazing
- Growth of Reydon including 1970's residential and industrial development on outskirts

### **Future Management Needs**

- Protect the existing heathland and acid grassland habitats, looking to expand these or enhance connectivity wherever possible
- Protect the wide verges which are often flower rich, seeking to establish new verges in field margins and besides roads wherever possible and avoid planting, ploughing or spraying and reseeding
- Protect existing areas of woodland, restoring replanted ancient woodland sites to native species and retaining all deadwood where it is safe and viable to do so
- Manage the existing hedgerows, shelterbelts and pine lines for conservation purposes, planting up gaps using native, local plant stock
- Manage the heathland resource using light sheep grazing or rabbit grazing and controlling bracken growth through cutting or spraying
- Manage both Countryside and Rights of Way Act open access land and linear access routes to minimise the impact of recreation on Special Protection Area features including wood lark and nightjar
- Plan for engagement with recreational users to promote understanding and acceptance of the management measures needed to maintain this landscape
- Plan to expand the woodland resource by planting new shelterbelts where appropriate, particularly where this resource has been lost to arable intensification, always using local and native plant stock
- Plan to expand the resource of heathland and acid grassland by allowing arable or agriculturally managed land to revert to these habitats wherever possible – where opportunities are available to join and expand existing areas of heathland, these should be taken

- Protect this landscape from development that would significantly impact on its open character

## Subsidiary Landscape Character Types

### Open Coastal Fens

#### Introduction and Location

This Landscape Character Type comprises wet grazing marsh and reedbed managed for nature conservation.

This Landscape Character Type is found in two specific locations within the Study Area - between Walberswick and Dunwich (comprising the Walberswick and Dingle Marshes National Nature Reserves) and the Minsmere Nature Reserve south of Dunwich.

#### Key Characteristics

- Flat landscape comprised of peaty soils overlying river and marine alluvium
- Former river valleys (Dunwich River and Minsmere Old River) significantly canalised and sealed by accretion of shingle bars across their mouths
- Topographically contained by rising land and woodland fringe on Estate Sandlands
- Open expansive landscape dominated by reedbeds and pools or fresh water lagoons
- Vegetation clearly marks the progression from open water to shallow marsh and then wooded valley slopes
- Some areas of scrub development on the fringes where areas have dried out
- Woodland contains and frames views across these coastal fen area
- Limited to no visual connection with the open sea
- The land is significantly managed for wildlife conservation

#### Physical/Natural

This landscape comprises flat valley floors and coastal flats with deep peat deposits that overlie river and marine alluvium. Habitat comprises a mosaic of marine, freshwater, marshland and associated habitats, complete with transition areas in between. The Walberswick Marshes Nature Reserve contains the largest continuous stand of reedbeds in England and Wales and a rare transition in grazing marsh plants from brackish to fresh water.

#### Historic and Cultural

These areas have had a complex history affected by marine erosion and the movement of coastal sediments. River courses such as Dunwich River and Minsmere Old River have altered due to coastal deposition and have been significantly canalised. The flat areas of former salt marsh have been drained at various periods creating a range of different drainage patterns and dykes. More recent re-flooding of the area and significant activity to improve the nature conservation value of the habitats including creation of scrapes and areas of open water has resulted in the loss of many of the drains. Today these areas comprise a mosaic of lagoons, acid grassland, scrub, arable land reverted to grassland and woodland and forms outstanding examples of freshwater habitat and reedbed. Early decoy ponds constructed in the 19th century are a feature of this landscape type and have been added to through the creation of ponds and lagoons, as part of the conservation movement.

These landscapes are unsettled and undisturbed and are particularly valuable to birdlife and popular with birdwatchers.

#### Coastal Processes and Change

- Historically, unsuccessful attempts have been made to exclude the sea: Land has been reclaimed from the salt marshes by farmers and allowed to revert to freshwater marsh by naturalists, only for the sea to make incursions
- There has been movement of major watercourses, loss of land and movement of beaches associated with this landscape and its dynamic nature
- This is a dynamic, low-lying landscape and there is a need to consider adaptation of existing habitats

**Future Management Needs**

- Protect and maintain the nature conservation value of this landscape and its habitats, and its potential as an educational resource
- Protect the open nature of this landscape, ensuring that scrub or tree growth is managed
- Protect the matrix of different habitats within this landscape, ensuring diversity is maintained and managed
- Manage access and promote responsible dog ownership to reduce impacts on bird species using the habitats
- Manage existing cultural elements to illustrate the historical and cultural character of the landscape
- Manage reedbeds and marshes through reed cutting and cattle grazing which are traditional management method in parts of this landscape
- Plan for the need to allow for the adaptation and retreat of habitats in accordance with the actions of the sea, in particular consider sites for freshwater habitats which will convert to saltwater habitats as the sea inundates, for example, reedbed creation

## Wooded Fens

### Introduction and Location

This Landscape Character Type comprises valley floor landscapes with low lying marshes or former estuaries sealed off by accretion of shingle bars across the coastal edge. They are simple landscapes made up of deep peat, wet meadow, reedbed and open water.

This Landscape Character Type exists as discreet, small patches in the north of the Study Area at Easton Broad/ Pottersbridge Marshes, Covehithe Broad, and Benacre Broad.

### Key Characteristics

- A flat, broad, shallow valley landscape of peaty soils with narrow bands of sand and gravels to the valley sides
- Small areas of alder carr woodland are evident in this landscape
- Land use comprises marsh and reedbed and cattle grazed marshes cut by a network of minor ditches and streams
- Pollarded willows along field boundaries
- Low wooded ridges, arable fields and Scots pine lines contain the marshland and create the backdrop to views
- This landscape contains important nature conservation sites
- Large pools of open water exist immediately behind the shingle bar: these are broads
- Absence of built development and a sense of remoteness and wildness
- Bold simple quality with a wild and windswept aspect

### Physical/Natural

The coastal areas consist of flat valley bottoms covered with deep peat deposits and alluvium, in addition to areas of sands, silts and gravels, creating a broad shallow valley. Extensive bodies of water exist e.g. Covehithe Broad and Benacre Broad. The coastal valleys consist largely of grazing marsh (rush pasture or reed bed) or reverted 'wildland' for nature conservation, with considerable amounts of water, either in drainage ditches or larger open broads. Where there are areas of reedbed the landscape can appear simple, masking the intricate network of tributary watercourses. There are fragmented areas of alder carr within the valleys and plantation woodlands on the higher ground surrounding them. This Landscape Character Type is covered by the Benacre National Nature Reserve and Pakefield to Easton SSSI.

### Historic and Cultural

The enclosure pattern, where one is present, consists mainly of straight drainage ditches, indicative of 18th- or 19th-century enclosure and drainage. However, there are curvilinear drains that suggest earlier episodes of enclosure. Some of the areas on the coast have been reverted to unenclosed 'wildland' for wildlife conservation. With the exception of a small number of isolated farmsteads (often brick built), this is a remote, wild and unsettled landscape.

### Coastal Processes and Change

- Much of this landscape is generally maintained for conservation purposes meaning that there are limited pressures upon it
- Nutrient enrichment from sources inland, particularly from open air pig farming, sometimes has an adverse impact on aquatic communities
- Coastal erosion and action, including shifting of coastal spits creates a dynamic landscape subject to change
- Reduction in extent of open water due to coastal erosion, shifting shingle spits at mouth of valleys and colonisation of reedbed
- Freshwater and brackish habitats vulnerable to salt water ingress by overtopping of shingle bars

**Future Management Needs**

- Protect the existing grazing land use, with grazing by cattle to ensure a relatively short, well managed sward
- Protect the wild, remote and sparsely populated qualities of this area particularly from development in adjacent landscapes
- Protect the existing dyke system and associated flora, particularly where the medieval dyke system is evident and manage with a high water level where possible
- Manage the woodland character but where plantation woodlands exist, seek to revert these to native, broadleaved species
- Manage areas of reedbed to provide habitat for bird species
- Plan to reduce (or preferably eliminate) pollution by nutrient laden surface- and groundwater from more intensive agricultural land uses inland
- Plan to increase the area of land used for nature conservation purposes, reverting agricultural land uses to nature conservation whenever agricultural land becomes available
- Plan to monitor succession and salinity of lagoons/broads and conserve and enhance their biodiversity interest

## Rolling Estate Sandlands

### Introduction and Location

This landscape occurs on valley sides and comprises woodland and agricultural land, the estate character is not always evident.

This Landscape Character Type exists on the sides of the lower valleys of the east Suffolk rivers: within the Study Area it runs along the coast south of Aldeburgh and forms the valley sides of the Deben estuary.

### Key Characteristics

- Rolling river terraces and coastal slopes with sandy and free draining soils supporting arable agricultural
- Tree belts and plantations throughout the landscape, with occasional and significant semi-natural woodlands and ribbons of carr (wet woodland)
- Enclosure pattern comprises late enclosure with a pattern of tree belts and straight hedges
- Landscaped parklands associated with estates
- Settled landscape with villages, hamlets and farmsteads often constructed from 19<sup>th</sup> century red brick with black glazed pantiles
- Complex and intimate landscape located on valley sides offering views across estuaries and out to sea
- Strong visual association with open water in estuaries and valley sides opposite

### Physical/Natural

This landscape is found on similar sandy Newport series soils on river terraces and coast-edge slopes where they overlie thin glacial deposits on top of Crag sands.

Woodland in the form of belts, coverts and plantations is a consistent feature throughout these landscapes and is a reflection of its late enclosure character, but there are also occasional semi-natural oak woodlands on some of the slopes. There are even ribbons of wet woodland along some of the small tributaries.

### Historic and Cultural

The landscape generally occurs as narrow valley-side strips that echo the landscape character of the adjoining uplands. There is a greater mix of land and soil types so patterns of fields can be quite variable from straight, geometric units to more sinuous shapes.

In most places the estate character of the settlement and enclosure is not particularly marked, showing up sometimes as higher densities of timber trees in the hedges or in locally similar groups of buildings.

Between the Alde and the Deben there are some isolated occurrences of this landscape within the Coastal Levels which reflect the former existence of marshland islands, as at Iken church, Burrow Hill in Butley, Oxley Dairy in Hollesley and Buckanay Farm in Alderton. In the last two cases the place-names contain the Old English suffix 'ey' meaning 'an island'. Iken church was the site of Icanho, a monastery founded in mid 7th century by St Botolph and destroyed by Viking raiders in the late 9th century. Semi-islands also seem to have existed at Bawdsey ('Baldhere's island'), and Raydon Hall ('rye hill') in Orford.

### Coastal Processes and Change

- Many of these valley side landscapes are under considerable development pressure because there are concentrations of settlement and land use change: this affects the landscape character
- There are excellent areas of semi-natural landscapes and intact landscapes in many places suggesting strong landscape condition overall

- Changing agricultural practices, such as the use of fleece, plastic and outdoor pig production are altering the landscape character and creating new visual elements to the landscape

**Future Management Needs**

- Protect the historic field pattern of regular boundaries of hedgerows with hedgerow trees and replant gappy or lost hedgerows and encourage new hedgerow trees
- Protect the existing mosaic of grassland, arable and woodland
- Protect existing landscape parks as they represent significant cultural and historical resources
- Protect and maintain the existing shelterbelts, seeking to ensure a continuity of local native species where appropriate, although mixed woodland is a characteristic of this landscape
- Manage the agricultural character of the landscape ensuring that where farm buildings are converted to residential uses the agricultural character is retained and features such as gardens and boundaries do not introduce unnecessary urbanising character to the landscape

## Valley Meadowlands

### Introduction and Location

The Valley Meadowlands are flat valley floor grasslands on silty and peat soils. They are normally characterised by grass fields in the floodplain that, where waterlogged, can become dominated by reed beds. In some areas they have become wooded and, in places, extensive drainage has allowed arable farming.

This Landscape Character Type occurs in the Alde estuary around Snape and the northern tributary valley above the tidal influence of the sea.

### Key Characteristics

- These are flat, valley floor, landscapes of seasonally wet clay overlain with alluvium or peat
- Agricultural grasslands are divided by a network of wet ditches and used predominantly for cattle grazing with some silage production
- Occasional small reedbeds exist in wetter fields
- This landscape is generally unsettled although there are isolated farmsteads on valley sides and on locally higher spots

### Physical/Natural

These are flat valley floors made up of seasonally wet clays overlying alluvial deposits and peat, with some strongly peaty soils in the valley of the Alde. Important freshwater and occasionally brackish areas are rich in wildlife. Reed beds are especially important for rare birds like the bittern, bearded tit and marsh harrier.

Historically, the value of the meadows precluded their use for woodland, except in the wettest areas where alder carrs were a more viable option. Some of the alder carrs still survive, but the decline in the value of meadows in the 20th century led to plantations, particularly poplars or cricket-bat willows, being introduced into the valleys.

### Historic and Cultural

The damp nature of the land has led to a long use as meadows. Where these survive, they are now predominantly used as animal pastures rather than for silage production. The meadows are divided by wet ditches or dykes that in places are lined by trees or scrubby hedges. The introduction of more effective land drains in the 20th century has, however, resulted in the conversion of many meadows to arable land. In the wettest areas there are occasional small reedbeds.

These landscapes are generally unsettled although there are occasional farmsteads on the edge of the valleys or on locally higher spots. The area to the south of Snape, which extends westwards out of the Study Area, is designated as part of the Snape Conservation Area.

### Coastal Processes and Change

- Some of these landscapes are in excellent condition and are well managed
- Meadows are being affected by intakes into arable production, by horse grazing and by under-grazing which is affecting the meadow resource and the flora and fauna they support
- Conversion to arable land has led to the introduction of more uniform field patterns, and a loss of features such as hedgerows and ponds.
- The sense of tranquillity and isolation of this landscape can be intruded upon by the development of the adjacent rolling valley landscapes affecting the rural character

### Future Management Needs

- Protect all older grasslands and wet meadows, encouraging grazing where possible
- Protect existing flower rich meadows for conservation preventing scrub encroachment
- Protect the existing, traditional field pattern and associated hedgerows

- Protect and maintain existing areas of scrub or heath
- Protect existing ponds and other wetland habitats, raising the water level on the valley floor where practical
- Manage any dykes with high water levels where possible
- Manage lines or clumps of trees or shrubs along rivers or streams
- Plan to extend and re-create meadows where possible, seeking to revert arable land to grassland
- Plan for the restoration of hedgerow networks through the replanting of lost hedgerows and allow new hedgerow trees to grow