

**Seascape character area assessment  
East Inshore and East Offshore  
marine plan areas**

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## Introduction

This report has been produced by the Marine Management Organisation (MMO) to summarise and respond to comments received following the informal consultation of the key characteristics for the 10 character areas as outlined by URS Scott Wilson in their pilot study produced for Natural England.

This report should be viewed as an update and a record of development towards the revision of the key characteristics. **It is not intended to reproduce or replace the pilot study produced by URS Scott Wilson.** The aim of the consultation was to engage with stakeholders to verify the key characteristics and make amendments, where necessary, to enable the MMO to include these as part of their evidence base for policy development within marine planning.

## Background

The URS Scott Wilson report was completed in March 2011. The pilot study set out to undertake a seascape character assessment at a strategic scale for the MMO's marine plan areas 3 and 4 and part of 6. Commissioned by Natural England, following discussion with the MMO, the report was undertaken over a 12-week period to inform the marine planning process. However, due to time constraints it was not possible to undertake any stakeholder engagement at that time.

In April 2012 the MMO and the Department for Environment, Food and Rural Affairs (Defra) hosted a meeting to discuss how the work carried out by URS Scott Wilson might be taken forward into marine planning. An outcome of this meeting identified that further strategic analysis of the key characteristics for character areas was required. It was established that this work would be undertaken by a select group of stakeholders who have a specific knowledge of the character areas.

## Consultation response

We would like to thank all those who took time to respond to the consultation and for your continued support for the development of seascape characterisation. We received 18 responses containing over 300 individual comments from a select group of stakeholders. The consultation ran over a two-week period and closed on 27 April 2012. Knowledge and expertise contributed will prove invaluable to the process.

We have worked to align comments to each of the character areas specific to the key characteristics. We also considered the more general comments on methodology and map boundaries. Details of these can be found in the body of the report.

We have used the comments to define a list of amended key characteristics. Having gained approval from Natural England, these will form the evidence base for policy development within the first marine plans for the East Inshore and East Offshore areas.

## Consultation questions

We asked two specific questions to help focus the consultation. The questions with a brief explanation of the comments received are as follows. More detailed summarised comments can be found in the body of the report.

**1. Do you agree with the 10 character area boundaries depicted on the map? (Please note lines on the map do not depict areas of sight – they are there to separate areas with differing character. In reality these lines maybe more indistinct than suggested on the map.)**

We received many comments to suggest that the character area boundaries proposed by URS Scott Wilson are appropriate for the East plan areas. We also received more specific comments to suggest that defining key characteristic could benefit from making changes to some of the character area boundaries.

**2. Do the key characteristics identified in each of the character areas look correct? If not can you tell us why and please suggest alternatives.**

A summary of comments has been provided for each of the character areas used to amend the key characteristics. For obvious reasons this summary does not include all comments received however, it is hoped this will enable stakeholders to identify where specific changes have been made. The original key characteristics produced by URS Scott Wilson can be found at Appendix 2.

To note: specific comments in relation to environmental heritage and archaeological importance have been included using one standard term. We felt this was necessary to retain the strategic nature of the key characteristics. Unfortunately, historic character was not included by URS Scott Wilson in their initial study. The MMO are working with English Heritage to ensure the work carried out in the East Inshore and East Offshore areas (to look at historic seascape characterisation) is included as part of the evidence base for marine plans. This will be taken forward as a separate activity that will feed into the overall marine planning evidence base.

In relation to areas designated for wind turbine development. We agree that Round 3 wind farms are not yet a feature for seascape characterisation and have, where appropriate, removed these from the key characteristics. However, we thought it appropriate to mention future development of the industry due to spatial conditions and previously designated Round 3 zones which will be included in future iterations of the characteristics. We do appreciate that the character of some areas may change due to deployment of renewable energy projects that benefit from existing approaches, but have not yet been developed.

## Character area boundaries and general comments

### Map boundary comments

The URS Scott Wilson report indicates that the definition of character area boundaries has been produced with some limitations. "The limits of character areas at unbounded extents are not defined within the scope of the study and therefore URS Scott Wilson has recommended that this be validated by further study work within adjacent Marine Plan Areas". This may be taken forward further in the future, possibly after the introduction of the first marine plans.

A small number of stakeholders suggested that we should move character area boundaries to include specific land marks or places into different areas. The timetable for planning the first marine plans for East Inshore and East Offshore areas is a challenging one. The MMO are committed to the inclusion of current and future seascape assessments into the marine planning process. We have therefore, taken the decision not to revise plan area boundaries at this stage in the planning process. Boundary comments will therefore be taken forward in future work for the East plan areas and at an early stage for future marine plan areas.

### Summarised comments

Comments received:

- There isn't a natural division in this part of the coast. Arguably, northward to Gorleston is more similar to Lowestoft than it is to Great Yarmouth, so potential for moving the boundary northwards.
- I would suggest that the southernmost boundary of 5 Holderness Coastal Waters could be moved very slightly northwards, so that the whole of Spurn Point is very clearly included within Humber Waters.
- The line across the face of The Wash (area 8) might be a tidal factor? The line between area 7 (East Midland) and area 9 (Norfolk Coastal Waters) appears to be around Weybourne, where coastal sediment flow down the east coast divides with some moving west, with accretion in some areas, and some moving east and down the coast, through areas of coastal erosion.
- The boundaries on the map are all fine, perhaps with the exception of Areas 7 and 9. I'm not sure this reflects a recognisable break in character which may be better placed at The Wash? The North Norfolk coast is very similar in character from The Wash to the more easterly areas.
- The Suffolk Coastal Waters (Area 10) looks to be sensibly drawn but for Norfolk the definition, naming and description of the areas is in need of further work.
- Area 7 "East Midlands Coastal Waters" needs more thought.
- For the coast of Norfolk I think it would be worth drawing on the large-scale natural characteristics of the coastline more closely, as follows:
  - A separate character area of North Norfolk Coastal Waters, from east of Hunstanton to Weybourne (start of the cliffed coastline).
  - A second revised inshore character area, perhaps named "East Norfolk Coastal Waters" from Weybourne to south of Happisburgh (end of the cliffed coastline).
  - I think it would be useful for each inshore character area, and if possible for offshore character areas, to give a brief indication of the area covered, as this isn't always very clear on maps. I also think it would be useful to separate natural characteristics and human uses and influences.
- The Suffolk Coastal Waters (Area 10) looks to be sensibly drawn but for Norfolk the definition, naming and description of the areas is in need of further work. In particular Area 7 "East Midlands Coastal Waters" needs more thought.

### General comments

We have tried where possible to remove or amend characteristics which are similar or lead to uncertainty. We will take comments forward into future development of

seascape characterisation within the East plan areas and future plan areas. Comments which relate to more than one character area, such as heritage or archaeological potential, we have included a standard term for consistency.

### **Summarised comments**

Comments received:

- Looking at the lists of key characteristics for each character area, they seem not to have any order or structure. ...I would suggest that the key characteristics might be more memorable in the form of a list that is structured in a consistent manner.
- The order of the characteristics does not seem quite right. It would work better if they were laid out in some sort of order, ...it would be more useful if each area was laid out in a similar consistent way
- Some of the character areas have several bullet points which saying the same thing but in a different way
- Most of the key characteristics appear to be accurate although there are some significant oversights. Most notably although the archaeological potential of 'Doggerland' is recognised in Area 1 this term applies to the entire East Offshore and East Inshore areas and should be a key characteristic of all 10 character areas.
- As noted in the document 'Limitations and scope for future work', there were many constraints to carrying out a full assessment of the character areas, these have led to a narrow representation of each of the character areas and hence in their current form should not be classed as 'key characteristics', as they do not fully reflect the character of the areas.

## **Assessment of key characteristics**

### **Character Area 1 – Dogger Bank**

#### **Summarised comments**

Comments received suggested:

- The importance of fishing in the Dogger Bank area should be strengthened.
- The remote nature of Dogger Bank should be included.
- What is meant by 'archaeological potential' – reworded this to standard term.
- Removed wind farm reference in line with comments for other character areas.

#### **Revised key characteristics**

- Extensive and remote areas of relatively shallow waters.
- Visually unified and expansive open water character.
- Widespread sand bank habitat.
- Significant fisheries area because of important fish spawning and nursery habitats.
- Expansive seascape with few surface features.
- Important archaeological features present.

## Character Area 2 – Dogger Deep Water Channel

### Summarised comments

Comments received suggested:

- The reference to the size of the Outer Silver Pit is incorrect.
- Revision to bullet 5 required.
- Gas platforms mentioned twice.
- Dogger Deep Water Channel would probably have been a focus for human activity during the Mesolithic period prior to sea-level rises.
- Extensive area designated for Round 3 wind farms is not a characteristic.

### Revised key characteristics

- West-to-east deep channel which cuts across the south of Dogger Bank, known as the Outer Silver Pit.
- Broad channel at its widest part is 125 to 175 km (75 to 105 miles) with waters deepening to between 60 and 70 metres in places.
- Expansive seascape with small concentrations of gas platforms.
- Significant fisheries area because of important fish spawning and nursery habitats.
- Once a lake with tributaries of melt-water supplied from glaciers to north of Dogger Bank.
- Designated as a military practice area.
- Major North Sea navigation route.
- Concentration of gas platforms.
- Important archaeological features present.

## Character Area 3 – East Midlands Offshore Gas Fields

### Summarised comments

Comments received suggested:

- Not clear why gas and aggregate activities are nationally important.
- Add 'extensive palaeo-environmental features'.

### Revised key characteristics

- Concentrations of offshore gas extraction and aggregate extraction activities.
- Extensive shallow offshore waters generally below 30 metres.
- Represents some of the UK's most extensive stores of shallow subtidal sediments.
- Series of submerged long straight sand banks and tidal sand ridges which pose navigational difficulties.
- Widespread sand bank habitats that support large fish spawning and fish nursery grounds.
- Commercial offshore activities such as fishing, dredging and dumping have a localised influence on benthic and pelagic environments.
- Significant fisheries areas.
- Important archaeological features present.

## Character Area 4 – East Anglian Shipping Waters

### Summarised comments

Comments received suggested:

- Early human remains and environmental records should be included.
- Add 'Important archaeological potential associated with marine aggregates'.
- Large areas designated for Round 3 wind farms is not a characteristic.

### Revised 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.
- Extensive offshore commercial activities such as fishing and dredging.
- Large military practice area.
- Windfarm developments and gas fields.
- Important archaeological features present.

## Character Area 5 – Holderness Coastal Waters

### Summarised comments

Comments received suggested:

- To reword bullet one.
- I would also question 'Large and featureless seaward horizon' – I think there needs to be a proviso added here to take into account proposed offshore wind farms – this will remain until the character of the area changes.
- The Holderness Coast also features extensive WW1 and WW2 coastal defences.
- Good variety of seabirds widespread throughout inshore waters.

### Revised key characteristics

- Expansive, sweeping coastline undergoing dynamic natural coastal processes of erosion.
- Extensive soft glacial till cliffs.
- Heritage Coasts of Flamborough Head and Spurn Head to the northern and southern extents.
- Open, exposed character by merit of low lying coastal topography and an absence of vegetation.
- Large and featureless seaward horizon.
- Flat topography results in the views of the seascape from land being generally restricted to coastal towns and immediate cliff edges.
- Heavily potted coastal waters with strong fishing heritage.
- Generally shallow waters which preclude commercial shipping.
- Submerged gas pipelines and Easington Gas refinery.
- Military practice area.
- Extensive WW1 and WW2 coastal defences, subject to coastal erosion.
- Variety of roosting and feeding seabirds dispersing from nesting areas.

## Character Area 6 – Humber Waters

### Summarised comments

Comments received suggested:

- First bullet: the inter-tidal mud and sand is more than just 'notable', is internationally important for birds. Also saltmarsh.
- On a point of accuracy, my understanding is that only part of the sediment that goes to build up the intertidal features in and around the Humber Estuary comes from the Holderness coast – much of it also comes from the wider North Sea.
- Re-wording: Views are animated by shipping traffic.
- A number of highly significant prehistoric boats have been recovered from this area.
- Revisions to bullets 9 and 12 required.

### Revised key characteristics

- The second largest coastal plain estuary in the UK bounded by intertidal mud and sand flats and saltmarsh.
- Humber estuary drains approximately 20 per cent of the country.
- Consistently muddy waters derived from North Sea tidal dynamics and suspended sediment from erosion taking place along the Holderness coast.
- Internationally important for wildlife habitats and spawning grounds especially birds.
- Very large tidal range with constant and powerful tidal movements.
- Constantly dredged and maintained navigation canal associated with land uses along the internal shores.
- Waters host UK's largest port complex and waters are heavily trafficked with up to 40,000 ship movements per year.
- Views are significantly animated by shipping traffic.
- Extensive and complex mix of industrial, commercial, agricultural, residential and tourism estuary land uses which dominate views.
- Renowned for transportation and fishing heritage.
- Spanned inland by the Humber Bridge, the fifth largest single-span suspension bridge in the world.
- Divided from the sea by the dynamic and evolving sand spit of Spurn Head which is a designated feature for its geomorphology and habitats.
- Waters guarded at the mouth of the Humber by two early 20th century sand forts.
- Important archaeological features present.

## Character Area 7 – East Midlands Coastal Waters

### Summarised comments

Comments received suggested:

- First bullet: change to 'demonstrating complex dynamic natural processes'.

- The historic character of the area is dominated by medieval and later land reclamation with areas of preserved ridge and furrow, isolated churches and deserted medieval villages, WW2 coastal defence infrastructure.
- There exists potential for the recovery of Mesolithic and Palaeolithic material from character area 7.
- Area 7, and most notably the area around Holme-next-the-Sea, is also significant for its buried peat deposits, again indicating palaeo landscape should be a key characteristic.
- Extensive saltmarsh and grazing marsh are important features that deserve a mention along the north Norfolk coast.
- We are unsure if 'designated' as a Royal Yachting Association (RYA) racing area' is the right terminology – revised to 'recognised'.
- Think the document should make reference to importance of coastal defence and beach replenishment activity which affects localised characteristics of intertidal sediment type and a mix of sea defences along the coastline.

#### **Revised key characteristics**

- Flat, low lying coastal landscape demonstrating a complex array of dynamic natural processes.
- Wild and dynamic nature of the seascape with strong wave action over generally shallow waters.
- Shallow waters divided by a deeper water channel called The Well.
- Extensive submerged sand flats.
- Temporal seascape character heavily influenced by the tides and the exposure of vast sand flats at low tide.
- Extensive linear coastal geometry creating long sweeping views along the coastline and out to sea.
- Gently rolling dune systems and intertidal sand flats supporting a variety of coastal habitats and supporting a rich diversity of wildlife.
- Perception of land and sea is strongly influenced by dunes and intertidal areas which present a wild and remote character.
- Remote character influenced in places by concentrated urban settlements, commercial activities and both on and offshore wind farm developments.
- Sediment accretion influencing coastal economies.
- Coastal defence and beach replenishment activity.
- Recreational value of seascape represented by coastal resorts with much of the coastal waters recognised as RYA racing and sailing areas.
- Commercial offshore activities such as dredging and dumping have localised influence on benthic and pelagic environments.
- Important fisheries areas, particularly shellfish fisheries.
- Important archaeological features present.
- Significant for its buried peat deposits.
- WW2 coastal defence infrastructure.
- Extensive areas of salt marsh, and grazing marsh.

## Character Area 8 – The Wash

### Summarised comments

Comments received suggested:

- The Wash is an 'embayment' and not an 'estuary'.
- Correction: Ely Cathedral is known as the Ship of the Fens and Boston parish church (St Botolph's) is the Boston Stump.
- A great deal of prehistoric interest, for example the Bronze Age peat beds.
- RAF Holbeach is designated as a military practice area – bombing range on the Lincolnshire Wash.
- Military activities take place at Wainfleet and features associated with bombing ranges are evident within the site.
- The Wash and North Norfolk coast are home to more common seals than anywhere else in England.

### Revised key characteristics

- England's largest tidal embayment fed by multiple rivers.
- Tidal influence extending for considerable distances up main rivers with very shallow gradients.
- Extremely low lying coastal seascape containing extensive areas of inter-tidal sand banks, mudflats, saltmarsh and a complex network of tidal creeks and inlets.
- Temporal seascape character heavily influenced by the tides and the exposure of vast sand and mud flats at low tide.
- Hazardous navigation due to shallow waters and offshore sand banks.
- Natural deep water channel at the entrance connecting to shallower individual river channels.
- Seascape largely perceived at great distances creating panoramic views with extensive vistas to level horizons, including views of the coast on the far side of the embayment, especially from Hunstanton Cliffs and the coastal ridge behind the Eastern Wash.
- Generally remote and inaccessible seascape.
- Internationally important wildlife habitat designated as European marine site for a variety of wildlife habitats and species with mudflats supporting the largest numbers of migrating waterfowl of any site in the UK and waters providing important shellfish breeding habitats.
- Important fisheries, particularly shellfisheries.
- Very large tidal range with constant and powerful tidal movements.
- Broad visual associations with Lincolnshire Wolds to the north and the Carstone/Chalk escarpments to the east.
- Relatively sheltered apart from north easterly gales – generally exposed character and changeable weather creates dynamic and variable experiences.
- Natural and remote character interrupted by commercial vessel movements in deeper waters.
- Small scale human activities are typically lost within the expansive landscape.
- Important archaeological features present.
- Military practice areas.

- Important area for marine mammals.

## Character Area 9 – Norfolk Coastal Waters

### Summarised comments

Comments received suggested:

- At Holme-next-the-Sea, dune recession has revealed a complex of Bronze Age and later timber structures, including the so-called 'Seahenge'.
- Area 9 in particular is highly significant both archaeologically and palaeo-environmentally.
- Some of the earliest human remains in the UK discovered on this coastline.
- The Wash and North Norfolk coast are home to more common seals than anywhere else in England.
- We would like to query the phrase 'heavily exploited waters' for shellfish.
- We are unsure that 'Widespread terrestrial and marine habitats' really make sense.
- We are unsure if 'designated' as RYA racing area' is the right terminology – revised to 'recognised'.

### Revised key characteristics

- Extensive linear coastal geometry with open and exposed sandy beaches creating long sweeping views along the coastline and out to sea.
- Soft glacial till cliffs that are largely wild and unmanaged – partly vegetated, prone to slippage through ground water infiltration and easily eroded at their toe.
- Wide variety of erosion protection measures implemented along much of the coastline.
- Extensive systems of offshore mobile sandbanks aligned with the curve of the coast.
- Extensive chalk reef habitat.
- Visual influence of Cromer Ridge.
- Very low lying in places, particularly at the coastal interface of the Norfolk broads where the sea is hidden from inland behind sea walls.
- Important fisheries areas, particularly for shellfish species.
- Presence of major shipping routes.
- The coastline is recognised as RYA sailing area.
- Submerged gas pipelines and Bacton Gas refinery associated with North Sea gas.
- Coastal holiday resorts.
- Remote character strongly influenced in places by concentrated urban settlements, commercial activities and both on and offshore wind farm developments.
- Important archaeological features present.
- Navigation restricted by shingle/sand banks.
- Important area for marine mammals.

## Character Area 10 – Suffolk Coastal Waters

### Summarised comments

Comments received suggested:

- Area 10 has a strong fishing heritage in terms of small fleets which have been active since the medieval period.
- Include rapidly eroding cliffs composed of gravels, sands and clays of the Pleistocene Crag Group.
- Soft cliffs should be mentioned as a bullet point as it is a key characteristic of the area.
- Add 'Important archaeological potential associated with marine aggregates.
- Correction: Colourful seafront coastlines lined by brightly painted beach huts. This is actually only true of very small sections – that is Felixstowe and Southwold and some of Aldeburgh. There are eight other coastal settlements which this description does not truly represent.
- Correction: Steeply sloping, shelved shingle beaches? Not all shingle and probably inaccurate to describe them as steeply sloping. The beaches are open in character.

### Revised key characteristics

- A rich mixture of unique coastal lowland landscapes some of which submerged.
- Estuaries characterised by wildlife-rich salt-marsh and mudflat, with significant reclaimed freshwater marshes protected by earth-bank river walls.
- Estuaries bustling with recreational water craft.
- Low-lying coastline dominated by coastal processes and estuarine influences.
- Characterised by a nationally significant concentration of vegetated shingle structures, soft cliffs and coastal lagoon habitats with open sloping beaches.
- Colourful seafront town coastlines lined by brightly painted beach huts in some places.
- Dramatic and contrasting developments such as Sizewell nuclear power station, Orford Ness transmitting station and commercial port development at Felixstowe.
- Historic military defence of the coastline, leaving a number of associated structures.
- Large scale panoramic views of the seascape dominated by busy offshore North Sea shipping waters including static vessels.
- Important archaeological features present.
- A strong fishing heritage in terms of small fleets.
- Rapidly eroding low cliffines and shrinking saltmarshes.
- Long distance coastal footpath (Suffolk Coast Path)

## Marine planning process

The timetable for marine planning for the first two plan areas presents many challenges. Since April 2011 we have been working to develop our process alongside the production of the East Inshore and East Offshore marine plans. We have produced a number of reports for consultation including our Evidence and Issues Report and our Draft vision and objectives for the East marine plans report.

We have been working closely with our stakeholders to gain their views. We are currently working to develop our options process with the aim to producing a draft plan for the East Inshore and East Offshore areas by the end of September 2012 for submission to government, with public consultation on the draft plan to take place in early 2013. We are currently gathering evidence for consideration of the next areas for marine planning. Following an announcement in July, planning in these areas will commence in October 2012.

## **Towards seascape for marine plans**

As this report was commissioned by Natural England and produced by URS Scott Wilson we need to ensure that the proposed amendments are appropriate for its possible role within the production of marine plans. Once agreement is sought the finding from this report will be included in our evidence base for the current plan areas. The work carried out in this process will ensure the key characteristics for the East plan areas are considered during the development of policy and production of the first marine plans for England. This will support the inclusion of seascape within the planning process.

### **Lessons learned**

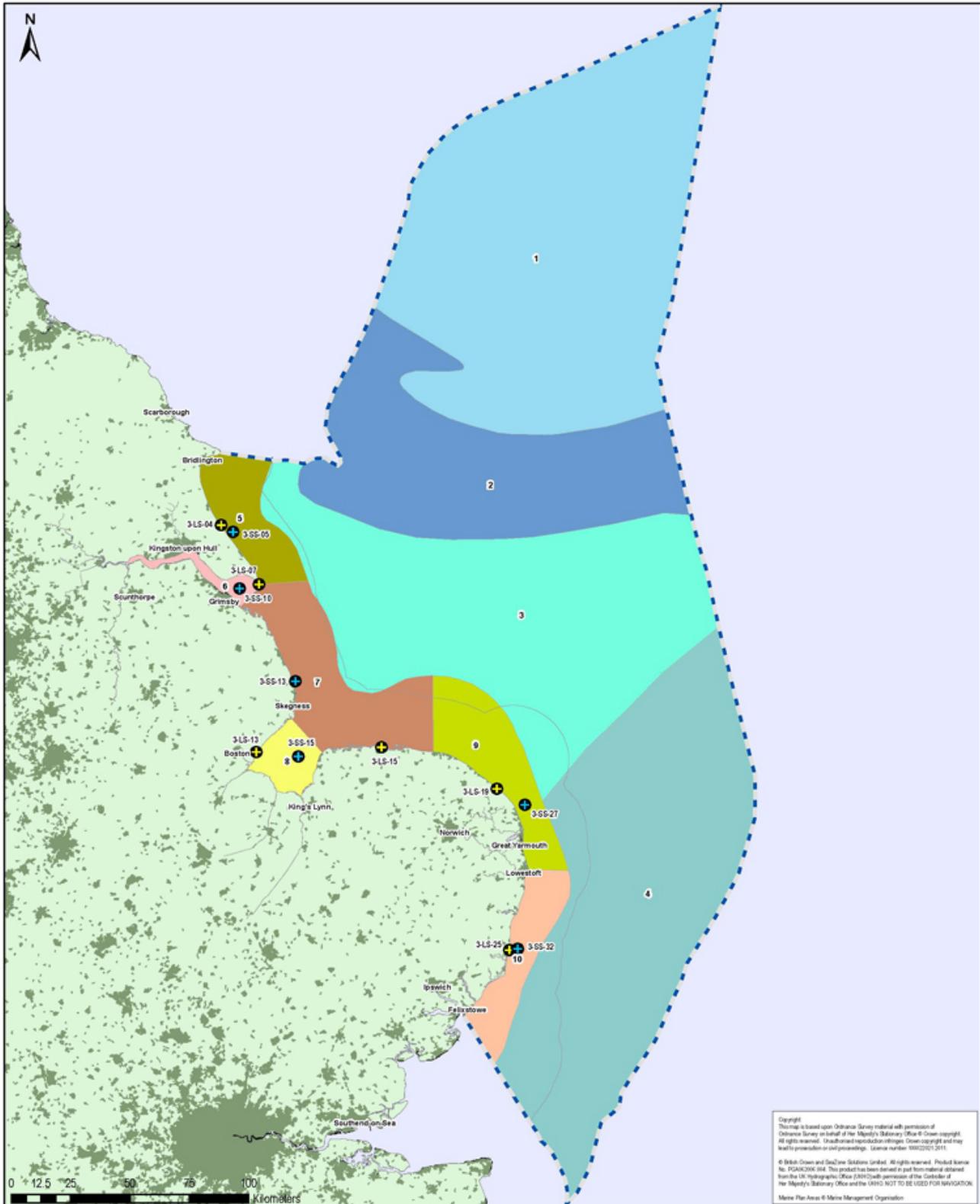
Unfortunately, due to the time constraints of the planning process, we have not been able to incorporate all of the comments raised during this consultation. We hope that suggestions, such as amendments to character area boundaries, could be considered in future studies and any revisions to a marine plan through further engagement with stakeholders at an earlier stage in the process. In terms of the East plan areas we recommend that comments derived from this consultation process are considered in any future characterisation study

### **Future development**

On 1 August we will announce the next areas for marine planning. Following the announcement we would like start discussions for seascape characterisation in other areas around the English coast.

If you have any questions about the consultation or would like to talk to a member of the planning team please contact [planning@marinemanagement.org.uk](mailto:planning@marinemanagement.org.uk)

# Appendix 1: Character area map (URS Scott Wilson Report, Figure 1.13)



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<b>Key</b> MMO Area Boundary Open Boundary-Limit of Study Representative Field Survey Locations-Land Representative Field Survey Locations-Sea <b>Seascape Character Areas</b> 1 Dogger Bank 2 East Midlands Offshore Gas Fields 3 East Anglian Shipping Waters 4 Holderness Coastal Waters 5 Humber Waters 6 East Midlands Coastal Waters 7 The Wash 8 Norfolk Coastal Waters 9 Suffolk Coastal Waters 10 Suffolk Coastal Waters		Job Title <b>SEASCAPE CHARACTERISATION MMO AREAS 3 AND 4</b>  Drawing Title <b>SEASCAPE CHARACTER AREAS &amp; REPRESENTATIVE FIELD SURVEY LOCATIONS</b>  Drawing Ref No. D136317/34/013  Scale(s) at A3 NTS  Drawn CLH  Check RM  Approved SD  Date APR 2011	Scott Wilson Ltd Brunel House 54 Princess Street Manchester M1 6HS Telephone (0161) 907 3500 Fax (0161) 907 3501    Figure Number <b>FIGURE 1.13</b>
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## Appendix 2: Key characteristics (as defined by URS Scott Wilson)

### Character Area 1 – Dogger Bank

#### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- Extensive areas of relatively shallow waters.
- Visually unified and expansive open water character.
- Widespread sand bank habitat.
- Important for fish spawning habitats and fish nursery areas.
- Expansive seascape with few surface features.
- Important archaeological potential of 'Doggerland'.
- Large area designated for Round 3 wind farms.

### Character Area 2 – Dogger Deep Water Channel

#### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- West-to-east deep channel which cuts across the south of Dogger Bank, known as the Outer Silver Pit.
- Broad channel at 175 km at its widest point with waters deepening to between 60 and 70 metres in places.
- Expansive seascape with small concentrations of gas platforms.
- Significant fisheries area because of important fish spawning and nursery habitats.
- Once a lake with tributaries running into it from Dogger Bank.
- Designated as a military practice area.
- Major North Sea navigation route.
- Extensive area designated for Round 3 wind farms.
- Localised concentration of gas platforms.

### Character Area 3 – East Midlands Offshore Gas Fields

#### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- Concentrations of offshore gas extraction and aggregate extraction activities that are nationally important.
- Extensive shallow offshore waters generally below 30 metres.
- Represents some of the UK's most extensive stores of shallow subtidal sediments.
- Series of submerged long straight sand banks and tidal sand ridges which pose navigational difficulties.
- Widespread sand bank habitats that support large fish spawning and fish nursery grounds.
- Commercial offshore activities such as fishing, dredging and dumping have a localised influence on benthic and pelagic environments.
- Significant fisheries areas.

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

##### **Key characteristics**

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- 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 5 – Holderness Coastal Waters**

##### **Key characteristics**

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- Expansive, sweeping, fragile coastline suffering from severe erosion.
- Extensive soft glacial till cliffs.
- Heritage coasts of Flamborough Head and Spurn Head to the northern and southern extents.
- Open, exposed character by merit of low lying coastal topography and an absence of vegetation.
- Large and featureless seaward horizon.
- Flat topography results in the views of the seascape from land being generally restricted to coastal towns and immediate cliff edges.
- Heavily potted coastal waters with strong fishing heritage.

- Generally shallow waters which preclude commercial shipping.
- Submerged gas pipelines and Easington Gas refinery.
- Military practice area.

### Character Area 6 – Humber Waters

#### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- The second largest coastal plain estuary in the UK bounded by notable intertidal mud and sand flats.
- Humber estuary drains approximately 20 per cent of the country.
- Consistently muddy waters derived from tidal dynamics and suspended sediment from erosion taking place along the Holderness coast.
- Internationally important wildlife habitats and spawning grounds.
- Very large tidal range with constant and powerful tidal movements.
- Constantly dredged and maintained navigation canal associated with land uses along the internal shores.
- Waters host UK's largest port complex and waters are heavily trafficked with up to 40,000 ship movements per year.
- Views are dominated by shipping traffic.
- Extensive and complex mix of industrial, commercial, agricultural, residential and tourism estuary land uses which dominate views.
- Renowned for transportation and fishing heritage.
- Spanned inland by the Humber Bridge, the fifth largest single-span suspension bridge in the world.
- Divided from the sea by the dynamic and evolving sand spit of Spurn Head.
- Waters guarded at the mouth of the Humber by two early 20th century sand forts.

### Character Area 7 – East Midlands Coastal Waters

#### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- Flat, low lying dynamic coastal landscape demonstrating a complex array of natural processes.
- Wild and dynamic nature of the seascape with strong wave action over generally shallow waters.
- Shallow waters divided by a deeper water channel called The Well.
- Extensive submerged sand flats making navigation treacherous.
- Temporal seascape character heavily influenced by the tides and the exposure of vast sand flats at low tide.

- Extensive linear coastal geometry creating long sweeping views along the coastline and out to sea.
- Gently rolling dune systems and intertidal sand flats supporting a variety of coastal habitats and supporting a rich diversity of wildlife.
- Perception of land and sea is strongly influenced by dunes and intertidal areas which present a wild and remote character.
- Remote character influenced in places by concentrated urban settlements, commercial activities and both on and offshore wind farm developments.
- Sediment accretion influencing coastal economies and altering the perceptual associations with seascape.
- Recreational value of seascape represented by coastal resorts with much of the coastal waters designated as RYA racing and sailing areas.
- Commercial offshore activities such as dredging and dumping have localised influence on benthic and pelagic environments.
- Important fisheries areas, in particular shellfish fisheries.

## Character Area 8 – The Wash

### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- England's largest tidal estuary.
- Extremely low lying coastal seascape containing extensive areas of inter-tidal sand banks and mudflats and a complex network of tidal creeks and inlets.
- Temporal seascape character heavily influenced by the tides and the exposure of vast sand and mud flats at low tide.
- Hazardous navigation due to shallow waters and offshore sand banks.
- Natural deep water channel at the entrance to The Wash provides access to inland navigable channels to what were once coastal ports.
- Seascape largely perceived at great distances creating panoramic views with extensive vistas to level horizons.
- Generally remote and inaccessible seascape.
- Internationally important wildlife habitat with mudflats supporting the largest numbers of migrating waterfowl of any site in the UK and waters providing important shellfish breeding habitats.
- Important fisheries with particular importance to shellfisheries.
- Very large tidal range with constant and powerful tidal movements.
- Broad visual associations with Lincolnshire Wolds to the north and Cromer Ridge to the east.
- Exposed character and changeable weather creates dynamic and variable experiences.
- Natural and remote character challenged by commercial vessel movements in deeper waters.
- Small scale human activities are typically lost within the expansive landscape.
- Noteworthy landmarks generally appear at great distance, Ely Cathedral known as the 'Boston stump' and the dramatic Hunstanton Cliffs.

## Character Area 9 – Norfolk Coastal Waters

### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- Extensive erosion of soft glacial till cliffs.
- Wide variety of erosion protection measures implemented along the coastline.
- Relatively inhospitable marine environment with few safe havens for marine users except ports of Great Yarmouth and Lowestoft.
- Extensive chalk reef habitat.
- Visual influence of Cromer Ridge.
- Very low lying in places, particularly at the coastal interface of the Norfolk broads.
- Widespread terrestrial and marine habitats supporting a diverse ecosystem.
- Heavily exploited waters, particularly for shellfish species.
- Presence of major offshore shipping routes challenges natural character.
- Much of the coastline is designated as RYA sailing areas.
- Submerged gas pipelines and Bacton Gas refinery associated with North Sea gas.
- Coastal holiday resorts.
- Remote character strongly influenced in places by concentrated urban settlements, commercial activities and both on and offshore wind farm developments.

## Character Area 10 – Suffolk Coastal Waters

### Key characteristics

The key characteristics of the area are summarised below. The corresponding baseline data which informs the character definitions has been included in Appendix 4 and the associated field study reference sources have been included in Appendices 8 and 9.

- 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.

- Large scale panoramic views of the seascape dominated by busy offshore North Sea shipping waters.
- Perception of seascape is often from the immediate coastal interface due to long estuaries, low landform and coastal shingle structures.

### **Appendix 3: Organisations that responded to the consultation**

Below is a list of organisations who responded to the consultation.

English Heritage  
Hartlepool Borough Council  
National Trust  
Natural England  
NFFO  
Norfolk Coast Partnership Area of Outstanding Natural Beauty  
Norfolk County Council  
Suffolk Coast and Heaths Area of Outstanding Natural Beauty