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# Seascape Characterisation around the English Coast (Marine Plan Areas 3 and 4 and Part of Area 6 Pilot Study)

Annex 2 - Lessons Learnt and Methodology Development

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## Seascape Characterisation around the English Coast (Marine Plan Areas 3 and 4 and Part of Area 6 Pilot Study) – Lessons Learnt and Methodology Development



Prepared for  
**Natural England**



## Revision Schedule

### Lessons Learnt and Methodology Development

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# 1 Introduction

The following report has been prepared to consider lessons learnt from existing studies and to identify points of relevance which have informed the development and refinement of the methodology.

## 2 Lessons Learnt

The following section considers lessons learnt from specific feedback on the Dorset Coast study and from the experience gained in developing this pilot seascape characterisation study. The lessons learnt are considered under the process stage headings below.

### 2.1 Methodology

- The 'Draft Seascape Character Assessment Guidance for Great Britain (2011) (SCA)' provided a clear and logical approach to processing and interpretation of data. Its acknowledgement of relevance at a variety of scales was readily applied to a strategic scale of assessment and provided a clear basis of understanding of aspects relevant to the seascape environment.
- The mapped examples of notional character area extents at varying scales of assessment was a useful prompt for the relative scale of character areas appropriate to this study.
- The flow diagrams illustrating the process of assessment were a useful guide through the key stages involved, though with some modification to suit the detail of subject matter proportionate to the strategic scale of study. Complementary to the process flow diagrams was the 'wheel' illustration (Figure 1 within the Draft SCA guidance) which emphasised the inter-relationship of natural, cultural/social and perceptual and aesthetic factors in shaping the character of a place.
- Visibility threshold tables included within the methodology were notable in providing a useful measure for defining the potential extent of inter-visibility between land and sea.
- The only potential limitation to the content of the methodology was in the citation of reference sources which may be more comprehensively acknowledged to reflect the relative unfamiliarity with the subject that some users may encounter.
- Overall, the SCA methodology provided comparable guidance to that conveyed by equivalent land based landscape character assessment guidance. Its significance is however notable in promoting that an understanding of the influence of the below water environment is fundamental to interpretation of the character of an area. Without such understanding the sea environment may otherwise be perceived as generic with limited capacity to identify distinction.

### 2.2 Desk Study

- As the initial remit of the study was to pilot test the application of the 'Draft Seascape Character Assessment Guidance for Great Britain (2011)', there was no immediately comparable precedent for strategic characterisation. As a consequence it was not initially apparent what the focus of inputs needed to be. This had a particular bearing on the inputs from specialist multi-disciplinary team members where the scope was so expansive and the output as yet unknown in structure and content that it was difficult to target resources accordingly.
- As such it would have to be acknowledged that one of the limitations of the current study is that it includes a disproportionate representation of topic coverage (some



topics over represented and some under represented). The level of interpretation of data is also limited without the focus of study being known at the outset. It would be anticipated that this could be redressed with additional work on the current study and a more focussed approach with future studies with the certainty and awareness of what is relevant at a strategic scale.

- The accessibility of GIS layers is limited by the sometimes obscure source file titling which doesn't immediately convey the content with a consequent time implication on having to interrogate each file to determine its relevance.

## 2.3 Field Study

- A significant time allowance needs to be anticipated for organising the field work itinerary to cover the extensive area of land and sea associated with such a strategic study (in particular the logistics of booking multiple boat hires and the frequent need to book and re-book boats to work around the unpredictability of weather conditions).
- Various approaches to boat hire for sea survey work were considered, each with pros and cons. Hiring multiple boats for individual harbour out and back day journeys reduces the risk of cancellation costs if bad weather prevents sailing and doesn't incur crew overnight accommodation costs. It does however involve an out and back journey along the same stretch of coastline which doesn't maximise time usage in terms of distance covered. Hiring a single boat to run along a coast line and docking in at ports along the way maximises the amount of distance coverable in a day but incurs overnight accommodation costs and risks cancellation costs if the weather prevents sailing half way through an itinerary. In this instance the multiple boat hire approach was appropriate but boat availability may be a limiting factor in other instances.
- Programme/resource/expenses costs need to accommodate the potential for abortive boat hire in the event that sea conditions are unsuitable.
- The constraints of physically covering open sea areas needs to be considered where boats struggle to cover the distance – potential to consider fly overs as a practical alternative (particularly to gain representative understanding of the offshore areas).
- The frequency of survey points at sea can be greatly reduced relative to that which was undertaken within the pilot study. Now that the proportionate size of character areas has been determined, the detail of understanding for the strategic scale can be gained with much less site validation.
- A realistic timeframe for field work needs to be allowed for to physically cover the ground (also taking account of limitations on access) to inform the assessment (particularly so at the local scale where detail needs to be covered).
- The use of local skippers for sea based fieldwork provides a valuable reference source for understanding local sea conditions which may in turn inform the characterisation process.
- The sea environment is significantly influenced by variable activity/weather/tide/sea conditions and as such cannot be considered absolute at the time of visitation (which has a bearing on consideration of an area as perceived as being quiet for example which at another time may be an active space).

- The limitations to the extent of area which can realistically be covered by boat meant that it was not possible to validate the character of Marine Plan Area 4 other than superficially around its western edge. As such the character within the extents of Area 4 was largely based on desk top study and interpretation of visual characteristics based on contexts experienced on its western edge and within the wider seascape study area context.
- In terms of the field study record forms it was considered that many of the experiential aspects could have been adequately described using a tick sheet approach so as to save time and be more user friendly as writing when on rough water was particularly difficult.

## 2.4 Character Areas

- The identification and naming of seascape character areas based on professional inputs requires validation by local stakeholders (particularly so at a local scale) as the criteria and name associations may not be consistent with local vernacular or temporal variations which weren't apparent at the time of field work study.
- The perception of seascape/landscape by people is an important consideration to ensure that any assessment is inclusive and can only be derived through stakeholder input. The balance of this in relation to an otherwise objective approach requires careful consideration.
- Where strategic consideration has been drawn from designations as a basis of relative significance this may introduce a disproportionate emphasis. Clearly review should consider all landscape/seascape as being of value and this requires further moderation from more extensive fieldwork and desk study.
- In some instances it was difficult to describe seascape without acknowledging trends and forces for change. The economic climate, changing operational practices and development pressures are all examples of perceptible influences with capacity for change and influence on seascape character.

## 3 Methodology Development

The focussed methodology applied to the assessment is included within the main 'Seascape Characterisation around the English Coast (Marine Plan Areas 3 and 4 and Part of Area 6 Pilot Study)' document. The developmental considerations which have informed this methodology are noted below to illustrate how the approach has been refined.

### 3.1 Reference Sources

1. Initial parameters were drawn from the Client brief.
2. The substance of the methodology was developed taking primary reference from the 'Draft Seascape Character Assessment Guidance for Great Britain (2011)' (SCA) in terms of structure and content, but has also considered other approaches within a number of key sources:
  - Maritime Ireland/Wales INTERREG 'Guide to Best Practice in Seascape Assessment';
  - the online CCW 'Seascape Assessment of Wales';
  - The SNH report 'An Assessment of the Sensitivity and Capacity of the Scottish Seascape in Relation to Windfarms';
  - Dorset Coast and East Midlands Regional Landscape Character Assessments.

### 3.2 Study Area Boundaries

1. The study area was fundamentally defined by the Marine Management Organisation Marine Plan Area boundaries. Within this, consideration was given to how the sea to land and sea to estuary boundaries were to be defined.
2. For the purposes of this assessment the high water mark was taken to represent the physical landward extent of study. This allowed the land/sea overlap intertidal zone to be considered in acknowledgement that coastal processes and erosive and depositional features are key character features.
3. Whilst the physical division of land and sea character area boundaries is drawn at the high water mark, the process and perceptual overlaps clearly require acknowledgement. The emerging character methodologies for land and sea have been written to acknowledge the overlap and the study has considered this with review of the draft updates to the land based NCAs. The land based character methodology was not however available at the time of this study to validate the overlaps. Descriptive overlaps with land area descriptions have been noted within the seascape character descriptions.
4. The estuarine limits of seascape at the strategic scale have been drawn to coincide with the perceptible face of the adjacent coastline rather than extend inland along the various tributaries. In the instance of the Humber where the estuary is a more significant feature, the inland limit has been drawn to coincide with the boundary of the associated land based NCA.
5. Alternative consideration of distinction of estuarine boundaries for areas including The Humber Estuary, The Wash and The Exe may be based on their distinction as 'internal

waters' in terms of territorial water limits. They are distinguished by virtue that foreign vessels have no right of passage and that inland waters are also covered by River Basin Management Plans (Water Framework Directive). In this way they are acknowledged as being administrationally distinct from other seascape areas but such distinction was considered to be too arbitrary as a basis of character division.

6. The capacity for sea level rises or the action of coastal processes to change the coastline is acknowledged as a further dynamic in the land/sea boundary interface.

### 3.3 Desk Study

1. Desk top data was compiled as a background reference source to the character area descriptions using a heading structure informed by the Draft SCA. Figures were included to illustrate the respective topic descriptions. Particular emphasis was placed on assessing the character of the below water surface environment to ensure understanding of the processes and context beyond the immediate scope of perception.
2. Key reference sources were:
  - JNCC Coastal Directories
  - Marine and Coastal Natural Area descriptions
  - GIS datasets
3. The creation of the fieldwork pro-forma took reference from the approach applied in the Dorset Coast Landscape and Seascape Character Assessment to test its comparative robustness at a strategic National level of assessment. In the absence of a detailed ZTV analysis and therefore a fuller understanding of terrestrial areas with a sea influence the forms were adapted to be more generic, the outcome being a Land based field form and a Sea based field form. A fieldwork prompt sheet was also produced which sought to prompt descriptive analysis when out in the field.
4. As a basis for determining the visual inter-relationship between land and sea at this scale, a generalised analysis of coastal vantage points and identification of notable coastal features was undertaken. Using the graph indicated within Box 6 of section 5.3.3 of the Draft SCA, an offset from the coastal topographical high points was produced to determine the theoretical visible horizon from the land (and therefore how far out the land would potentially be visible from the sea). This was considered an appropriate method in substitute for the otherwise time consuming preparation of a computer generated Zone of Theoretical Visibility (ZTV).
5. It was assumed that the theoretical visual horizon of a land based receptor (topographical high points and visual horizon table as described) would similarly correspond to a view from a sea based receptor i.e. some kind of visual association (without weather influence) would be available from both where land based receptors would see notable offshore activity and sea based receptors would see land as a land mass (no detail). This was the most practical approach to determining intervisibility without ZTV analysis. This approach does not however account for receptors (sea) being elevated e.g. from a cruise ship, as it assumes a sea level vantage point. At this strategic scale of assessment such differentiation would not be significant but at a more local scale of study this may have a bearing on the relative significance of visibility.

6. Sea to sea visibility used the same principles as applied to the generation of the theoretical visible horizon extents, namely using the graph indicated within Box 6 of section 5.3.3 of the Draft SCA which presented the visibility of a receptor at sea level to be 3 nautical miles (approximately 6km).
7. Initial character area boundaries were identified as an outcome of the desktop stage. These were identified on the following basis:
  - the existing land based NCA boundaries were extended out into the sea;
  - A 5 km offshore boundary was created to mark a notional extent of perceptible visual influence of land when viewed from the sea (based on The Department for Trade and Industry (DTI) Guidance on the Assessment of the Impact of Offshore Wind Farms). The DTI guidance suggests that between 3 and 5km from shore the detail of land and the coastline becomes small and indistinct except for landmarks. It was predicted that this zone of visual significance could mark a boundary at which the landscape becomes indistinct and notable offshore activities may influence the character more readily.

### 3.4 Field Study

1. Land based field survey points were identified to correspond with character areas relating to the existing NCA boundaries. When determining the land based surveys, accessibility and realistic driving expectations were also considered. Within this remit, locations which appeared to demonstrate key characteristics identified within the national landscape character area descriptions were selected.
2. Sea based field survey locations were selected to broadly correspond with the land based assessments within a 5km offset zone from the coastline in acknowledgement that this zone was most influenced by the local subtleties of the coastline. The identification of survey locations outside this boundary was informed by key offshore activity such as shipping routes, fishing grounds and offshore gas / windfarm installations.
3. The initial intention for sea based survey was to use one vessel running over several days along the coast line, however it was apparent that the availability of craft to do this would limit the approach to a more costly large scale and slow moving vessel. In order to make most economical use of craft and time it was decided to modify the approach to a number of smaller, faster craft hired from a number of ports.
4. Sea based field survey points were proportionately spaced across the extent of sea that it was physically possible to cover in one day. The capabilities of the selected boat were obviously heavily influential in determining the distance that could be covered in the time allocation. Ultimately however the tides and weather conditions were the most crucial factors. The survey locations were discussed with each skipper in advance of carrying out the field visits so as to have regard to constraints posed by local conditions, tides and boat capabilities. The route was subsequently adapted where necessary to take advantage of tide conditions and increased possible range. Locations further out to sea were also selected so as to test theoretical assumptions and to visit groups of offshore activities.

5. The seascape character guidance advocates visiting a minimum of 3 locations within each of the draft character areas. Prior to determining the relative scale of character area boundaries (which were ultimately defined late in the process) the number of field surveyed points were typically in excess of this.
6. At each survey location a field form was completed which included exact location coordinates taken from a GPS device and a panoramic photo record was also carried out using a digital SLR camera with a focal length equivalent to a 50mm focal length on a manual SLR camera. These were initially taken with a limited panorama which after the first day was modified as an approach to record a full 360 degree view for each point to capture the full scope of context. Where appropriate a “representative” photograph was also taken in order to demonstrate character as effectively as possible.
7. In conjunction with the sea based field survey locations, a map was annotated to demonstrate landmark features and general consistent features observed such as eroding cliff line, clusters of boat activities and settlement pattern.
8. There is a visual dilemma relating to the difference between looking from land to sea and sea to land as an influence on how the boundary to a character area is perceived or defined. Within 5km of the land, the perceptions of an area are broadly comparable for both land and sea based viewers as it is the detail and features of the terrestrial landscape and activities on the immediate coastal seascape that largely influences character. Beyond the 5km boundary, the perception of land receptors is of an expansive continuation of the seascape but still retaining focus on the foreground detail. The perception of sea based viewers is however of a more dissociated open water environment where the visual significance of land diminishes and activities/detail on the water become prominent.
9. Visibility extents within sea to sea views were difficult to gauge and relied exclusively on some kind of a visual cue such as a landmark feature or a boat (which when on the boat could be determined using GPS equipment). Analysis of visual influence at sea would rely on detailed shipping information and variables relating to specific vessel types and elevation of the receptors. Analysis along these lines would be appropriate if assessing a specific location for a specific objective, however a more general approach was adopted for the strategic level of assessment being considered here.

### 3.5 Character Areas

1. Initial thoughts on refining character areas suggested that visual influences were an appropriate basis for identifying boundaries. In proximity to land, associations could clearly be drawn in relation to identifiable landscape characteristics. This approach did not however allow distinction to be made where distance meant that land was no longer perceptible from the sea and sea environments then became generic. The consultation workshop held in March 2011 as part of the pilot study programme provided a useful steer on focus of character descriptions and highlighted in particular the relevance of Coastal and Marine Natural Areas as a comparable reference source. The ultimately defined seascape character boundaries draw close reference to the Coastal Natural Areas where coastal processes result in perceptible complementary associations. The importance of the below water environment became a significant consideration in identifying geographic distinction in areas which were otherwise limited in orientational reference points.
2. The initial basis of identifying character areas produced a linear coastal band defined by the 5km land inter-visibility threshold, a further offset linear offshore band defined by the ultimate perceptible distance influence of land (relative to elevation) and then the outlying offshore areas. This approach was considered too detailed for a strategic scale of study

(reference Figure 7 in the Draft SCA) and the 5km sub-division was merged into the limits defined by the broader perceptible land influence boundary.

3. It would be anticipated that more detailed/local scale studies would prompt the subdivision of the proposed national scale seascape character areas into smaller areas, which may potentially include a distinct coastal band to address the sea/land transition as an entity in its own right.
4. The most influential factors informing the character identification process were:
  - Natural Marine Area boundaries
  - NCA boundaries
  - Coastal Processes
  - Bathymetry
  - Sea and Coastal Use
  - Visual Influences
5. The following gives an example of how distinction in character terms was identified at the strategic scale as a product of various underlying process associations. This approach is captured within the 'wheel' illustration (Figure 1 within the Draft SCA guidance) which emphasised the inter-relationship of natural, cultural/social and perceptual and aesthetic factors in shaping the character of a place. Clearly there would be a different 'grain' applied to the relevance of the various factors at a more local scale of study or depending on the relative significance of features in different areas.
  - geology + coastal process = distinctive landform
  - water depth + fauna = distinctive fishing land use
  - water depth + settlement = distinctive shipping activity
6. The basis of naming character areas considered a number of potential reference sources including shipping forecast areas, admiralty maps, land based named locations and NCA names. Distinctive physical features such as water depth, geological features or land use were also considered as prompts to add a further element of orientation around a perceptible feature so that the basis of the area boundary could be understood in the context of more remote offshore areas. It was ultimately considered important to retain some element of geographic name associations, particularly where these could appropriately be related to land influences and thereby associate with the area. It is however acknowledged that these initial names would be subject to change to match with stakeholder associations.
7. The format of character area descriptions took reference from the Dorset Coast and East Midlands Regional Landscape Character Assessment studies to maintain comparability with existing approaches.
8. The review of existing and draft update landscape National Character Areas was extremely helpful in guiding the level of information and associations appropriate to the scale of assessment being undertaken but also in understanding the general character and coastal processes influencing the coastline. The documents helped in the identification of landmark

features as well as providing a general understanding of the interaction between land and sea where the sea featured heavily within the appreciation of landscape. An understanding of the scope of the land based NCA was also useful in defining the relative extent of overlap between the two complementary references.

9. All character area boundaries are effectively open at their seaward extents where these are not coincident with an adjacent character area identified within the study area. This reflects the situation that boundaries require validation within the context of a wider study area to determine where a transition to another character area occurs. There is potential scope for proposed seascape character area boundaries currently shown ending at the limits of the study area to be foreshortened within the current study area with the benefit of study of a wider area.