



Marine
Management
Organisation

Seascapes sensitivity assessment: Technical Report (MMO1204)



INVESTORS
IN PEOPLE

Bronze



Seascapes sensitivity assessment (MMO1204) Technical report: December 2019



Report prepared by:

White Consultants: Environment Ltd in association with APEM Ltd and Northumbria University

For: Marine Management Organisation – Marine Planning Team

Project funded by: European Maritime and Fisheries Fund, grant number ENG4001

Version	Author	Note
0.1	SW/MB	First draft
1.0	SW/MB	Stakeholder comments
1.1	D Hutchinson C Graham	MMO Comments
1.2	SW	Final draft

© Marine Management Organisation 2019

You may use and re-use the information featured on this publication (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. Visit www.nationalarchives.gov.uk/doc/open-government-licence/ to view the licence or write to:

Information Policy Team
The National Archives
Kew
London
TW9 4DU
Email: psi@nationalarchives.gsi.gov.uk

Information about this publication and further copies are available from:

Marine Management Organisation
Lancaster House
Hampshire Court
Newcastle upon Tyne
NE4 7YH

Tel: 0300 123 1032
Email: info@marinemanagement.org.uk
Website: www.gov.uk/mmo

Disclaimer

This report contributes to the Marine Management Organisation (MMO) evidence base which is a resource developed through a large range of research activity and methods carried out by both MMO and external experts.

The opinions expressed in this report do not necessarily reflect the views of MMO nor are they intended to indicate how MMO will act on a given set of facts or signify any preference for one research activity or method over another. MMO is not liable for the accuracy or completeness of the information contained nor is it responsible for any use of the content.

When referencing this publication, please cite as:

MMO (2019). Seascapes sensitivity assessment (MMO1204) Technical report. A report produced for the Marine Management Organisation, MMO Project No: 1204, December 2019, 83pp

Contents

Executive Summary	6
1 Introduction	7
1.1 Study and report purpose.....	7
1.2 Background.....	7
1.3 The brief.....	7
1.4 Uses of the method	8
1.5 Users of the method.....	8
1.6 Method used in this study	9
1.7 Report structure	9
2 Policy Context	11
2.1 Relevant policies relating to seascape and landscape.....	11
2.2 MMO and Natural England policies relating to seascape	15
3 Relevant Guidance.....	17
3.1 Introduction	17
3.2 Relevant guidance relating to seascape and landscape	17
3.2.1 An approach to seascape character assessment, NECR 105, Natural England, October 2012.	17
3.2.2 An approach to landscape sensitivity assessment – to inform spatial planning and land management, Natural England, June 2019.....	19
3.2.3 Guidelines for Landscape and Visual Impact Assessment, Edition 3, (GLVIA 3) LI and IEMA, 2013.	20
3.2.4 Guidance on the Assessment of the Impact of Offshore Windfarms: seascape and visual impact report, DTI (2005).....	21
3.2.5 UK Offshore Energy Strategic Environmental Assessments 2 and 3, DECC, 2011 and 2016.	22
3.2.6 Other seascape related guidance and studies.....	22
4 The seascape of England.....	24
4.1 Seascape/marine character assessments	24
4.2 National Parks and AONBs	24
4.3 Heritage Coasts	27
4.4 World Heritage Sites	27
4.5 Other designations	27
4.6 Landscape character assessments.....	27
5 Approach to terms	29
5.1 Overview and intended application	29
5.2 Approach to quality	29
5.3 Approach to value	29
5.4 Approach to capacity.....	30
5.5 Approach to design and mitigation	31
6 Proposed method.....	32
6.1 Key considerations.....	32

6.1.1	Objective and principles.....	32
6.1.2	Types of marine development	32
6.1.3	Use of MCA and SCA information	32
6.1.4	Process.....	32
6.1.5	Susceptibility.....	32
6.1.6	Values.....	33
6.1.7	Indicators	33
6.1.8	Sensitivity	33
6.2	Test areas showing worked examples	33
6.3	Status of report.....	36
References.....		37
Annex A: Glossary		41
Annex B: Types of marine development		43
Annex C SCA 1 maps and seascape sensitivity worked example		53
Annex D: MCA 31 maps and seascape sensitivity worked example		64

Figures

Figure 1: What is seascape character?	18
Figure 2: Assessing Landscape Sensitivity	19
Figure 3: Marine Plan areas, marine character areas and seascape character areas	25
Figure 4: Marine Plan areas and national landscape constraints	26
Figure 5: Pilot test marine/seascape character areas	35

Executive Summary

The purpose of this report is to set out the background and context for a method to enable those using marine plans to make decisions regarding an area's seascape quality, value and capacity for change in line with the UK Marine Policy Statement. The method itself is contained in a separate Approach document prepared in conjunction with this report.

The primary use for the method is considered to be the assessment of the sensitivity of seascape for strategic purposes, in relation to potential defined development types.

Users are likely to be those who commission an assessment, carry out an assessment, review an assessment or utilise an assessment of the decision-making.

The policies and guidance relevant to seascape and related landscape and sensitivity matters are considered. The method is intended to be complementary to an approach to landscape sensitivity assessment, Natural England (2019).

Marine character areas have been defined at a national level ([MMO1134](#)). These complement the terrestrial National Character Areas. The main relevant designations are discussed – National Parks, Areas of Outstanding Natural Beauty, Heritage Coasts and World Heritage Sites. Other relevant constraints are also considered.

The approach to terms shows how quality, value and capacity are incorporated into an up-to-date method. Quality contributes to the susceptibility of an area to a specific type of development. Susceptibility and value are combined to reach a judgement on sensitivity. Using current terminology, capacity for change effectively means sensitivity to a specific type of development.

There will be situations where development is required to meet national or local policy objectives such as mitigating climate change. Here, preparation of sensitivity assessments which only provide information on areas of constraint or opportunity may not be sufficient. The assessment can also be used to inform recommendations on the location and design of development in order to avoid or mitigate effects or, preferably, to create a positive benefit.

The method and process using criteria and indicators of sensitivity are considered briefly, referencing the Approach document. Types of development and their attributes are described in more detail in the Annex B.

The method is tested in two marine character areas; Dogger Bank and St Bees to Haverigg coastal waters. Here indicative sensitivity assessments of wind energy and marina development types are set out in worked examples in Annexes C and D.

1 Introduction

1.1 Study and report purpose

White Consultants, in association with APEM and Northumbria University, were appointed in June 2019 by the Marine Management Organisation (MMO) to create a method to enable those using marine plans to make decisions regarding an area's seascape quality, value and capacity for change.

The purpose of this report is to set out the context for the study and explore issues leading to a recommended method. The Method itself is set out in a shorter companion document to maintain consistency with other guidance and to make the process as simple as reasonably possible. There may be duplication between the documents. The Method is the definitive document that should be followed.

1.2 Background

The [UK Marine Policy Statement](#) (MPS) (HM Government, 2011) details considerations in marine spatial planning. It states '*When developing Marine Plans, marine plan authorities should consider at a strategic level visual, cultural, historical and archaeological impacts not just for those coastal areas that are particularly important for seascape, but for all coastal areas, liaising with terrestrial planning authorities as necessary. In addition, any wider social and economic impacts of a development or activity on coastal landscapes and seascapes should be considered.*' (HM Government, 2011, Section 2.6.5.2)

It goes on to state '*In considering the impact of an activity or development on seascape, the marine plan authority should take into account **existing character and quality, how highly it is valued** and its **capacity to accommodate change specific to any development.** Landscape Character Assessment methodology may be an aid to this process.*' (HM Government, 2011, Section 2.6.5.3) [This report's emphasis]

Seascape and marine character assessments now cover all of the English marine plan areas through the implementation of project [MMO1134](#) (MMO, 2018), along with the Seascape Characterisation for the East [NECR106](#) (Natural England, 2012b) and South in [MMO1037](#) (MMO, 2014) Marine Plan Areas. These fulfil the initial part of the Marine Policy Statement seascape requirements, namely '*character*'. This method now considers how to assess quality, value and capacity to accommodate change.

In addition, the National Planning Policy Framework (NPPF) (2019), states that planning policies and decisions contribute to and enhance the natural and local environment by recognising the intrinsic character and beauty of the countryside (170, page 49).

1.3 The brief

The brief states that the objectives of the project are to create an approach to:

- a) assess the quality of a seascape (character and visual)
- b) establish how highly a seascape (character and visual) is valued
- c) establish the impacts of different development types on seascape (character and visual)
- d) (based on the above) establish an area's capacity to accommodate change (a compatibility matrix may be considered as an appropriate method of evaluation)

It goes on to state that the outputs from MMO1134 will be used as baseline evidence. Areas designated for landscape protection such Areas of Outstanding Natural Beauty or National Parks will also need to be considered.

1.4 Uses of the method

The prime use for the method is considered to be the assessment of marine character areas (MCAs) at a national level or seascape character areas (SCAs) at a regional/local level for strategic purposes, in relation to potential **defined development types**.

A secondary use is that relevant elements of the method could be used as part of a method for undertaking a wider seascape and visual impact assessment (SVIA) **for a specific development**. This is currently primarily guided by the Guidelines for Landscape and Visual Impact Assessment (GLVIA) 3 (LI and IEMA, 2013). A key principle in this guidance is proportionality – in effect, the scope and level of detail should be consistent with the size and complexity of a given development (GLVIA 3, 1.17, page 9).

1.5 Users of the method

The users of the method are expected to be those who:

- commission an assessment
- carry out an assessment
- interrogate or review an assessment
- utilise an assessment to inform decision-making.

The users of the method are expected to be primarily suitably qualified and experienced chartered landscape architects/seascape assessors working on behalf of statutory authorities, non-governmental organisations (NGOs) or private developers. As such, the method is technical, uses terms specific to seascape and landscape sensitivity and is to a suitable level of detail. In particular, it is expected that the method would be used by those making and considering an application to the MMO in line with a marine plan - applicants, consultees and decision-makers. Therefore, both the technical report and the method/approach are written in plain English where possible, with a glossary of relevant technical terms and list of abbreviations. This Method will also need to be considered in the preparation of the assessments themselves so that users can understand and easily access the findings without the loss of their core function.

1.6 Method used in this study

The study has been carried out as follows:

- **Stage 1: Inception and refinement of brief** - clarifying the objectives and uses of the study, refining the scope, establishing the availability of information, exploring areas to test the method and agreeing the approach to stakeholders and consultation.
- **Stage 2: Desk study and initial consultation** - study of UK seascape and landscape policies, existing studies and relevant guidance, establishing the likely range and nature of marine development types, and initial structured consultation with interested technical stakeholders to explore scope, definitions and relevant information.
- **Stage 3: Development of a draft seascape method** - establishing a draft process for establishing quality, value, capacity for change and the related up-to-date concepts of susceptibility and sensitivity; establishing relevant criteria and indicators.
- **Stage 4: Testing the method** - testing the criteria and indicators using a desk study of two test areas; SCA1 Dogger Bank and MCA31 St Bees to Haverigg Coastal Waters, considering two different types of development.
- **Stage 5: Draft technical report and method/approach** - preparation of the draft report and method/approach taking on board the lessons learned from the test exercise.
- **Stage 6: Consultation** - circulation of the documents to the client and technical stakeholder group, holding a meeting to discuss key issues and receiving written comments.
- **Stage 7: Finalising the technical report and method/approach**- preparation of the final technical report and method/approach taking on board relevant feedback from the client and technical stakeholder group.

The team has included a chartered landscape architect with over 30 years' experience, supported by researchers and a GIS specialist.

1.7 Report structure

This report is structured to consider the policy context (Section 2), relevant guidance (Section 3), the seascape of England (Section 4), developing the approach (Section 5) and the method (Section 6).

References are followed by annexes covering a Glossary ([Annex A](#)), types of marine development ([Annex B](#)), SCA 1 maps and seascape sensitivity worked example ([Annex C](#)) and MCA 31 maps and seascape sensitivity worked example ([Annex D](#)).

It should be noted that this document uses technical terms whose meanings are specific to seascape and landscape considerations and which are derived from a series of relevant guidance documents. Terms include seascape, character, sensitivity, quality, capacity, susceptibility, value, criteria and indicators. It is important that the reader consults the glossary if in doubt about the meaning of a particular word.

2 Policy Context

2.1 Relevant policies relating to seascape and landscape

The UK signed up to the **European Landscape Convention (ELC)** (2000) in 2006. Signatories acknowledge that the landscape is an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognised as being of outstanding beauty as well as everyday areas. Landscape includes land, inland water and marine areas.

The **Marine and Coastal Access Act 2009** introduced eight key measures to help ensure *'clean, healthy, safe, productive and biologically diverse oceans and seas'*. The measures included the introduction of a marine planning system and the setting up of the Marine Management Organisation (MMO) delivering marine functions in English territorial waters and UK offshore waters for matters that are not devolved. The Act requires that all public authorities should undertake planning decisions should do so in accordance with the Marine Planning Statement.

The **UK Marine Policy Statement (MPS)** (2011) the national policy framework for preparing marine plans throughout the UK. The UK vision for the marine environment is for *'clean, healthy, safe, productive and biologically diverse oceans and seas'* (2.1.1). The high level marine objectives (page 11, Box 1) include: *'Ensuring a strong, healthy and just society: People appreciate the diversity of the marine environment, its **seascapes**, its natural and cultural heritage and its resources and act responsibly'* (this report emphasis).

The marine policy statement indicates that there is no legal definition of seascape but reiterates the European Landscape Convention (ELC) (2000) definition of *'an area, as perceived by people, whose character is a result of the action and interaction of natural and/or human factors'* (2.6.5.1). (This is the definition favoured by Natural England). However, importantly, the MPS text states that references to seascapes should be taken as meaning *'landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other'* (2.6.5.1).

As mentioned in Section 1 the MPS sets out how seascape should be considered in marine spatial planning. It states: *'When developing Marine Plans, marine plan authorities should consider at a strategic level visual, cultural, historical and archaeological impacts not just for those coastal areas that are particularly important for seascape, but for all coastal areas, liaising with terrestrial planning authorities as necessary. In addition, any wider social and economic impacts of a development or activity on coastal landscapes and seascapes should be considered.'* (Defra, 2011, 2.6.5.2)

It goes on to state: *'In considering the impact of an activity or development on seascape, the marine plan authority should take into account **existing character and quality, how highly it is valued and its capacity to accommodate change specific to any development. Landscape Character Assessment methodology may be an aid to this process.'*** (Defra, 2011, 2.6.5.3) [this report's emphasis].

Further, ‘*For any development relatively close to nationally designated areas, the marine planning authority (MPA) should have regard to the specific statutory purposes of the designated areas. The design of development should be taken into account as an aid to mitigation.*’ (HM Government, 2011, 2.6.5.4).

In relation to coastal areas, the **National Planning Policy Framework (NPPF)** states that planning policies and decisions should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes in a manner commensurate with their statutory status or identified quality in the development plan
- recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services, and
- maintain the character of the undeveloped coast, while improving public access to it where appropriate. (Ministry of Housing, Communities and Local Government, 2019, 170, page 49).

The NPPF emphasises that great weight should be given to conserving and enhancing the landscape and scenic beauty in National Parks and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks.

Within areas defined as Heritage Coast planning policies and decisions should be consistent with the special character of the area and the importance of its conservation.

World Heritage Sites have the highest significance as heritage assets and are internationally recognised to be of Outstanding Universal Value. The contribution that seascape makes to their setting should be taken into account.

The Framework covers all coastal projects which are not considered to be Nationally Significant Infrastructure Projects (NSIPs). It also forms the framework for locally prepared plans undertaken by Local Planning Authorities and others.

The NPPF also references **National Planning Practice Guidance (NPPG)** which considers designations in more detail and the use landscape character assessments.

The NPPG references section 85 of the **Countryside and Rights of Way Act 2000** which states that relevant authorities shall have regard to the purposes of National Parks and AONBs. The guidance states: ‘*This duty is particularly important to the delivery of the statutory purposes of protected areas. It applies to all local planning authorities, not just National Park authorities, and is relevant in considering development proposals that are situated outside National Park or Area of Outstanding Natural Beauty boundaries, but which might have an impact on their setting or protection.*’ (Paragraph: 039. Revision date: 21 07 2019)

The **Planning Act 2008** brought in a number of measures including National Policy Statements (NPSs) and the concept of nationally significant infrastructure projects

(NSIPs). In respect of marine issues this was amended by the 2009 Act above. For example, offshore windfarms with an output above 100MW are NSIPs. Since the Planning Act 2008 (as amended by the **Localism Act 2011**) responsibility for development consent applications for NSIPs has been passed to the Planning Inspectorate (PINS).

National Policy Statements (NPSs) applying to energy are EN–1 Overarching Energy, EN–3 Renewable Energy Infrastructure e.g. offshore windfarms and EN–4 Oil and Gas Supply and Storage. These were issued in July 2011. Subsequently, the NPS for Ports was issued in January 2012. These documents are important as they set the framework within which PINS examine the landscape and visual impact of the proposed developments. Seascape is taken to be within the meaning of landscape.

EN-1 states that the landscape and visual impact assessment (LVIA) should reference any landscape character assessments and associated studies and the 'visibility and conspicuousness' of the project and potential impact on views and visual amenity ((BEIS (1), 2011, 5.9.7).

In terms of decision making, landscape effects will depend on the existing character of the local landscape, its current quality, how high it is valued and its capacity to accommodate change. This duplicates the wording of the MPS. The point is made that virtually all NSIPs will have effects on the landscape. Having regard to operational and other constraints, the aim should be to minimise harm to the landscape providing reasonable mitigation where possible and appropriate (BEIS (1), 2011, 5.9.8).

EN-1 states that National Parks and AONBs are confirmed by the Government as having the highest status of protection in relation to landscape and scenic beauty and their statutory purposes help ensure their continued protection (5.9.9).

EN-1 goes on to state: *'The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation such projects should be designed sensitive to the given the various sighting, operational, and other relevant constraints. This should include projects in England which may have impacts on National Scenic Areas in Scotland.'* (5.9.12)

'The fact that a proposed project will be visible from within a designated area should not in itself be a reason to for refusing consent.' (5.9.13)

In considering the relevance of this to the seascape sensitivity, some designated areas on the coast have been designated, at least in part, due to the land's relationship with the sea e.g. Exmoor National Park and Gower AONB. Others, which may run close to the coast but are designated for different reasons, may be considered to be less likely to be compromised.

EN-1 indicates that outside nationally designated areas, local landscape designations should not be used in themselves to refuse consent as this may unduly restrict acceptable development. The test is that the Examining Authority should

judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits of the project (5.9.15). The reversibility of the development needs to be considered, as well as if the project has been designed carefully to minimise harm to the landscape.

The effects on sensitive receptors such as residents or visitors have to be assessed to establish if they outweigh the benefits of the project (5.9.18). Coastal areas are stated as being particularly vulnerable to visual intrusion because of potentially high visibility, effect on the skyline and on stretches of undeveloped coast. Examples of existing similar infrastructure should be used to assist decision-makers.

Reducing the scale of the project is cited as an option only in exceptional circumstances where mitigation could have a very significant benefit.

EN-3 specifically addresses offshore windfarms' seascape and visual effects. Seascape is stated as important resource and an economic asset in coastal landscapes which are often recognised through statutory landscape designations.

The three principal considerations determining the likely effect of offshore wind farms are stated as:

- limit of visual perception from the coast;
- individual characteristics of the coast which may affect its capacity to absorb development; and
- how people perceive and interact with the seascape.

The assessment should be carried out in line with the Department of Trade and Industry (DTI) (2005) guidance. Where appropriate, cumulative SVIAs should be undertaken.

In terms of decision-making, it is important that the NPS indicates that consent should not be refused for development solely on the ground of an adverse effect on seascape or visual amenity unless:

- an alternative layout would minimise any harm;
- taking account of the sensitivity of the receptors, the harmful effects are considered to outweigh the benefits of the proposed scheme.
- it is expected that a reduction in scale of the windfarm is unlikely to be feasible due to the reduction in electricity generating output.

The **Ports NPS** addresses landscape and visual impacts which include effects on seascape. A particular problem is cited as the effects on existing important tourist or recreational activities due to the introduction of light pollution and noise into otherwise potentially tranquil areas (5.11.1, page 62).

Any assessment should include reference to character assessments and associated studies and consider the visibility and conspicuousness of the project.

The criteria for decision-making are similar to other major projects above.

Overall, legislation and policy sets a high threshold for demonstrating harm leading to a refusal of large scale infrastructure. The test for smaller scale development is

lower. National landscape designations are given greatest weight in ascertaining the level of harm in relation to new development. The terms quality, value and capacity to accommodate change are used across the policy spectrum.

2.2 MMO and Natural England policies relating to seascape

There are 11 **marine plan areas** in England. These are divided into inshore and offshore areas except for the south east where there is only an inshore area. Two examples are discussed below.

The **East Marine Plan** was the first marine plan to be completed in England, in April 2014. The inshore area extends out from the mean high water mark to the territorial limit. The offshore area extends from the territorial limit to the boundary of the Exclusive Economic Zone. Policy SOC3 (page 58) states that proposals should demonstrate, in order of preference:

- a. that they will not adversely impact the terrestrial and marine character of an area
- b. how, if there are adverse impacts, they will minimise them
- c. how, if they cannot be minimised, they will be mitigated against
- d. the case for proceeding with the proposal if it is not possible to minimise or mitigate the adverse impacts

The Seascape Character Assessment (Natural England, 2012b) published in October 2012 was used as a pilot study to test the [NECR105](#) approach to seascape assessment and formed the basis of [NECR106](#). The report defines the boundaries of ten areas and describes their key characteristics, physical influences, cultural influences and aesthetic and perceptual qualities. This study had no stakeholder engagement MMO engaged with targeted stakeholders and produced an addendum updating the key characteristics (MMO, 2012). There is no consideration of sensitivity in either assessment. Clearly they are useful for informing regional policies and SVIAs.

The **South Marine Plan** was the second English Marine plan to be adopted in 2018. Seascape issues are included in Objective 9 which considers the seascape and its constituent marine character and visual resource and the landscape of the south marine plan areas (9, page 22). It states that *“proposals that may have an impact upon the seascape of an area should only be supported if they demonstrate that they will, in order of preference, avoid, minimise or mitigate significant adverse impacts. If it is not possible to mitigate impacts, proposals should state the case for proceeding.”* This links to Policy S-SCP-1. Seascape is considered important due to the prevalence of protected landscapes, their beauty and association with tourism and recreation activities.

The plan is supported by the south seascape assessment ([MMO1037](#), MMO, 2014). This identified 14 marine character areas- three offshore and eleven roughly following the inshore boundary and primarily defined by changes in the coastal character. Each area assessment has an overview, with key characteristics, natural influences, cultural/social influences, aesthetic and perceptual qualities. In addition, a national sea/land intervisibility model was prepared for England and Wales.

In addition, MMO have prepared and published seascape assessments for the NE, NW, SE, and SW marine plan areas in preparation for the adoption of the relevant marine plan areas. These are desk based assessments and included the development of a national marine character area GIS layer (see 4.1).

3 Relevant Guidance

3.1 Introduction

The guidance and studies relevant to seascape and related landscape matters are considered.

3.2 Relevant guidance relating to seascape and landscape

The most relevant guidelines and reports taken into consideration in this study are as follows:

- An approach to seascape character assessment, NECR 105, Natural England, October 2012.
- An approach to landscape sensitivity assessment – to inform spatial planning and land management, Natural England, June 2019.
- Guidelines for Landscape and Visual Impact Assessment, Edition 3, (GLVIA 3) LI and IEMA, 2013.
- Guidance on the Assessment of the Impact of Offshore Windfarms: seascape and visual impact report, DTI (2005).

They are discussed in more detail below.

Other documents which inform understanding of seascape and in particular how it may accommodate renewable energy, especially offshore wind development include:

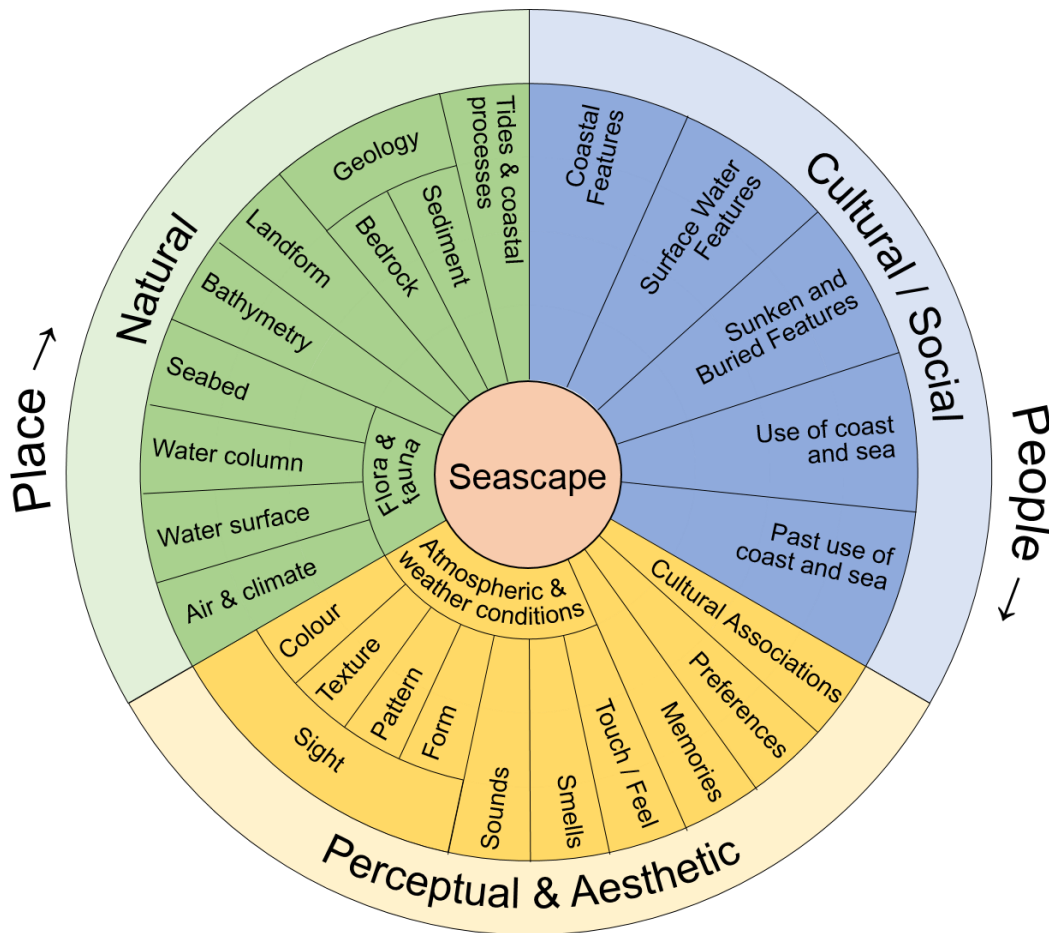
- UK Offshore Energy Strategic Environmental Assessment 2, DECC, March 2011.
- UK Offshore Energy Strategic Environmental Assessment 3, DECC, March 2016.
- An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms (Scottish Natural Heritage commissioned report 103, 2005) - a ground-breaking document led by Dr John Benson forming the basis of subsequent UK guidance including the 2005 DTI report above.
- Seascape and visual sensitivity to offshore wind farms in Wales: Strategic assessment and guidance. Stages 1-3. NRW Evidence Series. Report No: 315, NRW, Bangor, 2019- guidance focused on offshore wind farm development in terms of recommended visual buffers for different sizes of turbine, guidance for developers and a national sensitivity assessment for defined large scale seascape units (larger than MCAs) suited to large scale wind farms and relevant to NPS EN-1 and EN-3.

3.2.1 An approach to seascape character assessment, NECR 105, Natural England, October 2012.

Natural England's Approach to Seascape Character Assessment was first published in 2012. It is a concise document which defines terms, and sets out the principles, processes and outputs to achieve a seascape character assessment. The definition of seascape is defined as *'an area of sea, coastline and land, as perceived by people, whose character results from the actions and interactions of land with sea, by natural and/or human factors.'* This is summarised in a diagram (see Figure 1). This diagram (renamed as the Seascape Wheel) is used in seascape assessments

for Marine Plan Areas such as the south (MMO (2014) p 6 Figure 3). As such, it underpins seascape character.

Figure 1: What is seascape character? Adapted from Natural England (2012a), Figure 1, page 9



The document sets out five principles of seascape character assessment (SCA) and carries out an overview of process and outputs. The principles are:

- Landscape is everywhere and all landscape and seascape has character
- Seascape occurs at all scales and the process of seascape character assessment can be undertaken at any scale.
- SCA should involve an understanding of how seascape is perceived and experienced by people.
- SCA provides an evidence base to inform a range of decisions and applications.
- SCA can provide an integrating spatial framework. (page 17)

The process for SCA is stated as similar to landscape assessment resulting in the definition and description of Seascape Character Areas and Types with the coastal boundary being the High or Low Water Mark.

NECR105 only covers character, stating that the '*process of evaluating or making judgements about seascape quality or value, or decisions about the appropriateness of development, are separate from the Seascape Character Assessment process,*

even though they are informed by the outputs of a character assessment.' (page 11, this report emphasis). Thus, this study is intended to provide this guidance building on Natural England (2012a).

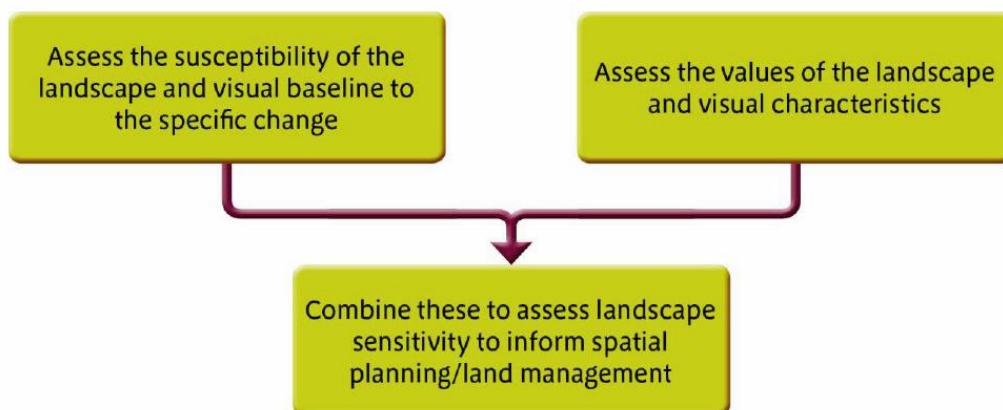
3.2.2 An approach to landscape sensitivity assessment – to inform spatial planning and land management, Natural England, June 2019.

This recent document applies to England and replaces Topic Paper 6 (2004). It was informed by two workshops and a working group of members of the Landscape Institute. It sets out the application of the approach, principles, process and a glossary. At present it applies to all terrestrial and marine areas although it acknowledges that MMO is preparing a 'similar' approach. The report focuses on landscape sensitivity to inform strategic spatial planning, not relating to specific developments where GLVIA 3 (2013) applies (page 6).

A key principle is that sensitivity is taken as sensitivity to a specific type and scale of development, not intrinsic/inherent sensitivity of the landscape resource. Landscape capacity is taken as the **amount** of development or change which a particular landscape and the associated visual resource is able to accommodate without undue negative effects on its character and qualities. However, this concept is considered to be possibly too simplistic and other non-landscape factors which influence capacity are cited. As such, unlike Topic Paper 6, the document does not address this further. It should be noted that the issue of capacity is a hotly debated topic and some practitioners continue to undertake capacity studies in areas where targets for development numbers are known. However, this document effectively sidelines the term capacity and indicates that, if required, it should be an additional process after the sensitivity assessment.

The basic approach to deriving landscape sensitivity is stated as Figure 2 below:

Figure 2: Assessing Landscape Sensitivity (Source: © Natural England, 2019, Figure 1, p 6.)



Susceptibility is a term first used in GLVIA 3 (2013) (see below). It is taken to mean the degree to which a defined character area and its associated visual qualities and attributes might respond to the specified types of development or change without

undue negative effects on character and the visual resource. Susceptibility and value combine to arrive at landscape sensitivity.

The process for carrying out a landscape sensitivity assessment is a useful basis for considering a complementary process in marine areas. In summary:

1. Define purpose and scope
2. Gather the information to inform the sensitivity assessment:
 - A. Describe the development and identify the key attributes likely to affect the landscape
 - B. Confirm assessment units and identify key landscape and visual characteristics and values to determine criteria.
 - C. Identify indicators of relative landscape and visual susceptibility and value, specific to the development type.
3. Assess landscape sensitivity of the assessment units
 - A. Assess sensitivity against each susceptibility and value indicator
 - B. Arrive at an overall sensitivity for each unit
4. Reporting

Criteria against which landscape susceptibility is judged are organised in a similar way to a landscape or seascape character assessment i.e. natural, cultural/social, aesthetic and perceptual, landscape condition and visual characteristics. Of interest is condition placed in this list. Previous guidance and GLVIA 3 place condition under the heading of value.

Value criteria include designations, sense of place, valued attributes e.g. cultural and historic features and associations, community values, recreational value and intrinsic value.

As the above approach has been agreed over an extended period it is considered as a reasonable basis to adapt for marine purposes.

3.2.3 Guidelines for Landscape and Visual Impact Assessment, Edition 3, (GLVIA 3) LI and IEMA, 2013.

The Guidelines for Landscape and Visual Impact Assessment were revised in a 3rd edition in 2013 (Landscape Institute, 2013). The guidance defines seascape as per the MPS (2011) and states that any assessment should carefully consider the relationship between land and sea in coastal areas and also take account of possible requirements to consider the open sea (2.9). Methods to assess the character of seascapes are being developed and the latest available guidance should be referred to.

This guidance relates solely to the assessment of individual developments either as part of an Environmental Impact Assessment (EIA) or as a contribution to the appraisal of proposals and planning applications.

The assessment of sensitivity of the receiving landscape forms part of the process. The guidance establishes the principle of:

Susceptibility of receptor to specific change + Value = Sensitivity

This has subsequently been adopted by the Natural England (2019) approach already discussed.

Where it differs from the strategic Natural England (2019) approach is that it separates landscape and visual effects (Figure 3.4) and thus the assessment of susceptibility and value of landscape receptors from visual receptors. This separation is maintained in the final judgements on effects. This is a key distinction between the two processes. As a strategic tool, the GLVIA guidance therefore follows the Natural England approach.

GLVIA 3 discusses cumulative effects, setting out the alternative approaches of assessing the combined effects of existing and proposed developments or just the additional cumulative effects of a given development. Neither approach is given more weight than the other. For this study, it is considered that the combined effects of developments is the most important concern at a strategic level.

3.2.4 Guidance on the Assessment of the Impact of Offshore Windfarms: seascape and visual impact report, DTI (2005).

This document is referred to specifically in relation to offshore windfarms in EN – 3. The purpose of the seascape assessment method is to inform environmental impact assessment and therefore, like GLVIA 3, focuses on individual developments and separates seascape and visual impacts. The document covers the recommended process of assessment, baseline studies required, sensitivity, predicting impacts and their magnitude, assessing significance and cumulative impacts.

Definition of a seascape unit is based broadly on the Countryside Council for Wales (CCW) Hill et al (2001) approach for a regional scale unit which is considered appropriate for assessing offshore wind farms. Whilst this is still used in Scotland, this has been replaced in England and Wales by the NECR 105 approach discussed above.

Important terms used in this guidance are used in subsequent policy wording both in the MPS, EN-1 and EN-3, specifically quality, value and capacity to accommodate change. However, this document is now dated in terms of current practice and guidance, deriving partly from Topic Paper 6 (2002), and partly from the original seascape guidance CCW (2001). Whilst it is thorough and comprehensive and useful as a starting point, there is a need for the method to reflect up-to-date practice (in terms of seascape character assessment) and terms.

The **sensitivity** of a seascape unit is defined as following the SNH (2005) study. Unlike GLVIA 3, it combines seascape and visual sensitivity. Seascape character sensitivity combines natural factors, cultural factors, aesthetic factors and landscape quality/condition (Box, p 38). Visual sensitivity includes general visibility, sea-based receptors, land-based receptors, and mitigation potential (Box, p 38). The term 'sensitivity' here is equivalent to the current use of the term 'susceptibility'.

Value is derived from designations but also factors derived from Countryside Agency and Scottish Natural Heritage (2002) i.e. landscape quality (condition, integrity),

rarity, representativeness, conservation interests, wildness, associations, remoteness and accessibility, scenic quality, recreation, amenity and tourism uses and public attitudes (Box 7 p 41).

Capacity to accommodate change is stated as reflecting the overall sensitivity of the seascape to a particular type of development and the value attached to the seascape or specific elements in it (5.4 p 43). The term 'capacity' here is equivalent to the current use of the term 'sensitivity'.

3.2.5 UK Offshore Energy Strategic Environmental Assessments 2 and 3, DECC, 2011 and 2016.

These reports considered a range of factors including seascape in guiding offshore energy. In the 2016 report, the principal considerations for assessment of the likely impacts are stated as to include (5.8.1 p 283):

- the limit of visual perception from the coast
- the individual characteristics of the coast which affect its capacity to contain a given development
- how people perceive and interact with the seascape.

There is therefore an emphasis on visual effects in line with the MPS definition of seascape. Evidence considered includes the curvature of the Earth and theoretical visibility, contrast, lighting and navigational markings, haze and meteorological factors.

Seascape units are referred to but at the date of publication the MCAs have not been completed as a consistent resource. National landscape designations are mentioned as indicators of value which are likely to influence the locations of development (5.8.2.5 p 296).

Cumulative effects are identified as an issue in places (p 323). For instance, offshore wind developments are already starting to characterise certain seascapes and any additional development in combination with that already in place has the potential to generate significant cumulative effects both day and night.

3.2.6 Other seascape related guidance and studies

Conservation Principles, Policies and Guidance. April 2008, Historic England:

This guidance provides a framework for the sustainable management of the historic environment which has relevance to seascape character. It sets out six conservation principles including that the historic environment is a shared resource and that understanding significance of places is vital. It also describes a range of four heritage values- evidential, historical, aesthetic and communal value which is an indication of the plurality of values. The approach and terms that are used (such as the heritage 'significance' of places) slightly differ from seascape and visual assessment. This significance is determined by who values the place and why, how those values relate to its fabric, their relative importance and the contribution made by the setting and context of the place. The guidance provides a useful underpinning to understanding the historic dimension of seascape expressed in historic seascape character assessments.

Seascape value, quality and links with sense of place ([MMO1132](#)):

This emerging baseline social information study considers people's perception of sense of place in relation to seascape along the designated North Devon coast. The study used a focus group and a public participation GIS mapping exercise. Special seascapes were associated with a range of positive feelings including solitude, feeling happy and relaxed and in association with happy memories. They also engendered feelings of respect and very strong emotional attachment as well as feelings of awe related to physical characteristics such as the size and scale of cliffs. There was general agreement about the coast being vitally important for well-being, and providing clarity or peace of mind which cannot be found in other places. The sights and views and expanse of sea were important features of special places. Presence of wildlife was also important in the unspoilt nature of the study area seascapes. Diminished well-being was experienced as a result of negative changes to the environmental qualities of seascapes and the threat of further changes. The study findings indicate that local views can contribute to the assessment of values.

4 The seascape of England

4.1 Seascape/marine character assessments

The national level characterisation of all of England's inshore and offshore marine plan areas has been completed as part of rolling programme of MMO1134 studies following Natural England's seascape assessment of the east plan area. There are 53 marine character areas (MCAs) and 10 seascape character areas (SCAs) respectively. Though named differently they are all at a national scale (see Figure 3).

The characterisation has been carried out in line with An approach to seascape character assessment, NECR 105 (Natural England, 2011). The MCAs have a profile setting out location and boundaries, an overall character summary, and reference to adjacent National Character Areas (NCAs) and intervisible national designations and defined landscapes. Key characteristics are also set out. The east plan area SCAs descriptions are divided into key characteristics, physical influences, cultural influences and aesthetic and perceptual qualities.

At a local/regional level there are a number of seascape character assessments following the pioneer local level assessments in Wales, but there is far from comprehensive coverage. Areas covered include the marine areas off North Devon and Exmoor, Dorset, and the Dover Straits. These tend to focus on character and few mention sensitivity. Relevant studies are shown in the references.

Both levels of assessment form a valid basis for the assessment of sensitivity. The level chosen will depend on the scale of development to be assessed and the availability of information.

4.2 National Parks and AONBs

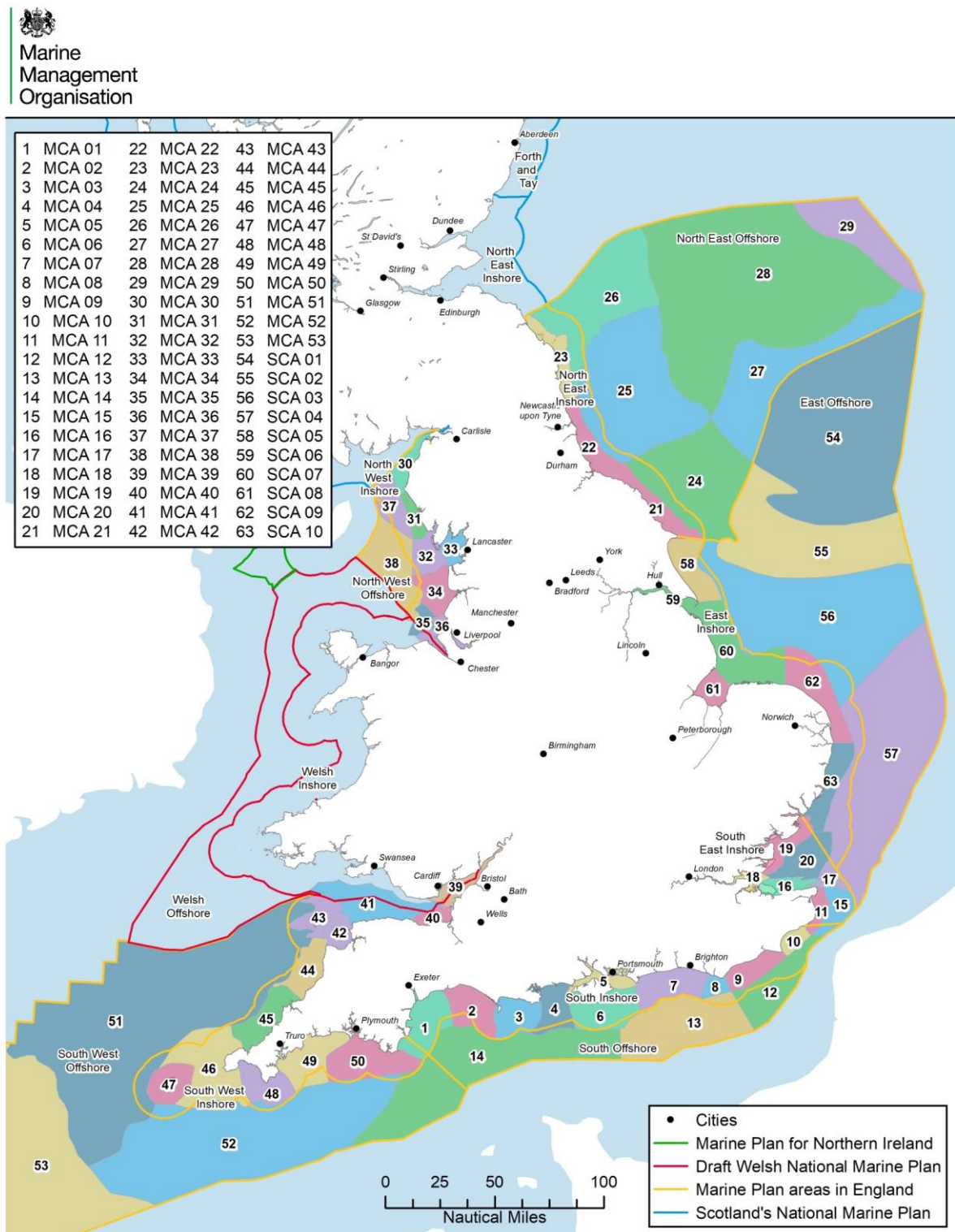
National Parks and Areas of Outstanding Natural Beauty (AONBs) originated under the National Parks and Access to the Countryside Act 1949 as amended by subsequent legislation including the Environment Act 1995 and the CROW Act 2000.

The statutory purposes of National Parks are to conserve and enhance the natural beauty, wildlife and cultural heritage of an area and to promote opportunities for the understanding and enjoyment of the special qualities of an area by the public. National Parks which reach the coast include Exmoor, Lake District, North York Moors, South Downs, New Forest and the Broads. These are illustrated in Figure 4.

The purpose of AONBs is to conserve and enhance natural beauty. AONBs on the coast are numerous and include North Norfolk Coast, Suffolk Coast and Heaths, Kent Downs, High Weald, Chichester Harbour, Isle of Wight, Dorset, East Devon, South Devon, Tamar Valley, Cornwall, North Devon, Quantock Hills, and Arnside and Silverside. These are illustrated in Figure 4.

The special qualities for which areas are designated vary, as does their relationship with the coast and related seascape. This needs to be taken into account when considering their influence on the value and sensitivity of a given MCA/SCA.

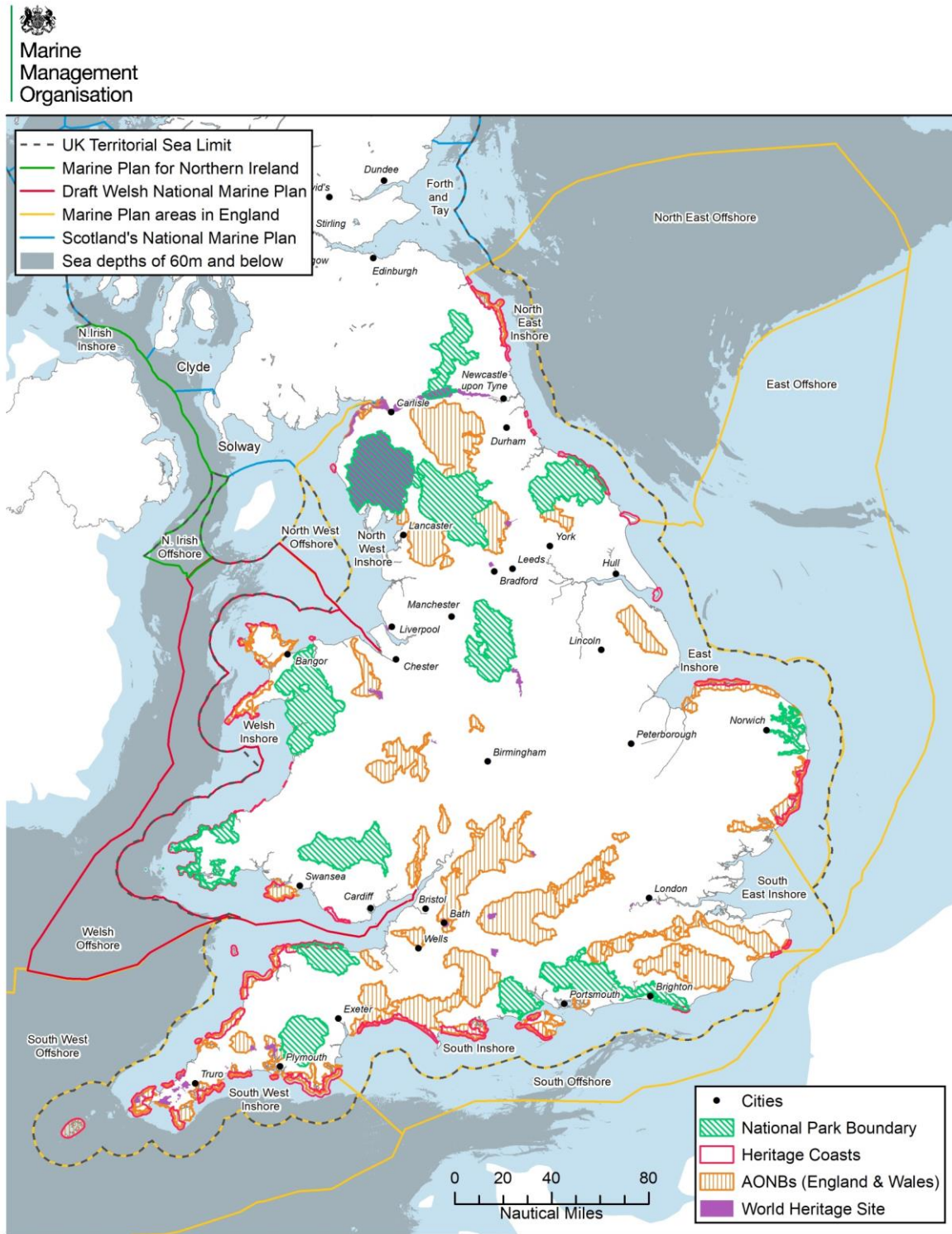
Figure 3: Marine Plan areas, marine character areas and seascape character areas



Date of Publication: 25/11/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation.
 Contains public sector information licenced under the Open Government Licence v3.0. from UKHO, MMO, Marine Scotland, Welsh Government. Contains OS data © Crown Copyright and database right 2019. ESRI Data and Maps CDs, Copyright © 2000, ESRI, Inc

Figure 4: Marine Plan areas and national landscape constraints



Date of Publication: 25/11/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation. Contains public sector information licenced under the Open Government Licence v3.0. from UKHO, MMO, Marine Scotland, Welsh Government, Natural Resource Wales, Natural England. Contains OS data © Crown Copyright and database right 2019. EMODnet Bathymetry Consortium (2018): EMODnet Digital Bathymetry (DTM). ESRI Data and Maps CDs, Copyright © 2000, ESRI, Inc. © Historic England [2019]. The Historic England GIS Data contained in this material was obtained on [12/08/2019]. Up to date Historic England GIS Data can be obtained from <http://www.HistoricEngland.org.uk>.

4.3 Heritage Coasts

Heritage Coasts were established to conserve the best stretches of undeveloped coast in England. These are non-statutory landscape definitions agreed between Natural England and the relevant maritime authorities. They comprise of areas of coast more than 1 mile in length. Their purpose is to conserve, protect and enhance the natural beauty of the coastline and related flora and fauna and heritage features. They often overlap with National Parks and AONBs, reinforcing the importance of these coasts. They also occur in their own right where the hinterland does not have national landscape status. Examples of the latter include Lundy, the Durham Heritage Coast, Spurn Head and Flamborough Headland.

4.4 World Heritage Sites

World Heritage Sites are designated by UNESCO according to their natural (physical, biological, geological) or cultural (historic, aesthetic, archaeological monuments and structures) attributes and have the highest significance as heritage assets. The contribution that seascape makes to their setting is an important factor. Coastal related sites include the Dorset and East Devon Coast (Jurassic Coast) and Cornwall and West Devon Mining Landscape.

4.5 Other designations

Other designations which are relevant to the consideration of seascape include scheduled monuments and listed buildings which may have a particular relationship with the coast such as castles and coastal forts. Registered historic parks and gardens may also have important views over the coast and sea as part of their setting. Local landscape designations may be related to the special qualities of the coast or seascape. Coastal access is being improved with the aim for a coast path around England to be completed by 2020. The completed Wales Coast Path overlooks stretches of the English seascape and coasts.

4.6 Landscape character assessments

There is a national [Landscape Character Assessment of England](#) which defines 159 National Character Areas (NCAs). Each has a more comprehensive profile than the 64 seascape MCA/SCAs including an introduction and summary, a description including key characteristics, statements of environmental opportunity, key facts and data, consideration of landscape change and analysis. These form a helpful context to more detailed landscape character assessments at a local/regional level.

The method for defining the extent and boundaries of these areas is different to MCAs or SCAs and so the boundaries do not necessarily match up. This is perfectly valid as they have a different basis for definition. Coastal NCAs may share relevant key characteristics in common with adjoining MCAs.

Though it is theoretically possible, it is rare for NCAs to be used as a unit for defining sensitivity to different types of development. This is much more normal at a local level and possibly reflects the scale of terrestrial development.

5 Approach to terms

5.1 Overview and intended application

The difference in the use of the terms quality, value and capacity to accommodate change in policy and in current landscape and seascape sensitivity practice and guidance is dealt with below. Our approach is to combine these factors to produce an approach to assessing sensitivity of marine character areas/seascape character areas. This is explained below.

5.2 Approach to quality

Natural England (2012a) defines quality as the physical state of the seascape. It includes the extent to which typical character is represented in individual areas, sometimes referred to as strength of character, the intactness of the seascape from visual, functional and ecological perspectives and the condition or state of repair of individual elements of the seascape.

DTI (2005) includes the assessment of quality/condition in both sensitivity and value. Natural England (2019) considers quality/condition under the heading of susceptibility.

The above documents have been written by qualified landscape/seascape professionals for specific purposes of the seascape or landscape sensitivity assessment. Other professionals, some from related disciplines, have indicated that quality should also include a wider definition including other factors such as people's perceptions and values. The approach here in this new MMO approach is that this factor is considered to be covered as another sub-heading of value and should not be duplicated in quality.

In order to be consistent with the Natural England (2019) approach it is considered that quality should contribute to the assessment of susceptibility and not be double counted under value. This also has the benefit of avoiding the contention of whether the value of inherent characteristics of an area should be influenced by its condition which can be improved with different management.

5.3 Approach to value

It is important that the values society places on seascape character and its attributes and visual qualities are taken into consideration.

The UK Marine Policy Statement, National Planning Policy Framework and National Policy Statements all give the greatest weight to national landscape designations in terms of value. The marine planning authority should have regard to the specific statutory purposes of nationally designated areas where a development proposed within or relatively close to nationally designated areas. The MPS defines these as AONBs, National Parks and Heritage Coasts. The NPPF gives a lower status to Heritage Coasts (as these are defined rather than designated).

It therefore has to be acknowledged that these designations have a substantial influence on the value of related marine character areas (MCAs) or local seascape character areas (LSCAs). The degree of influence is likely to be determined by a number of factors including the defined special qualities of the designation, distance from the designation, intervisibility and the relationship between the designation and character area.

Value will also derive from other factors equivalent to those explored in Natural England (2019, p 18). These include:

- other designations e.g. nature conservation designations, heritage designations such as World Heritage Sites and local landscape designations
- character and sense of place
- valued attributes such as coastal form, perceptual qualities, cultural and natural features and associations, special qualities
- community values- these may be ascertained by engagement with communities who engage with seascape in various ways
- recreational value
- other intrinsic value.

Community values may be ascertained by community engagement or other evidence. This information is important as it relates to people's quality of life. Communities' views may contrast with, or reinforce, 'expert' opinion.

The assessment should reflect and make explicit the range of values found within an area. For some studies, it may be necessary to come to an overall value for an area. This should not be just a 'mathematical' adding up of the values but be based on a judgement on the relative importance of the values considered. This judgement should be backed up by a text justification.

5.4 Approach to capacity

Natural England (2019) defines landscape capacity as the amount of development or change which a particular landscape and the associated visual resource is able to accommodate without undue negative effects on its character and qualities. Our contention is that this is not what the MPS means by capacity for change. Instead, this approach considers 'capacity for change' to mean 'sensitivity to a specific type of development.' This is set out in more detail in the following sections.

Clustering of development is an issue in some marine areas. This is an inevitable consequence of the presence of existing infrastructure which makes further development, including extensions, more cost-effective. It is also a consequence of the standard process of SVIA which usually leads to the assertion that existing development is a key characteristic and therefore the area is not particularly sensitive to further development of this type. There are instances where this approach has led to significant adverse combined cumulative effects.

It could be argued that an area may have reached a threshold whereby more development would fundamentally adversely change its character or affect other related functions e.g. fishing and recreation. This introduces the concept of capacity which is a counterbalance to the standard approach to judgements on landscape

sensitivity and LVIA. This is a contentious issue in the profession with some arguing for, and others arguing against the concept. This may reflect the difference between the influence of the public and private sectors. However, as this is an increasingly common issue, dealing with cumulative effects should be addressed in the guidance.

Overall, the guidance will consider that ‘capacity for change’ means ‘sensitivity to a specific type of development.’

5.5 Approach to design and mitigation

There will be situations where development is required to meet national or local policy objectives such as mitigating climate change. Here, preparation of assessments which only provide information on areas of constraint or opportunity may not be sufficient. The assessment can also be used to inform recommendations on the location and design of development in order to avoid or mitigate effects or, preferably, to create a positive benefit. This may include consideration of the relationship between developments themselves as well as with inherent seascape character and visual receptors. Assessment proformas can include this as an additional consideration. From this, it may be possible to develop overall generic guidelines for different types of development, but this would be separate from the core sensitivity assessment.

6 Proposed method

6.1 Key considerations

6.1.1 Objective and principles

The main objective of the method is to guide how to assess the sensitivity of MCAs or SCAs to defined types and scales of change incorporating consideration of quality and value.

The main principles underpinning the seascape sensitivity assessment method are set out in the Approach document (1.4).

6.1.2 Types of marine development

The types of marine development or change that may be considered are set out in the Approach document (2.3.1). More detail on developments and their attributes are located in [Annex B](#) of this report. This is not definitive or comprehensive and may date over time but has informed the approach to assessing seascape sensitivity.

6.1.3 Use of MCA and SCA information

MCA and SCA information may be adequate to provide baseline information for sensitivity. However, in inshore areas where more detailed information is required existing national and local Landscape Character Assessment information may be useful. This should be used to inform the criteria where relevant.

6.1.4 Process

A summary of the suggested Method is set out in the Approach document (Figure 3). Each of the stages in the process is explained in the Approach document (2.2.2 onwards).

6.1.5 Susceptibility

The potential range of elements and features contributing to seascape character and the related visual resource is complex. It can include elements of hinterland, coastal landform, intertidal areas, subtidal areas, the seabed, water column and surface and all related natural and man-made features, uses and visual resource.

A key consideration is the type of development or change being considered. In some cases, development on the coast or in the intertidal and subtidal area may have direct or indirect physical impacts on features contributing to seascape character. These features therefore need to be considered in the criteria. Developments or other uses far offshore may not affect these features and so they may not be relevant as criteria.

A list of criteria and sub-criteria has been prepared which should cover the range of factors that need to be considered. This is set out in the Annex B of the Approach document. This is derived from consideration of a number of seascape sensitivity assessments in England and Wales.

6.1.6 Values

The proposed value criteria relating to seascape character value are set out in the Approach document (Annex B). Most are likely to be valid in most locations although some may not apply if for example the area is some distance offshore. As with the susceptibility criteria, it is important that assessors prepare their own criteria and satisfy themselves, with appropriate justification, that these cover the relevant range of values contributing to sensitivity for any given study area.

6.1.7 Indicators

Indicators define what makes a seascape or visual resource more or less susceptible to a particular type of development and should be applied to each criteria. These are discussed in the Approach document (2.3.3). Examples of indicative indicators for different types of development (offshore wind farms and marinas) are set out in Annex C of the Approach document.

6.1.8 Sensitivity

The approach to deriving seascape sensitivity is set out in the Approach document (2.4).

6.2 Test areas showing worked examples

The criteria and indicators have been tested in two areas agreed with the MMO. These are SCA1 Dogger Bank and MCA31 St Bees to Haverigg Coastal Waters. These are shown in Figure 5 Figure 5 and assessed in Annex C and Annex D respectively.

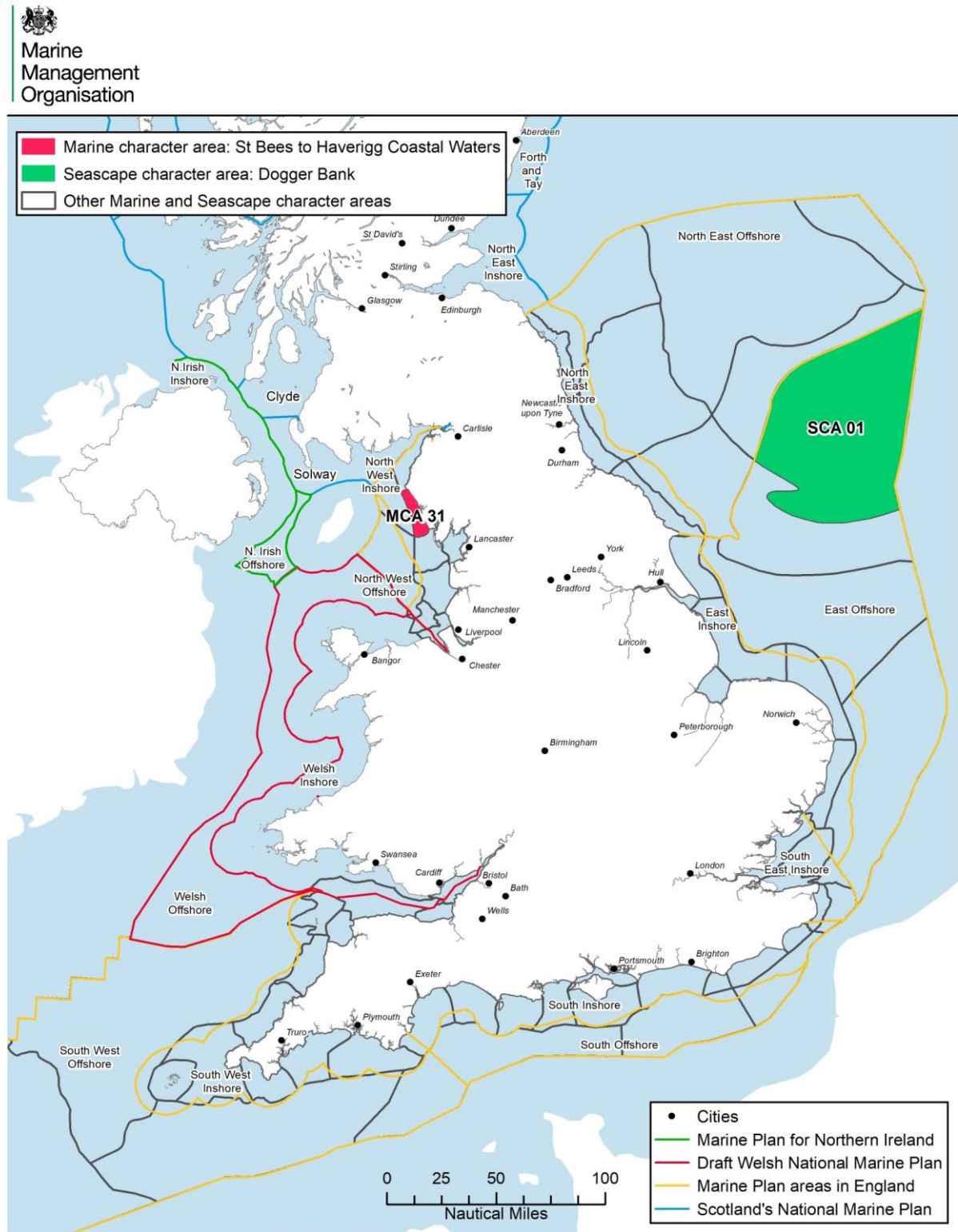
SCA1 Dogger Bank is an offshore area in the North Sea and over 80km from its nearest point to the coast at Flamborough Head. It is a very large area of open sea over 200km across. It was assessed for Natural England and therefore the description has a slightly different format to the subsequently assessed MCAs as part of the MMO1134. This area is assessed for large-scale wind energy development within the SCA (Annex C).

MCA 31 St Bees to Haverigg Coastal Waters is an inshore area extending out to 13 km from the coast of Cumbria. It has very limited uses within the area and a simple coast with the Lake District National Park bordering the sea to the south. The fells within the Park rise behind the narrow coastal plain. Wind farms lie offshore outside the area, but also on the coastal plain. This area is assessed for large-scale offshore wind energy development outside the MCA and for marina development within it (Annex D). It is appreciated that the latter may not be feasible but provides a development type which would have a direct physical impact on the coast and coastal waters compared to the indirect effects of a potential wind farm offshore.

The test assessments given in the annexes are entirely hypothetical and based on a brief and non-comprehensive desk study without site verification. They therefore should not be used as a basis for any subsequent work. However, they give an indication of how the criteria and indicators may work.

Overall, the seascape and visual susceptibility criteria have been found to be valid but quite time-consuming to fill in. It is considered that they may be better used as a checklist for simplified aggregated criteria. This will be partly dictated by time and resources available. The value criteria appear to work well, covering distinct relevant factors.

Figure 5: Pilot test marine/seascape character areas



Date of Publication: 25/11/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation.
 Contains public sector information licenced under the Open Government Licence v3.0. from UKHO, MMO, Marine Scotland, Welsh Government. Contains OS data © Crown Copyright and database right 2019. ESRI Data and Maps CDs, Copyright © 2000, ESRI, Inc

6.3 Status of report

The findings of this technical report have led to a preferred approach for assessing seascape character sensitivity. This is set out in the separate Approach document. The Method should be read as a complementary document to the approach to landscape sensitivity assessment, Natural England (2019).

This technical report provides a background to, and rationale for, the Approach.

References

Countryside Agency, (2006). Review and Evaluation of Heritage Coasts in England, July 2006.

Countryside Council for Wales, Maritime Ireland, Brady Shipman Martin (2001), Guide to Best Practice in Seascape Assessment, INTERREG programme (Contract EU/100/10), 2001.

DECC, (2011). UK Offshore Energy Strategic Environmental Assessment 2, March 2011.

<https://www.gov.uk/government/publications/uk-offshore-energy-strategic-environmental-assessment-2-environmental-report> Last accessed December 2019

DECC, (2016). UK Offshore Energy Strategic Environmental Assessment 3, March 2016.

<https://www.gov.uk/government/consultations/uk-offshore-energy-strategic-environmental-assessment-3-oesea3> Last accessed December 2019

Defra, (2005). Duties on relevant authorities to have regard to the purposes of National Parks, Areas of Outstanding Natural Beauty (AONBs) and the Norfolk and Suffolk Broads Guidance note, March 2005.

Dorset County Council/LDA, (2010). Dorset Coast Landscape and Seascape Character Assessment, September 2010.

DTI. BMT Cordah. (2003). Offshore Wind Energy Generation: Phase 1 proposals and environmental report.

DTI (2005). Guidance on the Assessment of the Impact of Offshore Windfarms: seascape and visual impact report.

English Heritage. Historic Environment Projects, Cornwall Council, Seazone Solutions, (2011). Historic Seascape Characterisation: Bristol Channel and Severn Estuary.

https://archaeologydataservice.ac.uk/archives/view/hscbristol_ah_2011/overview.cfm
Last accessed December 2019

English Heritage. Historic Environment Projects, Cornwall Council, Seazone Solutions, (2011). Historic Seascape Characterisation: South West Peninsula.

<https://research.historicengland.org.uk/Report.aspx?i=15765> Last accessed December 2019

European Landscape Convention, open for signature at Florence on 20 October 2000, (2000) Florence, Council of Europe. Chapter 1, Article 1.

<https://www.coe.int/en/web/landscape> Last accessed December 2019

Government Office for Science, (2018). Foresight Future of the Sea: A report from the Government Chief Scientific Adviser.

<https://www.gov.uk/government/publications/future-of-the-sea--2> Last accessed December 2019

Historic England (formerly English Heritage), (2008). Conservation Principles, Policies and Guidance. April 2008.

<https://historicengland.org.uk/advice/constructive-conservation/conservation-principles/> Last accessed December 2019

Historic England, (2017). Seascape characterisation technical advice document; thesaurus; database user guide. July 2017.

https://archaeologydataservice.ac.uk/archives/view/seascape_he_2018/ Last accessed December 2019

HM Government, (2011). UK Marine Policy Statement, March 2011.

<https://www.gov.uk/government/publications/uk-marine-policy-statement> Last accessed December 2019

Kent County Council, 2015. Seascape character assessment for the Dover Strait, NOSTRA Project, July 2015.

<https://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/environmental-policies/climate-change/dover-strait-projects> Last accessed December 2019

LI and IEMA, 2013. Guidelines for Landscape and Visual Impact Assessment, Edition 3, Routledge, 2013. (GLVIA 3).

Marine and Coastal Access Act 2009, London: HMSO. Available on line at:

<http://www.legislation.gov.uk/ukpga/2009/23/contents> Last accessed December 2019

Ministry of Housing, Communities and Local Government, 2019, National Planning Policy Framework, February 2019.

<https://www.gov.uk/government/publications/national-planning-policy-framework--2> Last accessed December 2019

Ministry of Housing, Communities and Local Government, National Planning Policy guidance- Environment/Landscape, Website accessed 01/11/2019.

<https://www.gov.uk/guidance/natural-environment#landscape> Last accessed December 2019

MMO, (2012), Seascape character area assessment East Inshore and East Offshore marine plan areas, July 2012.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312481/east_seascape.pdf Last accessed December 2019

MMO, (2014). Seascape assessment for the South Marine Plan Areas; technical report. MMO Project No: MMO1037. July 2014.

<https://www.gov.uk/government/publications/seascape-assessment-for-the-south-marine-plan-areas-mmo-1037> Last accessed December 2019

MMO, (2018). MMO1134: Seascape Character Assessments for south west, south east, north west, and north east marine plan areas, September 2018.
<https://www.gov.uk/government/publications/seascape-assessments-for-north-east-north-west-south-east-south-west-marine-plan-areas-mmo1134> Last accessed December 2019

MMO, (2019). MMO1132: Social baseline data for Marine Planning, November 2019.
<https://www.gov.uk/government/publications/social-baseline-data-for-marine-planning-mmo1132> Last accessed December 2019

Natural England (2012a). An Approach to Seascape Character Assessment, NECR105, October 2012.
<http://publications.naturalengland.org.uk/publication/2729852> Last accessed December 2019

Natural England, (2012b). Seascape characterisation around the English Coast (Marine Plan Areas 3 and 4 and Part of Area 6 Pilot Study).NECR106. October 2012.

Natural England, (2019). An approach to landscape sensitivity assessment– to inform spatial planning and land management, NE724, June 2019.
<https://www.gov.uk/government/publications/landscape-sensitivity-assessment> Last accessed December 2019

Natural Resources Wales, (2019). Seascape and visual sensitivity to offshore wind farms in Wales: Strategic assessment and guidance. Stages 1-3. NRW Evidence Series. Report No: 315.
<https://naturalresourceswales.gov.uk/evidence-and-data/research-and-reports/landscape-and-geodiversity-reports/publications-about-landscape-geology-soils-and-features-of-historic-interest/?lang=en> Last accessed December 2019

North Devon Council, North Devon AONB, Exmoor National Park Authority, Torridge District Council, National Trust, Natural England. (2015). North Devon and Exmoor Seascape Character Assessment, November 2015.
<https://www.northdevon.gov.uk/council/strategies-plans-and-policies/environment-and-planning-policies/local-plan/planning-policy-supporting-documents/environment/landscape-assessments/> Last accessed December 2019

Pembrokeshire Coast National Park Authority, (2013). Seascape Character Assessment Supplementary Planning Guidance, December 2013.
<https://www.pembrokeshirecoast.wales/default.asp?pid=614&LangID=1> Last accessed December 2019

Scottish Natural Heritage, (2005). Report 103, An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms.
<https://www.nature.scot/snh-commissioned-report-103-assessment-sensitivity-and-capacity-scottish-seascape-relation-windfarms> Last accessed December 2019

Scottish Natural Heritage, (2012a). Assessing the cumulative impact of onshore wind energy developments. March 2012.

<https://www.nature.scot/professional-advice/planning-and-development/advice-planners-and-developers/renewable-energy-development/onshore-wind-energy/wind-farm-impacts> Last accessed December 2019

Scottish Natural Heritage, (2012b). Offshore renewables- guidance on assessing the impact on coastal landscape and seascape- informing scoping assessments. March 2012.

<https://www.nature.scot/guidance-offshore-renewables-assessing-impact-coastal-landscape-and-seascape-guidance-scoping> Last accessed December 2019

Swansea Council, Neath Port Talbot Council, Carmarthenshire Council, Bridgend Council, Natural Resources Wales, (2017). Carmarthen Bay, Gower & Swansea Bay Local Seascape Character Assessment, November 2017.

<https://www.swansea.gov.uk/sca> Last accessed December 2019

Annex A: Glossary

Term	Definition
Marine character	See seascape character.
Marine character area	See seascape character area. (Term used for national/regional scale units).
Seascape	Seascape is landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.(MPS)
Seascape character	Seascape character is a distinct and recognisable pattern of elements in the seascape that makes one seascape different from another, rather than better or worse. (NECR105)
Seascape character area	These are single unique geographical areas of a particular seascape character type. Each has its own individual character and identity, even though it shares the same generic characteristics with other seascape character areas of the same type. (NECR105)
Seascape character capacity	Seascape capacity refers to the amount of specified development or change which a particular marine or local seascape character area and the associated visual resource is able to accommodate without undue negative effects on its character and qualities. (Adapted from Natural England, 2019)
Seascape character sensitivity	Term applied to marine character and seascape and the associated visual resource, combining judgements of their susceptibility to a specific type of development / development scenario or other change being considered and the value(s) related to that seascape, marine character and visual resource. (Derived from Natural England, 2019)
Seascape character susceptibility	The degree to which a defined seascape character area and its associated visual qualities and attributes might respond to the specified types of development or change without undue negative effects on character and the visual resource. (Adapted from Natural England, 2019)
Seascape character type	These are distinct types of seascape that are relatively homogeneous in character. They are generic in nature in that they may occur in different locations but wherever they occur they share broadly similar combinations of geology, bathymetry, ecology, human influences and perceptual and aesthetic attributes. (NECR105)
Seascape character value	The relative value or importance attached to a seascape character area, which may express national or local consensus, because of its quality, its qualities including perceptual aspects such as scenic beauty, tranquillity and wildness, its natural or historic attributes or features, cultural associations, or its

	relationship with designated or valued landscapes and coasts and their defined special qualities. (Adapted from Natural England, 2019)
Seascape quality	The physical state of the seascape. It includes the extent to which typical character is represented in individual areas, sometimes referred to as strength of character, the intactness of the seascape from visual, functional and ecological perspectives and the condition or state of repair of individual elements of the seascape. (NECR105)

For other definitions, NECR105 or relevant Natural England guidance should be used.

Abbreviations used in the text

AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
DECC	Department of Energy and Climate Change
EIA	Environmental impact assessment
GLVIA	Guidelines for landscape and visual impact assessment
GIS	Geographic information system
HSC	Historic Seascape Characterisation
HWM	High water mark
km	Kilometres
LCA	Landscape character assessment <i>or</i> landscape character area
LVIA	Landscape and visual impact assessment
LWM	low water mark
m	metres
MCA	Marine Character Area
MPA	Marine Planning Area
MPS	Marine Policy Statement
MHW	Mean high water
nm	nautical miles
NE	Natural England
NRW	Natural Resources Wales
SM	Scheduled Monument
SCA	Seascape character assessment / seascape character area
SCT	Seascape character type
SEA	Strategic environment assessment
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SNH	Scottish Natural Heritage
SVIA	Seascape, (landscape) and visual impact assessment
WHS	World Heritage Site

Annex B: Types of marine development

Typical types of marine related development and their nature

(Note: the list is not comprehensive or definitive- its purpose is to inform the development of the seascape sensitivity method. Assessors are responsible for defining their own parameters and descriptions of the types of development that they intend to assess and should not rely on this table.)

Type of development	Typical type, shape and size of structures (vertical, intermediate or horizontal)	Typical extent of overall development (large, medium, small)	Typical location (offshore, inshore, close to coast or coastal)	Nature of physical footprint (seabed, water column, sea surface, coastal edge)	Static or moving, lighting, colour and noise	Duration of development, (permanent, long term, medium term, short term), frequency of operation, seasonality	Likely main seascape, visual and cumulative effects
Renewable or other forms of energy generation							
Wind	Wind turbines with vertical size variation between 100-350m to blade tip above the sea surface on monopole or jacket base; offshore substations and operations bases on platforms in larger developments; cable on sea bed; associated maintenance and supply craft	Medium to large; typically 30 -270 turbines; some larger offshore schemes may include multiple phases.	Older, smaller wind farms tending to be within 8km of shore. More recent larger schemes average 22km from shore. Some are proposed further offshore 40km+;	Vast majority of turbines have monopile or jacket foundations on the sea bed in seas maximum depth 60m. Floating turbines anchored to sea bed in deeper waters.	Moving turbine blades unless in calm conditions; generally pale grey with Trinity House yellow on bases; aircraft warning lights on nacelles; navigational warning lights on turbines and surrounding buoys; turbine noise at close distances.	Long term installation; constantly in operation but blade movement and energy generation dependent on wind speed/ meteorological conditions.	Primarily visual effects of offshore components on onshore and offshore receptors with associated effects on character. Partly dependent on size of structures and distance from shore. Wide extent of effects due to the size of structures and extent of developments. Secondary potential localised effects on seabed- with impacts on physical and historic features.

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
	during operation; associated onshore infrastructure including substations, cable and pylons/poles.						<p>Secondary effects from onshore/coastal infrastructure.</p> <p>Potential cumulative effects with other windfarms and multi-phase schemes.</p>
Wave	Mostly at demonstration stage at present. Low, mostly horizontal, steel generating structures and associated onshore infrastructure; cables on sea bed; the four most common models are point absorber buoys, surface attenuators, oscillating water columns, and overtopping devices	Small to date	Inshore and offshore	Structures on the sea surface and suspended below surface-anchored to the seabed.	Moving parts depending on model, unless in calm conditions; generally recessive colours but with navigational warning colouring in parts and lights & Trinity House buoyage; underwater noise; some models such as the oscillating water column produce high noise levels.	Long term installation; constantly in operation with but movement and energy generation dependent on sea/ meteorological conditions.	<p>Some visual impact of structures with change in character.</p> <p>Due to size/height, effects more localized than wind.</p>

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
Tidal lagoons	None in UK at present. Impounded lagoon enclosed by a rock sea wall typically several km long, around 14m AOD with generating turbine structures in concrete structure, gantry crane, sluice and lock gates and associated maintenance and possibly visitor buildings/ structures; lighting; onshore infrastructure for maintenance and possibly leisure.	Generally medium, some potentially large; most likely where there is a large tidal range	Inshore and coast; onshore infrastructure	Sea walls and turbine structures on sea bed; enclosed lagoon silting up over time with possible associated maintenance.	Static; moving turbine blades only; generally recessive colours; navigational warning lights & buoyage; underwater noise	Permanent installation; In operation four times in 24 hours when sufficient head on incoming or outgoing tides.	Character impact on coastal/inshore seascape; visual impacts primarily on onshore receptors especially at low tide-variation of 4m to 13m seawall exposed depending on tide level. Effects potentially local depending on extent of development. Effects on coastal processes may have impacts on coast either side either through increased erosion or deposition.

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
Tidal stream	Mostly at demonstration stage at present. Either submerged generating structures or turbines suspended between low vertical supports; cables on sea bed; associated onshore infrastructure.	Small to date; the largest tidal stream array is located just off the northern tip of Scotland, a 2MW floating device	In areas of high tidal stream, typically close to coast e.g. around headlands or in sounds between islands and mainland	Low towers with foundations on seabed or surface structure anchored to seabed.	Static with moving turbine blades only; potentially recessive colours but Trinity House yellow or red for many structures above sea level; navigational warning lights & buoyage; underwater noise	Long term installation; constantly in operation	Some visual impact of structures with change in character. Due to size effects more localised. Impact on water column and related tidal, seabed, water conditions and marine biodiversity.
Nuclear	Multiple large reactor, fuel, turbine hall and ancillary buildings (reactors 56x56m and 64m high for Hinckley Point C) and related infrastructure such as generator, waste, storage and workshop buildings, effluent tanks, sub stations,	Large onshore sites with footprint of generally over 3.4km ²	Often in coastal locations generally in remote areas located by the sea to take advantage of sea water cooling,	Onshore and coastal edge. Currently 15 operational reactors in 8 locations in the UK.	Static infrastructure; colours of buildings generally grey or pale/neutral; localised noise in operation; lighting at night; navigational warning lights and buoyage associated with jetty, sea water intake and outfalls.	Permanent installation in operational phase; uncertainties over decommissioning; constantly in operation	Visual effects of onshore components on and onshore and offshore receptors with associated effects on character. Wide extent of effects due to the size of structures and extent of development. Potential localised physical effects on water column and sea bed through cooling infrastructure and operation, impact on marine biodiversity, and impact on cultural features.

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
	transmission infrastructure; water intakes, outfalls and tunnels on or under sea-bed; enhanced concrete sea walls; jetty if required; security fencing and lighting; related landscape mitigation measures such as bunds and plant screens						
Oil or gas rigs	Very large structures (up to 100m high) drilling and testing rigs and platforms, cranes and gantries. Secondary infrastructure onshore including pipelines, gas reception facilities and LNG import facilities;	Medium to large scale offshore; potentially large wharves and processing sites onshore.	Offshore rigs; onshore refineries; potential future offshore gas storage.	Rigs may either be founded on sea bed in shallow waters, or floating and moored to sea bed in deeper seas.	Static steel or concrete rigs, often painted yellow, red, white or grey, but note associated shipping and helicopter movements; navigational hazard lighting; noise during exploration and operationally.	Long term installation; constantly in operation.	Primarily visual effects of offshore components on onshore and offshore receptors with associated effects on character. Largely dependent on scale of rig and distance from shore. Potentially wide extent of effects due to the size of structures and extent of developments.

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
	subsea gas storage facilities and pipelines						Potential for cumulative impacts if multiple rigs in oil or gas field.
Other developments							
Fish farms or aquaculture	Generally multiple horizontal floating pens e.g. for salmon (pens can be up to 90m circumference but often smaller) is approx. 25m diameter); size in UK limited to 2500 tonnes of fish per site; or areas of suspended rafts, ropes or poles e.g. for mussels or cages for shellfish, with surface buoys.	Small to medium	Generally inshore, often in sheltered bays or inlets; but future larger developments possible offshore.	Predominantly at surface, with pens; in watercolumn for mussels, and seabed for other shellfish.	Static equipment but operational activity, incl. boats and maintenance activities; generally recessive colours; navigational warning lights & buoyage.	Medium term installation; most operational work in daytime. Shellfish farms may be unattended for longer periods.	Visual effects of pens and rafts on onshore receptors with associated effects on character. Largely dependent on distance from shore. Mostly localised effects due to the limited size of structures and extent of development. Potential for cumulative impacts if multiple farms in proximity.

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
Ports	Infrastructure including wharves, gantries, access ramps and hardstanding areas, for commercial and passenger transport; associated activities and services including shipbuilding and repair, storage and other transport interchanges, waste disposal.	Medium to large	Coast and onshore; dredging of navigational channels.	Coastal edge; inshore anchorages.	Movement of vessels and motor vehicles/trains; static infrastructure; operational & navigational lighting; noise from operations; buoyage with Trinity House yellow on bases depending on type; noise of ships, vehicle movements and loading /unloading.	Permanent infrastructure; frequency and timing of vessel movements varies with operational needs; constantly in operation but more passenger use in summer.	<p>Effects on coastal character.</p> <p>Visual effects on onshore receptors with associated effects on character. Dependent on scale of development and character of landscape context.</p> <p>Physical impacts on coastline e.g. saltmarsh , intertidal area e.g. reedbeds, marine heritage and hydrography.</p> <p>Effects of movement of shipping, noise and lighting.</p>

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
Marinas & moorings	Pontoons (typically wooden decks over steel structure with floats, 2-3 m wide with smaller side 'fingers', plus posts) and organised berths with associated areas of hardstanding; or moorings on buoys; infrastructure including club houses for example, for recreational activity; associated services including boatyards and repair and dry docks and waste disposal.	Small to medium	Inshore & coast, in sheltered locations such as bays, estuaries or inlets.	Sea surface and associated onshore infrastructure.	Static infrastructure; movement of boats and people; boats generally white; lighting from boats and navigational buoyage, some with Trinity House yellow at base depending on type; limited noise from leisure activities.	Long term infrastructure; frequency of use and timing of vessel movements varies with tourist seasons.	Effects on coastal character. Visual effects on onshore receptors with associated effects on character. Dependent on scale of development and character of landscape context. Mostly localised effects. Potential cumulative effects in localised area.

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
Aggregate dredging and deposition	Dredging for aggregates for commercial use; dredging for navigational channels etc, deposition for beach replenishment for example; disposal of waste materials.	Diverse	Dredging is mostly inshore in shallow waters; disposal is mostly offshore; at ports, wharves and storage areas with associated transport infrastructure.	Sea bed for dredging or disposal; sediment plumes in water column.	Vessel movement for dredging or deposition; colour of ships varies; some noise both at sea and onshore; lights on ships.	Short term and occasional.	<p>Primary impacts on hydrographical, benthic and sedimentary conditions and related marine ecosystem.</p> <p>Impact on marine heritage.</p> <p>Visual and character and noise impacts potentially on onshore marine receptors may not be required to be assessed.</p>
Coastal defences	Embankments, gabions, revetments, seawalls, timber or natural structures; size determined by flood defence needs and tidal range.	Diverse according to need.	Coastal.	Coastal edge.	Static, diverse materials and design may include natural materials, concrete or steel.	Permanent.	<p>Effects on coastal processes and biodiversity.</p> <p>Effects on coastal character.</p> <p>Visual effects on onshore and offshore receptors with associated effects on character. Dependent on height and length of defences and character of landscape context.</p> <p>Mostly localised effects.</p> <p>Secondary impacts on recreational access.</p>

Type of Development	Typical structures	Typical extent	Typical location	Physical footprint	Movement, lighting, colour, noise	Duration, frequency of operation	Likely main seascape, visual and cumulative effects
Defence & military ranges	Areas used for defence training, tests and evaluation; naval, missile and airborne activities; onshore transmitters.	Medium to large restricted areas. Potentially very large exclusion zone at times of firing (570 sq km at Manorbier).	Inshore and coastal in remote locations.	Water column and seabed.	Noise of firing and explosions, and military craft or aircraft; aircraft in flight especially if low flying.	Short term and occasional operations, Normal firing times (Pembrey, Wales) are 9am to 5pm on weekdays, with irregular night firing.	Primary impacts from noise, and visual impact on onshore receptors of aircraft flight paths. Reduction in tranquillity. Secondary impacts on hydrographical and benthic conditions; may impact marine heritage.
Marine carbon capture and storage	At feasibility stage at present, likely first installations 'at scale' in 2030s; potential for infrastructure re-use after oil & gas use in central North Sea and East Irish Sea.	Pilot project around the world vary in proposed technology and form;	Unknown.	Seabed and water column.	Static.	Long term.	Same impacts as oil and gas rigs as reuse of existing infrastructure.

Annex C SCA 1 maps and seascape sensitivity worked example

Area: SCA1

Seascape sensitivity to offshore wind farms

Scenario:

Offshore windfarms **within** area. Typically:

- 300 turbines
- 300m high to blade tip
- 1.5 km spacing
- 20 platforms of substations/accommodation
- transmission cable

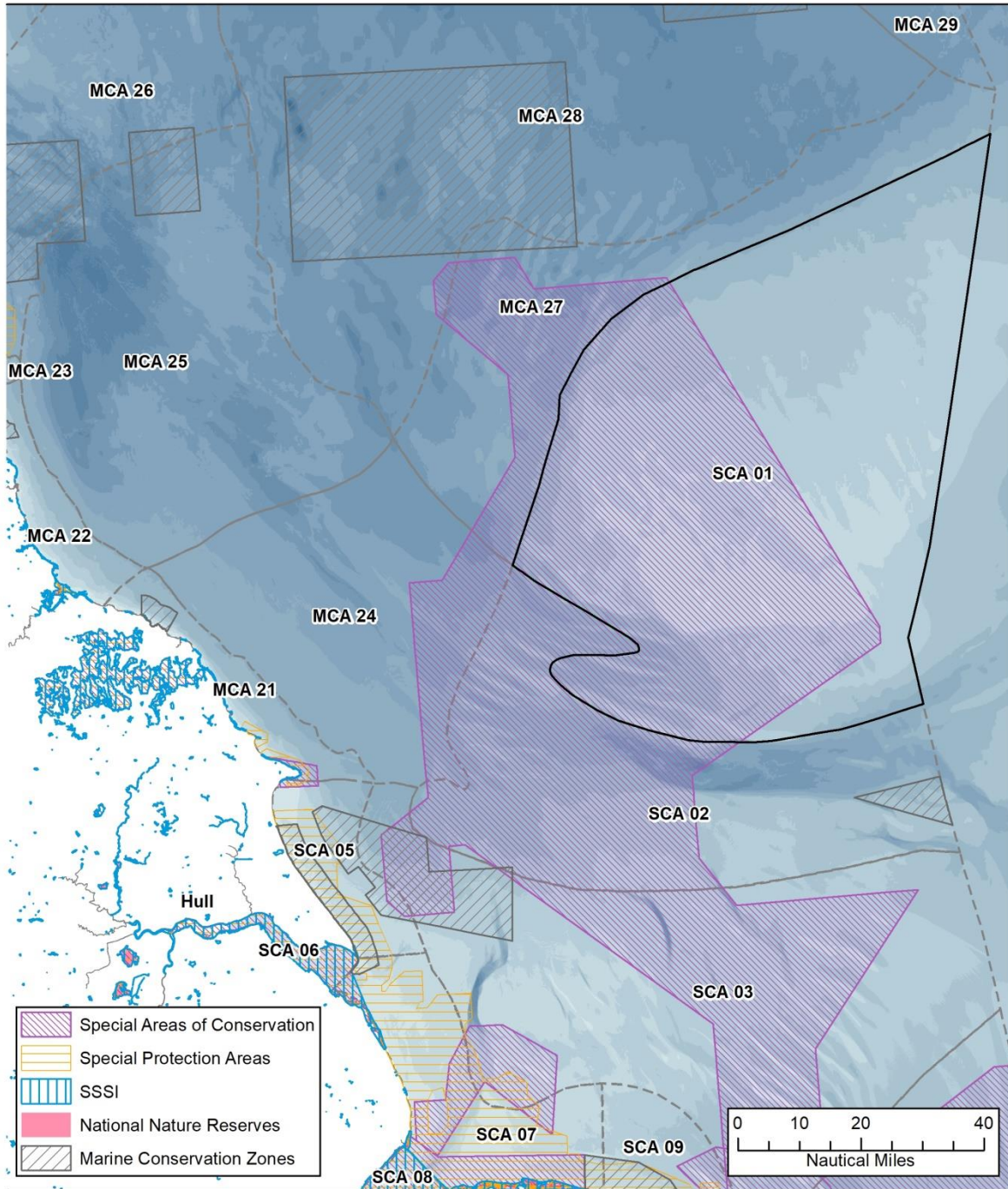
Notes:

The assessment is indicative based on SCA descriptive information only and should not be applied in practice.



Marine
Management
Organisation

**Figure SCA1.1: Seascape Character Area (SCA) 1 -
Ecological designations**

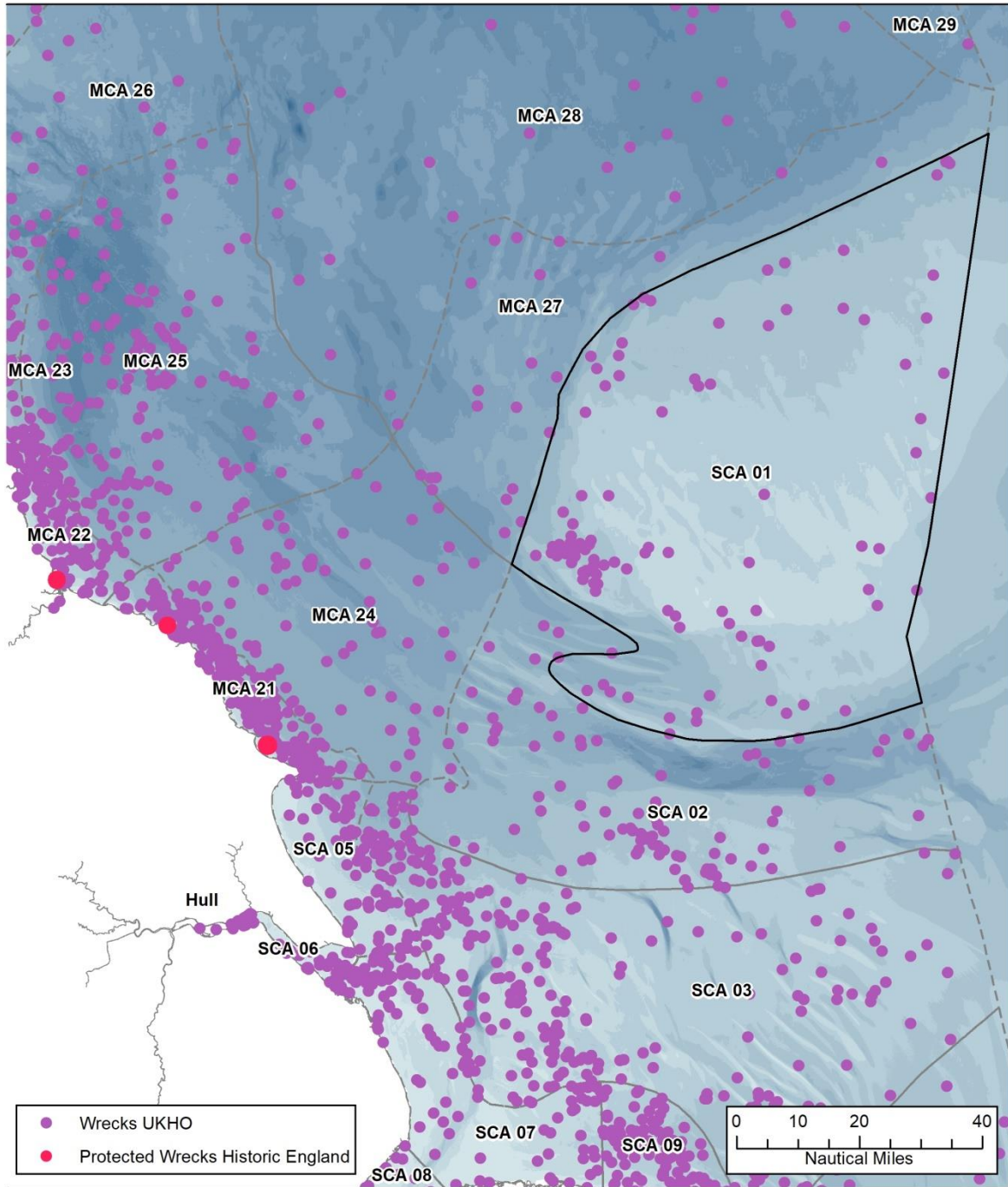


Date of Publication: 22/08/2019
Coordinate System: ETRS 1989 UTM
Zone 30N
Projection: Transverse Mercator

Not to be used for Navigation.
Contains public sector information, licenced under the Open Government
Licence v3.0. from MMO, Natural England. Contains OS data © Crown
Copyright and database right 2019. EMODnet Bathymetry Consortium (2018);
EMODnet Digital Bathymetry (DTM).



Figure SCA1.2: Seascape Character Area (SCA) 1 - Heritage assets and designations

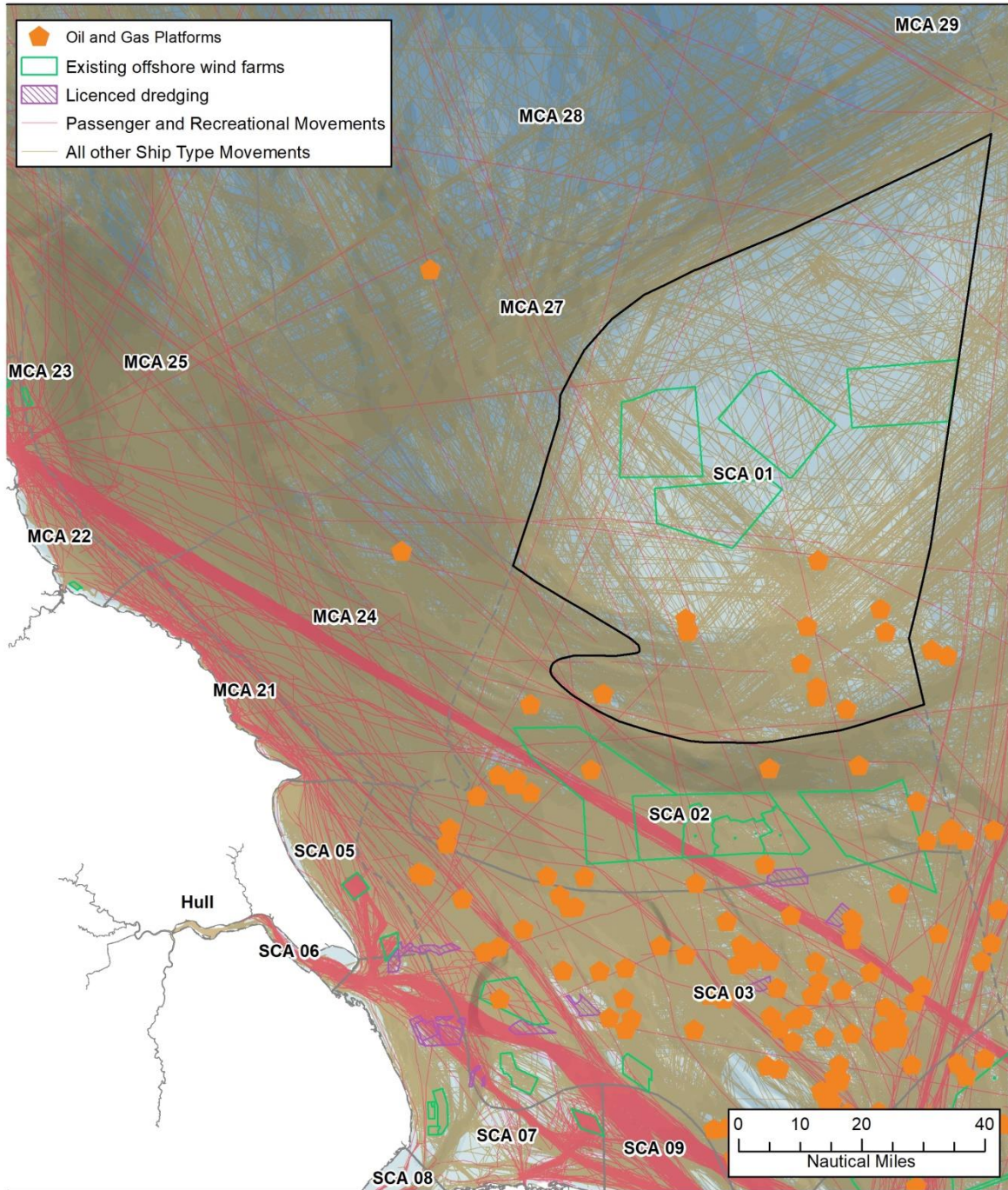


Date of Publication: 22/08/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation. Contains public sector information, licenced under the Open Government Licence v3.0. from UKHO and MMO. Contains OS data © Crown Copyright and database right 2019. EMODnet Bathymetry Consortium (2018); EMODnet Digital Bathymetry (DTM). © Historic England [2019]. The Historic England GIS Data contained in this material was obtained on [12/08/2019]. Up to date Historic England GIS Data can be obtained from



Figure SCA1.3: Seascape Character Area (SCA) 1 - Access and recreation and sea uses



Date of Publication: 22/08/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation.
 Contains public sector information, licenced under the Open Government Licence v3.0. from MMO (AIS data 2015), Natural England. Contains OS data © Crown Copyright and database right 2019. EMODnet Bathymetry Consortium (2018): EMODnet Digital Bathymetry (DTM). EMODnet Human Activities, Hydrocarbon Extraction: Offshore Installations. The Crown Estate © Crown copyright (2019).

SUSCEPTIBILITY							
Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Natural							
Seabed	Seabed/ sedimentary geology and form.						Gravel, sandy gravel, shallow waters, some channels
Tidal range/ currents	Tidal range, direction and speed of currents						Tidal but no seabed exposed
Sea surface	Waviness/ exposure.						Exposed
Key habitats, features and species	Marine, intertidal, coastal edge (if relevant).						Fish spawning habitats and nursery areas
Cultural/Social							
Use of the sea	Navigation, fishing, leisure, energy production, mineral extraction etc.						Extensive windfarms in the middle of the area, gas platforms to the south, RAF military practice area, submarine training, important commercial fisheries.
Historic features at sea, on seabed or buried below	e.g. wrecks, paleolandscapes						Mesolithic archaeology of human artefacts (Doggerland), Pleistocene animal remains, concentration of wrecks to the south west.
Cultural associations	e.g. former use of the sea or coast, boatmaking, former trade routes, associations with artists and writers, food traditions,						Perception of area in BBC shipping (weather) forecast (Dogger), associations with fishing.

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
	spiritual connections, education and interpretation etc						
Quality/ Condition							
Intactness	Degree of completeness or fragmentation or area character or elements, presence of detractors and extent.						Presence of existing windfarms and oil platforms detract
State of repair	Condition of coastal natural and built features/ elements, maintained or not maintained.						Not known
Aesthetic and Perceptual							
Scale	Of sea in relation to coastal form or offshore.						Very large-scale. Existing windfarms already scale the area
Openness and enclosure	Degree and nature of enclosure of sea by land, framing of views.						Open/unimpeded views
Exposure	Sheltered, calm, exposed.						Exposed
Seascape pattern and foci	Features and elements on/above the sea surface.						Existing windfarms and platforms

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Tranquillity	Movement						Extensive windfarms and gas platforms, RAF military practice area, submarine training, important commercial fisheries all contribute to movement in the middle and south. Less movement to the north.
Tranquillity	Presence of man-made structures						Windfarms and platforms to the south
Tranquillity	Dark skies/lighting						Windfarms and platforms to the south
Naturalness Wildness	Sense of natural /semi-natural character uninfluenced by man.						Windfarms and platforms to the south. Wild and natural to the north.
Remoteness	Perceived distance from centres of population						Remote
Visual Characteristics							
Key views- land to sea sea to land sea to sea	Including nature of views and elevation, perhaps including iconic features. Views from within area and from outside.						The sea to sea views. Very limited leisure sailing.
Intervisibility of the area with important receptors	Amount/length/ extent /nature of intervisibility and distance away from unit/ development. e.g. relationship in terms of angle of view,						No intervisibility

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
	topography influences e.g. elevation and form- plateau, slopes etc.						
Typical receptors – type and number	e.g. coast walkers, visitors to coast/features, beach visitors, residents, leisure sailors, ferries, shipping, urban areas etc.						Limited shipping in adjacent areas and support craft
How seascape is experienced	Summarise whether experienced mainly from coast or sea, from remote/ secluded areas or populated areas, from elevated or low positions etc						Area little used except by people who work in it for renewable or carbon energy, or fishing.
Overall susceptibility							

VALUE							
Main criteria	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Landscape designations- National, regional, local	e.g. National Parks, AONBs, Heritage Coast, local countryside designations, (distance, relationship, extent of role as setting).						No designations
Nature conservation designations	Marine and coastal e.g. MCZ, RAMSAR, SAC, SPA, SSSI etc (if relevant).						SAC - half area to the south
Heritage designations	Marine and coastal- e.g. WHS, listed buildings, historic parks and gardens, Conservation Areas, and their settings (if relevant).						None known
Relevant special qualities	If landscape/ coastal designation overlooks area. (List and define the degree to which the area contributes to these).						N/A
Other valued attributes	Scenic quality						Open sea
Other valued attributes	Perceptual aspects - e.g. wildness, tranquillity,						Park tranquil, part not tranquil
Other valued attributes	Non-designated cultural or natural features						Doggerland
Other valued attributes	Cultural associations						Radio shipping forecast- Dogger
Other valued attributes	Rarity, representativeness						-
Strength of character and sense of place	Distinctiveness of area, features or elements.						N/A

Main criteria	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Community values	Value associated with area or features/elements by people-communities of interest and place, public attitudes.						-
Recreational value	Use for leisure or sport on sea, intertidal, coast.						None?
Overall value							
Overall sensitivity	M/L						
Summary justification							

Annex D: MCA 31 maps and seascape sensitivity worked example

Area: MCA31

Sensitivity to offshore wind farms

Scenario:

Offshore windfarms **outside** area (say 20 km from coast). Typically:

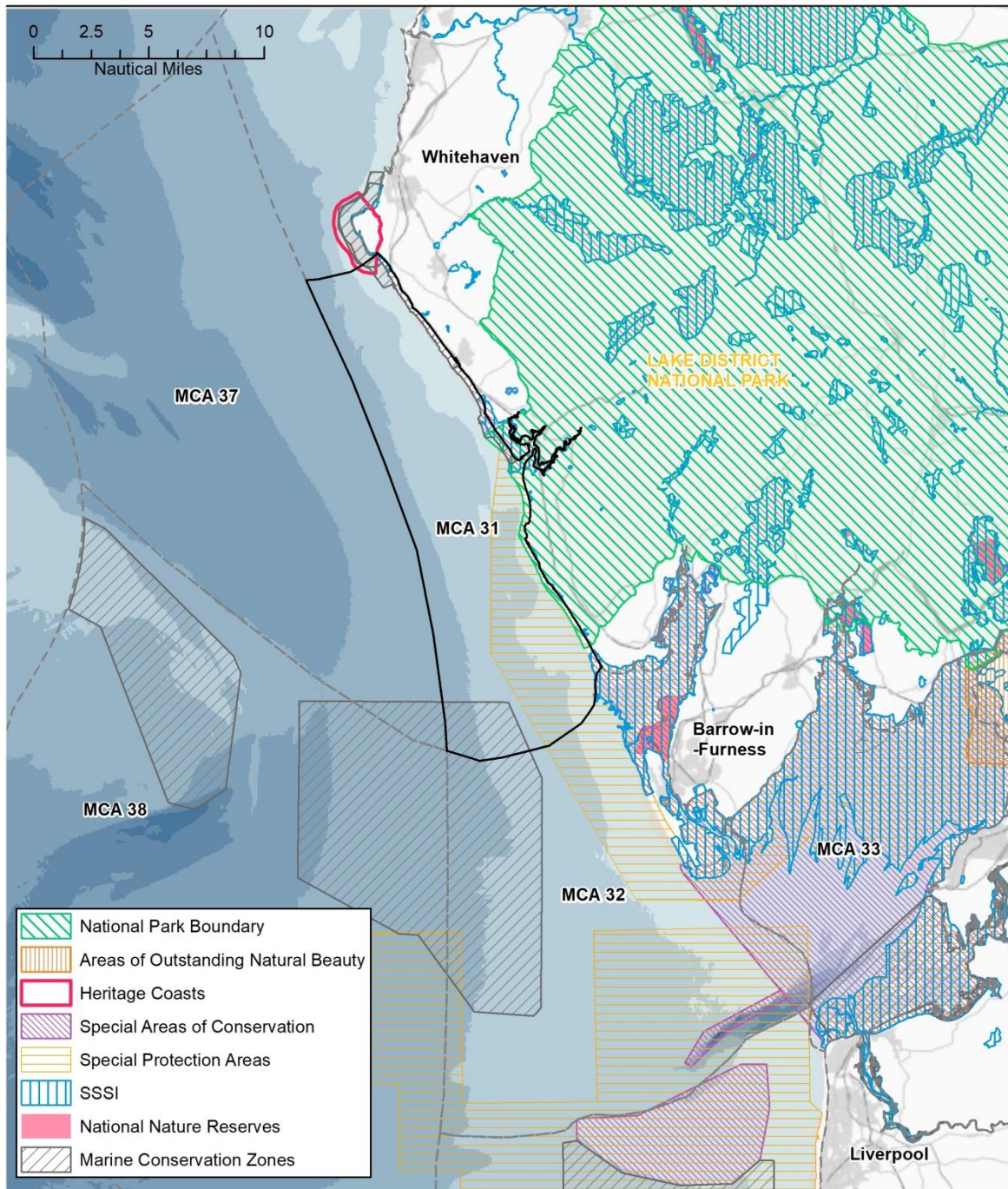
- 100 turbines
- 220 m high to blade tip
- 1.2 km spacing
- 2 platforms of substations
- transmission cable through area to shore within area

Note:

The assessment is indicative based on MCA descriptive information only and should not be applied in practice.



Figure MCA31.1: Marine Character Area (MCA) 31 - Landscape and ecological designations

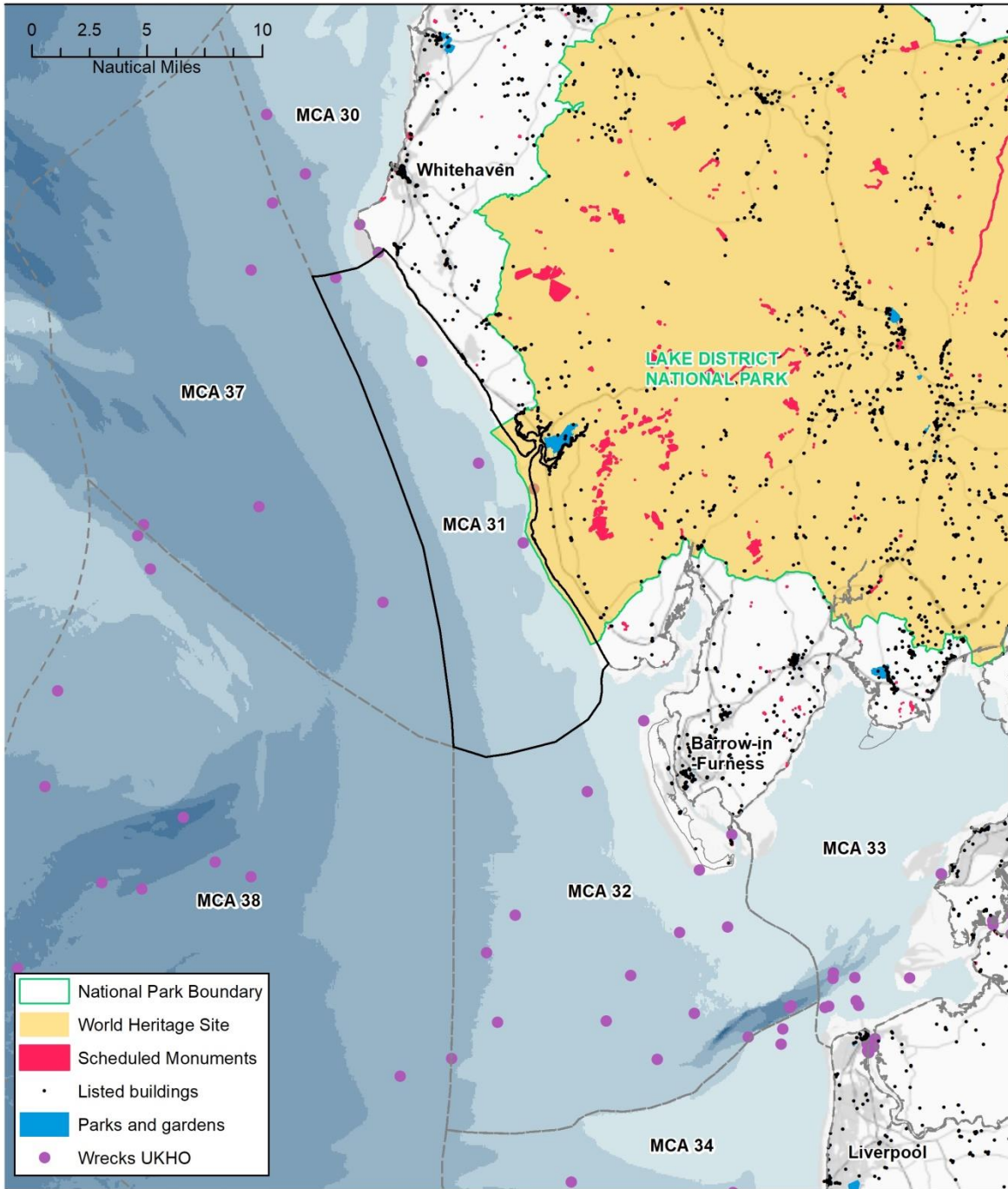


Date of Publication: 22/08/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation.
 Contains public sector information, licenced under the Open Government
 Licence v3.0. from MMO, Natural England. Contains OS data © Crown
 Copyright and database right 2019. EMODnet Bathymetry Consortium (2018);
 EMODnet Digital Bathymetry (DTM).



Figure MCA31.2: Marine Character Area (MCA) 31 - Heritage assets and designations



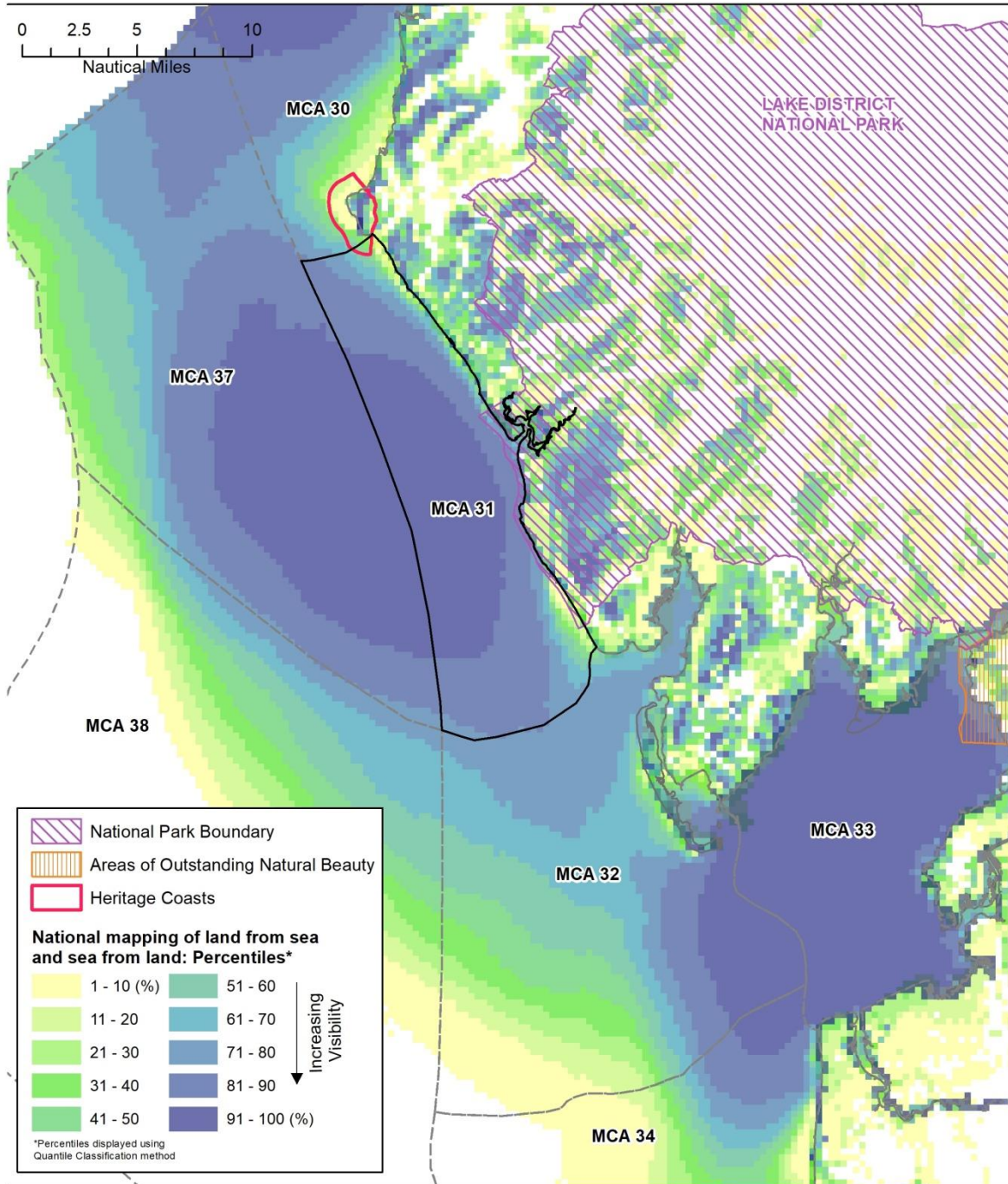
Date of Publication: 22/08/2019
Coordinate System: ETRS 1989 UTM
Zone 30N
Projection: Transverse Mercator

Not to be used for Navigation. Contains public sector information, licenced under the Open Government Licence v3.0. from UKHO, MMO, Natural England. Contains OS data © Crown Copyright and database right 2019. EMODnet Bathymetry Consortium (2018): EMODnet Digital Bathymetry (DTM). © Historic England [2019]. The Historic England GIS Data contained in this material was obtained on [12/08/2019]. Up to date Historic England GIS Data can be obtained from <http://www.HistoricEngland.org.uk>.



Marine Management Organisation

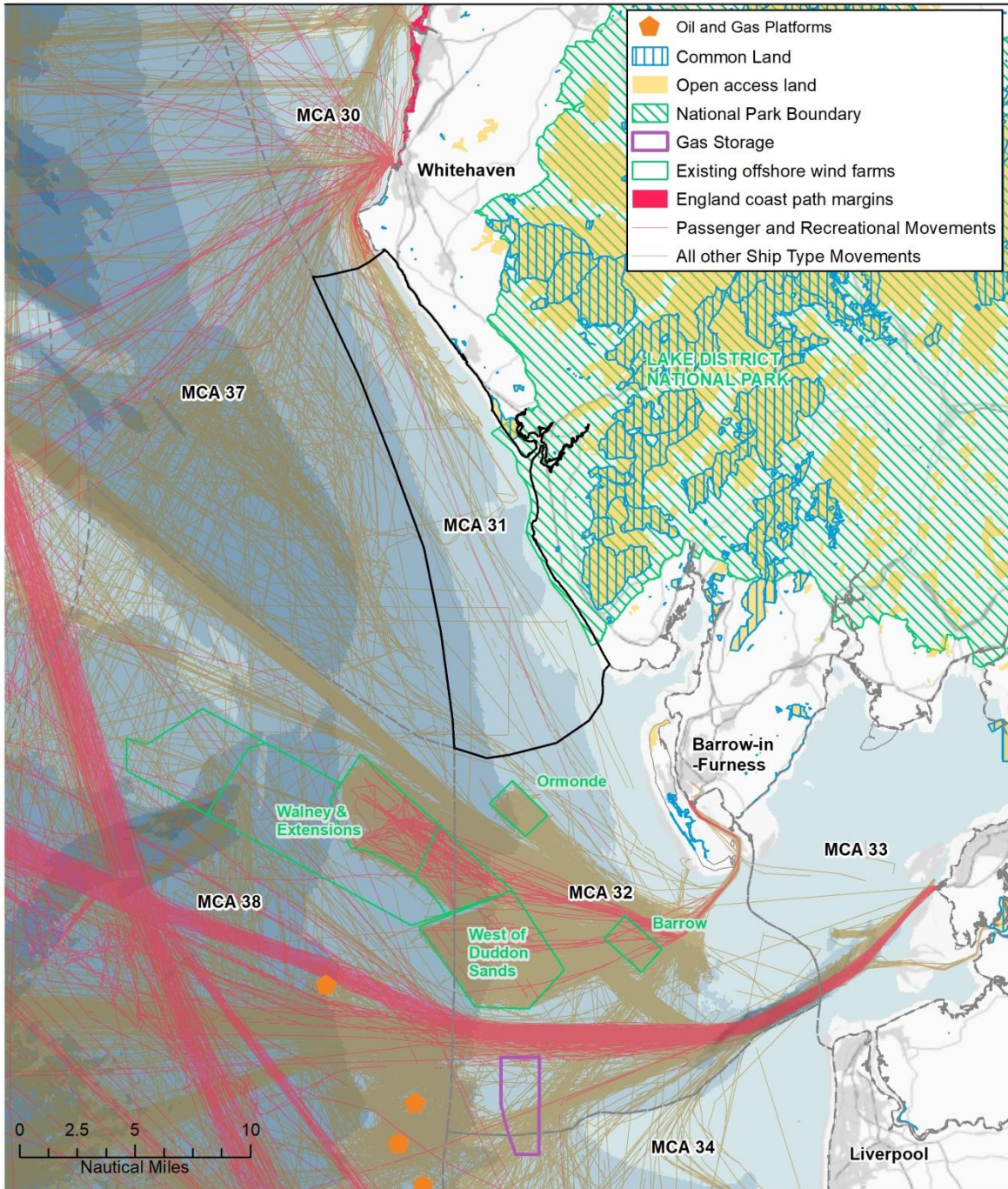
Figure MCA31.3: Marine Character Area (MCA) 31 - Viewshed intervisibility of land from sea and sea from land



Date of Publication: 22/08/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation.
 Contains public sector information, licenced under the Open Government
 Licence v3.0. from MMO, Natural England. Contains OS data © Crown
 Copyright and database right 2019.

Figure MCA31.4: Marine Character Area (MCA) 31 - Access and recreation and sea uses



Date of Publication: 22/08/2019
 Coordinate System: ETRS 1989 UTM
 Zone 30N
 Projection: Transverse Mercator

Not to be used for Navigation.
 Contains public sector information, licenced under the Open Government Licence v3.0. from MMO (AIS data 2015), Natural England. Contains OS data © Crown Copyright and database right 2019. EMODnet Bathymetry Consortium (2018): EMODnet Digital Bathymetry (DTM). EMODnet Human Activities, Hydrocarbon Extraction: Offshore Installations. The Crown Estate © Crown copyright (2019).

SUSCEPTIBILITY							
Main criteria seascape- long list	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Natural							
Coastal edge	Cliffs, rocky coasts, upper beach, dunes etc						Generally smooth coast with few indentations, low cliffs or dunes
Coastal edge	Intertidal						Relatively simple large beaches with some man-made interventions
Tidal range/ currents	Tidal range, direction and speed of currents						Very limited range
Coastal processes	Deposition or erosion of sediments and direction.						N/A
Sea surface	Waviness/ exposure.						N/A
Key habitats, features and species	Marine, intertidal, coastal edge (if relevant).						N/A
Cultural/Social							
Use of the sea	Navigation, fishing, leisure, energy production, mineral extraction etc.						Military firing range, limited fishing, limited recreational sailing routes. Windfarms to the south and west MCAs 32 and 38.
Use of the coast/ hinterland if relevant	Settlement, industry, marine related development such as ports or harbours, industry, leisure/tourism, agriculture, dunes etc.						Predominantly rural edge with limited settlement focused on Ravenglass and St Bees. Isolated interventions of nuclear-power plant at Sellafield and Haverigg onshore windfarm.

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Historic features at sea, on seabed or buried below	e.g. wrecks, paleolandscapes						N/A
Historic features on coast (if relevant)	e.g. coastal forts, castles, lighthouses						Roman settlement at Ravenglass
Cultural associations	e.g. former use of the sea or coast, boatmaking, former trade routes, associations with artists and writers, food traditions, spiritual connections, education and interpretation etc						'Energy Coast' Association of area with Lake District National Park
Quality/ Condition							
Intactness	Degree of completeness or fragmentation or area character or elements, presence of detractors and extent.						Generally intact with few detractors (Sellafeld and Haverigg, some caravan parks)
State of repair	Condition of coastal natural and built features/ elements, maintained or not maintained.						Generally good condition?

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Aesthetic and Perceptual							
Scale	Of sea in relation to coastal form or offshore.						Large scale views. Other windfarms offshore.
Openness and enclosure	Degree and nature of enclosure of sea by land, framing of views.						Openness is a key characteristic but unimpeded
Exposure	Sheltered, calm, exposed.						Moderately exposed
Aspect	Relationship with sun.						Offshore windfarms may potentially interfere with views of the sunset. Many views over the area are elevated on fells behind the coast
Seascape pattern and foci	Features and elements on/above the sea surface.						Offshore windfarms to the south and south-west of MCA
Seascape pattern and foci - coast and hinterland (if relevant)	e.g. Headlands, cliffs, high hills, mountains or landmarks such as forts or castles.						Headland at St Bees Head to the north. Fells behind the coast including Black Combe provide positive backcloth.
Tranquillity	Movement						Relatively limited
Tranquillity	Presence of man-made structures						No substantial structures within the marine area but Sellafield and Haverigg windfarm on the coast.
Tranquillity	Dark skies/lighting						Predominantly dark night skies especially to the south.

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
							Occasional lights- e.g. Sellafield and small settlements.
Naturalness Wildness	Sense of natural /semi-natural character uninfluenced by man.						Generally undeveloped seascape
Remoteness	Perceived distance from centres of population.						Moderately remote- only small settlements but occasional caravan parks.
Visual Characteristics							
Key views- land to sea sea to land sea to sea	Including nature of views and elevation, perhaps including iconic features. Views from within area and from outside.						Mainly land to sea – elevated views from fells including Black Combe. Limited leisure sailing with views likely to be mainly focused towards Lake District, although views to Isle of Man.
Intervisibility of the area with important receptors	Amount/length/ extent /nature of intervisibility and distance away from unit/ development. e.g. relationship in terms of angle of view, topography influences e.g. elevation and form- plateau, slopes etc.						Sea highly visible from land due to coastal hill slopes and elevated fells.
Typical receptors – type and number	e.g. coast walkers, visitors to coast/features, beach visitors,						PROWs and open access land users on hills and fells Some beach users Very limited recreational sailors

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
	residents, leisure sailors, ferries, shipping, urban areas etc.						Coast path?
How seascape is experienced	Summarise whether experienced mainly from coast or sea, from remote/secluded areas or populated areas, from elevated or low positions etc						Key views mainly from PROWs and open access land users on hills and fells
Relationship between seascape area and adjacent coast or character area							
Relationship between components of seascape character (if relevant)	Key relationships between hinterland, coastal edge, intertidal area and sea						Relationship between the fells and the coast and seascape
Contribution to setting	Contribution of seascape to the setting of an important coast/hinterland Contribution to the setting of a an adjacent seascape character area						Sea provides the setting to the western Lake District fells and St Bees Head
Overall susceptibility							

VALUE							
Main criteria	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Landscape designations- National, regional, local	e.g. National Parks, AONBs, Heritage Coast, local countryside designations, (distance, relationship, extent of role as setting).						Late District National Park- reaches coast to the south. Seascape within its setting. St Bees Head Heritage Coast at northern edge
Nature conservation designations	Marine and coastal e.g. MCZ, RAMSAR, SAC, SPA, SSSI etc (if relevant).						SPA covering southern part of the area Esk Estuary SSSI- estuary and dunes MCZ Southwest
Heritage designations	Marine and coastal- e.g. WHS, listed buildings, historic parks and gardens, Conservation Areas, and their settings (if relevant).						Eg Ravenglass scheduled monuments related to Roman occupation
Relevant special qualities	If landscape/ coastal designation overlooks area. (List and define the degree to which the area contributes to these).						Sea contributes to special qualities of west Cumbria
Other valued attributes	Scenic quality						Fells relationship with the coast/seascape
Other valued attributes	Perceptual aspects - e.g. wildness, tranquillity,						Tranquil generally
Other valued attributes	Non-designated cultural or natural features						-
Other valued attributes	Cultural associations						Roman port connections

Main criteria	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Other valued attributes	Rarity, representativeness						Moderately rare to have high fells close to the coast
Strength of character and sense of place	Distinctiveness of area, features or elements.						Distinctively straight coast with limited access
Community values	Value associated with area or features/elements by people-communities of interest and place, public attitudes.						?
Recreational value	Use for leisure or sport on sea, intertidal, coast.						Some uses enjoying seascape including limited recreational sailing and beach use.
Overall value							

Overall sensitivity	H/M
Summary justification	

Area: MCA31

Sensitivity to marinas

Scenario:

Marina type development **within** area. Typically:

- sea wall
- lock/tidal sill
- organised moorings on floating jetties (say 10) and buoys;
- associated services including boatyards and repair,
- storage
- clubhouse
- parking and access

Notes:

The assessment is indicative based on MCA descriptive information only and should not be applied in practice. The likelihood of this type of development being practical along this coast is very limited so it is a test for the method only.

Assessing seascape sensitivity to marinas at this large scale of unit may be inappropriate. The MCA should possibly be divided up into several local units.

SUSCEPTIBILITY							
Main criteria seascape- long list	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Natural							
Coastal edge	Cliffs, rocky coasts, upper beach, dunes etc						Simple smooth coast with one indentation – Esk estuary with associated sand dunes. Overall, significant simplicity.
Coastal edge	Intertidal Subtidal/ sub littoral						Simple low cliffs and straight beaches with dunes with very limited man-made structures
Water column depth and qualities	Bathymetry range and nature of water/water qualities e.g. Blue Flag, suspended sediment etc.						Moderate water quality
Tidal range/ currents	Tidal range, direction and speed of currents						Limited tidal range
Coastal processes	Deposition or erosion of sediments and direction.						Limited tidal processes except Esk Estuary
Sea surface	Waviness/ exposure.						Exposure
Key habitats, features and species	Marine, intertidal, coastal edge						Bird habitats to south-foraging terns.
Cultural/Social							
Use of the sea	Navigation, fishing, leisure, energy production, mineral extraction etc.						Limited use of the area for recreational sailing. Limited fishing.

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Use of the coast	Settlement, industry, marine related development such as ports or harbours, industry, leisure/tourism, agriculture, semi-natural, dunes etc.						Generally undeveloped coast. Settlement set back from the coast with caravans at coast in places. Presence of Sellafeld and Haverigg windfarm.
Historic features at sea, on seabed or buried below	e.g. wrecks, paleo-landscapes						Concentration of wrecks at Haverigg Point to the south.
Historic features on coast	e.g. coastal forts, castles, lighthouses						Very limited historic features on the coast. In Roman remains at Ravenglass.
Cultural associations	e.g. former use of the sea or coast, boat-making, former trade routes, associations with artists and writers, food traditions, spiritual connections, education and interpretation etc						Energy Coast. Coast of the Lake District National Park.
Quality/ Condition							
Intactness	Degree of completeness or fragmentation or area character or elements, presence of detractors and extent.						Generally intact with few detractors except Sellafeld to the north and Haverigg windfarm to the south

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
State of repair	Condition of coastal natural and built features/ elements, maintained or not maintained.						Generally good condition?
Aesthetic and Perceptual							
Scale, openness and enclosure	Of sea in relation to coastal form or offshore. Degree and nature of enclosure of sea by land, framing of views.						Intermediate/large-scale. Some enclosure but smooth coast resulting in openness.
Exposure	Sheltered, calm, exposed.						Moderately exposed
Seascape pattern and foci	Features and elements on/above the sea surface.						Offshore windfarms to the south and south-west of MCA
Seascape pattern and foci - coast and hinterland	e.g. headlands, cliffs, high hills/mountains or landmarks such as forts or castles.						Headland at St Bees Head to the north. Fells behind the coast including Black Combe provide positive backcloth.
Tranquillity	Defined by movement, presence of man-made structures, dark skies/ lighting, noise.						Relatively limited movement. No substantial structures within the marine area but Sellafield and Haverigg windfarm on the coast. Predominantly dark night skies especially to the south.

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
							Occasional lights- e.g. Sellafield and small settlements.
Naturalness Wildness	Sense of natural /semi-natural character uninfluenced by man.						Generally undeveloped seascape
Remoteness	Perceived distance from centres of population and human interventions.						Moderately remote- only small settlements but occasional caravan parks.
Visual Characteristics							
Key views- land to sea sea to land	Including nature of views and elevation, perhaps including iconic features. Views from within area and from outside.						Mainly land to sea – elevated views from fells including Black Combe. Limited leisure sailing with views likely to be mainly focused towards Lake District, although views to Isle of Man.
Intervisibility of the area with important receptors	Amount/length/ extent /nature of coastal views and distance away from unit/ development. e.g. remote areas of coast, coastal topography influences e.g. elevation and form- plateau, slopes etc.						Sea highly visible from land due to coastal slopes and elevated fells. Local important views around Ravenglass and St Bees?
Typical receptors –	e.g. coast walkers, visitors						PROWs and open access land users on hills and fells

Main criteria seascape	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
type and number	to coast/features, beach visitors, residents, leisure sailors, ferries, shipping, urban areas etc.						Some beach users Very limited recreational sailors Coast path?
How the seascape is experienced	Summarise whether experienced mainly from coast or sea, from remote/secluded areas or populated areas, from elevated or low positions etc						Key views mainly from PROWs and open access land users close to coast.
Relationship between seascape area and adjacent coast or character area							
Relationship between components of seascape character	Key relationships between hinterland, coastal edge, intertidal area and sea						Relationship between Esk estuary, dunes and coast.
Contribution to setting	Summarise contribution of seascape to the setting of a coast/ hinterland Summarise contribution to the setting of a an adjacent seascape character area						Esk estuary provides setting to town and associated heritage features. Sea forms an important part of fells setting to the south.
Overall susceptibility							

VALUE							
Main criteria	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Landscape designations- National, regional, local	e.g. National Parks, AONBs, Heritage Coast, local countryside designations, (distance, relationship, extent of role as setting).						Late District National Park- reaches coast to the south. Seascape within its setting. St Bees Head Heritage Coast at northern edge.
Nature conservation designations	Marine and coastal e.g. MCZ, RAMSAR, SAC, SPA, SSSI etc (if relevant).						SPA covering southern part of the area Esk Estuary SAC and SSSI- estuary and dunes MCZ to south west and around St Bees Head
Heritage designations	Marine and coastal- e.g. WHS, listed buildings, historic parks and gardens, Conservation Areas, and their settings (if relevant).						Eg Ravenglass scheduled monuments related to Roman occupation
Relevant special qualities	If landscape/ coastal designation overlooks area. (List and define the degree to which the area contributes to these).						Sea contributes to special qualities of west Cumbria
Other valued attributes	Scenic quality						Fells relationship with the coast/seascape
Other valued attributes	Perceptual aspects - e.g. wildness, tranquillity,						Tranquil generally

Main criteria	Sub-criteria	H	H/M	M	M/L	L	Comments e.g.
Other valued attributes	Non-designated cultural or natural features						-
Other valued attributes	Cultural associations						Roman port connections
Other valued attributes	Rarity, representativeness						Moderately rare to have high fells close to the coast
Strength of character and sense of place	Distinctiveness of area, features or elements.						Distinctively straight coast with limited access
Community values	Value associated with area or features/elements by people-communities of interest and place, public attitudes.						?
Recreational value	Use for leisure or sport on sea, intertidal, coast.						Some uses enjoying seascape including limited recreational sailing and beach use.
Overall value							

Overall sensitivity	H/M
Summary justification	