REPORT

East Lindsey District Council Local Plan

Stage 1 Habitats Regulation Assessment

Client: East Lindsey District Council

Reference: I&B9X2286/100R001F0.6

Revision: 0.6/Final

Date: 29 November 2016

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Document title:	East Lindsey District Council Local Plan
Document short title:	East Lindsey Local Plan HRA
Reference:	I&B9X2286/100R001F0.6
Revision:	0.6/Final
Date:	29 November 2016
Project name:	East Lindsey Local Plan HRA
Project number:	9X2286/100
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Date / initials:	29/11/2016 PMT
Approved by:	Matthew Hunt
Date / initials:	29/11/2016 MH

Classification
Open

MANAGEMENT SYSTEM CERTIFICATION DNV·GL ISO 9001 = ISO 14001 OHSAS 18001

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Table of Contents

Table of Tables

Table of Figures

Appendices

1 INTRODUCTION

1.1 Purpose of the Report

1.1.1 This report provides the conclusions of the Habitats Regulations Assessment (HRA), commencing with the test of likely significant effect, for the East Lindsey District Council Local Plan. The first stage considers the scope of the Plan, and assesses the developing policies and options contained within the Issues and Options Consultation document (Autumn 2012) and subsequent revisions to the final Plan (October 2016).

1.1.2 The need for this assessment arises from the *EC Habitats Directive* (92/43/EEC) and its implementation in the UK under *The Conservation of Habitat and Species Regulations 2010 (as amended)* (the Habitats Regulations - previously the *Conservation (Natural Habitats &c.) Regulations 1994*, as amended)). HRA is required under Regulation 61 (1) of the Habitats Regulations for a plan or project not directly connected with the management of an international site[1] which may have an adverse effect on the integrity[2] of that site, either alone or in combination with other plans or projects. Impacts should be assessed against sites' Conservation Objectives (see **Section 3**).

1.1.3 This document presents the conclusions of the Habitats Regulations Assessment (HRA) for the East Lindsey District Council Local Plan, commencing with the screening assessment, identifying the international sites within or adjacent to East Lindsey District (and which might potentially be affected by the implementation of the Plan) and an assessment (a Test Of Likely Significant Effect (TOLSE)) of the Local Plan policies. It identifies whether these policies, either alone or in-combination with other plans or policies, are likely to have a significant effect on international sites. Subsequent to initial screening in September 2012 (Royal HaskoningDHV, 2012) that concluded 'no adverse effect on the integrity of the European sites', subsequent policy revisions (following recommendations in 2013, and subsequent policy changes as a result of consultation, changes in Government policy, and changing circumstances in the District) were undertaken and the screening was reviewed at each stage. This report presents the screening and subsequent conclusions for the policy development process for the East Lindsey District Council Local Plan.

1 Special Areas of Conservation (SAC, or candidate Special Area of Conservation (cSAC)), designated under the Habitats Directive (92/43/EEC), and Special Protection Areas (SPA) designated under the Birds Directive (79/409/EEC), form part of the EU-wide Natura 2000 network. 'Ramsar sites', designated under The Convention on Wetlands of International Importance, especially as Waterfowl Habitat, are subject to the same provisions. This definition encompasses those European sites below the high tide mark (whether SPA or SAC) which, following the updated nomenclature used in the Marine and Coastal Access Act 2009, are referred to as European Marine Sites. The term international sites will be used throughout this report when referring to these designated sites.

2 The coherence of the site's ecological structure and function, across its whole area, or the habitats and species populations for which the site is classified.

1.1.4 The concluding Appropriate Assessment is a recorded decision by the 'competent authority', in this case East Lindsey District Council, as to whether the proposed Local Plan can be determined as not having an adverse effect on the integrity of any international sites.

1.2 Structure of the Report

1.2.1 The report is structured as below:

- Section 2: Methodology;
- Section 3: Sites and Features;
- Section 4: Stages of Policy Development;
- Section 4:Test of Likely Significant Effect; and
- Section 5: Conclusions.

1.3 Background

1.3.1 In 2008 Royal Haskoning was commissioned to undertake a HRA for the then-developing East Lindsey Local Development Framework (LDF). A Scoping Report was produced which included an assessment of likely significant effect of the Core Strategy Issues and Options document on international sites.

1.3.2 In consultation with Natural England it was agreed that nine international sites were pertinent to the assessment of the East Lindsey District LDF and should be considered within the Scoping Report. These sites included;

- Humber Estuary SAC, SPA and Ramsar sites;
- Gibraltar Point SPA and Ramsar;
- The Wash SPA and Ramsar sites;
- Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC; and
- The Wash and North Norfolk Coast SAC.

1.3.3 It was concluded that due to the likely scale and nature of policies within the East Lindsey LDF, a likely significant effect on the international sites in or adjacent to the District could not be ruled out.

1.3.4 The East Lindsey District Local Plan builds on policy development and assessment work carried out since 2012 and also represents changes in the approach to planning in the District. The conclusions presented in this HRA consequently draws on the 2008 Scoping Report, and the assessment of the developing Local Plan at the Issues and Options stages (described below), through to the assessment (test for LSE) of the final policies at this submission stage.

1.3.5 In Autumn 2012 East Lindsey District Council prepared and circulated a draft Local Plan comprising the draft policies and options. A HRA Scoping Report was prepared and submitted for consultation alongside the draft Local Plan (Royal HaskoningDHV, 2012) looking at the nine European and international sites.

1.3.6 The 2012 HRA Scoping Report stated that it could not conclude no likely significant effect because of the absence of information on the proposed quantum of growth. It identified recommendations for a number of options and policies to enable a conclusion of no likely significant effect to be determined.

1.3.7 In November 2013 the Core Strategy was revised and a review was carried out of the revised policies to determine whether a likely significant effect would arise. The review concluded that the majority of the policies were considered unlikely to result in a significant effect, with the exception of one Policy. However, other policies within the Plan as a whole would ensure that the potential effect of that policy would not arise. Therefore a conclusion was reached that there will be no adverse effect on the integrity of the identified internationally-designated sites from implementing the Core Strategy (Royal HaskoningDHV, 2013) as a whole.

1.3.8 In April 2016 the Core Strategy was revised further and a review was carried out of the revised policy suite to determine whether a likely significant effect would arise. The review concluded that the majority of the policies were considered unlikely to result in a significant effect. Changes in one policy had not been made and it was not possible to conclude no likely significant effect for that policy alone. It did however confirm that the Plan as a whole would ensure that the potential effect of that policy would not arise. It was therefore concluded that there will be no adverse effect on the integrity of the identified internationally-designated sites from implementing the Core Strategy (Royal HaskoningDHV, 2016a) as a whole.

1.3.9 In June 2016 the Core Strategy was finalised further along with greater detail regarding site allocations. A screening assessment (test for likely significant effect) review was carried out of the revised policies and the site allocations. The conclusions of the review was the same as that in April 2016 above. Overall, it concluded that there will be no adverse effect on the integrity of the identified internationally-designated sites from implementing the final Core Strategy (Royal HaskoningDHV, 2016b) as a whole.

2 Methodology

2.1 Introduction

2.1.1 This section outlines the general HRA methodology and the process that was undertaken for the Habitats Regulations Assessment of the East Lindsey District Council Local Plan.

2.2 Application of Habitat Regulations Assessment to Land Use Plans

2.2.1 Following a European Court of Justice ruling in 2005, which determined that the United Kingdom had not transposed the Habitats Directive into law in the correct manner, Land Use Plans have been subject to HRA to determine impacts on sites designated under the Habitats and Birds Directives. The 2010 Habitats Regulations revision now includes provisions for Land Use Plans.

2.2.2 HRA is considered to be a risk-based assessment, drawing on available information. The Department for Communities and Local Government (DCLG) has produced draft guidance on carrying out Appropriate Assessment for the protection of International sites for Regional Planning Bodies and Local Planning Authorities (DCLG, 2006). It addresses determining the need for an Appropriate Assessment for a given plan and the provision of an assessment if one is required. The documents: *"Planning for the Protection of European Sites: Appropriate Assessment"* (DCLG, 2006) and *"The Assessment of Regional Spatial Strategies under the Provisions of the Habitats Regulations – Draft Guidance"* (English Nature, 2006), provide a cohesive source of guidance for assessments. Further documents which have provided scope to this work are the Royal Society for the Protection of Birds (RSPB) publication *"The Appropriate Assessment of Land Use Plans in England"* (2007) and the more recent guidance for competent authorities (Tyldesley and Hoskin 2008). Furthermore, Scottish HRA guidance, "*HRA of Plans - Guidance for Plan- Making Bodies in Scotland*" (2010) was endorsed by various bodies, including the RTPI.

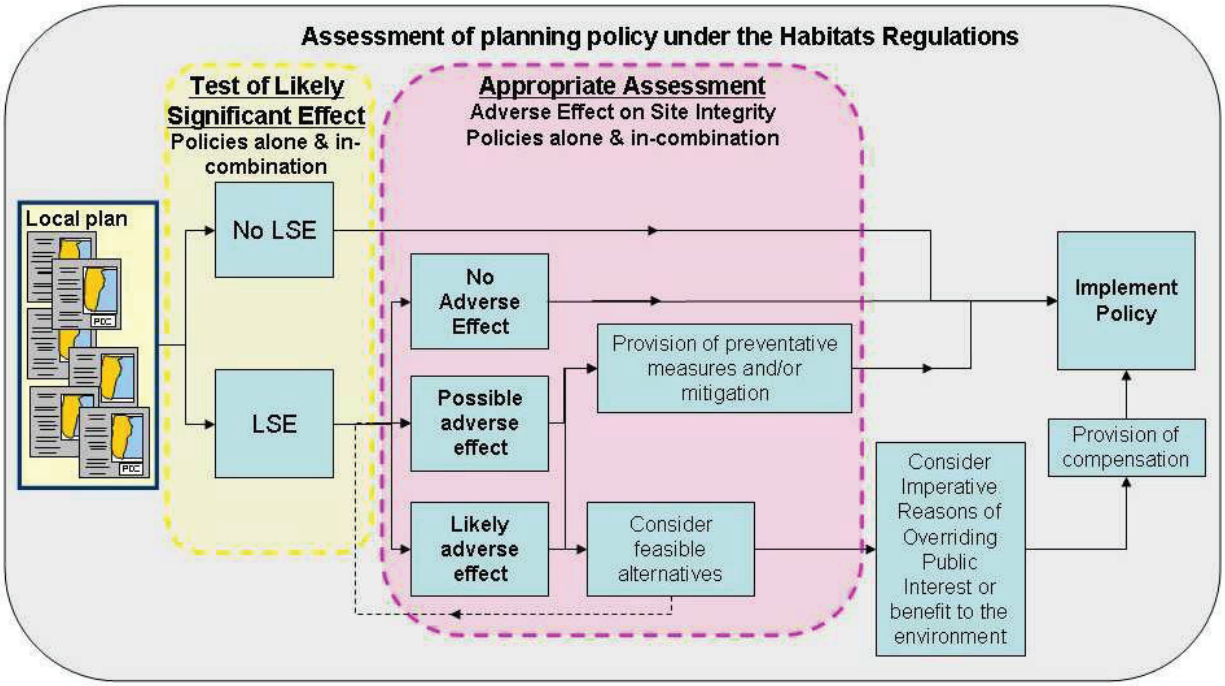
2.3 Habitats Regulations Assessment Methodology

2.3.1 The process of a HRA is shown in **Figure 2.1**. Initially an assessment is undertaken of whether policies and land allocations have the potential to have a Likely Significant Effect (LSE), either alone or in-combination, upon the relevant international sites. Those policies that can be scoped out of the further assessment stages are deemed suitable for inclusion in the core strategy. Further amendments to policies, through iterative assessment and refinement, may also enable them to be determined as 'compliant' and scoped out of further assessment.

2.3.2 Final policies which are determined to have an LSE are taken through to the 'Appropriate Assessment' stage. This involves a more detailed review of the policies or land allocations and assessing their potential impacts on the integrity of the international sites against information gathered on the condition of the site, and any further details concerning the likely impact.

2.3.3 If it cannot be concluded that the policies and Plan will not have an adverse impact on the international sites then mitigation or avoidance measures must be developed and specified which can be used to prevent any declines in the condition of the site or sites in question.

Figure 2.1 The Habitats Regulations Assessment Process



2.3.4 However, any policies for which mitigation or preventative measures cannot be established should be reconsidered and alternatives proposed. If the policy lacks a viable alternative it is necessary to consider whether the policy is required. DCLG (2006) states:

"*After mitigation measures have been exhausted on an emerging option and it is shown to still have a potentially negative effect on the integrity of a European site, and in absence of any other alternative solution, as a rule the option should be dropped.*

In the exceptional circumstance and as an exception to that rule, if the pursuit of the option is justified by 'imperative reasons of overriding public importance (IROPI)' consideration can be given to proceeding in the absence of alternative solutions. In these cases compensatory measures must be put in place to offset negative impacts".

2.3.5 In circumstances where IROPI prevails, the Secretary of State has to be shown that there were no possible mitigation measures or alternatives solutions that would negate the adverse effects on the international site(s), along with either of the following:

- That the plan is being undertaken for reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; and /or
- That the plan is being undertaken for imperative reasons of overriding public interest.

2.3.6 Mitigatory or compensatory measures must also be carried out if proceeding with a plan or policy that is likely to have adverse impacts on an international site. Consultation is required with the appropriate Government department throughout this process to ensure the overall integrity of the international site network is not detrimentally impacted.

2.3.7 As well as considering the direct and in-direct impacts of policies, they must also be considered with other policies or plans in an 'in-combination' assessment. Policies which, in isolation, have been assessed as having no LSE could have a significant effect when considered collectively.

2.4 In-combination Assessment

2.4.1 The Habitats Regulations require assessments to consider 'in combination' impacts, to ensure that the integrity of sites is afforded full protection from the cumulative impacts of development and to ensure a holistic approach to assessment. The in-combination assessment includes a review of the relevant local development plans for the following areas including:

- West Lindsey District (now part of Central Lincolnshire Council);
- North Kesteven District (now part of Central Lincolnshire Council),
- North East Lincolnshire District;
- Boston Borough; and
- Lincolnshire County.

2.4.2 The in-combination assessment also includes an assessment of the potential in-combination impacts from ongoing and proposed projects, including the Lincshore beach nourishment scheme (run by the Environment Agency) and offshore wind farm developments, as well as other strategic plans including The Wash Shoreline Management Plan (SMP) and Flamborough Head to Gibraltar Point SMP.

3 International Sites and Features

3.1 Introduction

3.1.1 This section provides information on the international sites relevant to the East Lindsey District Council and the Local Plan, highlighting the interest features that form the basis for the designations derived from the citations in **Appendix A**. Information has also been included on each site's sensitivities and the relevant conservation objectives, which are presented in **Appendix B**. The location of the sites, local settlements, rivers and main roads are shown on **Figure 3.1**. Eight designations covering five areas have been identified at this stage as requiring consideration.

3.2 Humber Estuary SPA, SAC and Ramsar

3.2.1 Located to the north of the District, the Humber is the second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. It is a muddy, macro-tidal estuary, fed by the Rivers Ouse, Trent and Hull, Ancholme and Graveney. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast.

3.2.2 Habitats within the Humber Estuary include Atlantic salt meadows and a range of sand dune types in the outer estuary, together with subtidal sandbanks, extensive intertidal mudflats, glasswort beds and coastal lagoons. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary. Significant fish species include river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* which breed in the River Derwent, a tributary of the River Ouse.

3.2.3 The Humber Estuary Ramsar site supports a breeding colony of grey seals *Halichoerus grypus* at Donna Nook. It is the second largest grey seal colony in England and the southern-most regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad *Bufo calamita*.

Site Sensitivities

3.2.4 The Humber Estuary is an extremely dynamic estuarine system with a high sediment budget, which results in changing morphology, allowing the movement of the intertidal and subtidal habitats in response to physical and biological variables. The habitats within the estuary are interdependent and inextricably linked to the structure and functioning of one another and of the system as a whole.

3.2.5 The Humber Estuary is subject to the impacts of human activities (past and present) as well as ongoing processes such as sea level rise and climate change. Key issues include coastal squeeze, impacts on the sediment budget, and changes to geomorphological structure and function of the estuary (due to sea level rise, flood defence works, dredging, and the construction, operation and maintenance of ports, pipelines and other infrastructure), changes in water quality and flows, pressure from additional built development, and damage and disturbance arising from access, recreation and other activities.

Conservation Objectives

3.2.6 In order to maintain the international sites within the Humber Estuary in favourable condition, there should be no reduction in the extent of the following habitats:

- Estuary;
- Littoral sediment;
- Saline lagoons;
- Sand dunes; and
- Standing open water and canals.

3.2.7 There should also be no change in the composition of inshore sub-littoral sediment and biotope distribution should also be maintained for this habitat.

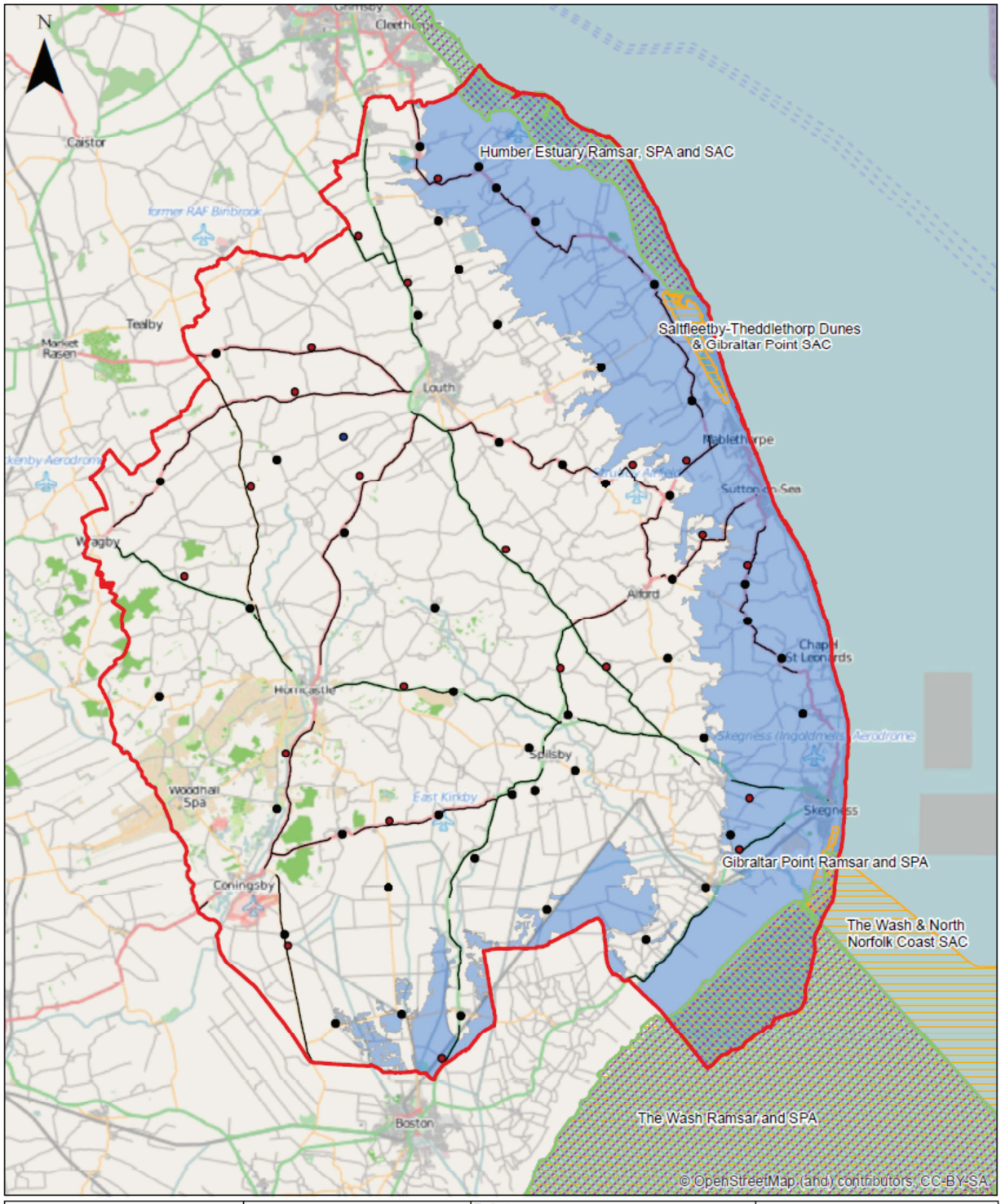
3.2.8 Favourable conservation targets for all sites are included in **Appendix C**.

3.3 Saltfleetby–Theddlethorpe Dunes and Gibraltar Point SAC

3.3.1 The dune system on the composite Saltfleetby–Theddlethorpe Dunes and Gibraltar Point site contains good examples of shifting dunes. At this site the *Ammophila*-dominated dunes are associated with lyme-grass *Leymus arenarius* and sand sedge *Carex arenaria*.

3.3.2 Within this dune complex there are extensive areas of fixed dune vegetation within largely intact geomorphologically active systems. The lime-rich dunes support a rich and diverse flora, dominated by red fescue *Festuca rubra* and with unusual species including pyramidal orchid *Anacamptis pyramidalis*, bee orchid *Orchis apifera*, sea-holly *Eryngium maritimum* and sea campion *Silene maritima*. The fixed dunes are part of a successional transition.

3.3.3 This site supports a good example of dunes with *Hippophae rhamnoides* in the main part of its natural range in the UK. This habitat develops on dune areas and is present in a range of successional stages from early colonisation to mature scrub associated with elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and ivy *Hedera helix*.



Legend

- East Lindsey District Boundary
- Coastal Flood Zone
- Ramsar Sites
- Special Protection Area
- Special Area of Conservation
- Strategic Roads Network
- Settlements

Project:	East Lindsey District Council Core Strategy
Title:	International Sites within or adjacent to East Lindsey District
Source:	© OpenStreetMap (and) contributors, CC-BY-SA "© Crown copyright. All rights reserved. Natural England, 100046223 [2012]."
Figure No: 3.1	Version Control: 2.2
Client:	East Lindsey District Council
Drawn: MCG	File Location:
Date:	21/08/2012

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3.3.4 The humid dune slacks are part of a successional transition and some have developed from saltmarsh to freshwater habitats after becoming isolated from tidal inundation by sand deposition. There is a range of different communities present, many of which are species-rich.

Site Sensitivities

3.3.5 The site is subject to a high number of visitors which require close management. Seaborne pollution, particularly accidental discharge from shipping or from inshore oil and gas drilling operations could pose problems for the site but contingency plans exist for dealing with oil spills.

3.3.6 Many of the vegetation types supported by sand dunes are fragile and vulnerable to erosion from heavy trampling. Where recreational pressures are significant enough to result in the loss of vegetation cover and prevent recovery, it may be necessary to take steps to manage access by putting boardwalks in or controlling activities in vulnerable areas such as the fore dunes. Such measures are already undertaken in places.

3.3.7 Where recreation pressure is not severe, the impact of trampling can help to retain diversity on some sites – sandy tracks break up the vegetation sward and provide areas of bare sand thus increasing the diversity of habitats available.

Conservation Objectives

3.3.8 In order to maintain Saltfleetby–Theddlethorpe Dunes and Gibraltar Point SAC in favourable condition, there should be no reduction in the extent of the following habitats:

- Sub-littoral sands and gravels;
- Littoral sediment;
- Coastal saltmarsh; and
- Coastal sand dune.

3.3.9 Favourable conservation targets for all sites are included in **Appendix C**.

3.4 Gibraltar Point SPA and Ramsar

3.4.1 Gibraltar Point consists of an actively accreting sand-dune system, saltmarsh and extensive intertidal flats. All stages of dune development are represented with the older dunes extensively colonised by scrub. There are also small areas of freshwater marsh and open water. The site accommodates large numbers of overwintering birds and significant colonies of breeding little tern *Sterna albifrons*. The terns feed outside the SPA in nearby waters. The site is also important for waders during the spring and autumn passage period.

3.4.2 The dune and saltmarsh habitats present on the site are representative of all the stages of colonisation and stabilisation. There is a fine example of freshwater marsh containing sedges *Carex* spp., rushes *Juncus* spp., and ferns, including adder's-tongue fern *Ophioglossum vulgatum*. Also most northerly example of nationally rare saltmarsh/dune communities containing sea heath *Frankenia laevis*, rock sea lavender *Limonium binervosum* and shrubby seablite *Suaeda vera*. It also supports an assemblage of wetland invertebrate species of which eight species are listed as rare in the British Red Data Book and a further four species listed as vulnerable.

Site Sensitivities

3.4.3 Many of the vegetation types supported by sand dunes are fragile and vulnerable to erosion from heavy trampling. Where recreational pressures are significant enough to result in the loss of vegetation cover and prevent recovery, it may be necessary to take steps to manage access or controlling activities in vulnerable areas such as the fore dunes. It may also be necessary to manage access to limit the impacts of disturbance on breeding birds. Such measures are already undertaken in places.

3.4.4 There are a number of factors that are contributing to saltmarsh change including coastal erosion as a result of coastal flood-defence works, rising sea-levels, variations in sediment deposition, and land claim for development. The birds that use mud and sandflats for feeding and roosting are vulnerable to disturbance from human activities, for example, bait digging, dog walking and wildfowling. These activities can lead to reduced time spent feeding, or individuals being restricted to areas with a poor food supply.

3.4.5 The location and extent of mud or sandflats is dependent on the extent to which the estuary or coast where they occur is constrained from responding to sea level rise and changing sediment regimes.

Conservation Objectives

3.4.6 In order to maintain Gibraltar Point SPA and Ramsar sites in favourable condition, there should be no reduction in the extent of the following habitats:

- Littoral sediment;
- Coastal saltmarsh; and
- Coastal sand dune.

3.4.7 Favourable conservation targets for all sites are included in **Appendix C**.

3.5 The Wash SPA and Ramsar

3.5.1 The Wash is the largest estuarine system in the UK and is fed by the rivers Witham, Welland, Nene and Great Ouse that drain much of the east Midlands of England. The Wash comprises very extensive saltmarshes, major intertidal banks of sand and mud, shallow waters and deep channels. The intertidal flats have a rich invertebrate fauna and colonising beds of Glasswort *Salicornia* spp. which are important food sources for the large numbers of waterbirds dependent on the site. The sheltered nature of The Wash creates suitable breeding conditions for shellfish which are important food sources for some waterbirds. The Wash is of outstanding importance for a large number of geese, ducks and waders, both in spring and autumn migration periods, as well as through the winter. The SPA is especially notable for supporting a very large proportion (over half) of the total population of Canada/Greenland breeding knot *Calidris canutus islandica*. In summer, the Wash is an important breeding area for tern species and as a feeding area for marsh harrier *Circus aeruginosus* that breed just outside the SPA.

Site Sensitivities

3.5.2 The biological richness of The Wash is largely dependent on the physical processes that dominate the natural systems and consequently the ecological vulnerability is closely linked to the physical environment. The intertidal zone is vulnerable to coastal squeeze as a result of land-claim, coastal defence works, sea-level rise, and storm surges. Intertidal habitats are potentially affected by changes in sediment budget caused by dredging and coastal protection, construction of river training walls and flood defence works.

3.5.3 Activities affecting sediment budget and anthropogenic causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SAC/SPA on the site.

3.5.4 The estuary is fed by four large rivers which drain a substantial area of Eastern England. The volume and quality of water entering The Wash is dependent on the use made of these rivers for water abstraction and agricultural and domestic effluents – such consents and licenses are managed under the provisions of the Habitats Regulations.

Conservation Objectives

3.5.5 In order to maintain the international sites within The Wash in favourable condition, there should be no reduction in the extent of the following habitats:

- Coastal saltmarsh;
- Littoral sediment;
- *Sabellaria spinulosa* reefs;
- Saline lagoons;

- Coastal vegetated shingle; and
- Sub-littoral sands and gravels.

3.5.6 Favourable conservation targets for all sites are included in **Appendix C**.

3.6 The Wash and North Norfolk Coast SAC

3.6.1 This site represents one of the largest expanses of sublittoral sandbanks in the UK. The subtidal sandbanks vary in composition and include coarse sand through to mixed sediment at the mouth of the embayment. Sublittoral communities present include large dense beds of brittlestars *Ophiothrix fragilis*. The subtidal sandbanks provide important nursery grounds for many commercial fish species.

3.6.2 The Wash is the second largest area of intertidal flats in the UK. The sandflats in the embayment include extensive fine sands and drying coarse sand banks, and this, coupled with variety in degree of exposure, means that there is a high diversity relative to other east coast sites. Sandy intertidal flats predominate, with some soft mudflats in the areas sheltered by barrier beaches and islands along the north Norfolk coast.

3.6.3 The Wash is the largest embayment in the UK and is connected via sediment transfer systems to the north Norfolk coast. The embayment supports a variety of mobile species, including fish species and common seal *Phoca vitulina*.

3.6.4 In the tide-swept approaches to the Wash, the polychaete worm *Sabellaria spinulosa* forms areas of biogenic reef. The site and its surrounding waters is the only known location of well-developed stable *Sabellaria* reef in the UK.

3.6.5 The east coast of England is one of the few areas in the UK where saltmarshes are generally accreting. The proportion of the total saltmarsh vegetation represented by *Salicornia* and other annuals is high because of the extensive enclosure of marsh in this site. The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica*.

3.6.6 This site is designated for the extensive ungrazed saltmarshes of the north Norfolk Coast and for the traditionally grazed saltmarshes around the Wash. The Wash saltmarshes represent the largest single area of this habitat type in the UK. Saltmarsh swards dominated by sea-lavenders *Limonium* spp. are particularly well-represented.

3.6.7 The Wash and North Norfolk Coast comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a cover of shrubby sea-blite and sea-purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes.

Site Sensitivities

3.6.8 The site is vulnerable to natural sea level rise, storm surges and changes in erosion patterns which are increasingly likely to affect the freshwater grazing marsh and reedbed habitats. Increasing interest in abstraction of groundwater for irrigation of arable land may affect freshwater spring flows onto grazing marshes and would be addressed through application of provisions under the Habitat Regulations. The site is visited by a large number of tourists especially in the summer.

3.6.9 By their very nature embryonic shifting dunes are restricted in the area they can occupy. They are made even scarcer by the fact that only a relatively small number of dunes are actively prograding, the condition under which this habitat type develops best. Embryonic shifting dunes are also particularly vulnerable to trampling by beach users and to mechanical cleaning of beaches, and this may well be a significant factor in limiting their extent.

Conservation Objectives

3.6.10 In order to maintain the international sites within The Wash in favourable condition, there should be no reduction in the extent of the following habitats:

- Coastal saltmarsh;
- Littoral sediment;
- *Sabellaria spinulosa* reefs;
- Saline lagoons; and
- Sub-littoral sands and gravels.

3.6.11 In order to maintain the condition of the site, the population of common seals must display a stable or increasing usage of the site.

3.6.12 Favourable conservation targets for all sites are included in **Appendix C**.

4 Stage of Policy Development

4.1 Introduction

4.1.1 Since the original 2012 Habitats Regulation Assessment on the East Lindsey Local Plan, revisions have been made to the policies included within the plan, and a draft Core Strategy document has been produced for the purpose of public consultation. The following section outlines the changes that have been made to each review of the Local Plan and the subsequent alterations in the assessments for each policy within the plan. The designated sites to be assessed within this HRA have not changes since the original assessment, nor have the conservation objectives within those sites.

4.2 2012 HRA Scoping Report

4.2.1 The 2012 HRA Scoping Report assessed the following policies in regards to the East Lindsey Draft Local Plan. The following policies were considered:

- *Vision of the Local Plan;*
- *Objectives of the Local Plan;*
- *The Pattern of Future Growth*. This policy includes *A Sustainable Pattern of Place*. This policy included the following options;
  - *Growth Option 1: Concentrate Growth into the Five Inland Towns;*
  - *Growth Option 2: Moderately Dispersed Distribution of Growth;*
  - *Growth Option 3: More Dispersed Pattern of Growth; and*
  - *Growth Option 4: Dispersed Pattern of Growth Including the Small Rural Villages.*
- *Sustainable and Thriving Communities including Rural Exemptions;*
- *Delivering Affordable Housing*. This policy included the following options;
  - *Option 1: Where 3 or more Dwellings are Proposed; and*
  - *Option 2: Where 5 or more Dwellings are Proposed.*
- *Protecting our Natural, Built and Historic Environment*. This policy includes *Protecting and Enhancing our Natural, Built and Historic Environment Landscape, Green Infrastructure, Biodiversity and Geodiversity* and *Raising the Quality of Our Built Environment;*
- *Renewable Energy;*
- *The Coast;*
- *Widening the Tourist Economy;*
- *Gypsies, Travellers and Travelling Show People;*
- *Diverse Inland Economy;*

- *Town Centres;*
- *Open Space, Sport and Recreation; and*
- *Green Infrastructure.*

4.2.2 All of the above policies were assessed as having ***no likely significant effect*** with the exception of:

- *Growth Options 1 to 4* from *A sustainable Pattern of Place* within the *Pattern of Future Growth policy*. All these options were assessed as having ***the potential for a likely significant effect;***
- *Renewable Energy* which was assessed as having ***the potential for a likely significant effect***;
- *Widening the Tourist Economy* which was assessed as having ***the potential for a likely significant effect****;*
- *Protecting and Enhancing our Natural, Built and Historic Environment Landscape, Green Infrastructure, Biodiversity and Geodiversity* included within the policy of *Protecting our Natural, Built and Historic Environment*. This policy was assessed as having ***the potential for a positive effect, at the plan level***;
- *Open Space, Sport and Recreation* which was assessed as having ***the potential for a positive effect, at the plan level***;
- *Green Infrastructure* which was assessed as having ***the potential for a positive effect, at the plan level***.

4.2.3 The absence of information relating to the quantum of growth at the time of this assessment meant that it was not possible to conclude no likely significant effect in respect of *Growth Options 1-4.*

4.2.4 Some of the objectives and policies assessed at the time offered protection at the Plan level, while in some areas recommendations were made for further policy strengthening. The ***potential for a likely significant effect*** also remains in respect of two further policies:

- *Renewable Energy*; and
- *Widening the Tourist Economy*.

4.2.5 At the time of assessment, it was concluded that the above mentioned policies with the ***potential for a likely significant effect*** could be strengthened and ***no likely significant effect*** achieved through minor modifications to the policy text.

4.3 2013 Review of Amended Policies

4.3.1 The 2013 HRA Screening Review assessed the following policies in regards to the East Lindsey Draft Local Plan (as amended following previous recommendations).

4.3.2 The following policies were unchanged from previous assessment:

- *Strategic Policy 3: Rural Exceptions; and*
- *Strategic Policy 13: Open Space, Sport and Recreation.*

4.3.3 The following policies were subject to minor revisions:

- *Strategic Policy 1: A Sustainable Pattern of Places;*
- *Strategic Policy 2: Delivering Affordable Housing;*
- *Strategic Policy 4: Single Plot Exceptions;*
- *Strategic Policy 5: Design;*
- *Strategic Policy 6: Gypsies, Travellers and Showpeople;*
- *Strategic Policy 7: Inland Employment;*
- *Strategic Policy 8: Town/Village Centres and Shopping;*
- *Strategic Policy 9: Widening the Inland Tourism and Leisure Economy;*
- *Strategic Policy 11: Coastal East Lindsey;* and
- *Strategic Policy 18: Infrastructure and S106 Obligations.*

4.3.4 The above policies were assessed as having **no likely significant effect** on designated sites, with the exception of Open Space, Sport and Recreation and Infrastructure and S106 Obligations, which were assessed as having **the potential for a positive effect, at the plan level** and Widening the Inland Tourism and Leisure Economy which was assessed as having **the potential for a likely significant effect**.

4.3.5 *Strategic Policy 14*: *Landscape* was broken down into 3 separate policies:

- *Strategic Policy 5A Historic Environment;*
- *Strategic Policy 15 Green Infrastructure*; and
- *Strategic Policy 16 Biodiversity and Geodiversity.*

4.3.6 Whilst positive impacts that may have resulted from implementing the original *Protecting our Natural, Built and Historic Environment* policy no longer apply, it was considered that these new policies (SP5A, SP15 & SP16) had ***no likely significant effect*** on the international sites.

4.3.7 The supporting text for *Strategic Policy 17: Renewable Energy* was amended to include reference to designated sites and the need for rigorous assessment of impacts. It also referred other policies within the Core Strategy, including the new Biodiversity and Geodiversity policy (SP16). These additions are considered to provide additional Plan level protection against the implementation of any policy which may have an LSE on the international sites and was assessed as having ***no likely significant effect.***

4.3.8 The previous assessment concluded that *Strategic Policy 9: Widening the Inland Tourism and Leisure Economy* may result in a LSE as a result of an increase in people visiting the coast, and made recommendations for amending the text. The wording of the policy and its supporting text has not changed since that assessment and therefore has been assessed as having ***the potential for a likely significant effect***. Despite this, however, Plan level protection was considered to be provided by other policies.

4.3.9 Strategic Policy 1A was created as an additional policy incorporating the previous "Option 2 for growth" as assessed in 2012. The supporting text was updated to include a reference to the natural environment and the need to take into account other Core Strategy policies (including Strategic Policy 16: Biodiversity and Geodiversity). This meant that the policy could now be assessed as having ***no likely significant effect***.

4.3.10 Two further new policies were created:

- *Strategic Policy 10: Inland Flood Risk*; and
- *Strategic Policy 12: Transport and Accessibility*.

4.3.11 The above policies related to the requirements set on development in respect of flood risk areas and the need for transport links to be maintained enabling access for the entire District. These policies did not further define developments in the area and so were assessed as having ***no likely significant effect***.

4.3.12 Whilst revisions to existing policies and the addition of a small number of new policies occurred since the original assessment in 2012, the overall conclusions of the previous assessment remain applicable. The majority of the policies set out in the Core Strategy are considered unlikely to result in a significant effect on any international sites.

4.4 June 2016 Review of Amended Policies

4.4.1 The June 2016 HRA Screening Review assessed the following policies following further amendments:.

4.4.2 The following policies were unchanged from previous assessment:

- *Strategic Policy 1A: Sustainable Development;*
- *Strategic Policy 6* (formerly SP5): *Design;*
- *Strategic Policy 8* (formerly SP6): *Gypsies, Travellers and Showpeople;*
- *Strategic Policy 12* (formerly SP10): *Inland Flood Risk;*
- *Strategic Policy 14* (formerly SP12): *Transport and Accessibility;*
- *Strategic Policy 15* (formerly SP14): *Landscape;*
- *Strategic Policy 17* (formerly SP15): *Green Infrastructure;* and
- *Strategic Policy 20* (formerly SP18): *Infrastructure and S106 Obligations.*

4.4.3 The following policies were subject to minor revisions:

- *Strategic Policy 3* (formerly SP2): *Delivering Affordable Housing (formerly titled Affordable and Low Cost Housing*);
- *Strategic Policy 4* (formerly SP3*): Rural Exceptions*;
- *Strategic Policy 5* (formerly SP4): *Single Plot Exceptions*;
- *Strategic Policy 7* (formerly SP5A): *Historic Environment*;
- *Strategic Policy 9* (formerly SP7): *Inland Employment;*
- *Strategic Policy 10* (formerly SP8): *Town/Village Centres and Shopping*;
- *Strategic Policy 13* (formerly SP11): *Coastal East Lindsey;*
- *Strategic Policy 16*: *Biodiversity and Geodiversity*;
- *Strategic Policy 18* (formerly SP13): *Open Space, Sport and Recreation*; and
- *Strategic Policy 19* (formerly SP17): *Renewable Energy*.

4.4.4 The above policies were assessed as having ***no likely significant effect*** on designated sites, with the exception of *Strategic Policy 17* (formerly SP15): *Green Infrastructure*, *Strategic Policy 20* (formerly SP18): *Infrastructure and S106 Obligations* and *Strategic Policy 18* (formerly SP13): *Open Space, Sport and Recreation* which were all assessed as having the ***potential for a positive effect, at the plan level***.

4.4.5 The 2012 assessment concluded that *Strategic Policy 11 (Formerly SP9): Widening the Inland Tourism and Leisure Economy* may result in a LSE as a result of an increase in people visiting the coast, and made recommendations for amending the text. The wording of the policy and its supporting text has not changed since that assessment and therefore has been assessed as having the ***potential for a likely significant effect***. Despite this, however, Plan level protection was considered to be provided by other policies.

4.4.6 *Strategic Policy 2* (formerly 1A): *Housing Growth and the Location of Inland Growth* is the same as the previous "Option 2 for growth" as assessed in the original report 2012. The district housing targets increased from 7,545 to 7,815, but decreased in the Coastal Flood Hazard area from 1,605 to 1,281, which were existing commitments. Further amendments to supplementary text included the provision that any development will have to take into account *Strategic Policy 16: Biodiversity and Geodiversity*. An assessment of the distance from potential development areas to all European sites, along with consideration of access, other recreational provision, was undertaken and a concluding assessment of ***no likely significant effect*** was made.

4.4.7 A minor amendment in *Strategic Policy 9* (formerly SP7): *Inland Employment* was made, namely the change in the amount of employment land schedules at inland sites. Given the distance to any of internationally designated sites, an assessment of ***no likely significant effect*** was made.

4.4.8 Additional information was provided on the development allowed on coastal areas, as well as regarding self-service holiday accommodation within *Strategic Policy 13* (formerly SP11): *Coastal East Lindsey.* It was further noted that any development will have to take into account *Strategic Policy 16: Biodiversity and Geodiversity* and was subsequently assessed as having ***no likely significant effect***.

4.4.9 One new policy was created; *Strategic Policy 1: A Sustainable Pattern of Places*. This new policy referred to the inclusion of brownfield sites within developments and provided clarification on the potential development areas. As the policy does not add further actions that could influence or impact on the European sites and their features, it was assessed as having ***no likely significant effect***.

4.4.10 While revisions to existing policies and one new policy occurred since the 2012 assessment and the 2013 review, the overall conclusions of the previous assessments remain applicable. The majority of the policies set out in the Core Strategy were considered unlikely to result in a significant adverse effect on any international sites.

5 Test of Likely Significant Effect

5.1.1 This section presents the concluding screening assessment of the policies and options, and confirms the conclusion of ***no likely significant effect*** as a result of the East Lindsey District Council Local Plan upon the designated sites. **Table 4.1** presents the concluding assessment text alongside the final policy. The concluding assessment of Likely Significant Effect (LSE) is provided using the coding as set out in the table.

5.1.2 Subsequent to the review in June 2016 (see Section 4.5), the Strategic Policy 8 *Gypsies, Travellers and Showpeople* was clarified with regard to preventing unacceptable harm to the character of the area where they are located. As this does not change the locations of the possible settlements it is concluded that ***no likely significant effect*** would arise.

5.1.3 The only policy where the assessment could not initially conclude no likely significant effect was *Strategic Policy 11: Widening the Inland Tourism and Leisure Economy*. Assessing the policy alone indicated that it may result in a LSE as a result of an increase in people visiting the coast. However at the Plan level, protection is considered to be provided by other policies, thereby providing the preventing actions which enabled a conclusion of ***no likely significant effect*** to be made.

5.2 In-Combination Assessment

5.2.1 The following plans screened out impacts on the international sites considered in this Screening Report or concluded that no adverse effect on integrity in-combination with other plans would arise:

- Lincolnshire County Council Local Transport Plan 2013/14 to 2022/23 (Lincolnshire County Council, 2013);
- Lincolnshire Minerals and Waste Local Plan, Core Strategy and Development Management Policies (Lincolnshire County Council, 2014);
- South Kesteven District Council Core Strategy (South Kesteven District Council, 2010);
- South Kesteven District Council Site Allocation and Policies DPD (South Kesteven District Council, 2014);
- North Lincolnshire Council Core Strategy (Atkins, 2010);
- North Lincolnshire Council Housing and Employment Land Allocations DPD (North Lincolnshire Council, 2014); and
- Central Lincolnshire District Council Local Plan 2012 to 2036 (Central Lincolnshire Council, 2016).

5.2.2 Whilst considering the one policy (*Strategic Policy 11: Widening the Inland Tourism and Leisure Economy*) with a potential likely significant effect in-combination with other plans, it was noted that there is no HRA or recent local plan for Boston Borough Council and North East Lincolnshire Council. Consequently, given the lack of further information on these plans, it is concluded that the protection measures provided within the East Lindsey District Council Local Plan would ensure that the conclusion of no likely significant effect of the Plan in its entirety, alone or in-combination remains.

Table 5.1 Assessment of Policies

Key	
Potential for adverse effect	-
No significant effect	o
Potential positive effect, at the plan level	+

	Policy	*Assessment*	
1	**A Sustainable Pattern of Places**: The Settlement Pattern shall guide the distribution, scale and nature of future development. The distribution of future housing growth is set out in Strategic Policies SP2, Housing Growth and the Location of Inland Housing Growth and SP13, Coastal East Lindsey.	Strategic Policy 1 refers to Strategic Policy 2 and 12 that determine the level of housing allocation and where. This policy then defines the locations that are towns, large villages, medium villages, and small villages. As this policy only provides a clarification as to what locations are towns and villages, it does not add further actions that could influence or impact on the European sites and their features, as this is considered in relation to the specific Strategic Policy 2 and 12. Consequently, as it is not defining further development other than redevelopment of brownfield sites it is considered to have ***no likely significant effect***.	o
1A	**Sustainable Development:** When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.	The Sustainable Development policy sets out the aims for planning in accordance with the National Planning Policy Framework. As the policy does not relate to specific development, it is assessed as having ***no likely significant effect***.	o

	Policy	Assessment	
2	**Housing Growth and the Location of Inland Growth:** The overall District wide housing target is 7815 homes7768 homes for the plan period, broken down into two separate targets: • On the coast approximately 1308 homes which covers the area of the Coastal Flood Hazard maps these are existing commitments. Housing on the coast will be constrained to these existing commitments with the exceptions set out in Strategic Policy SP13 (SP13) Coastal East Lindsey. • Inland a minimum of 6460 homes will be allocated.	Supporting text for this policy includes reference to the natural environment and the need to take into account SP16. This ensures the protection of internationally-designated sites and features. District housing targets increased from 7,545 to 7,815, but decreased in the Coastal Flood Hazard area from 1,605 to 1,281. Further, an assessment on the distance from potential development areas to all European sites was completed and sites are considered far enough away from any development, with limited or no PRoW and access to the sites, and of a negligible quantum of potential growth that no LSE would occur. SP2 is assessed as having ***no likely significant effect***.	o
3	**Affordable and Low Cost Housing:** The Council will support the delivery of affordable housing in the towns and large villages across the District. In the Medium and High Value Areas, on sites of 15 or more houses the Council will seek a 30% developer contribution towards the provision of affordable housing. This will rise to 40% in the Very High Value area but there will be no requirement in the Low Value Areas and Coastal Flood Hazard zone.	The policy supports the development of affordable housing in towns and large and medium villages. Development will comply with other policies relating to siting and scale which should include avoiding impacts to the international sites. This type of affordable development would not result in any more impacts than those associated with ordinary development. This option stipulating affordable housing numbers will not have a likely significant effect on any of the international sites. This policy has been assessed as having ***no likely significant effect***.	o
4	**Rural Exceptions:** In and adjoining the large, medium and small villages, where local affordable housing need is proven, the development of small-scale, affordable housing sites on land not otherwise considered acceptable for development housing will be supported providing; • They do not result in sporadic development, which is unrelated to the form and scale of the existing settlement; • The number of dwellings is no greater than the identified need; and • The development shall comply with other relevant policy relating to siting, scale, layout, design, materials, access, parking and landscaping.	The policy restricts sporadic development in rural areas. Development will comply with other policies relating to siting and scale which should include avoiding impacts to the international sites. This type of development would not result in any more impacts than those associated with ordinary development. This policy has been assessed as having ***no likely significant effect***.	o

	Policy	Assessment	
5	**Single Plot Exceptions:** In the towns, large, medium and small villages, where local affordable housing need is proven, the Council will support single plot development for affordable housing provided it meets all of the following: • the applicant can demonstrate they are unable to afford a suitable home currently available in the parish; • the applicant has an evidenced strong local connection to the parish; • the site is within or adjoining alongside the village settlement and does not constitute isolated or sporadic development; • The dwelling is affordable to the applicant and will remain affordable to subsequent occupiers in perpetuity. • The area of the site does not exceed 0.1ha and typically, the internal floorspace of the proposed dwelling does not exceed 100 sqm or 110sqm where flood risk mitigation is required.	The policy supports the development of affordable housing in towns and large and medium villages. Development will comply with other policies relating to siting and scale which should include avoiding impacts to the international sites. This type of affordable development would not result in any more impacts than those associated with ordinary development. This option stipulating affordable housing numbers will not have a likely significant effect on any of the international sites. This policy has been assessed as having ***no likely significant effect***.	o
6	**Design:** The Council will support well-designed sustainable development, which maintains and where possible enhances the character of the District's towns, villages and countryside.	The policy refers to the physical design characteristics of individual and groups of buildings with a view to landscape quality. As such this will not directly or indirectly influence or result in sources of potential impact to European site habitats or fetaures. There it has been assessed as having ***no likely significant effect***.	o
7	**Historic Environment**: The Council will support proposals that secure the continued protection and enhancement of heritage assets in East Lindsey, contribute to the wider vitality and regeneration of the areas in which they are located and reinforce a strong sense of place.	The policy seeks to protect existing greenspace and maximise opportunities for new areas. By doing this the potential recreational pressure on international sites from increased population growth should be reduced since people tend to preferentially use sites closer to them for recreation. The policy also seeks to protect international sites unless overriding reasons of public interest for the development are proven. This policy has been assessed as having ***no likely significant effect***.	o

Policy		Assessment	
8	**Gypsies, Travellers and Showpeople:** The Council will support new permanent Gypsy and Traveller sites and sites for Travelling Showpeople adjacent to or in or in reasonable proximity to a town or large village.	The policy supports permanent Gypsy and Traveller sites and sites for Travelling Show people alongside or close to a town or large village. These sites should be appropriate in scale and form without causing unacceptable harm to the character of the area. Given the location of all but one of these proposed sites is inland, this policy has been assessed as having ***no likely significant effect***. The conclusion remains for the one site near to the coast as this is located within an existing industrial area on the outskirts of Mablethorpe, and as such, being a transitory and temporary (occasional) rather than permanent occupancy site and given the low number of units, no additional disturbances are expected on the nearest European site.	**o**
9	**Inland Employment:** The Council will support growth and diversification of the local economy by building on the role of the inland towns as the focus for business development by identifying and protecting additional land for employment in the Settlement Proposals.	Given that these locations are significantly inland of the European sites with no direct pathways for impacts to arise, and given the change is small, this policy has been assessed as having ***no likely significant effect***.	**o**
10	**Town/Village Centres and Shopping**: The town centres in Alford, Coningsby, Tattershall, Horncastle, Louth, Mablethorpe, Skegness and Spilsby, and the primary and secondary shopping frontages will be defined on the Settlement Proposals Map. The Council will support the development of shopping, commercial and community services and facilities that contribute to the vitality and viability of town centres.	Given the location of these facilities within already developed areas, away from international sites and that these features will act as a draw to a number of people, ***no likely significant effect***.is anticipated.	**o**

	Policy	Assessment	
11	**Widening the Inland Tourism and Leisure Economy:** The Council will support quality tourism facilities and attractions where they: • Extend and diversify the tourism and leisure economy, and provide additional employment opportunities; • Provide opportunities for the enjoyment of the District's wider countryside and historic towns and villages; • Do not cause unacceptable harm to the landscape, biodiversity or heritage assets; • Are of a scale and intensity compatible with their surroundings.	As development is restricted to existing developed areas it is unlikely that the policy will result in direct impacts to the international sites or impacts to water quality and flows. However, there could potentially be an impact in association with more people present on the coast, causing disturbance issues. The policy should be strengthened to include reference to no increased (adverse) impacts to international sites as a result of tourism development. Without this text it is not possible to conclude that there will not be a likely significant effect on the international sites, and this policy has been assessed as having the ***potential for a likely significant effect.***	-
12	**Inland flood Risk:** The Council will support development for business, leisure and commercial uses in areas of inland flood risk providing it incorporates flood mitigation measures in its design.	This policy relates to the requirements set on developments within flood risk areas and as it is not defining further development this policy has been assessed as having ***no likely significant effect***.	o
13	**Coastal East Lindsey:** The Council will give a high priority to development that extends and diversifies all-year round employment opportunities, contributes directly to the local economy, infrastructure or extends and diversifies the tourism market.	This policy provides detail on what kind of development will be permitted on Skegness Foreshore which will have to take account of other Core Strategy policies (i.e. SP16). There is supplementary text regarding the prevention of coalescence of Chapel St Leonards, Ingoldmells, and Addlethorpe which is intended to prevent development in certain areas, as well as text regarding the location of self-service holiday accommodation ensures avoidance of potential conflict with European sites and their features. Further, the creation of a coastal country park will provide alternative, managed areas for tourists, dog walkers, and bird watchers to go as well as potentially providing alternative habitat for SPA bird species. This policy has been assessed as having ***no likely significant effect***.	o

	Policy	Assessment	
14	**Transport and Accessibility:** The Council will support accessibility and seek to reduce isolation in the District by: • Supporting development in or adjoining towns, large and medium villages where it is accessible to key facilities. • Supporting development which is shown to link with the existing road and public transport systems operating within the District. Large scale developments such as food retail units of 800sq. m and larger and 80 residential dwellings or more will be accompanied by a transport assessment and travel plan.	This policy relates to the needs for transport links to be maintained enabling access for the entire District areas and as it is not defining further development this policy has been assessed as having ***no likely significant effect***.	**o**
15	**Landscape:** The District's landscapes will be protected, enhanced, used and managed to provide an attractive and healthy working and living environment which allows for greater public access to the countryside and naturalistic coast, supports visitors to the District, helps provide additional employment opportunities, and adds to the health and quality of rural communities. Development will be guided by the District's Landscape Character Assessment and landscapes defined as highly sensitive will be afforded the greatest protection.	The policy seeks to protect existing greenspace and maximise opportunities for new areas. By doing this the potential recreational pressure on protected landscape areas from increased population growth should be reduced since people tend to preferentially use sites closer to them for recreation. This policy has been assessed as having ***no likely significant effect***; the policy is expected to alleviate pressure on international sites from elsewhere and thus result in a positive effect.	**+**

	Policy	Assessment	
16	**Biodiversity and Geodiversity:** Development proposals should seek to protect and enhance the biodiversity and geodiversity value of land and buildings, and minimise fragmentation and maximise opportunities for connection between natural habitats. The Council will protect sites designated internationally, nationally or locally for their biodiversity and geodiversity importance, species populations and habitats identified in the Lincolnshire Biodiversity Action Plan and the Natural Environment and Rural Communities (NERC) Act 2006.	The policy seeks to protect existing greenspace and maximise opportunities for new areas. By doing this the potential recreational pressure on international sites from increased population growth should be reduced since people tend to preferentially use sites closer to them for recreation. The policy also seeks to protect international sites unless overriding reasons of public interest for the development are proven (in line with the requirements of the Habitats Regulations). It also states that re-creation, mitigation and enhancement should be undertaken, with new habitat linked to other similar habitats. It should be noted that, under the Habitats Regulations, any compensatory habitat should also be ecologically functioning in advance of any loss; such a principle could be applied more broadly to ensure ecological benefits are gained through the implementation of the plan. This policy will have benefits in relation to reducing recreational pressure and contributing to the resilience and coherence of the international sites. This policy has been assessed as having ***no likely significant effect***; indeed a positive effect is expected due to the reduction in visitor pressure.	+
17	**Green Infrastructure:** The Council will safeguard and deliver a network of accessible greenspace green infrastructure by: • Protecting and safeguarding all greenspace identified through the Settlement Proposals DPD so that there is no net loss; • Maximising opportunities for new and enhanced greenspace infrastructure and publically accessible open spaces in and around all communities; • Seek opportunities to connect existing green spaces infrastructure to improve the network of spaces and accessibility for both the local population and wildlife.	The policy seeks to protect existing greenspace and maximise opportunities for new areas. By doing this the potential recreational pressure on international sites from increased population growth should be reduced since people tend to preferentially use sites closer to them for recreation. This policy will have benefits in relation to reducing recreational pressure and contributing to the resilience and coherence of the international sites. This policy has been assessed as having ***no likely significant effect***; indeed a positive effect is expected due to the reduction in visitor pressure.	+

	Policy	Assessment	
18	**Open Space, Sport and Recreation:** The Council will support development that facilitates the Council's aspiration to increase participation in sports and physical activity, the Council will safeguard, expand, enhance and promote access to sports and recreational facilities and open spaces.	This policy provides alternative areas for recreational use which could reduce the pressures on international sites. Also, by locating them within populated areas the need to travel to other areas of the District is reduced. The policy could be further strengthened by adding in reference that open space win new developments will help to alleviate the potential for displaced activity at designated sites. This policy has been assessed as having a **potential positive effect, at the plan level.**	+
19	**Renewable and Low Carbon Energy:** Large-scale renewable and low carbon energy development, development for the transmission and interconnection of electricity, and infrastructure required to support such development, will be supported where their individual or cumulative impact is, when weighed against the benefits, considered to be acceptable in relation to: • residential amenity; • surrounding landscape, townscape and historic landscape character, and visual qualities; • the significance (including the setting) of a historic garden, park, battlefield, building conservation area, archaeological site or other heritage asset; • sites or features of biodiversity or geodiversity importance, or protected species; • the local economy; • highway safety; and • water environment and water quality.	The policy states that renewable energy developments will only be supported where they are located outside and do not have significantly adverse impacts upon sites of landscape importance. It also mentions avoiding impacts on sites or features of natural history importance and designated sites. The policy states the need for rigorous assessment of impacts. It also references other policies within the Core Strategy, including SP16. This policy has been assessed as having ***no likely significant effect***.	o

	Policy	Assessment	
20	**Infrastructure and S106 Obligations:** Infrastructure schemes will be supported provided they are essential in the national interest; contribute to sustainable development, and respect the distinctive character of the district. Infrastructure schemes should be accompanied by an impact assessment that shows how the proposal impacts on the landscape or local setting of the area, including individual and cumulative effects. It should identify what steps have been taken to minimize its effects and the alternative options that have been considered.	The Council will only support proposals for development where it has been shown that adequate capacity is available or can be provided by the utility providers to meet the additional loads associated with the development and with the current and future environmental constraints. This policy protects the environment, limits the potential for impact through pathways such as waste water, and also ensures that infrastructure development will be subject to its own HRA and therefore no likely significant effect is anticipated on any of the international sites. . This policy has been assessed as having a **potential positive effect, at the plan level**.	+

6 Conclusions

6.1.1 In summary, whilst revisions to some existing policies and one new policy have occurred since 2013, the overall conclusions of the previous 2012 assessment and subsequent reviews remain applicable. The majority of the policies set out in the Core Strategy are considered unlikely to result in a significant adverse effect on any international sites.

6.1.2 Changes recommended in 2012 for Strategic Policy 11 have not been incorporated and it is therefore still not possible to conclude no LSE for this policy individually. Despite this assessment, it is considered that Plan-level protection is provided by other policies.

6.1.3 At the Plan level it is considered that the policies within the Core Strategy which relate to the natural environment should ensure that any potential impacts on the international sites are suitably assessed and mitigated against.

6.1.4 Following this assessment of the latest policy suite it is suggested that the conclusion can be drawn that there will be no likely significant effect on the integrity of the identified internationally designated sites as a result of the implementation of the East Lindsey District Council Local Plan alone or in-combination with other plans.

7 Consultation Responses

7.1.1 The following comments have been received with respect to the previous HRA review.

7.1.2 The RSPB responded with the request for a holistic (collated) HRA.

7.1.3 This final document presents the combined (developed) HRA Screening, which screened out the need for Appropriate Assessment on the resulting conclusion of no likely significant effect.

7.1.4 The RSPB raised a concern that the effect of housing allocations focussed on the distance by foot from nearby settlements.

7.1.5 The consideration and assessment of housing allocation, resident visitors and tourist visitors to international sites and the surrounding areas is dependent on many factors. We agree that distance is not one key factor and the assessment has considered a number of factors. One element to consider are the differences in the nature and form of tourism and visitor usage as well as the accessibility to sites. In addition there is also local and regional disparity between visitor pressure and resident visitor pressure. For example, surveys in Somerset at international sites indicated that visitors came from significant distances and were not 'residents'. The residential development allocations were considered and assessed on the basis of the number of housing allocations, the distance (by routes accessible by foot in particular) to the international sites, the nature of the visits, the actual accessibility for non-pedestrian means (in the majority of cases the lack of access), and the existing ProW and other open space, access, recreation provision at those allocation areas. Given all these considerations it was concluded that immeasurable increases were likely given these factors and the numbers would be within the variable activity and quantities currently expected at the locations in the international sites where visitor presence already occurs.

7.1.6 Natural England requested that the various HRA documents are drawn together in one consolidated document.

7.1.7 As mentioned above, this document presents the development of the HRA screening, and conclusion of no likely significant effect as presented iteratively through the various documents prepared since 2012. This document therefore represents the consolidation of the HRA screening process.

8 References

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Appendix A International Site Citations

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Humber Estuary
Unitary Authority/County:	City of Kingston upon Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire
SAC status:	Designated on 10 December 2009
Grid reference:	TA345110
SAC EU code:	UK0030170
Area (ha):	36657.15
Component SSSI:	Humber Estuary

Site description:
The Humber is the second largest coastal plain **Estuary** in the UK, and the largest coastal plain estuary on the east coast of Britain. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. The range of salinity, substrate and exposure to wave action influences the estuarine habitats and the range of species that utilise them; these include a breeding bird assemblage, winter and passage waterfowl, river and sea lamprey, grey seals, vascular plants and invertebrates.

The Humber is a muddy, macro-tidal estuary, fed by a number of rivers including the Rivers Ouse, Trent and Hull. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. This is the northernmost of the English east coast estuaries whose structure and function is intimately linked with soft eroding shorelines. The extensive mud and sand flats support a range of benthic communities, which in turn are an important feeding resource for birds and fish. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers.

Habitats within the Humber Estuary include **Atlantic salt meadows** and a range of sand dune types in the outer estuary, together with **Sandbanks which are slightly covered by sea water all the time**, extensive intertidal mudflats, ***Salicornia* and other annuals colonising mud and sand**, and **Coastal lagoons**. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary. These are best-represented at the confluence of the Rivers Ouse and Trent at Blacktoft Sands.

Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks, for reasons that have yet to be fully explained. This section of the estuary is also noteworthy for extensive mud and sand bars, which in places form semi-permanent islands. The sand dunes are features of the outer estuary on both the north and south banks particularly on Spurn peninsula and along the Lincolnshire coast south of Cleethorpes. Examples of both **Fixed dunes with herbaceous vegetation (`grey dunes`)** and **Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes)** occur on both banks of the estuary and along the coast. Native sea buckthorn **Dunes with *Hippophae rhamnoides*** also occurs on both sides of the estuary.

Significant fish species include **river lamprey** *Lampetra fluviatilis* and **sea lamprey** *Petromyzon marinus* which breed in the River Derwent, a tributary of the River Ouse. **Grey seals** *Halichoerus grypus* come ashore in autumn to form breeding colonies on the sandy shores of the south bank at Donna Nook.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

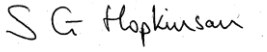
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Coastal lagoons*
- Dunes with *Hippophae rhamnoides*
- Embryonic shifting dunes
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Fixed dunes with herbaceous vegetation (`grey dunes`)*
- *Salicornia* and other annuals colonising mud and sand
- Sandbanks which are slightly covered by sea water all the time
- Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes')

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Grey seal *Halichoerus grypus*
- River lamprey *Lampetra fluviatilis*
- Sea lamprey *Petromyzon marinus*

Annex I priority habitats are denoted by an asterisk (*)

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030170
Date of registration: 10 December 2009



Signed:

On behalf of the Secretary of State for Environment, Food and Rural Affairs

EC Directive 79/409 on the Conservation of Wild Birds
Special Protection Area (SPA)

Name: Humber Estuary

Unitary Authorities/Counties: City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire

Component SSSIs: The SPA encompasses all or parts of the following Sites of Special Scientific Interest (SSSIs): Humber Estuary SSSI, North Killingholme Haven Pits SSSI, Saltfleetby-Theddlethorpe Dunes SSSI, and The Lagoons SSSI.

Site description: The Humber Estuary is located on the east coast of England, and comprises extensive wetland and coastal habitats. The inner estuary supports extensive areas of reedbed, with areas of mature and developing saltmarsh backed by grazing marsh in the middle and outer estuary. On the north Lincolnshire coast, the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools. Parts of the estuary are owned and managed by conservation organisations. The estuary supports important numbers of waterbirds (especially geese, ducks and waders) during the migration periods and in winter. In summer, it supports important breeding populations of bittern *Botaurus stellaris*, marsh harrier *Circus aeruginosus*, avocet *Recurvirostra avosetta* and little tern *Sterna albifrons*.

Size of SPA: The SPA covers an area of 37,630.24 ha.

Qualifying species:
The site qualifies under **article 4.1** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

Annex I species	Count and season	Period	% of GB population
Avocet *Recurvirostra avosetta*	59 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.7%
Bittern *Botaurus stellaris*	4 individuals – wintering	5 year peak mean 1998/99 – 2002/03	4.0%
Hen harrier *Circus cyaneus*	8 individuals – wintering	5 year peak mean 1997/98 – 2001/02	1.1%
Golden plover *Pluvialis apricaria*	30,709 individuals – wintering	5 year peak mean 1996/97 – 2000/01	12.3%
Bar-tailed godwit *Limosa lapponica*	2,752 individuals – wintering	5 year peak mean 1996/97 – 2000/01	4.4%
Ruff *Philomachus pugnax*	128 individuals – passage	5 year peak mean 1996-2000	1.4%
Bittern *Botaurus stellaris*	2 booming males – breeding	3 year mean 2000-2002	10.5%
Marsh harrier *Circus aeruginosus*	10 females – breeding	5 year mean 1998-2002	6.3%
Avocet *Recurvirostra avosetta*	64 pairs – breeding	5 year mean 1998 – 2002	8.6%
Little tern *Sterna albifrons*	51 pairs – breeding	5 year mean 1998-2002	2.1%

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

Migratory species	Count and season	Period	% of subspecies/ population
Shelduck *Tadorna tadorna*	4,464 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.5% Northwestern Europe (breeding)
Knot *Calidris canutus*	28,165 individuals – wintering	5 year peak mean 1996/97 – 2000/01	6.3% *islandica*
Dunlin *Calidris alpina*	22,222 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.7% *alpina*, Western Europe (non-breeding)
Black-tailed godwit *Limosa limosa*	1,113 individuals – wintering	5 year peak mean 1996/97 – 2000/01	3.2% *islandica*
Redshank *Tringa totanus*	4,632 individuals – wintering	5 year peak mean 1996/97 – 2000/01	3.6% *brittanica*
Knot *Calidris canutus*	18,500 individuals – passage	5 year peak mean 1996 – 2000	4.1% *islandica*
Dunlin *Calidris alpina*	20,269 individuals – passage	5 year peak mean 1996 – 2000	1.5% *alpina*, Western Europe (non-breeding)
Black-tailed godwit *Limosa limosa*	915 individuals – passage	5 year peak mean 1996 – 2000	2.6% *islandica*
Redshank *Tringa totanus*	7,462 individuals – passage	5 year peak mean 1996 – 2000	5.7% *brittanica*

Bird counts from: Wetland Bird Survey (WeBS) database and *The Humber Estuary: A comprehensive review of its nature conservation interest* (Allen *et al.* 2003).

Assemblage qualification:
The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season:

In the non-breeding season, the area regularly supports 153,934 individual waterbirds (five year peak mean 1996/97 – 2000/01), including dark-bellied brent goose *Branta bernicla bernicla*, shelduck *Tadorna tadorna*, wigeon *Anas penelope*, teal *Anas crecca*, mallard *Anas platyrhynchos*, pochard *Aythya ferina*, scaup *Aythya marila*, goldeneye *Bucephala clangula*, bittern *Botaurus stellaris*, oystercatcher *Haematopus ostralegus*, avocet *Recurvirostra avosetta*, ringed plover *Charadrius hiaticula*, golden plover *Pluvialis apricaria*, grey plover *P. squatarola*, lapwing *Vanellus vanellus*, knot *Calidris canutus*, sanderling *C. alba*, dunlin *C. alpina*, ruff *Philomachus pugnax*, black-tailed godwit *Limosa limosa*, bar-tailed godwit *L. lapponica*, whimbrel *Numenius phaeopus*, curlew *N. arquata*, redshank *Tringa totanus*, greenshank *T. nebularia* and turnstone *Arenaria interpres*.

Non-qualifying species of interest: The SPA is used by non-breeding merlin *Falco columbarius*, peregrine *F. peregrinus* and short-eared owl *Asio flammeus*, and breeding common tern *Sterna hirundo* and kingfisher *Alcedo atthis* (all species listed in Annex I to the EC Birds Directive) in numbers of less than European importance (less than 1% of the GB population).

Status of SPA:
1) Humber Flats, Marshes and Coast (Phase 1) SPA was classified on 28 July 1994.
2) The extended and renamed Humber Estuary SPA was classified on 31 August 2007.

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK9006111
Date of registration: 31 August 2007

Signed:

On behalf of the Secretary of State for Environment, Food and Rural Affairs

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 31 August 2007

3. Country:

UK (England)

4. Name of the Ramsar site:

Humber Estuary

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

The boundary has been extended

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii) **an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

053 32 59 N 000 00 03 E

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Kingston-upon-Hull

The Humber Estuary is located on the boundary between the East Midlands Region and the Yorkshire and the Humber Region, on the east coast of England bordering the North Sea.

Administrative region: City of Kingston upon Hull; East Riding of Yorkshire; Humberside; Lincolnshire; North East Lincolnshire; North Lincolnshire

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 37987.8

Min. -13
Max. 10
Mean No information available

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Humber Estuary is the largest macro-tidal estuary on the British North Sea coast. It drains a catchment of some 24,240 square kilometres and is the site of the largest single input of freshwater from Britain into the North Sea. It has the second-highest tidal range in Britain (max 7.4 m) and approximately one-third of the estuary is exposed as mud or sand flats at low tide. The inner estuary supports extensive areas of reedbed with areas of mature and developing saltmarsh backed in places by limited areas of grazing marsh in the middle and outer estuary. On the north Lincolnshire coast the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools. The Estuary regularly supports internationally important numbers of waterfowl in winter and nationally important breeding populations in summer.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 3, 5, 6, 8

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.

It is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Examples of both strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland occur on both banks of the estuary and along the coast. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers. The lower saltmarsh of the Humber is dominated by common cordgrass *Spartina anglica* and annual glasswort *Salicornia* communities. Low to mid marsh communities are mostly represented by sea aster *Aster tripolium*, common saltmarsh grass *Puccinellia maritima* and sea purslane *Atriplex portulacoides* communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch *Elytrigia atherica* (*Elymus pycnanthus*) saltmarsh community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed *Phragmites australis* fen and sea club rush *Bolboschoenus maritimus* swamp with the couch grass *Elytrigia repens (Elymus repens)* saltmarsh community. Within the Humber Estuary Ramsar site there are good examples of four of the five physiographic types of saline lagoon.

Ramsar criterion 3

The Humber Estuary Ramsar site supports a breeding colony of grey seals *Halichoerus grypus* at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad *Bufo calamita*.

Ramsar criterion 5

Assemblages of international importance:

153,934 waterfowl, non-breeding season

(5 year peak mean 1996/97-2000/2001)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Eurasian golden plover, *Pluvialis apricaria*

altifrons subspecies – NW Europe, W Continental Europe, NW Africa population

17,996 individuals, passage, representing an average of 2.2% of the population

(5 year peak mean 1996-2000)

Red knot, *Calidris canutus*

islandica subspecies

18,500 individuals, passage, representing an average of 4.1% of the population

(5 year peak mean 1996-2000)

Dunlin, *Calidris alpina*
alpina subspecies – Western Europe (non-breeding) population
20,269 individuals, passage, representing an average of 1.5% of the population
(5 year peak mean 1996-2000)

Black-tailed godwit, *Limosa limosa*
islandica subspecies
915 individuals, passage, representing and average of 2.6% of the population
(5 year peak mean 1996-2000)

Common redshank, *Tringa totanus*
brittanica subspecies
7,462 individuals, passage, representing an average of 5.7% of the population
(5 year peak mean 1996-2000)

Common shelduck, *Tadorna tadorna*
Northwestern Europe (breeding) population
4,464 individuals, wintering, representing an average of 1.5% of the population
(5 year peak mean 1996/7-2000/1)

Eurasian golden plover, *Pluvialis apricaria*
altifrons subspecies – NW Europe, W Continental Europe, NW Africa population
30,709 individuals, wintering, representing an average of 3.8% of the population
(5 year peak mean 1996/7-2000/1)

Red knot, *Calidris canutus*
islandica subspecies
28,165 individuals, wintering, representing an average of 6.3% of the population
(5 year peak mean 1996/7-2000/1)

Dunlin, *Calidris alpina*
alpina subspecies – Western Europe (non-breeding) population
22,222 individuals, wintering, representing an average of 1.7% of the population
(5 year peak mean 1996/7-2000/1)

Black-tailed godwit, *Limosa limosa*
islandica subspecies
1,113 individuals, wintering, representing an average of 3.2% of the population
(5 year peak mean 1996/7-2000/1)

Bar-tailed godwit , *Limosa lapponica*
lapponica subspecies
2,752 individuals, wintering, representing an average of 2.3% of the population
(5 year peak mean 1996/7-2000/1)

Common redshank, *Tringa totanus*
brittanica subspecies
4,632 individuals, wintering, representing an average of 3.6% of the population
(5 year peak mean 1996/7-2000/1)

Ramsar criterion 8
The Humber Estuary acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
153934 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):
Species with peak counts in spring/autumn:

European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	17996 individuals, representing an average of 2.2% of the population (1996-2000)
Red knot , *Calidris canutus islandica*, W & Southern Africa	18500 individuals, representing an average of 4.1% of the population (1996-2000)
(wintering)	
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	20269 individuals, representing an average of 1.5% of the population (1996-2000)
Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	915 individuals, representing an average of 2.6% of the population (1996-2000)
Common redshank , *Tringa totanus totanus*,	7462 individuals, representing an average of 5.7% of the population (1996-2000)

Species with peak counts in winter:

Common shelduck , *Tadorna tadorna*, NW Europe	4464 individuals, representing an average of 1.5% of the population (1996/7 to 2000/1)
European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	30709 individuals, representing an average of 3.8% of the population (1996/7 to 2000/1)
Red knot , *Calidris canutus islandica*, W & Southern Africa	28165 individuals, representing an average of 6.3% of the population (1996/7 to 2000/1)
(wintering)	
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	22222 individuals, representing an average of 1.7% of the population (1996/7 to 2000/1)

Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	1113 individuals, representing an average of 3.2% of the population (1996/7 to 2000/1)
Bar-tailed godwit , *Limosa lapponica lapponica*, W Palearctic	2752 individuals, representing an average of 2.3% of the population (1996/7 to 2000/1)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
See Sections 21/22 for details of noteworthy species
Details of bird species occuring at levels of National importance are given in Section 22

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:
Atlantic

b) biogeographic regionalisation scheme (include reference citation):
Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	neutral, shingle, sand, mud, clay, alluvium, sedimentary, sandstone, sandstone/mudstone, limestone/chalk, gravel, nutrient-rich
Geomorphology and landscape	lowland, coastal, floodplain, shingle bar, intertidal sediments (including sandflat/mudflat), estuary, islands, cliffs
Nutrient status	eutrophic
pH	circumneutral
Salinity	brackish / mixosaline, fresh, saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Cleethorpes, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/cleethorpes.html) Max. daily temperature: 13.1° C Min. daily temperature: 6.4° C Days of air frost: 29.0 Rainfall: 565.4 mm Hrs. of sunshine: 1521.9

General description of the Physical Features:

The Humber estuary is approximately 70 km long from the limit of saline intrusion on the River Ouse at Boothferry to the estuary mouth at Spurn Head, where it enters the North Sea. The area of the estuary is approx. 365 km2, and it has a width of 6.6 km at the mouth.

The Humber is a macro-tidal estuary with a tidal range of 7.4 m, the second-largest range in the UK and comparable to other macro-tidal estuaries worldwide. It is a shallow and well mixed estuary, with an average depth of 6.5m rising to 13.2 m at the mouth.

The Humber is the second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. This is the northernmost of the English east coast estuaries whose structure and function is intimately linked with soft eroding shorelines.

Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks. This section of the estuary is noteworthy for extensive mud and sand bars, which in places form semi-permanent islands.

The estuary covers the full salinity range from fully marine at the mouth of the estuary (Spurn Head) to the limit of saline intrusion on the Rivers Ouse and Trent)). A salinity gradient from north to south bank is observed in the outer estuary, due to the incoming tide flowing along the north bank, while the fresh water keeps to the south bank as it discharges to the sea. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary..

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17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Humber catchment covers an area of ca. 24,240 km2, more than 20% of the land area of England. Average annual precipitation in the upland areas of the catchment is as much as 1000 mm. Average freshwater flow into the Humber estuary from the rivers is 250 m3s-1, ranging from 60 m3s-1 in drier periods to 450 m3s-1 in wet periods. Peak flows of up to 1500 m3s-1 have been recorded during floods. The rivers Trent and Ouse, which provide the main fresh water flow into the Humber, drain large industrial and urban areas to the south and west (River Trent), and less densely populated agricultural areas to the north and west (River Ouse). The Trent/Ouse confluence is known as Trent Falls.

On the north bank of the Humber estuary the principal river is the river Hull, which flows through the city of Kingston-upon-Hull, and has a tidal length of 32 km, up to the Hempholme Weir. The Hull provides only about 1% of the freshwater input to the estuary. On the south bank, the River Ancholme enters the Humber at South Ferriby, but the tide is excluded by a sluice and a tidal lock. Altogether, the total tidal length of rivers and estuary is 313 km.

There are several major urban centres within the river catchments. Nottingham, Leicester, and the West Midlands/Birmingham conurbation are drained by the Trent, the Leeds-Bradford area in West Yorkshire is drained by the Aire/Calder and the Sheffield/Rotherham/Doncaster area in South Yorkshire is drained by the Don. There are also large rural regions, whose populations are currently experiencing high population growth, while the urban areas are showing a small decline. The 1992 population for the Ouse catchment was 4.1 million, and for the Trent catchment was 7.1 million. The population of Humberside, which comprises North and North-east Lincolnshire, the East Riding of Yorkshire, and Kingston-upon-Hull (Hull), was just under 0.9 million. Land use around the estuary itself is 50-98% agricultural, within only two areas of high population/ industry – the major conurbation around Kingston-upon-Hull (Hull) on the north bank, and several large industrial areas around Grimsby/ Immingham/ Cleesthorpes on the south bank.

The area around the Humber estuary is low-lying, and much land-claim of wetlands and supratidal zones, as well as parts of the intertidal zone, was carried out in the past two centuries. The mid to

outer estuary (Humber Bridge to Spurn Point) changed from a region of low water erosion in the 19th century to one of accretion in the 20th century, nonetheless a net loss of intertidal zone of some 3000 ha has taken place since the mid-19th century. Around the estuary some 894 km2 of land are below the 5 m contour, protected by extensive coastal defences. Most of the sediment entering the estuary comes from the North Sea, and a large part of it is believed to come from the continuing erosion of the Holderness Cliffs, which form the coastline to the north of the estuary mouth at Spurn Head. The estuary currently has approximately 1,775 ha of saltmarsh

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Sediment trapping

19. Wetland types:

Marine/coastal wetland

Code	Name	% Area
F	Estuarine waters	66.8
G	Tidal flats	26.4
H	Salt marshes	4.7
E	Sand / shingle shores (including dune systems)	0.8
7	Gravel / brick / clay pits	0.5
Q	Saline / brackish lakes: permanent	0.3
J	Coastal brackish / saline lagoons	0.3
Other	Other	0.1
9	Canals and drainage channels	0.01
Y	Freshwater springs	0.01

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Description

Much of the intertidal area of the Humber Estuary consists of mudflats with fringing saltmarsh. There are smaller areas of intertidal sand flats, and sand dunes. The saltmarsh is both eroding and accreting; although coastal squeeze is resulting in net losses, and cord grass Spartina anglica is a major colonising species. In areas of reduced salinity such as the Upper Humber there are extensive areas of common reed Phragmites australis with some sea club-rush Bolboschoenus maritimus. Mid-level saltmarsh tends to be much more floristically diverse, and in the higher level marsh with its dendritic network of drainage channels, salt pans and borrow pits grasses dominate with thrift Armeria maritima where the marsh is grazed by cattle and sheep. Extensive areas of eel grass Zostera marina and Z. nolti have been known to occur at Spurn Bight, although in recent years records are limited. Behind the sandflats of the Cleethorpes coast the mature sand-dune vegetation contains some locally and nationally rare species including chestnut flat sedge Blysmus rufus, bulbous meadow grass Poa bulbosa and dense silky-bent Apera interrupta. The sand dunes, which cap the shingle spit that forms Spurn Peninsula are dominated by marram grass Ammophila arenaria and patches of dense sea buckthorn Hippophae rhamnoides.

Ecosystem services

Aesthetic

Education

Food

Recreation

Storm/wave protection

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

None reported

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species Information

Species Information

Birds

Species currently occurring at levels of national importance:

Great bittern, *Botaurus stellaris*
stellaris subspecies – W Europe, NW Africa (breeding) population
2 booming males, breeding, representing an average of 10.5% of the GB population
(3 year mean 2000-2002)

Eurasian marsh harrier, *Circus aeruginosus*
Europe population
10 females, breeding, representing an average of 6.3% of the GB population
(5 year mean 1998-2002)

Pied avocet, *Recurvirostra avosetta*
Western Europe (breeding) population
64 pairs, breeding, representing an average of 8.6% of the GB population
(5 year mean 1998-2002)

Little tern, *Sterna albifrons*
albifrons subspecies, Western Europe (breeding) population
51 pairs, breeding, representing an average of 2.1% of the GB population
(5 year mean 1998-2002)

Dark-bellied brent goose, *Branta bernicla*
bernicla subspecies
2,098 individuals, wintering, representing an average of 2.1% of the GB population
(5 year peak mean 1996/7-2000/1)

Eurasian wigeon, *Anas penelope*
Northwestern Europe (non-breeding) population
5,044 individuals, wintering, representing an average of 1.2% of the GB population
(5 year peak mean 1996/7-2000/1)

Common teal, *Anas crecca*
crecca subspecies, Northwestern Europe (non-breeding population)
2,322 individuals, wintering, representing an average of 1.2% of the GB population

(5 year peak mean 1996/7-2000/1)

Common pochard, *Aythya ferina*
Northeastern & Northwestern Europe (non-breeding) population
719 individuals, wintering, representing an average of 1.2% of the GB population
(5 year peak mean 1996/7-2000/1)

Greater scaup, *Aythya marila*
marila subspecies, Western Europe (non-breeding) population
127 individuals, wintering, representing an average of 1.7% of the GB population
(5 year peak mean 1996/7-2000/1)

Common goldeneye, *Bucephala clangula*
clangula subspecies, Northwestern & Central Europe (non-breeding) population
467 individuals, wintering, representing an average of 1.9% of the GB population
(5 year peak mean 1996/7-2000/1)

Great bittern, *Botaurus stellaris*
stellaris subspecies – W Europe, NW Africa (breeding) population
4 individuals, wintering, representing an average of 4.0% of the GB population
(5 year peak mean 1998/9-2002/3)

Hen harrier, *Circus cyaneus*
Europe population
8 individuals, wintering, representing an average of 1.1% of the GB population
(5 year peak mean 1997/8-2001/2)

Eurasian oystercatcher, *Haematopus ostralegus*
ostralegus subspecies
3,503 individuals, wintering, representing an average of 1.1% of the GB population
(5 year peak mean 1996/7-2000/1)

Pied avocet, *Recurvirostra avosetta*
Western Europe (breeding) population
59 individuals, wintering, representing an average of 1.7% of the GB population
(5 year peak mean 1996/7-2000/1)

Great ringed plover, *Charadrius hiaticula*
hiaticula subspecies
403 individuals, wintering, representing an average of 1.2% of the GB population
(5 year peak mean 1996/7-2000/1)

Grey plover, *Pluvialis squatarola*
squatarola subspecies, Eastern Atlantic (non-breeding) population
1,704 individuals, wintering, representing an average of 3.2% of the GB population
(5 year peak mean 1996/7-2000/1)

Northern lapwing, *Vanellus vanellus*
Europe (breeding) population
22,765 individuals, wintering, representing an average of 1.1% of the GB population
(5 year peak mean 1996/7-2000/1)

Sanderling, *Calidris alba*
Eastern Atlantic (non-breeding) population

486 individuals, wintering, representing an average of 2.3% of the GB population
(5 year peak mean 1996/7-2000/1)

Curlew, *Numenius arquata*
arquata subspecies
3,253 individuals, wintering, representing an average of 2.2% of the GB population
(5 year peak mean 1996/7-2000/1)

Ruddy turnstone, *Arenaria interpres*
interpres subspecies, Northeastern Canada & Greenland (breeding) population
629 individuals, wintering, representing an average of 1.3% of the GB population
(5 year peak mean 1996/7-2000/1)

Great ringed plover, *Charadrius hiaticula*
psammodroma subspecies
1,766 individuals, passage, representing an average of 5.9% of the GB population
(5 year peak mean 1996-2000)

Grey plover, *Pluvialis squatarola*
squatarola subspecies, Eastern Atlantic (non-breeding) population
1,590 individuals, passage, representing an average of 2.3% of the GB population
(5 year peak mean 1996-2000)

Sanderling, *Calidris alba*
Eastern Atlantic (non-breeding) population
818 individuals, passage, representing an average of 2.7% of the GB population
(5 year peak mean 1996-2000)

Ruff, *Philomachus pugnax*
Western Africa (non-breeding) population
128 individuals, passage, representing an average of 1.4% of the GB population
(5 year peak mean 1996-2000)

Whimbrel, *Numenius phaeopus*
islandicus subspecies
113 individuals, passage, representing an average of 2.3% of the GB population
(5 year peak mean 1996-2000)

Common greenshank, *Tringa nebularia*
Northwestern Europe (breeding) population
77 individuals, passage, representing an average of 5.5% of the GB population
(5 year peak mean 1996-2000)

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Aquatic vegetation (e.g. reeds, willows, seaweed)
Archaeological/historical site
Environmental education/ interpretation
Fisheries production
Livestock grazing
Non-consumptive recreation

Sport fishing
Sport hunting
Tourism
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+
Public/communal	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	
Cutting of vegetation (small-scale/subsistence)	+	
Fishing: commercial	+	+
Fishing: recreational/sport	+	+
Gathering of shellfish	+	+
Bait collection	+	+
Permanent arable agriculture		+
Permanent pastoral agriculture	+	+
Hunting: recreational/sport	+	+
Industrial water supply	+	+
Industry	+	+
Sewage treatment/disposal	+	+
Harbour/port	+	+

Flood control	+	+
Irrigation (incl. agricultural water supply)		+
Mineral exploration (excl. hydrocarbons)		+
Oil/gas exploration	+	+
Transport route	+	+
Domestic water supply		+
Urban development		+
Non-urbanised settlements		+
Military activities	+	+
Horticulture (incl. market gardening)		+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Disturbance to vegetation through cutting / clearing	1	Reedbeds being cut and cleared on margins of pits associated with angling. Management agreements and enforcement to address.	+		
Vegetation succession	1	Lack of reedbed management leading to scrub encroachment. Management agreement to address.	+		
Water diversion for irrigation/domestic/industrial use	1	Abstraction causes reduced freshwater input. Review of consents well advanced but not yet implemented.	+	+	
Overfishing	2	Substantial lamprey by-catch in eel nets in River Ouse.		+	
Pollution – domestic sewage	1	Reduced dissolved oxygen in River Ouse is a barrier to fish migration. Review of consents well advanced but not yet implemented.	+	+	+
Pollution – agricultural fertilisers	1	Reduced dissolved oxygen in River Ouse is a barrier to fish migration. To be addressed through Catchment Sensitive Farming Initiatives and implementation of Water Framework Directive.	+	+	+
Recreational/tourism disturbance (unspecified)	1	Particularly illegal access by motorised recreational vehicles and craft. Control through management scheme.	+		

Other factor	1	Coastal squeeze causing loss of intertidal habitats and saltmarsh due to sea level rise and fixed defences. The Humber Flood Risk Management Strategy has been developed and is being implemented.	+		+

For category 2 factors only.
What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Overfishing - Overfishing – to be considered through an 'in-combination' assessment of possible factors as part of the Review of Consents exercise.

Is the site subject to adverse ecological change? YES

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	+
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	+
Site management statement/plan implemented	+	
Area of Outstanding National Beauty (AONB)		+
Special Area of Conservation (SAC)	+	
IUCN (1994) category IV	+	

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.
Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
Seal populations are monitored by the Sea Mammal Research Unit
Humber Wader Ringing Group
Spurn Bird Observatory
National Nature Reserve monitoring

Environment.
Institute of Estuarine & Coastal Studies, Hull: various
Industrial Concerns: monitoring on behalf of companies such as Associated British Ports and BP
Environment Agency monitoring: various
Geomorphological studies associated with shoreline management planning
National Nature Reserve monitoring

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There are a four National Nature Reserves with associated facilities within the Ramsar site (Spurn, Far Ings, Donna Nook and Saltfleetby – Theddlethorpe Dunes) and a number of other visitor, information and/or education centres including the Spurn Bird Observatory, the Cleethorpes Discovery Centre, Water's Edge and Far Ings. A wide range of Humber wide and area-specific information is available through a range of media (eg leaflets, displays, internet etc) including 'Humber Estuary European Marine Site Codes of Conduct' developed with a range of stakeholders to cover a range of recreational and educational activities and 'Coastal Futures' – a partnership project working with local communities affected by flood risk and associated issues including managed realignment includes proactive education work within schools.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.
Sailing: marinas at Brough, Winteringham, Hull, Grimsby and South Ferriby.

Bathing etc: Cleethorpes (some 6m visitors/yr).

Walking/Horse riding: throughout

Beach fishing, match sea-fishing, non-commercial bait digging.

Non-commercial samphire collection

Wildfowling

Tourist amusements: Cleethorpes.

Bird watching: throughout but particularly at Blacktoft Sands RSPB reserve and the four National Nature Reserves.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

Site-relevant references

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Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)
AND
FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. Site identification:

1.1 Type J

1.2 Site code UK9008022

1.3 Compilation date 199303

1.4 Update 199902

1.5 Relationship with other Natura 2000 sites

U	K	0	0	1	7	0	7	5
U	K	0	0	1	9	8	3	8
U	K	0	0	3	0	2	7	0

1.6 Respondent(s) International Designations, JNCC, Peterborough

1.7 Site name **Gibraltar Point**

1.8 Site indication and designation classification dates

date site proposed as eligible as SCI	
date confirmed as SCI	
date site classified as SPA	199303
date site designated as SAC	

2. Site location:

2.1 Site centre location

longitude	**latitude**
00 20 16 E	53 06 00 N

2.2 Site area (ha) 414.09

2.3 Site length (km)

2.5 Administrative region

NUTS code	Region name	% cover
UK33	Lincolnshire	100.00%

2.6 Biogeographic region

Alpine	Atlantic	Boreal	Continental	Macaronesia	Mediterranean
	X				

3. Ecological information:

3.1 Annex I habitats

Habitat types present on the site and the site assessment for them:

Annex I habitat	% cover	Representativity	Relative surface	Conservation status	Global assessment

3.2 Annex I birds and regularly occurring migratory birds not listed on Annex I

		Population				Site assessment			
		Resident	Migratory						
Code	Species name		Breed	Winter	Stage	Population	Conservation	Isolation	Global
A144	*Calidris alba*			67 I		C		C	
A157	*Limosa lapponica*			719 I		C		C	
A141	*Pluvialis squatarola*			2017 I		B		C	
A195	*Sterna albifrons*		23 P			C		C	

4. Site description:

4.1 General site character

Habitat classes	% cover
Marine areas. Sea inlets	
Tidal rivers. Estuaries. Mud flats. Sand flats. Lagoons (including saltwork basins)	48.0
Salt marshes. Salt pastures. Salt steppes	20.0
Coastal sand dunes. Sand beaches. Machair	28.0
Shingle. Sea cliffs. Islets	
Inland water bodies (standing water, running water)	1.0
Bogs. Marshes. Water fringed vegetation. Fens	1.0
Heath. Scrub. Maquis and garrigue. Phygrana	
Dry grassland. Steppes	
Humid grassland. Mesophile grassland	2.0
Alpine and sub-alpine grassland	
Improved grassland	
Other arable land	
Broad-leaved deciduous woodland	
Coniferous woodland	
Evergreen woodland	
Mixed woodland	
Non-forest areas cultivated with woody plants (including orchards, groves, vineyards, dehesas)	
Inland rocks. Screes. Sands. Permanent snow and ice	
Other land (including towns, villages, roads, waste places, mines, industrial sites)	
Total habitat cover	**100%**

4.1 Other site characteristics

Soil & geology:

Basic, Mud, Neutral, Sand, Sedimentary, Shingle

Geomorphology & landscape:

Coastal, Enclosed coast (including embayment), Lowland, Open coast (including bay)

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Sterna albifrons (Eastern Atlantic - breeding)	1% of the GB breeding population 5 year mean, 1992-1996

Over winter the area regularly supports:

Limosa lapponica (Western Palearctic - wintering)	1.4% of the GB population 5 year peak mean 1991/92-1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Calidris alba (Eastern Atlantic/Western & Southern Africa - wintering)	0.1% of the population 5 year peak mean 1991/92-1995/96
Pluvialis squatarola (Eastern Atlantic - wintering)	1.2% of the population 5 year peak mean 1991/92-1995/96

4.3 Vulnerability

The Ramsar Site and SPA broadly coincide with the area declared as a National Nature Reserve and managed for nature conservation by the local Wildlife Trust. The site is well protected by law and by appropriate land management. Land adjacent to the site has been acquired for management as an extension to the nature reserve or as permanent pasture under the Countryside Stewardship Scheme.

The natural geomorphological forces which have built the sand dunes and shaped the coastline will continue to operate and re-model the coast. Sea defences up-drift may have modified the natural evolution of the site, but recent beach restoration with imported material, some 8 to 18 km to the north of the site is expected to restore longshore drift patterns to a more natural state. The site is subject to a high number of visitors which require close management. Seaborne pollution, particularly accidental discharge from shipping or from inshore oil and gas drilling operations could pose problems for the site but contingency plans exist for dealing with oils spills.

5. Site protection status and relation with CORINE biotopes:

5.1 Designation types at national and regional level

Code	% cover
UK01 (NNR)	98.4
UK04 (SSSI/ASSI)	100.0

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 05 March 1993

3. Country:

UK (England)

4. Name of the Ramsar site:

Gibraltar Point

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii) **an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

53 06 00 N 00 20 16 E

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Skegness

Gibraltar Point lies on the Lincolnshire coast at the northern entrance to the Wash Estuary

Administrative region: Lincolnshire

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 414.09

Min. -2
Max. 4
Mean 1

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Gibraltar Point consists of an actively accreting sand dune system, saltmarsh and extensive intertidal flats. All stages of dune development are represented, with the older dunes extensively colonised by scrub. There are also small areas of freshwater marsh and open water. The site accommodates large numbers of overwintering birds.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

The dune and saltmarsh habitats present on the site are representative of all the stages of colonisation and stabilisation. There is a fine example of freshwater marsh containing sedges *Carex* spp., rushes *Juncus* spp., and ferns, including adder's-tongue fern *Ophioglossum vulgatum*. Also most northerly example of nationally rare saltmarsh/dune communities containing sea heath *Frankenia laevis*, rock sea lavender *Limonium binervosum* and shrubby seablite *Suaeda vera*.

Ramsar criterion 2

Supports an assemblage of wetland invertebrate species of which eight species are listed as rare in the British Red Data Book and a further four species listed as vulnerable.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
53072 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in spring/autumn:

Grey plover , *Pluvialis squatarola*, E Atlantic/W Africa -wintering	2793 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)
Sanderling , *Calidris alba*, Eastern Atlantic	971 individuals, representing an average of 4.7% of the GB population (5 year peak mean 1998/9-2002/3 - spring peak)
Bar-tailed godwit , *Limosa lapponica lapponica*, W Palearctic	3468 individuals, representing an average of 2.8% of the population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Dark-bellied brent goose, *Branta bernicla bernicla*,	682 individuals, representing an average of 0.6% of the GB population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Species with peak counts in spring/autumn:

Red knot , *Calidris canutus islandica*, W & Southern Africa (wintering)	33930 individuals, representing an average of 7.5% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
Details of bird species occuring at levels of National importance are given in Section 22

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15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation)**:**

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:
Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	basic, neutral, shingle, sand, mud, sedimentary
Geomorphology and landscape	lowland, coastal, intertidal sediments (including sandflat/mudflat), open coast (including bay), enclosed coast (including embayment)
Nutrient status	eutrophic
pH	circumneutral
Salinity	brackish / mixosaline, fresh, saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Cleethorpes, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/cleethorpes.html) Max. daily temperature: 13.1° C Min. daily temperature: 6.4° C Days of air frost: 29.0 Rainfall: 565.4 mm Hrs. of sunshine: 1521.9

General description of the Physical Features:

Gibraltar Point lies north of The Wash and consists of an actively accreting sand-dune system, saltmarsh and extensive intertidal flats. All stages of dune development are represented, with the older dunes extensively colonised by scrub. There are also small areas of freshwater marsh and open water.

To the south, the coastal habitats of Gibraltar Point are continuous with The Wash, with the ecology of the two sites intimately linked.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Gibraltar Point lies north of The Wash and consists of an actively accreting sand-dune system, saltmarsh and extensive intertidal flats. All stages of dune development are represented, with the older dunes extensively colonised by scrub. There are also small areas of freshwater marsh and open water.

To the south, the coastal habitats of Gibraltar Point are continuous with The Wash, with the ecology of the two sites intimately linked.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilisation and dissipation of erosive forces

19. Wetland types:

Inland wetland, Marine/coastal wetland

Code	Name	% Area
G	Tidal flats	49.3

Other	Other	27.8
H	Salt marshes	19.4
Ts	Freshwater marshes / pools: seasonal / intermittent	2.2
Tp	Freshwater marshes / pools: permanent	1
2	Farm ponds, small tanks	0.2
Q	Saline / brackish lakes: permanent	0.1

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The sand dunes at Gibraltar Point are actively accreting and the dune and saltmarsh habitats show all the stages in the colonisation and stabilisation of sand and mud by vegetation. The dunes to seaward are colonised by *Cakile maritima*; *Salsola kali; Eryngium maritimum* and *Elytrigia juncea*. Further inland the dunes are more stable and are dominated by *Ammophila arenaria; Leymus arenarius; Carex arenaria* and *Festuca rubra*. Other plants of stabilised dunes include *Anacamptis pyramidalis; Centaurium erythraea; C pulchellum; Echium vulgare, Calystegia soldanella, Silene maritima* and *Cynoglossum officinale*. The oldest dunes are locally dominated with scrub, especially *Hippophae rhamnoides*. The muddy parts of the foreshore have become colonised with saltmarsh species, *Salicornia* spp. growing on the youngest saltmarsh which rapidly grades into extensive marshes dominated by *Puccinellia maritima; Atriplex portulacoides; Limonium vulgare and L binervosum*. The highest marsh is composed of *Elytrigia atherica* together with *Artemisia maritima* and *Glaux maritima*. The site is the northernmost station in Britain for *Frankenia laevis*. Freshwater marshes occur between two dune ridges and protected from the sea by a seabank constructed in the late nineteenth century. These marshes, which are maintained by grazing, support a rich sward of *Festuca rubra, Poa pratensis, P trivialis and Cynosurus cristatus*, various species of *Juncus* and *Carex, Primula veris, Ophioglossum vulgatum, Cardamine pratensis, Oenanthe lachenalii* and *Dactylorhiza praetermissa*. Open water pools and ditches are fringed with *Phragmites australis* and *Bolboschoenus maritimus*; notable species found here include *Althea officinalis* and *Ranunculus baudotii*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Althaea officinalis, Festuca arenaria, Frankenia laevis, Parapholis incurva, Ranunculus baudotii, Salicornia pusilla, Sarcocornia perennis, Suaeda vera

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Little tern , *Sterna albifrons albifrons*, W Europe	32 apparently occupied nests, representing an average of 1.6% of the GB population (Seabird 2000 Census)

Species with peak counts in spring/autumn:

Eurasian oystercatcher , *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering	3406 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	7503 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
Common greenshank , *Tringa nebularia*, Europe/W Africa	12 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Red-throated diver , *Gavia stellata*, NW Europe	52 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Nationally important species occurring on the site.

Amphibia.

Bufo calamita.

Invertebrates.

Salticella fasciata, Haliplus mucronatus, Athetis pallustris, Eupithecia extensaria, Dexiopsis lacustris, Haematapota bigoti, Phaonia fusca, Pherbellia dorsata, Rymosia connexa, Spilogona biseriata

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23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Environmental education/ interpretation
Livestock grazing
Non-consumptive recreation
Scientific research
Tourism

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	
Private		+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Tourism		+
Recreation	+	+
Current scientific research	+	
Cutting of vegetation (small-scale/subsistence)	+	
Fishing: commercial		+
Fishing: recreational/sport		+
Bait collection		+
Arable agriculture (unspecified)		+
Permanent arable agriculture		+
Rough or shifting grazing	+	
Hunting: recreational/sport		+
Harbour/port	+	
Flood control	+	+
Military activities		+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
General disturbance from human activities	1		+		+

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?

Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	+
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	
Site management statement/plan implemented	+	
Other	+	+
Special Area of Conservation (SAC)	+	

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.
Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
British Trust for Ornithology: Bird Ringing Observatory; Common Bird Census; Constant Effort Ringing Site & Hen Harrier Roost Record Scheme
Annual Bird Migration Record
ITE: Butterfly Monitoring Scheme
Shorelark colour-ringing scheme.

Environment.
Wash Study Centre established 1958 promotes education and research and survey.
Daily weather recording.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Gibraltar Point is managed as a nature reserve and supports a field station for education and research. The Wash Study Centre is equipped with lecture room laboratories, library and living accommodation. It is staffed by one full-time officer and two seasonal assistants that give courses for schools, undergraduate and adult education. Accommodation and facilities are available for visiting

students and research workers. The internet address is: www.Lincstrust.org.uk; e-mail address is: educationatgib@aol.com

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

An Interpretative Centre and shop open every day in summer and at weekends in winter. Guided tours provided for visitors in summer. Some access suitable for disabled visitors and children in pushchairs. Events arranged for public; bird watching hides and publicity material available.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

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Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)
AND
FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. Site identification:

1.1 Type J

1.2 Site code UK9008021

1.3 Compilation date 198803

1.4 Update 199902

1.5 Relationship with other Natura 2000 sites

U	K	0	0	1	7	0	7	5

1.6 Respondent(s) International Designations, JNCC, Peterborough

1.7 Site name **The Wash**

1.8 Site indication and designation classification dates

date site proposed as eligible as SCI	
date confirmed as SCI	
date site classified as SPA	198803
date site designated as SAC	

2. Site location:

2.1 Site centre location

longitude	**latitude**
00 17 12 E	52 56 16 N

2.2 Site area (ha) 62211.66

2.3 Site length (km)

2.5 Administrative region

NUTS code	Region name	% cover
UK33	Lincolnshire	28.00%
0	Marine	60.00%
UK402	Norfolk	12.00%

2.6 Biogeographic region

Alpine	Atlantic	Boreal	Continental	Macaronesia	Mediterranean
	X				

3. Ecological information:

3.1 Annex I habitats

Habitat types present on the site and the site assessment for them:

Annex I habitat	% cover	Representativity	Relative surface	Conservation status	Global assessment

3.2 Annex I birds and regularly occurring migratory birds not listed on Annex I

		Population				Site assessment			
		Resident	Migratory						
Code	Species name		Breed	Winter	Stage	Population	Conservation	Isolation	Global
A054	*Anas acuta*			923 I		B		C	
A050	*Anas penelope*			3241 I		C		C	
A051	*Anas strepera*			71 I		C		C	
A040	*Anser brachyrhynchus*			33265 I		A		B	
A169	*Arenaria interpres*			717 I		C		C	
A046a	*Branta bernicla bernicla*			22248 I		A		C	
A067	*Bucephala clangula*			114 I		C		C	
A144	*Calidris alba*			355 I		C		C	
A149	*Calidris alpina alpina*			35620 I		B		C	
A143	*Calidris canutus*			186892 I		A		C	
A037	*Cygnus columbianus bewickii*			68 I		C		C	
A130	*Haematopus ostralegus*			25651 I		B		C	
A157	*Limosa lapponica*			11250 I		A		C	
A156	*Limosa limosa islandica*			859 I		B		C	
A065	*Melanitta nigra*			68 I		C		C	
A160	*Numenius arquata*			3835 I		B		C	
A141	*Pluvialis squatarola*			9708 I		A		C	
A195	*Sterna albifrons*		>33 P			C		C	
A193	*Sterna hirundo*		152 P			C		C	
A048	*Tadorna tadorna*			15981 I		A		C	
A162	*Tringa totanus*			2953 I		B		C	

4. Site description:

4.1 General site character

Habitat classes	% cover
Marine areas. Sea inlets	55.0
Tidal rivers. Estuaries. Mud flats. Sand flats. Lagoons (including saltwork basins)	39.0
Salt marshes. Salt pastures. Salt steppes	6.0
Coastal sand dunes. Sand beaches. Machair	
Shingle. Sea cliffs. Islets	
Inland water bodies (standing water, running water)	
Bogs. Marshes. Water fringed vegetation. Fens	
Heath. Scrub. Maquis and garrigue. Phygrana	
Dry grassland. Steppes	
Humid grassland. Mesophile grassland	
Alpine and sub-alpine grassland	
Improved grassland	
Other arable land	
Broad-leaved deciduous woodland	
Coniferous woodland	
Evergreen woodland	
Mixed woodland	
Non-forest areas cultivated with woody plants (including orchards, groves, vineyards, dehesas)	

Habitat classes	% cover
Inland rocks. Screes. Sands. Permanent snow and ice	
Other land (including towns, villages, roads, waste places, mines, industrial sites)	
Total habitat cover	**100%**

4.1 Other site characteristics

Soil & geology:

Clay, Mud, Neutral, Sand, Sedimentary, Shingle

Geomorphology & landscape:

Coastal, Enclosed coast (including embayment), Estuary, Intertidal sediments (including sandflat/mudflat), Lowland, Subtidal sediments (including sandbank/mudbank)

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Sterna albifrons (Eastern Atlantic - breeding)	at least 1.4% of the GB breeding population 5 year mean, 1992-1996
Sterna hirundo (Northern/Eastern Europe - breeding)	1.2% of the GB breeding population Count, as at 1993

Over winter the area regularly supports:

Cygnus columbianus bewickii (Western Siberia/North-eastern & North-western Europe)	0.9% of the GB population 5 year peak mean 1991/92-1995/96
Limosa lapponica (Western Palearctic - wintering)	21.4% of the GB population 5 year peak mean 1991/92-1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Anas acuta (North-western Europe)	1.5% of the population 5 year peak mean 1991/92-1995/96
Anas penelope (Western Siberia/North-western/North-eastern Europe)	1.2% of the population in Great Britain 5 year peak mean 1991/92-1995/96
Anas strepera (North-western Europe)	0.9% of the population in Great Britain 5 year peak mean 1991/92-1995/96
Anser brachyrhynchus (Eastern Greenland/Iceland/UK)	14.8% of the population 5 year peak mean 1991/92-1995/96
Arenaria interpres (Western Palearctic - wintering)	1.1% of the population 5 year peak mean 1991/92-1995/96
Branta bernicla bernicla (Western Siberia/Western Europe)	7.4% of the population 5 year peak mean 1991/92-1995/96

Bucephala clangula (North-western/Central Europe)	0.7% of the population in Great Britain 5 year peak mean 1991/92-1995/96
Calidris alba (Eastern Atlantic/Western & Southern Africa - wintering)	0.3% of the population 5 year peak mean 1991/92-1995/96
Calidris alpina alpina (Northern Siberia/Europe/Western Africa)	2.6% of the population 5 year peak mean 1991/92-1995/96
Calidris canutus (North-eastern Canada/Greenland/Iceland/North-western Europe)	54.2% of the population 5 year peak mean 1991/92-1995/96
Haematopus ostralegus (Europe & Northern/Western Africa)	2.9% of the population 5 year peak mean 1991/92-1995/96
Limosa limosa islandica (Iceland - breeding)	11.6% of the population in Great Britain 5 year peak mean 1991/92-1995/96
Melanitta nigra (Western Siberia/Western & Northern Europe/North-western Africa)	0.2% of the population in Great Britain 5 year peak mean 1991/92-1995/96
Numenius arquata (Europe - breeding)	1.1% of the population 5 year peak mean 1991/92-1995/96
Pluvialis squatarola (Eastern Atlantic - wintering)	5.8% of the population 5 year peak mean 1991/92-1995/96
Tadorna tadorna (North-western Europe)	5.3% of the population 5 year peak mean 1991/92-1995/96
Tringa totanus (Eastern Atlantic - wintering)	1.7% of the population 5 year peak mean 1991/92-1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS

Over winter the area regularly supports:

400367 waterfowl (5 year peak mean 01/04/1998)

Including:

Cygnus columbianus bewickii , Anser brachyrhynchus , Branta bernicla bernicla , Tadorna tadorna , Anas penelope , Anas strepera , Anas acuta , Melanitta nigra , Bucephala clangula , Haematopus ostralegus , Pluvialis squatarola , Calidris canutus , Calidris alba , Calidris alpina alpina , Limosa limosa islandica , Limosa lapponica , Numenius arquata , Tringa totanus , Arenaria interpres .

4.3 Vulnerability

The biological richness of the Wash is largely dependant on the physical processes that dominate the natural systems and consequently the ecological vulnerability is closely linked to the physical environment. The intertidal zone is vulnerable to coastal squeeze as a result of land-claim, coastal defence works, sea-level rise, and storm surges. Intertidal habitats are potentially affected by changes in sediment budget caused by dredging and coastal protection, construction of river training walls and flood defence works. The site is also potentially vulnerable to gas exploration. Activities affecting sediment budget and anthropogenic causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SAC/SPA on this site.
The estuary is fed by four large rivers which drain a substantial area of Eastern England. The volume and quality of water entering the Wash is dependent on the use made of these rivers for water abstraction and agricultural, and domestic effluents. Discharge consents and abstraction licenses will be reviewed under the provisions of the Habitats Regulations.

There are two Air Weapons Ranges within the site; activities on these ranges are covered by a Memorandum of Understanding between the Ministry of Defence and Department of the Environment, a Declaration of Intent between the Ministry of Defence and English Nature and by Site Management Statements with English Nature. There is a Nature Conservation Management Plan and Management Committee for one of the ranges.

These issues have been addressed in the Wash Estuary Management Plan and by Local Environment Agency Plans and will be extended through the Marine Scheme of Management which is now in progress.

5. Site protection status and relation with CORINE biotopes:

5.1 Designation types at national and regional level

Code	% cover
UK01 (NNR)	13.5
UK04 (SSSI/ASSI)	100.0

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 30 March 1988

3. Country:

UK (England)

4. Name of the Ramsar site:

The Wash

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii) **an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

52 56 16 N 00 17 12 E

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: King's Lynn

The Wash is located on the east coast of England between the coastal towns of Hunstanton in north Norfolk and Skegness in Lincolnshire.

Administrative region: Lincolnshire; Norfolk

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 62211.66

Min. -3
Max. 4
Mean 0

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Wash is the largest estuarine system in Britain. It is fed by the rivers Witham, Welland, Nene and Great Ouse. There are extensive saltmarshes, intertidal banks of sand and mud, shallow waters and deep channels. It is the most important staging post and over-wintering site for migrant wildfowl and wading birds in eastern England. It supports a valuable commercial fishery for shellfish and also an important nursery area for flatfish. It holds one of the North Sea's largest breeding populations of common seal *Phoca vitulina* and some grey seals *Halichoerus grypus*. The sublittoral area supports a number of different marine communities including colonies of the reef-building polychaete worm *Sabellaria spinulosa*.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 3, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels.

Ramsar criterion 3

Qualifies because of the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
292541 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in spring/autumn:

Eurasian oystercatcher , *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering	15616 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9-2002/3)
Grey plover , *Pluvialis squatarola*, E Atlantic/W Africa -wintering	13129 individuals, representing an average of 5.3% of the population (5 year peak mean 1998/9-2002/3 - spring peak)
Red knot , *Calidris canutus islandica*, W & Southern Africa (wintering)	68987 individuals, representing an average of 15.3% of the population (5 year peak mean 1998/9-2002/3)
Sanderling , *Calidris alba*, Eastern Atlantic	3505 individuals, representing an average of 2.8% of the population (5 year peak mean 1998/9-2002/3)
Eurasian curlew , *Numenius arquata arquata*, N. a. arquata Europe (breeding)	9438 individuals, representing an average of 2.2% of the population (5 year peak mean 1998/9-2002/3)
Common redshank , *Tringa totanus totanus*,	6373 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9-2002/3)
Ruddy turnstone , *Arenaria interpres interpres*, NE Canada, Greenland/W Europe & NW Africa	888 individuals, representing an average of 1.7% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Pink-footed goose , *Anser brachyrhynchus*, Greenland, Iceland/UK	29099 individuals, representing an average of 12.1% of the population (5 year peak mean 1998/9-2002/3)
Dark-bellied brent goose, *Branta bernicla bernicla*,	20861 individuals, representing an average of 9.7% of the population (5 year peak mean 1998/9-2002/3)

Common shelduck , *Tadorna tadorna*, NW Europe	9746 individuals, representing an average of 3.2% of the population (5 year peak mean 1998/9-2002/3)
Northern pintail , *Anas acuta*, NW Europe	431 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	36600 individuals, representing an average of 2.7% of the population (5 year peak mean 1998/9-2002/3)
Bar-tailed godwit , *Limosa lapponica lapponica*, W Palearctic	16546 individuals, representing an average of 13.7% of the population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Species with peak counts in spring/autumn:

Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa	1500 individuals, representing an average of 2% of the population (5 year peak mean 1998/9-2002/3)
Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	6849 individuals, representing an average of 19.5% of the population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	22033 individuals, representing an average of 2.3% of the population (5 year peak mean 1998/9-2002/3)
Northern lapwing , *Vanellus vanellus*, Europe - breeding	46422 individuals, representing an average of 1.3% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
See Sections 21/22 for details of noteworthy species
Details of bird species occuring at levels of National importance are given in Section 22

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	cobble, gravel, biogenic reef, neutral, shingle, sand, mud, clay, nutrient-rich, sedimentary, limestone

Geomorphology and landscape	lowland, coastal, shingle bar, subtidal sediments (including sandbank/mudbank), intertidal sediments (including sandflat/mudflat), enclosed coast (including embayment), estuary, lagoon
Nutrient status	eutrophic
pH	circumneutral
Salinity	saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Marham, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/marham.html) Max. daily temperature: 13.8° C Min. daily temperature: 5.7° C Days of air frost: 51.9 Rainfall: 621.3 mm Hrs. of sunshine: 1536.6

General description of the Physical Features:

The Wash is the largest estuarine system in the UK. It is fed by the rivers Witham, Welland, Nene and Great Ouse that drain much of the east Midlands of England. The Wash comprises very extensive saltmarshes, major intertidal banks of sand and mud, shallow waters and deep channels. The eastern end of the site includes low chalk cliffs at Hunstanton.

To the north, the coastal habitats of The Wash are continuous with Gibraltar Point, whilst to the east The Wash adjoins the North Norfolk Coast.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Wash is the largest estuarine system in the UK. It is fed by the rivers Witham, Welland, Nene and Great Ouse that drain much of the east Midlands of England. The Wash comprises very extensive saltmarshes, major intertidal banks of sand and mud, shallow waters and deep channels. The eastern end of the site includes low chalk cliffs at Hunstanton.
To the north, the coastal habitats of The Wash are continuous with Gibraltar Point, whilst to the east The Wash adjoins the North Norfolk Coast.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

No special values known

19. Wetland types:

Marine/coastal wetland

Code	Name	% Area
A	Shallow marine waters	51.7
G	Tidal flats	41
H	Salt marshes	7.2
E	Sand / shingle shores (including dune systems)	0.03
J	Coastal brackish / saline lagoons	0.03

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The intertidal flats of the Wash form one of the largest intertidal areas in Britain and these are predominantly sandy. The flats support high concentrations of marine worms and shellfish. There is an abundant growth of algae and high concentrations of marine invertebrates which provides a food source for over 300,000 wintering wildfowl and supports an important fishery and seal colony. Extensive saltmarshes fringe the bay but much of the older and botanically more diverse saltmarsh has been lost due to a long history of land-claim. Higher level marshes are characterised by *Elytrigia atherica*, *Atriplex portulacoides*, *Suaeda maritima* and *Limonium vulgare*. Where the saltmarsh has been grazed by cattle and wildfowl, there may be extensive lawns of *Puccinellia* spp. Abundant *Aster tripolium* occurs at lower levels whilst *Salicornia* spp. and *Spartina anglica* are the principal colonising species.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher plants.

Salicornia spp.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Lesser black-backed gull , *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa	1378 apparently occupied nests, representing an average of 1.2% of the GB population (Seabird 2000 Census)
Common tern , *Sterna hirundo hirundo*, N & E Europe	152 pairs, representing an average of 1.4% of the GB population (Count as at 1993)
Little tern , *Sterna albifrons albifrons*, W Europe	33 pairs, representing an average of 1.6% of the GB population (5 year mean 1992-1996)

Species with peak counts in spring/autumn:

Great cormorant , *Phalacrocorax carbo carbo*, NW Europe	367 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Pied avocet , *Recurvirostra avosetta*, Europe/Northwest Africa	422 individuals, representing an average of 12.4% of the GB population (5 year peak mean 1998/9-2002/3)
Ruff , *Philomachus pugnax*, Europe/W Africa	25 individuals, representing an average of 3.5% of the GB population (5 year peak mean 1998/9-2002/3)
Whimbrel , *Numenius phaeopus*, Europe/Western Africa	191 individuals, representing an average of 6.3% of the GB population (5 year peak mean 1998/9-2002/3)

Common greenshank , *Tringa nebularia*, Europe/W Africa	376 individuals, representing an average of 62.9% of the GB population (5 year peak mean 1998/9-2002/3)
Lesser black-backed gull , *Larus fuscus graellsii*,	1993 individuals, representing an average of 3.2% of the GB population (5 year peak mean 1998/9-2002/3)
Species with peak counts in winter:	
Red-throated diver , *Gavia stellata*, NW Europe	55 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)
Bean goose , *Anser fabalis fabalis*, NW Europe - wintering	7 individuals, representing an average of 1.7% of the GB population (Source period not collated)
Greater white-fronted goose , *Anser albifrons albifrons*, NW Europe	100 individuals, representing an average of 1.7% of the GB population (Source period not collated)
Common eider , *Somateria mollissima mollissima*, NW Europe	1109 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Black (common) scoter , *Melanitta nigra nigra*,	1190 individuals, representing an average of 2.3% of the GB population (5 year peak mean 1998/9-2002/3)
Spotted redshank , *Tringa erythropus*, Europe/W Africa	54 individuals, representing an average of 39.7% of the GB population (5 year peak mean 1998/9-2002/3)
Black-headed gull , *Larus ridibundus*, N & C Europe	31403 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Species occurring at levels of international importance.

Mammals.

Phoca vitulina

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23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport hunting
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+
Public/communal	+	+
Other	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Recreation	+	
Current scientific research	+	
Fishing: (unspecified)	+	
Fishing: commercial	+	+
Marine/saltwater aquaculture	+	
Gathering of shellfish	+	
Bait collection	+	
Arable agriculture (unspecified)		+
Permanent arable agriculture		+
Grazing (unspecified)	+	
Rough or shifting grazing	+	
Hunting: recreational/sport	+	+
Harbour/port	+	+
Flood control	+	+
Irrigation (incl. agricultural water supply)		+
Transport route	+	
Domestic water supply		+
Urban development		+
Non-urbanised settlements		+
Military activities	+	

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Other	+	+
Special Area of Conservation (SAC)	+	

b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.

Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
Bird Studies by the Wash Wader Ringing Group.
Waterfowl and invertebrate ecology studies by the Centre for Ecology and Hydrology.
Seal population studies by the Sea Mammal Research Unit.
Annual monitoring of shellfish stocks by Eastern Sea Fisheries Joint Committee.

Environment.

Sediment types and distribution, processes, erosion, tides and currents have been studied by a variety of institutions and are expected to continue.
The shoreline and water quality is routinely monitored by the Environment Agency.
Land-Ocean Interaction Study by the Natural Environment Research Council (1992-98).

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There are two field centres. Lincolnshire County Council run the Freiston field centre and Lincolnshire Wildlife Trust run the Gibraltar Point Field Station.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

Land based recreation is chiefly limited to wildfowling, bird watching and walking along the sea banks around two-thirds of the site. The Peter Scott Walk between the outlets of the Rivers Nene and Great Ouse, has been promoted by the local authorities. Some access points to the shore have also been improved by local authorities. Snettisham Bird Reserve provides facilities for bird watching. Traditional beach recreational activities occur between Hunstanton and Snettisham.

Facilities for pleasure craft are limited to some mud berths and stage moorings on the tidal rivers and at the ports of Kings Lynn and Boston. The principal locations for sailing boats are found at the Skegness Yacht Club at Wainfleet and Snettisham Beach Sailing Club and Hunstanton.

Other water sports including windsurfing, water-skiing and power boats occur mainly at Hunstanton and Heacham on the Norfolk shore. Zoning of watercraft is managed by the local authority. Recreational activities are subject to the Wash Estuary Management Plan but are not generally seen as detrimental to the site.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

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EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Saltfleetby–Theddlethorpe Dunes and Gibraltar Point
Unitary Authority/County:	Lincolnshire
SAC status:	Designated on 1 April 2005
Grid reference:	TF480906
SAC EU code:	UK0030270
Area (ha):	960.20
Component SSSI:	Gibraltar Point SSSI, Saltfleetby–Theddlethorpe Dunes SSSI

Site description:

The dune system on this composite site contains good examples of shifting dunes within a complex site that exhibits a range of dune types. The marram *Ammophila arenaria*-dominated dunes are associated with lyme-grass *Leymus arenarius* and sand sedge *Carex arenaria*. These shifting dunes are part of a successional transition with fixed dunes with dune grassland and sea-buckthorn *Hippophae rhamnoides*. The rapidly-accreting dunes on the seaward sand bars and shingle banks make this an important site for research into the processes of coastal development.

There are extensive areas of fixed dune vegetation within largely intact geomorphologically-active systems, with representation of early successional stages on the seaward side, and more stable areas. The lime-rich dunes support a rich and diverse flora, dominated in places by red fescue *Festuca rubra* and with unusual species including pyramidal orchid *Anacamptis pyramidalis*, bee orchid *Orchis apifera*, sea-holly *Eryngium maritimum*, lesser meadow-rue *Thalictrum minus* and sea campion *Silene maritima*.

This site also supports a good example of dunes with sea-buckthorn *Hippophae rhamnoides* in the main part of its natural range in the UK. This habitat develops on dune areas and is present in a range of successional stages from early colonisation to mature scrub associated with other species such as elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and ivy *Hedera helix*, typically associated with an understorey of ruderal species.

The dune slacks at this site are part of a successional transition between a range of dune features, and some have developed from saltmarsh to freshwater habitats after becoming isolated from tidal inundation by sand deposition. There is a range of different communities and the species present depend on the wetness of the slack, its location within the system and the management history. Some of the drier slacks support a very wide range of species; this has been encouraged by management. The wetter slacks often have more permanent standing water and are composed of stands of sedges and rushes.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Dunes with *Hippophae rhamnoides*. (Dunes with sea-buckthorn)
- Embryonic shifting dunes
- Fixed dunes with herbaceous vegetation (grey dunes). (Dune grassland)*
- Humid dune slacks
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). (Shifting dunes with marram)

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030270
Date of registration: 14 June 2005
Signed: Trevor Salmon
On behalf of the Secretary of State for Environment, Food and Rural Affairs

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)
AND
FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. Site identification:

1.1 Type K

1.2 Site code UK0017075

1.3 Compilation date 199610

1.4 Update 200103

1.5 Relationship with other Natura 2000 sites

U	K	9	0	0	8	0	2	1
U	K	9	0	0	8	0	2	2
U	K	9	0	0	9	0	3	1

1.6 Respondent(s) International Designations, JNCC, Peterborough

1.7 Site name **The Wash and North Norfolk Coast**

1.8 Site indication and designation classification dates

date site proposed as eligible as SCI	199610
date confirmed as SCI	200412
date site classified as SPA	
date site designated as SAC	200504

2. Site location:

2.1 Site centre location

longitude	**latitude**
00 19 05 E	52 56 13 N

2.2 Site area (ha) 107761.28

2.3 Site length (km)

2.5 Administrative region

NUTS code	Region name	% cover
UK33	Lincolnshire	61.00%
UK402	Norfolk	39.00%

2.6 Biogeographic region

Alpine	Atlantic	Boreal	Continental	Macaronesia	Mediterranean
	X				

3. Ecological information:

3.1 Annex I habitats

Habitat types present on the site and the site assessment for them:

Annex I habitat	% cover	Representativity	Relative surface	Conservation status	Global assessment
Sandbanks which are slightly covered by sea water all the time	41	A	B	B	**A**
Mudflats and sandflats not covered by seawater at low tide	17	A	B	A	**A**
Coastal lagoons	0.02	C	C	B	**C**
Large shallow inlets and bays	39	A	B	B	**A**
Reefs	0	A	C	A	**A**
Salicornia and other annuals colonising mud and sand	0.4	A	A	A	**A**
Spartina swards (*Spartinion maritimae*)	0	D			
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	2.6	A	B	A	**A**
Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	0.1	A	A	A	**A**

3.2 Annex II species

	Population				Site assessment			
	Resident	Migratory						
Species name		Breed	Winter	Stage	Population	Conservation	Isolation	Global
Lutra lutra	Very rare	-	-	-	C	C	C	**C**
Halichoerus grypus	Present	-	-	-	D			
Phoca vitulina	1001-10,000	-	-	-	B	B	C	**A**

4. Site description

4.1 General site character

Habitat classes	% cover
Marine areas. Sea inlets	51.0
Tidal rivers. Estuaries. Mud flats. Sand flats. Lagoons (including saltwork basins)	46.0
Salt marshes. Salt pastures. Salt steppes	3.0
Coastal sand dunes. Sand beaches. Machair	
Shingle. Sea cliffs. Islets	
Inland water bodies (standing water, running water)	
Bogs. Marshes. Water fringed vegetation. Fens	
Heath. Scrub. Maquis and garrigue. Phygrana	
Dry grassland. Steppes	
Humid grassland. Mesophile grassland	
Alpine and sub-alpine grassland	
Improved grassland	
Other arable land	
Broad-leaved deciduous woodland	
Coniferous woodland	
Evergreen woodland	
Mixed woodland	
Non-forest areas cultivated with woody plants (including orchards, groves, vineyards, dehesas)	
Inland rocks. Screes. Sands. Permanent snow and ice	
Other land (including towns, villages, roads, waste places, mines, industrial sites)	
Total habitat cover	**100%**

4.1 Other site characteristics

Soil & geology:

Alluvium, Biogenic reef, Chert/flint, Clay, Gravel, Limestone/chalk, Mud, Nutrient-rich, Peat, Sand, Sandstone, Shingle

Geomorphology & landscape:

Barrier beach, Coastal, Enclosed coast (including embayment), Estuary, Intertidal sediments (including sandflat/mudflat), Lagoon, Open coast (including bay), Shingle bar, Subtidal sediments (including sandbank/mudbank)

4.2 Quality and importance

Sandbanks which are slightly covered by sea water all the time
- for which this is considered to be one of the best areas in the United Kingdom.

Mudflats and sandflats not covered by seawater at low tide
- for which this is considered to be one of the best areas in the United Kingdom.

Coastal lagoons
- for which the area is considered to support a significant presence.

Large shallow inlets and bays
- for which this is considered to be one of the best areas in the United Kingdom.

Reefs
- for which this is considered to be one of the best areas in the United Kingdom.

Salicornia and other annuals colonising mud and sand
- for which this is considered to be one of the best areas in the United Kingdom.

Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- for which this is considered to be one of the best areas in the United Kingdom.

Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)
- for which this is one of only four known outstanding localities in the United Kingdom.
- which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares.

Lutra lutra
- for which the area is considered to support a significant presence.

Phoca vitulina
- for which this is considered to be one of the best areas in the United Kingdom.

4.3 Vulnerability

The Wash and North Norfolk Coast is one of the most diverse coastal systems in Britain. This diversity is largely dependent on physical processes that dominate the natural system; consequently the vulnerability of habitats is linked to changes in the physical environment. The intertidal zone is being threatened from coastal squeeze as a result of land-claim and coastal defence works as well as sea-level rise and storm-surges. Changes in the sediment budgets also threaten these habitats. At present activities which alter the sediment characteristics include dredging and coastal protection works. Current management is underway to address concerns over declines in shellfisheries.
The area supports internationally important seal populations that are vulnerable to disturbance and disruption of the marine ecosystem upon which they depend. Such issues should be addressed through the Marine Scheme of Management.

5. Site protection status and relation with CORINE biotopes:

5.1 Designation types at national and regional level

Code	% cover
UK01 (NNR)	2.8
UK00 (N/A)	38.7
UK04 (SSSI/ASSI)	61.4

Appendix B Site Conservation Objectives

European Site Conservation Objectives for Humber Estuary Special Area of Conservation Site Code: UK0030170

With regard to the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats and habitats of qualifying species**
- **The structure and function (including typical species) of qualifying natural habitats**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which qualifying natural habitats and habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks

H1130. Estuaries

H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats

H1150. Coastal lagoons*

H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram

H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*

H2160. Dunes with *Hippophae rhamnoides*; Dunes with sea-buckthorn

S1095. *Petromyzon marinus*; Sea lamprey

S1099. *Lampetra fluviatilis*; River lamprey

S1364. *Halichoerus grypus*; Grey seal

* denotes a priority natural habitat or species (supporting explanatory text on following page)

This is a European Marine Site

This site is a part of the Humber Estuary European Marine Site. These conservation objectives should be used in conjunction with the Regulation 35 Conservation Advice Package, for further details please contact Natural England's enquiry service at enquiries@naturalengland.org.uk, or by phone on 0845 600 3078, or visit the Natural England website at: http://www.naturalengland.org.uk/ourwork/marine/protectandmanage/mpa/europeansites.aspx

*** Priority natural habitats or species**

Some of the natural habitats and species listed in the Habitats Directive and for which SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Directive and the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Directive or the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features as required by the provisions of Article 6(1) and 6(2) of the Directive.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in Article 1 of the Habitats Directive.

Publication date: 31 March 2014 – version 2. This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England's Strategic Standard on European Site Conservation Objectives 2014.

European Site Conservation Objectives for Humber Estuary Special Protection Area Site Code: UK9006111

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A021 *Botaurus stellaris*; Great bittern (Non-breeding)
A021 *Botaurus stellaris*; Great bittern (Breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A081 *Circus aeruginosus*; Eurasian marsh harrier (Breeding)
A082 *Circus cyaneus*; Hen harrier (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Breeding)
A140 *Pluvialis apricaria*; European golden plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A151 *Philomachus pugnax*; Ruff (Non-breeding)
A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage

This is a European Marine Site

This SPA is a part of the Humber Estuary European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Regulation 35 Conservation Advice document for the EMS. For further details about this please visit the Natural England website at: http://www.naturalengland.org.uk/ourwork/marine/protectandmanage/mpa/europeansites.aspx or contact Natural England's enquiry service at enquiries@naturalengland.org.uk or by phone on 0845 600 3078.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where this is available) will also provide a framework to inform the management of the European Site under the provisions of Articles 4(1) and 4(2) of the Wild Birds Directive, and the prevention of deterioration of habitats and significant disturbance of its qualifying features required under Article 6(2) of the Habitats Directive.

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 30 June 2014 (Version 3). This document updates and replaces an earlier version dated 31 March 2014. Previous references to additional features identified in the 2001 UK SPA Review have been removed.

European Site Conservation Objectives for Gibraltar Point Special Protection Area Site Code: UK9008022

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A141 *Pluvialis squatarola*; Grey plover (Non-breeding)
A144 *Calidris alba*; Sanderling (Non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)
A195 *Sterna albifrons*; Little tern (Breeding)

This is a European Marine Site

This SPA is a part of The Wash and North Norfolk Coast European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Regulation 35 Conservation Advice document for the EMS. For further details about this please visit the Natural England website at http://www.naturalengland.org.uk/ourwork/marine/protectandmanage/mpa/europeansites.aspx or contact Natural England's enquiry service at enquiries@naturalengland.org.uk or by phone on 0845 600 3078.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where this is available) will also provide a framework to inform the management of the European Site under the provisions of Articles 4(1) and 4(2) of the Wild Birds Directive, and the prevention of deterioration of habitats and significant disturbance of its qualifying features required under Article 6(2) of the Habitats Directive.

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 30 June 2014 (Version 2). This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England's Strategic Standard on European Site Conservation Objectives 2014. Previous references to additional features identified in the 2001 UK SPA Review have also been removed.

European Site Conservation Objectives for The Wash Special Protection Area Site Code: UK9008021

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding)
A040 *Anser brachyrhynchus*; Pink-footed goose (Non-breeding)
A046a *Branta bernicla bernicla*; Dark-bellied brent goose (Non-breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A050 *Anas penelope*; Eurasian wigeon (Non-breeding)
A051 *Anas strepera*; Gadwall (Non-breeding)
A054 *Anas acuta*; Northern pintail (Non-breeding)
A065 *Melanitta nigra*; Black (common) scoter (Non-breeding)
A067 *Bucephala clangula*; Common goldeneye (Non-breeding)
A130 *Haematopus ostralegus*; Eurasian oystercatcher (Non-breeding)
A141 *Pluvialis squatarola*; Grey plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A144 *Calidris alba*; Sanderling (Non-breeding)
Contd/

A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)
A160 *Numenius arquata*; Eurasian curlew (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
A169 *Arenaria interpres*; Ruddy turnstone (Non-breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage

This is a European Marine Site

This SPA is a part of the The Wash and North Norfolk Coast European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Regulation 35 Conservation Advice document for the EMS. For further details about this please visit the Natural England website at: http://www.naturalengland.org.uk/ourwork/marine/protectandmanage/mpa/europeansites.aspx or contact Natural England's enquiry service at enquiries@naturalengland.org.uk or by phone on 0845 600 3078.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where this is available) will also provide a framework to inform the management of the European Site under the provisions of Articles 4(1) and 4(2) of the Wild Birds Directive, and the prevention of deterioration of habitats and significant disturbance of its qualifying features required under Article 6(2) of the Habitats Directive.

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 30 June 2014 (Version 2). This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England's Strategic Standard on European Site Conservation Objectives 2014. Previous references to additional features identified in the 2001 UK SPA Review have also been removed.

European Site Conservation Objectives for Saltfleetby–Theddlethorpe Dunes and Gibraltar Point Special Area of Conservation Site code: UK0030270

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of the qualifying natural habitats**
- **The structure and function (including typical species) of the qualifying natural habitats, and,**
- **The supporting processes on which the qualifying natural habitats rely**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram

H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*

H2160. Dunes with *Hippophae rhamnoides*; Dunes with sea-buckthorn

H2190. Humid dune slacks

* denotes a priority natural habitat or species (supporting explanatory text on following page)

*** Priority natural habitats or species**

Some of the natural habitats and species listed in the Habitats Directive and for which SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Directive and the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Directive or the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where this is available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features as required by the provisions of Article 6(1) and 6(2) of the Directive.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in Article 1 of the Habitats Directive.

Publication date: 30 June 2014 – version 2. This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England's Strategic Standard on European Site Conservation Objectives 2014.

European Site Conservation Objectives for The Wash and North Norfolk Coast Special Area of Conservation Site Code: UK0017075

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats and habitats of qualifying species**
- **The structure and function (including typical species) of qualifying natural habitats**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks

H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats

H1150. Coastal lagoons*

H1160. Large shallow inlets and bays

H1170. Reefs

H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

H1420. Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); Mediterranean saltmarsh scrub

S1355. *Lutra lutra*; Otter
S1365. *Phoca vitulina*; Common seal

* denotes a priority natural habitat or species (supporting explanatory text on following page)

This is a European Marine Site

This site is a part of the The Wash and North Norfolk Coast European Marine Site. These conservation objectives should be used in conjunction with the Regulation 35 Conservation Advice Package, for further details please contact Natural England's enquiry service at enquiries@naturalengland.org.uk, or by phone on 0845 600 3078, or visit the Natural England website at: http://www.naturalengland.org.uk/ourwork/marine/protectandmanage/mpa/europeansites.aspx

*** Priority natural habitats or species**

Some of the natural habitats and species listed in the Habitats Directive and for which SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Directive and the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Directive or the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features as required by the provisions of Article 6(1) and 6(2) of the Directive.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in Article 1 of the Habitats Directive.

Publication date: 30 June 2014 – version 2. This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England's Strategic Standard on European Site Conservation Objectives 2014.

Appendix C Site Favourable Condition Targets

7.

Table 3 Favourable Condition Table for pSAC interest features of the Humber Estuary European marine site

NB – It will be possible to monitor many of the attributes at the same time or during the same survey. The frequency of sampling for many attributes may need to be greater during the first reporting cycle in order to characterise the site and establish the baseline. Where relevant, National Vegetation Classification codes (NVCs) and marine biotope codes are provided and then referenced in Appendices V and VIII.

THE HUMBER ESTUARY pSAC INTEREST FEATURES

Interest Feature	Sub-feature	Attribute	Measure	Target	Comments
Estuary	All sub-features	Extent	Area (ha) of the estuary measured periodically during the reporting cycle (frequency to be determined).	No decrease in extent from an established baseline[9], subject to natural change.	Extent is an attribute on which reporting is required by the Habitats Directive.
		Morphological equilibrium.	Intra and inter-estuarine Tidal Prism/Cross Section ratio (TP/CS ratio) measured during the reporting cycle (frequency to be determined).	The intra- and inter-estuarine TP/CS relationship should not deviate significantly from an established baseline subject to natural change.	TP = Tidal Prism = total volume of water crossing a given cross section during the flood tide (m^3). CS = Area of a given cross section at high water springs (m^2). The relationship between TP & CS provides a measure of the way the estuary has adjusted to tidal energy. Substantial departures from this characteristic relationship (determined on a regional basis) may indicate the influence of anthropogenic factors and this would trigger more detailed evaluation of potential problems.
		Water density - temperature and salinity	Water temperature and salinity measured periodically during the reporting cycle (frequency to be determined).	Average temperature and salinity should not deviate significantly from an established baseline, subject to natural change.	Temperature and salinity are characteristic of the overall hydrography of the area. Changes in temperature and salinity influence the presence and distribution of species (along with recruitment processes and spawning behaviour) including those at the edge of their geographic ranges and non-natives.
	Saltmarsh communities	*For information on attributes for the saltmarsh communities sub-feature see the sections of this table which relate to the following interest features:* *Atlantic salt meadows and Salicornia and other annuals colonising mud and sand*			

Estuary	Intertidal mudflat and sandflat communities	*For information on attributes for the intertidal mudflat & sandflat communities sub-feature see the sections of this table which relate to the following interest feature:* *Mudflats and sandflats not covered by seawater at low tide*			
	Subtidal sediment communities	Distribution and extent of characteristic subtidal sediment biotopes for example: IMU, IMX biotopes (see Appendix VIII)	Distribution and extent of biotopes measured during the reporting cycle (frequency to be determined).	Distribution and extent should not deviate from an established baseline subject to natural change	The variety and location of subtidal biotopes are important structural and functional aspects of the interest feature. The subtidal biotopes demonstrate biological assemblages representative of a range of salinity conditions. Changes in extent and distribution may indicate long term changes in the physical condition of the estuary interest feature.
		For information on attributes for the subtidal sediment communities sub-feature see the sections of this table which relate to the following interest feature: Sandbanks which are slightly covered by seawater all the time			
Coastal lagoons	All sub features	Extent	Area (ha) of lagoon basin, measured once per reporting cycle	No decrease in extent from an established baseline[9], subject to natural change	Extent is an attribute on which reporting is required by the Habitats Directive. Natural gradual reduction in area of the lagoons may be inevitable due to natural dynamic coastal processes.
		Salinity	Seasonal averages measured periodically throughout the reporting cycle (frequency to be determined).	Average seasonal salinity and seasonal maxima and minima, should not deviate significantly from an established baseline subject to natural change.	Salinity is a key structuring factor within lagoons. Note should be made of natural fluctuations that occur according to year on year variations in rainfall.
		Water clarity	Average light attenuation measured periodically throughout the reporting cycle (frequency to be determined).	Average light attenuation should not deviate significantly from an established baseline, subject to natural change.	Water clarity is important for maintaining the extent and density of algal and plant dominated communities. Clarity decreases through increased suspended organic/inorganic matter.
		Nutrient status – green algal mats	Extent and cover across whole or parts of the site, measured during summer months annually.	No increase in extent or cover of green algal mats from an established baseline, subject to natural change.	Nutrient status is important for the structure and functioning of the lagoon and its communities. Opportunistic and seasonal green algae compete with other vegetation and may affect associated faunal communities.

Coastal lagoons		Characteristic species - density of *Chaetomorpha linum* and *Ruppia* spp.	Density (number of shoots/ m^2) measured during peak growth (Aug), twice per reporting cycle.	Average shoot density should not deviate significantly from an established baseline, subject to natural change.	*Chaetomorpha linum* and *Ruppia* species are characteristic species of lagoons. Reduction in the density of plants is an early indicator of stress and reflects changes in biomass.
Atlantic salt meadows	All sub-features	Distribution and extent	Area (hectares) measured at low spring tide, once during the reporting cycle	No decrease in extent of saltmarsh communities from an established baseline[9] subject to natural change.	Monitoring will need to take account of the dynamic nature of these habitats and seasonal and periodic random variations in vegetation types. Coastal squeeze may result in the replacement of Atlantic salt meadows with pioneer saltmarsh. A reduction in extent could be further indicated by a ground survey to assess for signs of erosion such as toppled vegetation blocks, signs of roots in intertidal mud, signs of stress/damage to plants. Extent needs to be measured at low tide. Much of the upper /transitional saltmarsh communities on the Humber are constrained by sea walls, and sea level rise may squeeze the habitat against these sea defences and submerge existing vegetation zones. The extent to which this habitat can migrate inland as sea levels rises, is likely to be especially valuable in re-dressing losses incurred to the feature from submersion. Monitoring the rate of change is therefore important. Site integrity will be dependent on maintaining the range of community types from low to high marsh by allowing natural rollback of the saltmarsh to occur.
		Creek system pattern	Density and morphology of creek systems measured during the reporting cycle (frequency to be determined)	Creek system pattern should not deviate significantly from an established baseline, subject to natural change	Meanders in creeks help to absorb tidal energy. Creeks transport sediment to and from the saltmarsh and act as drainage channels. The efficiency of this process depends on creek pattern. Vegetation cover, suspended sediment load and tidal influence influence creek density. Creeks allow pioneer vegetation to establish along their banks higher in the saltmarsh system than they would normally be found. Widening, lengthening and flattening of creeks are an indication of sea level rise/ increase in tidal energy. Though this dissipates the increased tidal energy over a larger area, it also allows higher energy to spread further inland.
		Topography	Surface elevation of saltmarsh and intertidal region, measured periodically during the reporting cycle (frequency to be determined).	Topography should not deviate significantly from an established baseline, subject to natural change.	The presence of sea walls may prevent the saltmarsh from keeping pace with sea level rise and maintaining its position in the tidal frame (the landward migration of saltmarsh to compensate for sea level rise is prevented)

Atlantic salt meadows	Low to mid marsh communities	Species composition of characteristic low to mid marsh communities, for example: - SM10 - SM11 (See Appendix V)	Presence and abundance of constant species, measured once during the reporting cycle.	Presence and abundance of constant species of characteristic low to mid marsh communities should not deviate significantly from an established baseline, subject to natural change.	A recent NVC survey by Bullen Consultants (March 2002) recorded low to mid marsh NVC communities: SM10, SM11, SM12, SM13, SM13a, SM13b, SM13c, SM13f, SM14, SM14a, SM14c. Dargie's 2002 survey of the North Lincolnshire Coast SSSI also recorded SM10, SM11, SM12, SM13, SM14.
	Mid to upper marsh communities	Species composition of characteristic mid-marsh communities, for example: - SM15 - SM 16 (See Appendix V)	Presence and abundance of constant species, measured once during the reporting cycle.	Presence and abundance of constant species of characteristic mid to upper marsh communities should not deviate significantly from an established baseline, subject to natural change.	A recent NVC survey by Bullen Consultants (March 2002) recorded mid to upper NVC communities: SM15, SM16a, SM16b, SM16c. Dargie's 2002 survey of the North Lincolnshire Coast SSSI also recorded SM15, SM16.
	Transitional communities	Species composition of characteristic transitional communities, for example: - SM24 - SM28 - S4 (See Appendix V)	Presence and abundance of constant species, measured once during the reporting cycle.	Presence and abundance of constant species of characteristic transitional communities should not deviate significantly from an established baseline, subject to natural change.	A recent NVC survey by Bullen Consultants (March 2002) recorded transitional NVC communities: SM24, SM28, S4. Dargie's 2002 survey of the North Lincolnshire Coast SSSI also recorded SM24.
***Salicornia* and other annuals colonising mud and sand**	Annual *Salicornia/ Suaeda maritima* saltmarsh communities	Distribution and extent	Area (hectares) measured at low spring tide, once during the reporting cycle.	No decrease in extent of saltmarsh communities from an established baseline[9], subject to natural change.	Monitoring will need to take account of the dynamic nature of these habitats and seasonal and periodic random variations in vegetation types.

***Salicornia* and other annuals colonising mud and sand**		Species composition of characteristic pioneer marsh communities, for example: - SM8 - SM9 (See Appendix V)	Presence and abundance of constant species, measured once during the reporting cycle.	Presence and abundance of constant species of characteristic pioneer marsh communities should not deviate significantly from an established baseline, subject to natural change.	
		Algal mat cover	Area and thickness of algal mat, measured once during the reporting cycle	No increase in algal mat cover from an established baseline, subject to natural change.	Algal mats (eg *Enteromorpha* spp) are often associated with pioneer and low marsh communities and are important primary producers. They can be affected by changes in water quality – eutrophication may lead to expansion and smothering of vegetation, or pollution can cause a decline which can then lead to destabilisation of sediment surfaces and initial erosion. An increase in algal cover can also indicate a decline in grazing invertebrates. (A reduction in algal mat cover can indicate active erosion)
		Distribution and extent of common cordgrass *Spartina anglica* community (SM6)	Distribution and extent of *Spartina anglica*, measured once during the reporting cycle	No significant increase in extent from an established baseline, subject to natural change.	*Spartina anglica* is considered to be an invasive species and may impact on pioneer and low-mid marsh communities. However, *Spartina* stands may have a role in sediment trapping following periods of erosion, although under certain tidal conditions, erosion around stands may be greater. Natural dieback has also been observed along the east and south coasts of England. If *S. anglica* increases to cover 20% or more of the site unit, then a monitoring programme may be advisable, possibly followed by control measures.
Mudflats and sandflats not covered by seawater at low tide	All sub-features	Extent	Area (ha) of intertidal flats, measured periodically during the reporting cycle (frequency to be determined).	No decrease in extent from an established baseline[9], subject to natural change.	Extent is an attribute on which reporting is required by the Habitats Directive. Loss of intertidal mudflat communities is likely to be detrimental to the structure of the interest feature, e.g. associated with a change in sediment budget or geomorphological regime, and may indicate long term changes in the physical conditions of the estuaries interest feature. It will be important to assess the impact of coastal squeeze on coastal processes.
		Topography	Tidal elevation and shore slope, measured periodically during the reporting cycle (frequency to be determined).	Shore profile should not deviate significantly from an established baseline, subject to natural change.	In the intertidal, topography reflects the energy conditions and stability of the sediment, which is key to the structure of the interest feature. Topography is a major influence on the distribution of communities throughout the mudflats. Measuring topography may also indicate the position of channels through the interest feature, which is another important indicator of the processes influencing the site.

Mudflats and sandflats not covered by seawater at low tide		Nutrient enrichment - macroalgal mats	Extent and cover of macroalgal mats, measured in the summer during the reporting cycle (frequency to be determined)	Average abundance of macroalgal mats should not increase from an established baseline, subject to natural change	Nutrient status is a key functional factor that influences biota associated with sediments, including fauna as well as plants/algae at the surface. Certain macroalgae (eg *Enteromorpha* and *Ulva* spp) can act as indicators of elevated nutrient levels which can reduce the quality of the sediments and their communities, primarily through smothering and deoxygenation. The duration of the algal mats on the surface of the sediments is also important.
		Sediment character	1. Particle size analysis (PSA). Parameters include percentage sand/ silt/ gravel, mean and median grain size, and sorting coefficient, used to characterise sediment type. Measured in summer, once during the reporting cycle.	Average PSA parameters should not deviate significantly from the baseline, subject to natural change.	Sediment character defined by particle size analysis is key to the structure of the feature, and reflects all of the physical processes acting on it. Particle size composition varies across the feature and can be used to indicate spatial distribution of sediment types thus reflecting the stability of the feature and the processes supporting it.
			2. Organic content- % carbon from sediment sample measured periodically (frequency to be determined)	Average organic carbon content should not deviate significantly from an established baseline, subject to natural change.	Organic content critically influences the infaunal community and can cause deoxygenation of the feature which can be detrimental to the biota. However, a balance needs to be struck as organic content provides a measure of the material available to detritivores. A reduction in organic content could lead to a reduction in detritivores, with subsequent knock on effects throughout the food chain.
			3. Oxidation - reduction potential. Depth of black anoxic layer. Measured periodically during the reporting cycle (frequency to be determined).	Average black layer depth should not deviate significantly from an established baseline, subject to natural change.	Degree of oxidation / reduction, reflecting oxygen availability within the sediment, critically influences the infaunal community and the mobility of chemical compounds. It is an indicator of the structure of the feature.
	Intertidal gravel and sand communities	Range and distribution of characteristic gravel and sand biotopes, for example: LGS biotopes (see Appendix VIII)	Range and distribution of biotopes measured during reporting cycle (frequency to be determined).	Range and distribution should not deviate significantly from an established baseline, subject to natural change	The variety and location of biotopes is an important structural and functional aspect of the feature. Changes in extent and distribution may indicate long-term changes in the physical conditions at the site.

Mudflats and sandflats not covered by seawater at low tide	Intertidal muddy sand communities	Range and distribution of characteristic muddy sand biotopes, for example: LMS biotopes (see Appendix VIII)	Range and distribution of biotopes measured during reporting cycle (frequency to be determined).	Range and distribution should not deviate significantly from an established baseline, subject to natural change	Muddy sands dominated by the worm *Arenicola marina* (e.g. LMS.MacAre) are found throughout this sub-feature. The invertebrates within the sediment play an important structural and functional role as well as providing an important source of food for marine predators and birds.
	Intertidal mud communities	Range and distribution of characteristic mud biotopes, for example: LMU biotopes (see Appendix VIII)	Range and distribution of characteristic mud biotopes measured during late summer / early autumn, periodically during the reporting cycle (frequency to be determined).	Range and distribution should not deviate significantly from an established baseline, subject to natural change.	The variety and location of biotopes is an important structural and functional aspect of the feature. Littoral mud biotopes such as LMU.HedScr, LMU.HedStr and LMU.HedMac often support a high number of polychaete worms and bivalve molluscs, which form an important food source for birds and marine predators such as fish.
	Eelgrass bed communities	Extent	Extent (m^2) of the *Zostera* beds measured during the peak growth period (May to Aug) every three years during the reporting cycle	No decrease in extent from an established baseline, subject to natural change	Eelgrass beds (LMS.Zos.Znol) contribute to sediment structure and stabilise foreshore sediments by reducing wave energy. The extent of *Zostera* beds is a key structural component of the sediments and provides a long-term integrated measure of environmental conditions across the feature. It is also particularly important in being an internationally scarce and declining habitat. The eelgrass beds provide a rich source of food for wintering wildfowl and provide an important nursery area for fish.
Sandbanks which are slightly covered by seawater all the time	All sub-features	Extent	Area (ha) of subtidal sandbanks, measured periodically during the reporting cycle (frequency to be determined).	No decrease in extent from an established baseline[9], subject to natural change.	Extent is an attribute on which reporting is required by the Habitats Directive. Loss of subtidal sediment communities is likely to be detrimental to the structure of the interest feature, e.g. associated with a change in sediment budget or geomorphological regime, and may indicate long term changes in the physical conditions of the estuaries interest feature. However, monitoring will also need to take into account the dynamic nature of the feature.
		Topography	Depth distribution of sandbanks from selected sites, measured periodically (frequency to be determined).	Depth should not deviate significantly from an established baseline, subject to natural change	Depth and distribution of the sandbanks reflects the energy conditions and stability of the sediment, which is key to the structure of the feature. Depth of the feature is of a major influence on the distribution of communities throughout.

Sandbanks which are slightly covered by seawater all the time		Sediment character	Grain size analysis. Parameters include percentage sand/ silt/ gravel, mean and median grain size, and sorting coefficient, used to characterise sediment type. Sediment type to be measured during summer once during the reporting cycle.	Average grain size parameters should not deviate significantly from an established baseline, subject to natural change.	Sediment character defined by grain size is key to the structure of the feature, and reflects all of the physical processes acting on it. Particle size composition varies across the feature and can be used to indicate spatial distribution of sediment types, thus reflecting the stability of the feature and the processes supporting it.
	Subtidal gravel and sands	Distribution and extent of characteristic subtidal gravel and sand biotopes, for example: IGS biotopes (see Appendix VIII)	Distribution and extent of biotopes measured during the reporting cycle (frequency to be determined).	Distribution and extent should not deviate from an established baseline subject to natural change	The variety and location of subtidal biotopes are important structural and functional aspects of the interest feature. The subtidal biotopes demonstrate biological assemblages representative of a range of salinity conditions. Changes in extent and distribution may indicate long term changes in the physical condition of the subtidal sandbank interest feature
	Subtidal muddy sands	Distribution and extent of characteristic subtidal mud biotopes, for example: IMS biotopes (see Appendix VIII)	Distribution and extent of biotopes measured during reporting cycle (frequency to be determined).	Distribution and extent should not deviate significantly from an established baseline, subject to natural change.	The variety and location of subtidal biotopes is an important structural and functional aspect of the interest feature. The subtidal biotopes demonstrate biological assemblages representative of a range of salinity conditions.
River lamprey *Lampetra fluviatilis* and **Sea lamprey** *Petromyzon marinus*		Water quality (physico-chemical properties)	Water quality measured regularly throughout the reporting cycle (frequency to be determined).	No significant variation in temperature, salinity, turbidity and pH, and no reduction in dissolved oxygen levels, from an established baseline[9].	Significant variation in these physico-chemical parameters may be injurious to lamprey populations or act as a barriers to migration. (E.g. Effects on temperature regime may have important consequences for lamprey.) Mature adult river lamprey begin their upstream migration to the River Derwent and the rivers of the Ouse system in November. The sea lamprey begin their run in May. The timing, duration and consistency of this upstream migration is closely related to temperature and pheromone triggers from the juvenile lamprey during periods of high water flow. Peak migration usually coincides with temperatures that remain above 10^{o}C and continues until temperatures reach 18^{o}C. Dissolved oxygen can also be significantly reduced in stretches receiving significant BOD inputs, or through the resuspension of organic rich sediments.

River lamprey *Lampetra fluviatilis* and **Sea lamprey** *Petromyzon marinus*		Habitat structure	Estuary form	Maintain the characteristic physical form and flow dynamics of the estuary	The characteristic morphology provides the diversity of water depths, current velocities and substrate types necessary to fulfil the migratory requirements of the species.
		Access	Any barriers should be mapped and quantified (in relation to height, type and water depth below obstruction).	No artificial barriers significantly impairing adults from reaching existing and historical spawning grounds, or juveniles from moving downstream.	Dams, navigation and other weirs may prevent lamprey from reaching their spawning grounds. In particular, sea lamprey are known to be poor at ascending obstacles. Lamprey can pass some potential barriers by attaching themselves to structures or riverbanks by their suctorial discs and creeping up by strong bursts of swimming.
		Population structure	Population structure measured in terms of viability.	Maintain age/size class structure	Where there is a shift in the age/size class structure (e.g. loss of mature adults or recruitment failure) or if disturbance causes a significant reduction in abundance, then this would be considered unfavourable. On the Humber, sources of disturbance are likely to result from large numbers of lamprey being lost through impingement in power station cooling waters. Also, lamprey have recently become popular in the UK as bait for pike-fishing and are caught as by-catch in an eel fishery on the Ouse. There are also indications that UK populations are sought after as a delicacy in Europe, where stocks are declining. Adult lamprey are usually caught by trapping, whilst juvenile lamprey can be removed by sieving, netting or digging out nursery habitats. Anecdotal evidence of adult trapping suggests heavy losses of fish in some areas.

9 Baselines to be determined during the first reporting cycle

NB: Extreme events (such as storms reducing or increasing salinities or warm summers) also need to be recorded as they may be critical in influencing ecological issues in the Humber Estuary European marine site and may well be missed by routine monitoring

11.

Table 7 Favourable Condition Table for the Humber Flats, Marshes and Coast SPA interest features of the Humber Estuary European marine site
Numbers of bird species using these habitats are given in Table 6

NB – It will be possible to monitor many of the attributes at the same time or during the same survey. The frequency of sampling for many attributes may need to be greater during the first reporting cycle in order to characterise the site and establish the baseline.

Interest Feature	Sub-feature	Attribute	Measure	Target	Comments
Internationally important populations of regularly occurring Annex I species (eg marsh harrier, avocet, little tern, bittern, hen harrier, golden plover, bar-tailed godwit)	All sub-features	Extent of habitat	Area (ha), measured once per reporting cycle.	No significant decrease in extent from an established baseline[13], subject to natural change.	The habitats provide important breeding sites for marsh harriers, little terns and avocets and feeding and roosting areas for all Annex I species. In addition, if these habitats are unable to keep pace with sea level rise (coastal squeeze may be implicated in this), inundation of these features will become more frequent – decreasing feeding and roosting areas and increasing the risk of flooding to little tern nests, which are located close to the high tide mark.
		Disturbance	Reduction or displacement of all Annex I birds and productivity of breeding birds, measured periodically (frequency to be determined)	No significant reduction in bird numbers and productivity or displacement of birds attributable to human disturbance from an established baseline, subject to natural change.	Significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure. Breeding birds are particularly vulnerable to disturbance and significant disturbance to adults on and off their nests can result in failure of egg clutches and fledged young. Productivity (number of successfully fledged young), together with other measures will also be used to monitor disturbance. Five-year peak mean information on populations will be used as the basis for assessing whether disturbance is damaging.
		Absence of obstructions to viewlines	Openness of terrain unrestricted by obstructions, measured periodically (frequency to be determined)	No increase in obstructions to existing bird view lines, subject to natural change.	Avocet, little tern, golden plover and bar-tailed godwit require unrestricted views to allow early detection of predators when feeding, nesting and roosting.

Internationally important populations of regularly occurring Annex I species (eg marsh harrier, avocet, little tern, bittern, hen harrier, golden plover, bar-tailed godwit)	Intertidal mudflats and sandflats	Food availability	Presence and abundance of suitable prey species, measured periodically (frequency to be determined)	No significant reduction in the presence and abundance of prey species from an established baseline, subject to natural change.	Important prey species for avocet and bar-tailed godwit are marine invertebrates such as crustaceans, molluscs and marine worms. Golden plover may also feed on the intertidal mudflats and sandflats during periods of harsh weather. When the tide is in, the breeding little terns will feed over the intertidal flats, feeding on sand eels and sprats.
	Saltmarsh Communities	Vegetation characteristics	Open, short vegetation or bare ground predominately in areas used for roosting, measured periodically (frequency to be determined)	Vegetation height and density throughout areas used for roosting should not deviate significantly from an established baseline, subject to natural change.	Vegetation height of <10cm is required throughout roosting areas. The bar-tailed godwit in particular, requires short vegetation with unrestricted views for roosting. The saltmarshes are also an important hunting area for hen harrier and marsh harrier.
	Tidal reedbeds	Food availability	Presence and abundance of small - medium sized birds and mammals, measured periodically (frequency to be determined).	Presence and abundance of prey should not deviate significantly from an established baseline, subject to natural change.	Reedbeds are particularly important as a hunting area for marsh harriers and hen harriers. Prey species include small mammals and birds.
			Presence and abundance of fish and amphibians, measured periodically (frequency to be determined).	Presence and abundance of prey should not deviate significantly from an established baseline, subject to natural change.	Reedbeds are a particularly important habitat for wintering bittern which feed on fish, eels and amphibians.
		Vegetation characteristics	Vegetation height, density and age structure, measured periodically (frequency to be determined).	Vegetation height, density and age structure should not deviate significantly from an established baseline, subject to natural change	Suitability of reedbed vegetation for the Annex I species: Bittern and marsh harrier prefer pure reed stands with vigorous growth for nesting and concealment. Hen harrier will also use reedbeds for roosting.

Internationally important populations of regularly occurring Annex I species (eg marsh harrier, avocet, little tern, bittern, hen harrier, golden plover, bar-tailed godwit)	Coastal lagoons	Food availability	Presence and abundance of crustaceans, annelids, fish and molluscs measured periodically (frequency to be determined)	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Little terns and avocets feed on crustaceans, annelids, fish and molluscs found in the lagoons. Food availability is important in maintaining the little tern and avocet breeding populations.
	Unvegetated sand and shingle	Vegetation cover	Predominately open ground with sparse vegetation and bare surfaces, measured periodically (frequency to be determined)	Extent of vegetation height and bare ground should not deviate significantly in the nesting area from an established baseline, subject to natural change.	Vegetation cover <10% during the breeding season in areas used by little terns. Areas of largely bare sand and shingle are important for nesting little terns for early detection of predators.
Internationally important migratory species and waterfowl assemblage	All sub-features	Extent of habitat	Area (ha), measured once per reporting cycle.	No significant decrease in extent from an established baseline[13], subject to natural change	The habitats provide important feeding and roosting areas for the migratory species and waterfowl assemblage. If these habitats are unable to keep pace with sea level rise (coastal squeeze may be implicated in this), inundation of these features will become more frequent – decreasing feeding and roosting areas.
		Disturbance	Reduction or displacement of birds measured periodically (frequency to be determined)	No significant reduction in bird numbers or displacement attributable to human disturbance from an established baseline, subject to natural change	Significant disturbance attributable to human activities can result in reduced food intake and / or increased energy expenditure. Five year peak mean information on populations will be used as the basis for assessing whether disturbance is damaging. Tidal reedbeds are an important high tide roost as they provide some protection from predators and human disturbance.
		Absence of obstructions to viewlines	Openness of terrain unrestricted by obstructions, measured periodically (frequency to be determined)	No increase in obstructions to existing bird view lines, subject to natural change.	Waders normally require unrestricted views >200m and brent geese >500m, to allow early detection of predators when feeding and roosting. Grey plover in particular require unrestricted views when feeding and roosting.

Internationally important migratory species and waterfowl assemblage	Intertidal mudflats and sandflats	Food availability	Presence and abundance of suitable invertebrate prey species, measured periodically (frequency to be determined).	Presence and abundance of food species should not deviate significantly from an established baseline, subject to natural change.	Many species require areas of high biological productivity for feeding. Important prey species include marine polychaete worms, crustaceans and molluscs such as Baltic tellin.
			Presence and abundance of marine algae and eelgrass, measured periodically (frequency to be determined)	Presence and abundance of plant species should not deviate significantly from an established baseline, subject to natural change.	Intertidal sand and mudflats also support surface plants and green algae and dark-bellied brent geese, pochard and wigeon will feed over mudflats rich in *Zostera*, *Enteromorpha* and other green plants.
	Saltmarsh communities	Food availability	Presence and abundance of soft-leaved grasses, herbs and seed bearing plants measured periodically (frequency to be determined)	Presence and abundance of food species should not deviate significantly from an established baseline, subject to natural change.	Saltmarsh communities such as *Puccinellia maritima* and *Salicornia* species are an important food source for wigeon and dark-bellied brent geese. Mallard will occasionally also graze on the leaves and shoots of saltmarsh plants.
			Presence and abundance of surface and sub-surface invertebrates measured periodically (frequency to be determined)	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Black-tailed godwit and other species feed on marine invertebrates in the substrate.
		Vegetation characteristics	Open, short vegetation or bare ground predominantly in areas used for roosting, measured periodically (frequency to be determined).	Vegetation height and density throughout areas used for roosting should not deviate significantly form an established baseline, subject to natural change.	Vegetation height of <10cm is required throughout roosting areas. A vegetation height of <10cm is also required for feeding areas used by dark-bellied brent geese and wigeon.

Internationally important migratory species and waterfowl assemblage	Tidal reedbeds	Food availability	Presence and abundance of aquatic plants and invertebrates measured periodically (frequency to be determined).	Presence and abundance of aquatic plants and invertebrates should not deviate significantly from an established baseline, subject to natural change.	Reedbeds are of particular importance for pochard which feed in the open water pools of the intertidal reedbeds.
		Open water	Presence, size and depth of open water pools measured periodically, (frequency to be determined).	Presence, size and depth of pools should not deviate significantly from an established baseline, subject to natural change	Medium to large open water pools are used as high tide roosts and feeding areas by species such pochard and goldeneye. They also provide some protection from predators and human disturbance.
	Coastal lagoons	Food availability	Presence and abundance of aquatic plants and invertebrates measured periodically (frequency to be determined)	Presence and abundance of aquatic plants and invertebrates should not deviate significantly from an established baseline, subject to natural change.	The saline lagoons are an important feeding habitat for wigeon, mallard, pochard, goldeneye and scaup.

[13] Baseline to be determined during the first reporting cycle.

NB: Extreme events (such as storms reducing or increasing salinities or warm summers) also need to be recorded as they may be critical in influencing ecological issues in the Humber Estuary European marine site and may well be missed by routine monitoring.

15.

Table 15 Favourable Condition Table for Humber Flats, Marshes and Coast Ramsar site interest features of the Humber Estuary European marine site

Species using these habitats are given in Table 14.

NB – It will be possible to monitor many of the attributes at the same time or during the same survey. The frequency of sampling for many attributes may need to be greater during the first reporting cycle in order to characterise the site and establish the baseline.

Criterion	Sub-feature	Attribute	Measure	Target	Comments
Criterion 2: Internationally important wetland hosting an assemblage of threatened coastal and wetland invertebrates	All sub-features	Extent of habitat	Area (ha), measured once per reporting cycle.	No significant decrease in extent from an established baseline[18], subject to natural change.	The habitats provide important feeding sites and cover for the invertebrate species.
Criterion 3: Internationally important wetland hosting a breeding colony of grey seals	Intertidal mudflats and sandflats	Extent of habitat	Area (ha) measured once per reporting cycle.	No significant decrease in extent from an established baseline[18], subject to natural change	The intertidal flats at Donna Nook are an important breeding and haul-out site for grey seals
		Disturbance	Reduction, displacement and productivity of grey seals, measured periodically using average count information (frequency to be determined)	No significant reduction in seal numbers, productivity or displacement of seals attributable to human disturbance from an established baseline[18], subject to natural change.	Excessive disturbance can cause stress to both adults and pups and result in reduced food intake and/or increased energy expenditure. Disturbance in breeding areas may result in a reduced pup production.

Criterion 5: Internationally important wetland regularly supporting 20,000 or more waterfowl	Intertidal mudflats and sandflats	For information on the favourable condition of intertidal mudflats and sandflats see Humber Flats, Marshes and Coast SPA favourable condition table
	Saltmarsh communities	For information on the favourable condition of saltmarsh communities see Humber Flats, Marshes and Coast SPA favourable condition table
	Tidal reedbeds	For information on the favourable condition of tidal reedbeds see Humber Flats, Marshes and Coast SPA favourable condition table
	Coastal lagoons	For information on the favourable condition of coastal lagoons see Humber Flats, Marshes and Coast SPA favourable condition table
Criterion 6: Internationally important wetland regularly supporting 1% or more of the individuals in a population of one species or sub-species of waterfowl	Intertidal mudflats and sandflats	For information on the favourable condition of intertidal mudflats and sandflats see Humber Flats, Marshes and Coast SPA favourable condition table
	Saltmarsh communities	For information on the favourable condition of saltmarsh communities see Humber Flats, Marshes and Coast SPA favourable condition table
	Tidal reedbeds	For information on the favourable condition of tidal reedbeds see Humber Flats, Marshes and Coast SPA favourable condition table
	Coastal lagoons	For information on the favourable condition of coastal lagoons see Humber Flats, Marshes and Coast SPA favourable condition table

[18] Baselines to be determined during the first reporting cycle.

NB: Extreme events (such as storms reducing or increasing salinities or warm summers) also need to be recorded as they may be critical in influencing ecological issues in the Humber Estuary European marine site and may well be missed by routine monitoring.

Table 3a Site-Specific definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **Sub Littoral Sands & Gravels** at **Gibraltar Point** in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition					
Criteria feature	**Attribute term in guidance**	**Site-specific Targets**	**Measure**	**Comments**	**Use for CA?**
Sandbanks which are slightly covered by sea water at all times	Topography	No alteration in topography of the inshore sub littoral sediment, allowing for natural responses to hydrodynamic regime. Topography as shown on Admiralty Charts. Also Figure 8.7 and 8.8 of Foster-Smith & Sotheran (1999).	Assessment of the depth distribution/profile of the inshore sub littoral sediment and periodic comparison with baseline conditions.	The depth distribution of the sediment has a direct influence on the structure and function of the system. For details of assessment techniques see Davies *et al*., 2001. Foster-Smith & Sotheran used AGDS supported by Admiralty Chart data to produce their bathymetric maps (Foster-Smith & Sotheran, 1999). Other potential data sources are from ESFJC AGDS / Sidescan surveys. Also EA shoreline monitoring programme bathymetric surveys (Uses side scan sonar. Along profiles to 15m depth. 1km spacing between profiles. Surveys undertaken once every 5 years).	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure	Comments	Use for CA?
Sandbanks which are slightly covered by sea water at all times	Sediment character: sediment type	No change in composition of sediment types across the feature, allowing for natural succession/ known cyclical change.	Distribution of sediment types should be assessed across the whole feature and compared with baseline conditions. For details of assessment techniques see Davies *et al*., 2001.	Where changes in sediment type are known to be clearly attributable to natural processes then the target value should accommodate this variability. Where extreme events cause a change in sediment type, then this may have caused a change in the structure of the feature, which may lead to the condition of the feature being considered as unfavourable.	Yes
	Distribution of biotopes	Maintain the distribution of biotopes in each sub-feature (gravel and sand communities, muddy sand communities), allowing for natural succession/ known cyclical change. Key biotopes listed in Appendix 5 Distribution o f biotopes as set out in Fig 7.3 and 7.4 of Foster-Smith & Sotheran, 1999	Assessment of the distribution of range of biotopes identified for the site. For details of assessment techniques see Davies *et al*., 2001.	Where changes in distribution are known to be clearly attributable to cyclical succession or expected shifts in distribution then target value should accommodate variability. Where there is a change in biotope distribution outside the expected variation or a loss of site conservation interest, then condition should be considered unfavourable Biotopes mapped using acoustic techniques (AGDS, Sidescan Sonar) which were ground-truthed by grab and video (Foster-Smith & Sotheran, 1999). Appendix 5 lists subtidal biotopes using the national biotope classification Foster-Smith & Sotheran, 1999 is probably the best baseline for the whole site as the survey covered the whole site.	Yes
	Extent of sub-feature	No change in extent of inshore sublittoral sediment biotopes or sub-feature (gravel and sand communities, muddy sand communities) identified for the site allowing for natural succession / known cyclical change	Assessment of the extent of biotopes identified for the site because of their nature conservation importance. For details of assessment techniques see Davies et al, 2001.	Where there is a clearly established natural variation in extent or in cyclical succession between biotopes, then the target value should accommodate this variability. Where there is a change in extent outside the expected variation or a change in the structure of the sub-feature leading to a loss of the site, then condition should be considered unfavourable.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure	Comments	Use for CA?
Sandbanks which are slightly covered by sea water at all times	Species population measures: Presence or abundance of specified species	No increase in presence or abundance of negative indicator species (non-native American razor shell *Ensis directus*, Pacific oyster *Crassostrea gigas*, Slipper limpet *Crepidula fornicata*).	Assessment of the presence or abundance of positive/negative indicator species identified for the feature. For details of assessment techniques see Davies *et al.*, 2001. CEFAS have undertaken regular surveys of *Ensis directus* since 1999, using Hamon or Day grabs (Palmer 2003).	Where there is a sizeable shift in the age/size class structure (i.e. loss of mature adults or recruitment failure) or if disturbance causes a species of nature conservation importance to be lost, or a significant reduction in abundance then condition would be considered unfavourable. Increased abundance of negative indicator species i.e. those indicative of stressed habitats or polychaete worms indicative of organic pollution, which would be detrimental to the feature as a whole, would also cause the condition of the feature to be considered unfavourable. CEFAS hamon grab surveys have estimated adult populations of 200 per square metre in 1999 (Palmer, 2003). Distribution seems concentrated in south and east side of Wash ie Nene to Thornham although can occur in other areas (eg off Long Sand, Roger, Scullridge) Current population is estimated as exceeding 10,000 tonnes (Addison et al, 2006). Large settlements can occur but populations seem extremely sporadic and frequently fail altogether. There are concerns about inter-specific competition with other filter feeders including mussel and cockle.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure	Comments	Use for CA?
Mudflats and sandbanks not covered by sea water at low tide	Biotope composition of littoral sediment	Maintain the variety of biotopes in each sub-feature (mud, muddy sand, sand & gravel) identified for the site allowing for natural succession/ known cyclical change.	Repeated assessment of overall biotope composition. Details on how baseline information was determined can be found in: For details of assessment techniques see Davies *et al*., 2001.	Target requires presence of biotopes listed in Appendix Where changes in biotope composition are known to be attributable to natural processes (e.g. winter storm/flood events, changes in supporting processes or mass recruitment or dieback of characterising species) then the target value should accommodate this variability. Where there is a change in biotope composition outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.	Yes
	Sediment character: sediment type	Maintain distribution of mud, muddy sand and sand and gravel across the feature, allowing for natural succession/known cyclical change. Spatial distribution of sediment types shown in:	Distribution of sediment types should be assessed across the whole feature and compared to baseline conditions. Target requires maintenance of spatial juxtaposition of specified sediment types (mud, muddy sand, sand) across the feature. For details of assessment techniques see Davies *et al*., 2001.	Where changes in sediment type are known to be clearly attributable to natural processes (e.g. winter storm/flood events, changes in supporting processes) then the target value should accommodate this variability. Where extreme events cause a change in sediment type, then this may have caused a change in the structure of the feature, which may lead to the condition of the feature being considered as unfavourable.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure	Comments	Use for CA?
Mudflats and sandbanks not covered by sea water at low tide	Distribution of biotopes	Maintain the distribution of biotopes in each sub-feature (mud, muddy sand, sand & gravel) set out in Appendix…, allowing for natural succession/ known cyclical change. Map of biotopes	Assessment of the distribution of biotopes identified for the site in Appendix,key biotopes shown in bold. For details of assessment techniques see Davies *et al*., 2001.	Unlike biotope composition this attribute is concerned with presence or absence at specific locations. Sediment biotopes show cyclical succession and have no clearly defined perimeter in the field. Target takes account of likely succession, and differences expected, between biotopes. Where changes in distribution are known to be clearly attributable to cyclical natural processes (e.g. due to a movement of a drainage channel) then the target value should accommodate variability. Where there is a change in biotope distribution outside the expected variation, or a loss of the conservation interest of the site, then condition should be considered unfavourable.	Yes
	Species composition of representative or notable biotopes	No decline in biotope quality due to changes in species composition or loss of notable species, allowing for natural succession/known cyclical change.	Assessment of biotope quality through assessing species composition, where the biotope is representative of the site or contains a number of species of conservation importance. Assessing this attribute will require specialist taxonomic expertise. For details of assessment techniques see Davies *et al*., 2001.	Where a change in species composition is known to be clearly attributable to natural succession, known cyclical change or mass recruitment or dieback of characterising species, then the target value should accommodate this variability. Where there is a change in biotope quality outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable. Dependant on future quantitative surveys.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure	Comments	Use for CA?
Mudflats and sandbanks not covered by sea water at low tide	Species population measures	Maintain age/size class structure & abundance of	Population structure and abundance should be assessed in terms of viability of the named species identified for the feature. For details of assessment techniques see Davies *et al* 2001.	Where there is a sizeable shift in the age/size class structure (i.e. loss of mature adults or recruitment failure) or if disturbance causes a species of nature conservation importance to be lost, or if there is a significant reduction in abundance, then condition would be considered unfavourable. Increased abundance of negative indicator species i.e. those indicative of stressed habitats which would be detrimental to the feature as a whole, would also cause condition to be considered unfavourable.	Yes
	Population structure of a species	Maintain abundance of named positive indicator species	Assessment of the presence or abundance of positive indicator species identified for the feature. For details of assessment techniques see Davies *et al*., 2001.		
	Presence or abundance of specified species	No increase in presence or abundance of named negative indicator species: non-native *Ensis directus, Crassostrea gigas, Crepidula fornicata*	Assessment of the presence or absence of negative indicator species identified for the feature.		

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure	Comments	Use for CA?
Mudflats and sandbanks not covered by sea water at low tide	Topography	No change in topography of the littoral sediment, allowing for natural responses to hydrodynamic regime. Topography as shown in EA beach profiles	Tidal elevation and shore slope to be assessed periodically. EA undertake beach profile surveys down transects. Surveys from fixed point inland to Mean Low Water. Transects are spaced at intervals of 1km. For details of assessment techniques see Davies *et al*., 2001.	Obvious changes in topography in terms of an overall lowering (shallowing) of the shore slope may act as a trigger for further investigation. Scouring adjacent to sea defences, which lowers the shore slope, should be considered unfavourable. A suitable period over which to ascertain trends resulting in a net lowering of shore profiles is 5 years.	Yes

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) (The selected attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Sandbanks slightly covered – the extent of sub-feature attribute is allocated a 'Yes' in the CA column for this site, however, it is not a mandatory CSM attribute. The Species Population Measures attribute also has a 'yes' in the CA column. Although not a mandatory CSM attribute there are non-natives present on site which can have a serious negative impact on native communities and for this site it is considered important to include it in all assessments **Mudflats and sandflats not covered by sea water at low tide** – The reason for including the Species Composition of Representative or Notable Biotopes attribute is because invertebrates are a key conservation feature of the site, even though this attribute is not a mandatory CSM attribute. The same is true of the Species Population Measures attribute – Population Structure of a Species; the - Presence or Abundance of Specified Species part of this attribute is included due to invasive non-natives being present in site. Topography is included here as changes in topography give an indication of the stability of the shore, whether erosion is occurring etc. (again, not a mandatory CSM attribute).
Other Notes
Sub-littoral sands & gravels – at present little is known about the sub-littoral habitats at Gibraltar Point, surveys have previously been focussed on The Wash embayment. It is possible that reefs may be present in sub-tidal areas of the Gibraltar Point part of the SAC and, if these cover a sufficient area, this habitat may need to be added to as a feature in these conservation objectives.

Table 3b Site-Specific definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **Coastal Saltmarsh** at **Gibraltar Point** in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
***Salicornia* and other annuals colonising mud and sand**	Physical structure: creeks & pans	No further anthropogenic alteration of creek patterns or loss of pans compared to the established baseline (Holder, NVC survey 1999). Realignment of creeks absent or rare.	Aerial photographs can be used, combined with information gathered from the site visit.	Creeks and pans vary in size and density. Creeks absorb tidal energy and assist with the delivery of sediment into saltmarshes. Major erosion of saltmarsh is indicated by internal dissection and enlargement of the drainage network, ultimately leading to the creation of mud basins. Establishment of creeks in pioneer zone tends to be less marked than higher on the saltmarsh.	Yes
	Vegetation structure: zonation of vegetation	Maintain the range of variation of zonations typical of the site. Typical zones include pioneer SM9 *Suaeda maritime* saltmarsh in strip saltings where sheltered areas are still open to the sea and around the mouth of dune breaches also were heavy rabbit grazing and increased sediment mobility occur at the southern tip of the Old Marsh.	The width of zones can be estimated using one or more transects. Pioneer vegetation may present some problems in deciding the boundary of marsh and mudflat - take the edge of the pioneer zone where the first *Salicornia* or *Suaeda* annuals appear.	The pattern of saltmarsh zonation will vary regionally and also from site to site (see Section 6.1). Saltmarsh has up to five main zones: pioneer, low-mid marsh, mid-upper marsh, saltmarsh strand/driftline (see transitions section in the Audit Trail below).	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
***Salicornia* and other annuals colonising mud and sand**	Vegetation structure: sward height	Maintain site-specific structural variation in the sward. Typical vegetation heights are not yet known for any saltmarsh community	This can be assessed by taking average sward height from the quadrats forming part of the structured walk	Grazing is not appropriate on this saltmarsh. In the absence of grazing, sward height is determined by natural processes and a target is not deemed to be required for condition assessment purposes.	No
	Vegetation composition: characteristic species	Maintain frequency of characteristic species of pioneer saltmarsh zone as follows: At least one of the following indicator species frequent and another occasional : *Salicornia* spp. *Suaeda maritima* *Puccinellia maritima*	Visual assessment of cover, using structured walk	Communities may be dynamic in their distribution and are linked to the physical processes operating at the site, including topography, creek patterns etc.	Yes
	Vegetation composition: negative indicator species *Spartina anglica*.	No recent evidence of expansion into pioneer saltmarsh (indicative target of less than 10 % expansion in last 10 years).	Aerial photographs, together with visual assessment of cover, using structured walk.	*Spartina anglica* is a species that is considered undesirable in intertidal habitats where it is expanding at the expense of mudflats. However it can be a precursor to the development of saltmarsh where sediments are accreting. No *Spartina anglica* was recorded during the baseline survey (1998)	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
***Salicornia* and other annuals colonising mud and sand**	Other negative indicators	Artificial drainage channels adversely affecting hydrology are absent or rare. No obvious signs of pollution. No increase in bare substrate as a result of anthropogenic activities such as vehicle use or trampling at vulnerable locations (tracks, access points).	Visual assessment on site during structured walk	Management of the NNR part of the site is under the strict control of the Lincolnshire Wildlife Trust. However, unauthorised vehicle access is greater on Seacroft Marsh due to its proximity to Skegness and this northern part of the site may be more susceptible	Yes
Atlantic salt meadow	Physical structure: creeks & pans	No further anthropogenic alteration of creek patterns or loss of pans compared to an established baseline. Realignment of creeks absent or rare.	Aerial photographs can be used, combined with information gathered from the site visit.	Creeks and pans vary in size and density. Creeks absorb tidal energy and assist with the delivery of sediment into saltmarshes. Major erosion of saltmarsh is indicated by internal dissection and enlargement of the drainage network, ultimately leading to the creation of mud basins.	Yes
Atlantic salt meadow	Vegetation structure: zonation of vegetation	Maintain the range of variation of zonations typical of the site including: Low marsh with annuals SM10 and of the mid marsh: *Puccinellia* dominated SM13 swards in the Old Saltmarsh, *Halimione portulacoides* dominated SM14 vegetation around creek banks in the Old Saltmarsh, *Aster tripolium* stands fringing low-lying areas of the Old Saltmarsh, SM16 upper marsh transitions with Festuca rubra, especially at the ecotone to dune communities on Seacroft Marsh and *Artemesia maritima* stands SM17 around the field station and elsewhere on the southern end of the West Dune spit.	The width of zones can be estimated using one or more transects. If poor clarity on aerial photographs prevents accurate mapping then GPS information can be collected on site and a map created.	The pattern of saltmarsh zonation will vary regionally and also from site to site. Saltmarsh has up to five main zones: pioneer, low-mid marsh, mid-upper marsh, saltmarsh strand plus transitions.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
Atlantic salt meadow	Vegetation structure: sward height	Maintain site-specific structural variation in the sward Typical vegetation heights are not yet known for any saltmarsh community	Assessed by taking average sward height from the quadrats forming part of the structured walk	Grazing is not appropriate on this saltmarsh. In the absence of grazing, sward height is determined by natural processes and a target is not required for condition assessment purposes. In the absence of grazing, sward height is determined by natural processes and a target is not deemed to be required for condition assessment purposes.	No
Atlantic salt meadow	Vegetation composition: characteristic species	Maintain frequency of characteristic species of low-mid saltmarsh zone (SM10, SM13a, SM14) as follows: At least one of *Puccinellia maritima, Atriplex* (*Halimione*) *portulacoides* or *Salicornia* spp. dominant, and two other listed species at least frequent: *Puccinellia maritima , Triglochin maritime, Plantago maritima , Atriplex portulacoides, Aster tripolium, Spergularia maritima , Suaeda maritima* *Salicornia* spp. Maintain frequency of characteristic species of mid-upper saltmarsh zone (SM13b, c d, e & f, SM16, SM17) as follows: At least one listed species abundant and three frequent: *Festuca rubra , Juncus gerardii Armeria maritima Agrostis stolonifera, Limonium vulgare, Glaux maritima, Seriphidium*	Visual assessment of cover, using structured walk	Communities may be dynamic in their distribution and are linked to the physical processes operating at the site, including topography, creek patterns etc.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
		maritimum (*Artemisia maritime*), *Plantago maritima , Aster tripolium , Juncus maritimus, Triglochin maritima , Blysmus rufus Eleocharis uniglumis Leontodon autumnalis, Carex flacca, Carex extensa*			
Atlantic salt meadow	Vegetation composition: negative indicator species *Spartina anglica*.	No recent evidence of expansion into pioneer saltmarsh (indicative target of less than 10 % expansion in last 10 years)	Aerial photographs, together with visual assessment of cover, using structured walk.	*Spartina anglica* is a species that is considered undesirable in intertidal habitats where it is expanding at the expense of mudflats. However it can be a precursor to the development of saltmarsh where sediments are accreting.	Yes
	Other negative indicators	Artificial drainage channels adversely affecting hydrology are absent or rare. No obvious signs of pollution. Turf cutting absent or rare. No increase in bare substrate as a result of anthropogenic activities such as vehicle use or trampling at vulnerable locations (tracks).	Visual assessment during site visit.		Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
Atlantic salt meadow	Indicators of local distinctiveness	Maintain presence of distinctive elements: Upper saltmarsh transitions to wetland and grassland communities especially to wet grassland (e.g. MG11) and *Carex otrubae* swards.	Presence confirmed during visit at appropriate season.	Saltmarsh/wetland transitions occur along the west-ward fringe of the East Dunes where the Old Marsh fingers into low dune ridges. These are the only saltmarsh –freshwater wetland ecotones known on the site.	Yes
	Physical structure: creeks & pans	No further anthropogenic alteration of creek patterns or loss of pans compared to an established baseline. Realignment of creeks absent or rare.	Aerial photographs can be used, combined with information gathered from the site visit.	Creeks and pans vary in size and density. Creeks absorb tidal energy and assist with the delivery of sediment into saltmarshes. Major erosion of saltmarsh is indicated by internal dissection and enlargement of the drainage network, ultimately leading to the creation of mud basins.	Yes
	Vegetation structure: zonation of vegetation	Maintain the presence and an appropriate distribution of the SM21 and SM25 communities as the upper zone (drift line transition to terrestrial habitats) in this site's range of variation of zonations. Key locations for SM25 in the baseline survey are at the southern tip of the site, in association with the shelter provided by Millennium Ridge. SM21 was centred in the strip saltings.	The width of zones can be estimated using one or more transects. If poor clarity on aerial photographs prevents accurate mapping – which is likely for the narrow *Suaeda vera* community along the drift line - then GPS information can be collected on site and a map created.	The pattern of saltmarsh zonation will vary regionally and also from site to site (see Section 6.1). Saltmarsh has up to five main zones: pioneer, low-mid marsh, mid-upper marsh, saltmarsh strand plus transitions (see transitions below)	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
Atlantic salt meadow	Vegetation structure: sward height	Maintain site-specific structural variation in the sward	This can be assessed by taking average sward height from the quadrats forming part of the structured walk	Grazing is not appropriate on this saltmarsh. These communities could be threatened by livestock grazing pressure. The height of the vegetation is determined by natural factors and is not necessary as a determinant of the community's health or viability.	No
	Vegetation composition: characteristic species	Maintain frequency of characteristic species of driftline and transition zones as follows: Presence of either *Suaeda vera* or all of the following at least occasional: *Frankenia laevis* *Limonium binervosum* *Spergularia media* *Salicornia* spp. *Suaeda maritime*	Visual assessment of cover, using structured walk.	Communities may be dynamic in their distribution and are linked to the physical processes operating at the site, including topography, creek patterns etc.	Yes
	Vegetation composition: negative indicator species *Spartina anglica*.	No recent evidence of expansion into pioneer saltmarsh (indicative target of less than 10 % expansion in last 10 years)	Aerial photographs, together with visual assessment of cover, using structured walk.	*Spartina anglica* is a species that is considered undesirable in intertidal habitats where it is expanding at the expense of mudflats. However it can be a precursor to the development of saltmarsh where sediments are accreting. Spartina anglica does not occur at this level on the saltmarsh and is unlikely to be a problem in these communities	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
Atlantic salt meadow	Other negative indicators	Artificial drainage channels adversely affecting hydrology are absent or rare. No obvious signs of pollution. Turf cutting absent or rare. No increase in bare substrate as a result of anthropogenic activities such as vehicle use or trampling at vulnerable locations (tracks, access points).	Visual assessment during site visit		Yes
	Indicators of local distinctiveness	Maintain the presence of transitions between saltmarsh and mobile sand dune habitats in the strip saltings.	Presence confirmed during visit at appropriate season:	This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not adequately covered by the previous attributes, or by separate guidance e.g. for notified species features. In the case of this site it is intended to cover important ecotones listed as being important habitat transitions. The sand dune community element of the transition is at risk of invasion by *Hippophae rhamnoides*.	No
	Physical structure: creeks & pans	No further anthropogenic alteration of creek patterns or loss of pans compared to an established baseline. Realignment of creeks absent or rare.	Aerial photographs can be used, combined with information gathered from the site visit.	Creeks and pans vary in size and density. Creeks absorb tidal energy and assist with the delivery of sediment into saltmarshes. Major erosion of saltmarsh is indicated by internal dissection and enlargement of the drainage network, ultimately leading to the creation of mud basins.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
Atlantic salt meadow	Vegetation structure: zonation of vegetation	Maintain the presence and distribution of this community as the upper zone (drift line transition to terrestrial habitats) in this site's range of variation of zonations.	The width of zones can be estimated using one or more transects. If poor clarity on aerial photographs prevents accurate mapping – which is likely for the narrow *Suaeda vera* community along the drift line - then GPS information can be collected on site and a map created.	The pattern of saltmarsh zonation will vary regionally and also from site to site (see Section 6.1). Saltmarsh has up to five main zones: pioneer, low-mid marsh, mid-upper marsh, saltmarsh strand plus transitions (see transitions below)	Yes
	Vegetation structure: sward height	Maintain site-specific structural variation in the sward	This can be assessed by taking average sward height from the quadrats forming part of the structured walk	Grazing is not appropriate on this saltmarsh. The height of the vegetation is determined by natural factors and is not necessary as a determinant of the community's health or viability.	No
	Vegetation composition: characteristic species	Maintain frequency of characteristic species of driftline and transition zones as follows: Presence of *Elytrigia atherica* (*Elymus pycnanthus*) at least frequent.	Visual assessment of cover, using structured walk.	Communities may be dynamic in their distribution and are linked to the physical processes operating at the site, including topography, creek patterns etc.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Measure/Method of Assessment	Comments	Use for CA?
Atlantic salt meadow	Vegetation composition: negative indicator species *Spartina anglica*.	No recent evidence of expansion into pioneer saltmarsh (indicative target of less than 10 % expansion in last 10 years)	Aerial photographs, together with visual assessment of cover, using structured walk.	*Spartina anglica* does not occur at this height on the saltmarsh and is unlikely to be a problem	Yes
	Other negative indicators	Artificial drainage channels adversely affecting hydrology are absent or rare. No obvious signs of pollution. Turf cutting absent. No increase in bare substrate as a result of anthropogenic activities such as vehicle use or trampling at vulnerable locations (tracks etc).	Visual assessment during site visit		Yes
	Indicators of local distinctiveness	Maintain the presence of the Frankenia laevis, Glaux maritime and Limonium binervosum saltmarsh habitat (SM21 and SM22 communities) in the strip saltings.	Presence confirmed during visit at appropriate season:	This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not adequately covered by the previous attributes, or by separate guidance e.g. for notified species features. In the case of this site it is intended to cover this important and rare saltmarsh and the characteristic species highlighted in the SSSI citation.	No

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)

SALTMARSH

The saltmarsh features in this table are described under the relevant SAC habitats, thus the CSM division into pioneer, low-mid and mid-upper saltmarsh are accommodated under *Salicornia* etc colonising sand and mud (CSM equivalent to pioneer marsh), Atlantic salt meadow (CSM equivalent to low-mid marsh) and Mediterranean etc scrubs (CSM equivalent to mid-upper marsh), only SM24 driftline saltmarsh and transitions do not qualify under the European features. There are some discrepancies between CSM and SAC habitats in terms of where different NVC communities are placed:

SAC habitat	CSM description
Salicornia etc colonising sand and mud SM7, **SM8**, **SM9**, SM27	Pioneer saltmarsh SM4, SM5, SM6, SM7, SM8, **SM9**, SM11, SM12
Atlantic salt meadow **SM10**, **SM11**, SM12, **SM13**, **SM14** , SM15 , **SM16**, **SM17**, **SM18**, SM19, SM20	Low-mid saltmarsh **SM10**, SM13a, **SM14**
	Mid-upper saltmarsh **SM13 b-f**, SM15, **SM16**, **SM17**, **SM18**, SM19, SM20, SM21, SM22, SM23, SM26, SM27
Mediterranean etc scrubs **SM21**, **SM25**	Driftline **SM24**, **SM25**, **SM28**

Communities in **bold** occur at Gibraltar Point

Saltmarsh baselines – the baseline information for all saltmarsh features on the SSSI is the information contained within 'A National Vegetation Survey of gibraltar Point National Nature Reserve' Holder/Living Landscapes (May 1999). The vegetation maps cover the whole of the NNR and additional maps exist (although need to be digitised) for the strip saltings north of Greenshank Creek and at the southern end of Seacroft Marsh. The vegetation maps and the 1:5,000 scale aerial photographs that were used in the survey (Environment Agency 1997 flight AF/97/143, Run 45 No.s 6000, 6004; Run 46 No. 6016; Run 47 No.s 6137, 6139, 6141) can be used to assess the attributes Physical Structure (creeks & pans), Zonation of Vegetation, certain Negative Indicators eg. Turf cutting, drainage, increase in bare substrate etc. The vegetation samples detailed and described provide the baseline for vegetative characteristics including the attributes Vegetation Composition (characteristic species) (negative indicator species) and Indicators of Local Distinctiveness. No data is held in the report on Vegetation Structure (sward height).

Zonation – In the CSM Guidance, zonation is discussed in terms of maintaining the three or four zones (pioneer, low-mid, mid-upper and driftline) present on site.

At Gibraltar Point each of the three main zones includes several NVC communities and, under the terms of the Guidance it would be possible to loose an NVC type without the site being judged as unfavourable, provided the zone was still detectable in the form of other NVC communities. For a complex and varied site such as this, this would be unacceptable. One potential scenario might be where grazing is introduced to the Old Marsh resulting in the loss of *Atriplex* (*Halimione*) *portulacoides* SM14 communities and the expansion of SM13a *Puccinellia* swards – because SM10 and Sm13a communities and the species characteristic of low-mid saltmarsh were still detected, an assessment would conclude that the zonation was intact. In these tables the key NVC communities typical of each zonation/SAC habitat are listed and these form an important part of the favourable condition of the zones. As NVC surveys will be required in order to assess many of the extent attributes (especially pioneer marsh) the NVC communities can also be checked. An NVC survey every 12 years, to coincide with alternate CSM assessments, would be appropriate.

Transitions – typical transitions where the baseline survey revealed an area of greater than 0.1ha (10,000 square metres) are as follows: in terms of CSM transitions, these exist between pioneer and low-mid marsh notably SM8/SM10 some 0.4ha, between low-mid saltmarsh and embryo dune communities - especially SD4 and SD6 some 2.1ha, between low-mid and mid-upper saltmarsh – SM10/SM18 a minor 0.1ha, between mid-upper saltmarsh and swamp and wet grassland – SM18+MG11+S18 but a mere 0.1ha. Transitions between driftline (Elytrigia atherica SM24 communities predominantly) and a range of other habitats are widespread: between low-mid saltmarsh and driftline – a notable 1ha of SM14/SM24, between mid-upper saltmarsh and driftline - especially SM13/SM24 at 0.75ha, and between driftline and sand dune communities – SM25/SD6c 0.5ha and SM24/SD9a 0.1ha. The extent and location of these transitions will vary over the longer term but a range, appropriate to the physical situation at the time of assessment, should be present. Loss of major transitions would indicate that natural processes have stagnated and the dynamic nature of these intertidal habitats has been lost.

See also the sand dune Audit Trail below re species on the 'outstanding assemblage of vascular plants' (SSSI notification) list and transitional habitats in which they occur, especially dune/saltmarsh and saltmarsh/fresh water communities.

Turf cutting – this measure has been removed from the *Salicornia* and Other Annuals habitat because turf cutting does not occur in the pioneer saltmarsh communities as, in this part of the country, the habitat is characterised by annual plants and large extents of bare mud. Turf cutting does not, at present, take place anywhere on the site but future commencement cannot be ruled out as there are swards that might be suitable for turf and the extent of *Festuca rubra* swards, especially at Seacroft Marsh, may increase as succession progresses.

Rationale for selection of measures of condition (features and attributes for use in condition assessment)

(The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).

Grazing by livestock and sward height attribute – the saltmarshes at Gibraltar Point have no history of grazing and it is not, therefore, thought necessary to have a sward height attribute, the target of <25% bare ground from livestock poaching has also been removed from the Negative Indicators section. Sward height

measurements do not currently exist for this site and so a baseline could not be determined. Grazing by livestock would alter the floristic composition of the established swards, especially the *Halimione portulacoides* communities which are especially sensitive to grazing. It is possible that other species typical of the rare *Suaeda vera – Frankenia laevis* community may also be sensitive to grazing and that introduction of livestock could reduce the abundance of these characteristic shrubs and scarce plants. Un-grazed slatmarshes are typical of much of the Lincolnshire coast and it is not considered desirable to introduce grazing with livestock. Some parts of the saltmarsh have experienced grazing by rabbits, which has increased in more recent years and can be especially high on the strip saltings when rabbit populations are high.

Other Notes

There are significant practical problems assessing some of the Favourable Condition attributes using just aerial photographs and the CSM Guidance field techniques, especially the zonation attribute. There are also difficulties in assessing the extent of certain communities (see tables above), especially *Salicornia* pioneer saltmarsh and differentiation with *Puccinellia* low-mid saltmarsh. In order to obtain the range of information at the accuracy required. Assessment every-other assessment cycle should be done through NVC survey i.e. every 12 years.

Table 3c Site-Specific definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **Coastal Lagoon** at **Gibraltar Point** in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:

Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)

This saline lagoon feature is located immediately landward (north) of Bulldog Bank. The Fenland Lagoon is not included as part of the feature.

Site-specific standards defining favourable condition

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Saline Lagoon	Extent of basin	No reduction in extent of saline lagoon area.	Extent should be assessed periodically against a baseline map/aerial image or through the review of any known activities that may have caused an alteration in extent. In most cases the area will be derived by referral to aerial photographs of the site. Broadscale biotope maps at the Phase 1 scale may also be of benefit, showing distribution and extent of major habitats. For details of assessment techniques see Section 2 and Davies *et al*., 2001.	In many cases where changes in extent are clearly attributable to natural processes, then the target value should accommodate this variability. A declining value may be established where sufficient information is available to predict a trend. Where the field assessment judges the extent to be unfavourable, and subsequent investigation reveals that the cause is clearly attributable to natural processes, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Where there is a change outside the expected variation or a loss of the conservation interest of the site, (e.g. due to anthropogenic	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… Saline Lagoon				activities or unrecoverable natural losses) then condition should be considered unfavourable. Such natural changes may be attributable to infilling or coastal erosion processes and might be observed in isolated or percolation lagoons which are often transient features. For created and actively managed lagoons, natural processes leading to loss of extent may cause the site to become unfavourable and management action can be taken. In all cases, changes in extent would be considered unfavourable if attributable to the following: loss or damage to a sluice or other flow control mechanism; anthropogenic alterations to the separating barrier; infilling, land claim or other developments.	
Saline Lagoon	Isolating barrier – presence and nature	No change in measure(s) from established baseline. In many cases the horizontal level of the inlet bed should be a little below high water neaps. However the level of the inlet in naturally occurring lagoonal	For details of assessment techniques see Section 2 and Davies *et al*., 2001.	Unlike many saline lagoons, the borrow dyke is not directly connected to tidal influences (With intertidal situations the key factor determining input and output of seawater is the height of the bottom of the inlet bed as retention of the majority of the lagoonal water at low tide depends on this). Where changes in the isolating barrier are attributable to natural processes (e.g. infilling or coastal erosion) also when restorative measures are not viable, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
				target condition. Where there is a change outside the expected variation or a loss of the conservation interest of the site, (e.g. due to anthropogenic activities or unrecoverable natural losses) then condition should be considered unfavourable. Changes in presence, nature and integrity of Bulldog bank would be considered unfavourable if attributable to loss or damage of a sluice or flow control mechanism or due to alterations in structure arising from anthropogenic activities.	
cont… Saline Lagoon	Biotope composition of lagoon	Maintain the variety of biotopes identified for the site, allowing for succession/ known cyclical change.	Repeated assessment of overall biotope composition or a subset of biotopes identified for the site. For details of assessment techniques see Section 2 and Davies *et al*., 2001.	Where the field assessment judges the biotope composition to be unfavourable, and subsequent investigation reveals the cause is clearly attributable to cyclical natural processes, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Where there is a change outside the expected variation or a loss of the conservation interest of the site, (e.g. due to anthropogenic activities or unrecoverable natural losses) then condition should be considered unfavourable.	Yes
	Salinity regime	Average seasonal salinity, and seasonal maxima and minima, should not deviate significantly from an	Seasonal averages (ppt) to be assessed periodically (preferably in late winter/early spring and later summer to determine seasonal lows and highs).	Where the field assessment judges the salinity change to be unfavourable, and subsequent investigation reveals the cause is clearly attributable to natural processes, the final assessment will require expert judgement to determine the	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… Saline Lagoon		established baseline: • 3-6 ‰ Baseline from Saline Lagoon Inventory. Average salinity throughout a site would be expected to lie within a range of between 15ppt and 40ppt. Sustained levels of <10ppt and >50ppt should trigger management action in many cases, but a good understanding of local ranges and periodic variability's is essential to individual site management.11	Depending on the size and shape of the lagoon, it may be necessary to measure along a salinity gradient. For details of assessment techniques see Section 2 and Davies *et al*., 2001.	reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Where there is a change outside the expected variation or a loss of the conservation interest of the site (e.g. due to anthropogenic activities or unrecoverable natural losses) then condition should be considered unfavourable. Isolated or percolation lagoons are most likely to be degraded this way. Changes in salinity would be considered unfavourable if attributable to the following: loss or damage to any water flow control mechanism; water abstraction or discharge altering the freshwater input; anthropogenic alterations to the isolating barrier. The entry in the Saline Lagoon Directory states that "there were no apparent freshwater or seawater inputs to the ponds" suggesting that salinity is through percolation of seawater through the bank. The Inventory also observes that the ditch "appears to be evolving towards freshwater and *Phragmites* marsh".	
	Species population measures: - presence or abundance of specified species	Maintain presence and/or abundance of the specified species *Hydrobia ventrosa* lagoon mud snail.	Assessment of the presence/absence or abundance of a specified species identified for the feature. For details of assessment techniques see Section 2 and Davies *et al*., 2001	*Hydrobia ventrosa* is the only lagoonal specialist listed in the Saline Lagoon Inventory entry for the landward ditch of Bulldog Bank. The advice concerning judgement of the feature condition provided under *species composition* equally applies to this section and should be consulted.	Yes

Audit Trail
Rationale for limiting standards to specified parts of the site
The original Saline Lagoon Directory entry for Gibraltar Point described ditches on both the landward and seaward side of Bulldog Bank. The seaward ditches were destroyed during the creation of the Fenland Lagoon but before the Ramsar designation was made. Saline Lagoon is only a feature of the Ramsar designation and not of the SSSI or other designations applied to this site.
Rationale for site-specific targets (including any variations from generic guidance)
Extent of sub-feature or representative/ notable biotopes and Distribution of biotopes – these have been deleted as the biotope is unknown, so the presence of sub-features and any variation in distribution has yet to be established. The borrow dyke is not large (listed as 0.054ha in the 1986 survey for the Saline Lagoon Inventory and calculataed as . If surveys to identify the biotope reveal important sub-features (see Guidance) then these non-mandatory features may need to be inserted. **Extent of water** – unlike many lagoons subject to the influences of a tidal regime, these borrow dykes maintain a fairly constant depth determined by rainfall. As the water level does not indicate siltation it is not thought to be a helpful attribute to include here. **Species population measures** – the only lagoonal species recorded from this site is *Hydrobia ventrosa*, no other animal or plant is listed in Appendix A of the Guidance. It is not thought useful to include the population structure attribute for this snail.
Rationale for selection of measures of condition (features and attributes for use in condition assessment) **(**The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Biotype composition – this has yet to be determined. Only available information is from the *Saline Lagoons & Lagoon Like Habitats No6 A directory of saline lagoons and lagoon like habitats in England*, B.P. Smirh and D. Laffoley (1992) (herein called the Saline Lagoon Inventory)
Other Notes

Table 3d Site-Specific definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **Coastal Sand dunes** at **Gibraltar Point** in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition					
Criteria feature	**Attributes**	**Targets**	**Method of Assessment**	**Comments**	**Use for CA?**
Embryonic Shifting Dunes	Physical structure: functionality and sediment supply	No further anthropogenic increase in factors leading to the decrease of natural mobility of the system. The natural circulation of sand and organic matter should be retained.	Aerial photographs can be used, combined with information gathered from the site visit and NVC survey for confirmation of specific or important zonations and transitions.	Natural processes, particularly sediment supply, may be interrupted or prevented by coastal protection or artificial stabilisation (other than porous breach repair) or by sediment extraction. Accumulation of driftline organic material (seaweed etc.) is essential for trapping sand and initiating dune formation. Mechanical beach cleaning can adversely affect this process. The construction of sea defences can affect sediment supply: groynes can interrupt longshore drift that transports sediment in a prevailing direction. Offshore dredging can also affect sediment supply. Hard sea defences can lead to erosion at the ends of the defences and to fossilisation of any dunes behind the sea walls. The erosive effects of the hard sea defence Lagoon Walk on the dunes at Seacroft Marsh have become apparent since the baseline report was undertaken.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… **Embryonic Shifting Dunes**	Vegetation structure: range of zones of vegetation	Zonation from beach to fixed dune should be intact over at least 95 % of coastal frontage	Visual assessment, e.g. using transects (extending from beach to fixed dune) may be used to estimate the width of the strandline, embryonic dune and mobile dune at points described by GPS and marked on a map.	Points may change because of natural dynamism, but the overall diversity should not diminish. The dune front may be vulnerable to heavy trampling by visitors and the beach ferry vehicle that travels south from Skegness. The range of vegetation zones and the transitions between them at this site include: Strandline (with *Cakile maritima*, *Honckenya peploides*, *Atriplex* spp.) Embryonic dune (sparse cover of *Elytrigia juncea*, *Leymus arenarius*) especially SD5 Mobile dune (more stable dune dominated by *Ammophila arenaria*) especially SD6 Saltmarsh especially when barrier dunes breach and sand is blown onto strip saltings (see Transitions in audit trail below re mosaic) particularly with SD6 and SM10.	Yes
	Vegetation Composition: typical species	Maintain frequency of characteristic species of the main sand dune zones as follows: Strandline: At least one species frequent and another occasional: *Cakile maritima*, *Honckenya peploides*, *Salsola kali*, *Atriplex* spp. Embryo dunes: At least one species frequent: *Elytrigia juncea*, *Leymus arenarius*	Visual assessment of cover (modified DAFOR scale), using structured walk and transects.	Communities may be dynamic in their distribution and are linked to the physical processes operating at the site. Embryo and mobile dunes a typically species-poor and monospecific stands are common. Additional species may be included in the target on a site-specific basis.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… **Embryonic Shifting Dunes**	Vegetation Composition: condition & fruiting/flowering of foredune grasses	Healthy *Ammophila arenaria*, *Leymus arenarius* or *Elytrigia juncea* with abundant fruiting heads at least frequent.	Visual assessment of cover (modified DAFOR scale), using structured walk and transects.	If flowering is not frequent, dunes are no longer mobile and condition is unfavourable (see text for details).	Yes
	Vegetation composition: negative indicator species	1. Non-native species no more than rare. 2. Any one of the following negative indicators no more than frequent throughout the sward, or singly or together the cover of negative indicator species no more than 5%: Negative indicator species: *Cirsium arvense*, *Cirsium vulgare*, *Urtica dioica*, *Lolium perenne*, *Arrhenatherum elatius* and *Hippophae rhamnoides* where this is in an area identified for embryo dune priority.	Aerial photographs, together with visual assessment of cover (modified DAFOR scale), using structured walk. % cover measured is cover of the entire feature.	*Hippophae rhamnoides* is native at this site, however, invasion of excessive areas is not desirable – see targets on *Hippophae rhamnoides* under Extent Audit Trail. Areas of the site have been given priority for *Hippophae* or non-scrub dune vegetation - use of sea buckthorn as 'negative' depends on this allocation. *Urtica dioica* and *Cirsium* species are indicative of poor condition because of nutrient enrichment.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… **Embryonic Shifting Dunes**	Other negative indicators	Vehicle damage or visitor damage at vulnerable locations (e.g. tracks, access points) should be absent or rare	Visual assessment during site visit	Impact of human activities will depend on the site. Notes should be made of the type of damaging activity, location and extent for future further assessment.	Yes
Shifting Dunes along the shoreline with *Ammophila arenaria*	Physical structure: functionality and sediment supply	No further anthropogenic increase in factors leading to the decrease of natural mobility of the system. The natural circulation of sand and organic matter should be retained.	Aerial photographs can be used, combined with information gathered from the site visit	The construction of sea defences can affect sediment supply: groynes can interrupt longshore drift that transports sediment in a prevailing direction. Offshore dredging can also affect sediment supply. Hard sea defences can lead to erosion at the ends of the defences and to fossilisation of any dunes behind the sea walls.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Shifting Dunes along the shoreline with *Ammophila arenaria*	Vegetation Structure: range of zones	Zonation from beach to fixed dune should be intact over at least 95 % of coastal frontage	Visual assessment, e.g. using transects (extending from beach to fixed dune) may be used to estimate the width of the strandline, embryonic dune and mobile dune at points described by GPS and marked on a map NVC survey should be carried out every 12 years to confirm closely related transitions.	Points may change because of natural dynamism, but the overall diversity should not diminish. If strandline is absent this may be acceptable if due to natural causes (see comment under Extent). The dune front may be vulnerable to heavy trampling by visitors and the beach ferry vehicle that travels south from Skegness. The range of vegetation zones and the transitions between them at this site include: Strandline (with *Cakile maritima*, *Honckenya peploides*, *Atriplex* spp.) notably SD4 Embryonic dune (sparse cover of *Elytrigia juncea*, *Leymus arenarius*) notably SD6 Shifting dune (more stable dune dominated by *Ammophila arenaria*) and fixed dune grassland (with grasses such as *Festuca rubra*, *Festuca ovina* and herbs such as *Galium verum*, *Rhinanthus minor* and *Rubus caesius*). Saltmarsh transitions also occur especially when barrier dunes breach and sand is blown onto strip saltings (see Transitions in audit trail below re mosaic of SD4 with SD6 and SM10 and the transition SM25/SD6c).	Yes
	Vegetation Composition: condition & flowering/fruiting of foredune grasses	Healthy *Ammophila arenaria* with abundant fruiting heads at least frequent.	Visual assessment of cover (modified DAFOR scale), using structured walk and transects.	If flowering is not frequent, dunes are no longer mobile and condition is unfavourable (see text for details).	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Shifting Dunes along the shoreline with *Ammophila arenaria*	Vegetation Composition: typical species	Maintain frequency of characteristic species of the main sand dune zones as follows: Mobile dunes: At least one species frequent: *Ammophila arenaria*, *Leymus arenarius*	Visual assessment of cover (modified DAFOR scale), using structured walk and transects.	Communities may be dynamic in their distribution and are linked to the physical processes operating at the site. Embryo and mobile dunes a typically species-poor and monospecific stands are common. Additional species may be included in the target on a site-specific basis.	Yes
	Vegetation Composition: negative indicator species	1. Non-native species no more than rare. 2. Any one of the following negative indicators no more than frequent throughout the sward, or singly or together the cover of negative indicator species no more than 5%.	Aerial photographs, together with visual assessment of cover (modified DAFOR scale), using structured walk. % cover measured is cover of the entire feature.	*Hippophae rhamnoides* is native here, however, invasion of excessive areas is not desirable – see targets on *Hippophae rhamnoides* under Extent Audit Trail. Areas of the site have been given priority for *Hippophae* or non-scrub dune vegetation - use of sea buckthorn as 'negative' depends on this allocation. *Urtica dioica* and *Cirsium* species are indicative of poor condition because of nutrient enrichment. **Negative indicator species: *Cirsium arvense*, *Cirsium vulgare*, *Urtica dioica*, *Lolium perenne*, *Arrhenatherum elatius* and *Hippophae rhamnoides* where this is in an area identified for mobile priority. Also *Senecio jacobaea* where it exceeds 10% cover.**	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… **Shifting Dunes along the shoreline with *Ammophila arenaria***	Other negative indicators	Vehicle damage or visitor damage at vulnerable locations (e.g. tracks, access points) should be absent or rare	Visual assessment during site visit	Notes should be made of the type of damaging activity, location and extent for future further assessment.	Yes
Fixed dunes with herbaceous vegetation	Vegetation Structure: range of zones	Zonation from beach to fixed dune should be intact over at least 95 % of coastal frontage	The width of zones could be estimated using one or more transects extending from strandline to landward features. Aerial photographs should be used as an aid, where available. NVC survey should be carried out every 12 years to confirm closely related transitions.	Points may change because of natural dynamism, but the overall diversity should not diminish. Important transitions at this site include those between: Dune slack with *Carex nigra* and *Potentilla anserina* SD17; Dunes with *Hippophae* SD18; Wet grassland with *Agrostis stolonifera* and *Potentilla anserina* (MG11) and with *Juncus effusus* (MG10); Mesotrophic grassland with *Arrhenatherum elatius* MG1; saltmarsh driftline community SM24.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… **Fixed dunes with herbaceous vegetation**	Vegetation Structure: bare ground	Bare ground or sand present, but no more than 10 % total area.	Visual assessment of cover during structured walk or transects. Aerial photographs should be used as an aid, where available.	Patches of bare sand are essential for a wide range of dune invertebrates. Areas of bare sand created by human induced disturbance should not increase.	Yes
	Vegetation Structure: sward height	30-70% of sward to comprise species-rich short turf, 2-10 cm tall.	Assessment during structured walk or transects.	Target for ratio of short turf to taller marram-dominated vegetation should be set on a site-specific basis.	Yes
	Vegetation Structure: flowering/fruiting	Flowering and fruiting of dune grassland to at least frequent level – depending on the time of year visited (May-Oct).	Visual assessment (modified DAFOR scale) during structured walk or transects.	Level and timing of stock grazing should be sufficient to allow adequate seed production. Flowering is also important for many invertebrates (e.g. for nectar).	Yes
	Vegetation Composition: typical species	For calcareous dune grasslands (SD7, SD8, SD9, SD19), at least eight typical species present at more than occasional level:	Visual assessment of cover (modified DAFOR scale), using structured walk and transects.	Other species may be included on a site specific basis (see also Indicators of local distinctiveness). **Typical species include:** *Aira praecox*, *Arrhenatherum elatius* (SD 9 swards only), *Carex arenaria*, *Carex flacca*, *Cerastium fontanum*, *Crepis capillaries*, *Cladonia* spp., *Erodium cicutarium*, *Euphrasia officinalis*, *Festuca rubra*, *Galium verum*, *Geranium molle*, *Hypnum cupressiforme*, *Hypochaeris radicata*, *Linum catharticum*, *Lotus corniculatus*, *Luzula campestris*, *Odontites verna*, *Ononis repens*, *Peltigera spp.*, *Pilosella officinarum*, *Plantago lanceolata, Prunella vulgaris*,*Rhinanthus minor*, *Rhytidiadelphus squarrosus*, *Rhytidiadelphus triquetrus*, *Thymus praecox*, *Tortula muralis*, *Sedum acre*, *Veronica chamaedrys*, *Viola canina*, *Viola riviniana*, *Viola tricolour*.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… **Fixed dunes with herbaceous vegetation**	Vegetation Composition: negative indicator species	1. Non-native species no more than rare. 2. Any one of the following negative indicators no more than frequent throughout the sward, or singly or together the cover of negative indicator species no more than 5%.	Aerial photographs, together with visual assessment of cover (modified DAFOR scale), using structured walk. % cover measured is cover of the entire feature.	*Hippophae rhamnoides* is native at Gibraltar Point, however, invasion of excessive areas is not desirable – see targets on *Hippophae rhamnoides* under Extent Audit Trail. Areas of the site have been given priority for *Hippophae* or non-scrub dune vegetation - use of sea buckthorn as 'negative' depends on this allocation. *Urtica dioica* and *Cirsium* species are indicative of poor condition because of nutrient enrichment. **Negative indicator species:** *Arrhenatherum elatius* (not SD9), *Cirsium arvense*, *Cirsium vulgare*, *Hippophae rhamnoides* where this is in an area identified for dune grassland priority, *Lolium perenne*, *Pteridium aquilinum*, *Rosa* spp., *Rubus fruticosus*, *Urtica dioica*, also *Senecio jacobaea* at over 15% cover	Yes
	Vegetation Composition: scrub/trees	Scrub/trees no more than occasional, or less than 5% cover (except Juniperus spp in Scotland). Tree invasion from adjacent plantations absent or rare.	Visual assessment of cover (modified DAFOR scale), using structured walk or transects. % cover measured is cover of the entire feature.	See comments above about Hippophae rhamnoides. Where scrub or woodland is a notified habitat feature, the woodland monitoring guidance should be consulted.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
cont… **Fixed dunes with herbaceous vegetation**	Other negative indicators	Vehicle damage or visitor damage at vulnerable locations (e.g. tracks, access points) should be absent or rare	Visual assessment during site visit	Notes should be made of the type of damaging activity, location and extent for future further assessment.	Yes
	Indicators of local distinctiveness	Maintain ratio between SD8 and SD9 (*Arrhenatherum* dune grassland) at the current ratio of 2:1 (in favour of SD8 communities and transitions).	Ratio confirmed from NVC survey results where the calculation of 'SD8' and 'SD9' includes mosaics and transitions with other dune communities (e.g. SD9+other, SD8/SD18a) as well as pure swards e.g. SD8e, SD9a.	This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not adequately covered by the previous attributes , or by separate guidance e.g. for notified species features. *If part of the reason for the notification of the site, this is a mandatory attribute.	No

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Humid dune slacks	Vegetation structure: range of zones	The full range of successional zones apparent in the baseline survey should be maintained, including ecotones with fixed dry dune communities and transitions to wet grassland. An ecotone with *Hippophae rhamnoides* should also be maintained at between 5% to 10% of the wetland fringe	Visual assessment during structured walk and transects where a recent NVC survey is not available. Aerial photographs should be used to support site-based assessment especially concerning the extent of the Hippophae ecotone. NVC survey should be carried out every 12 years to confirm closely related transitions e.g. SD17 and MG11. Suggested method of assessment to be based on circumference measurements. Measurement of the *Hippophae* ecotone should include dune slack/ dune wetland in all the main areas: the Freshwater Marsh, Measures 40 Acres and the damp parts of Seacroft Golf Course. Smaller slacks that appear in the East Dunes as scrub clearance progresses should be added to this (records to be kept in the attached map section).	The dune slack habitat at Gibraltar Point has not developed from a blow-out reaching the water table and its vegetation is characteristically different from the classic perception of dune slacks. There is no *Salix repens* on Lincolnshire dunes. The typical range of zones present during the baseline survey include: Wet grassland characterised by *Agrostis stolonifera* with other grasses and rushes (MG10, MG11, MG13); Swamp with either *Scirpus maritimus* (S21) or *Carex otrubae* (S18), the latter in dune hollows running down to saltmarsh; Dry dune grassland (SD8); Sea buckthorn (SD18). Water table height is fundamental to the maintenance of the dune wetlands. The Mere (created in 1972) may be having a profound effect on the perched water table due to increased evaporation from the water surface. Hydrological guidance is available and the effect of The Mere should be investigated with a view to returning the area to dune slack if it is shown to be having an adverse effect (which will be especially obvious in dry years).	Yes
cont… **Humid dune slacks**					

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Humid dune slacks	Vegetation structure: bare ground	Bare ground or sand less than 5% of the total dune slack area.	Visual assessment of cover during structured walk and transects.	Bare ground is not a characteristic of mature dune slacks, such as those here. The baseline survey revealed no large (visible on aerial photo) areas of bare sand.	Yes
	Vegetation composition: scrub/trees	Scrub/trees no more than occasional, or less than 5% cover.	Visual assessment of cover (modified DAFOR scale), using structured walk or transects. Aerial photographs should be used as an aid, where available.	If scrub/tree species are more than occasional throughout the sward, they are soon likely to become a problem through shading of what is an open habitat.	Yes
	Vegetation composition: forb/grass ratio	The sward should contain >30% cover of forbs and <70% cover of grasses.	Visual assessment of cover during structured walk and transects or quadrat data from NVC survey.	Drying and eutrophication of the slack can be indicated by increase in 'grassiness'. Due to the unconventional process of slack formation here, the abundance of forbes may need to be reviewed, perhaps to include sedges (*Carex nigra* is characteristic of the SD17 community) and mosses (*Calliergon cuspidatum* is a typical moss of dune slacks) as honorary forbes.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Humid dune slacks	Vegetation composition: negative indicator species	Non-native species no more than rare. No more than one other negative indicator species more than frequent or singly or together the cover of negative indicator species no more than 5%. Negative indicator species: *Cirsium arvense*, *Cirsium vulgare*, *Cirsium palustre*, *Lolium perenne*, *Senecio jacobaea*, *Urtica dioica*, *Pteridium aquilinum*, *Arrhenatherum elatius*.	Visual assessment of cover (modified DAFOR scale), using structured walk or transects. % cover measured is cover of the entire feature.	Urtica dioica and Cirsium spp. are indicative of poor condition Abundance of Senecio jacobaea indicates overgrazing in summer. Lolium perenne is indicative of agricultural improvement.	Yes
	Vegetation composition: typical species	Four or more typical species (see below) at least frequent and two or more others at least occasional. Bryophytes (e.g. *Calliergon cuspidatum*, *Campylium stellatum*) at least occasional.	Visual assessment of cover (modified DAFOR scale) during structured walk and transects or from NVC survey quadrats.	Other species may be included on a site specific basis (see also Indicators of local distinctiveness). **Typical species:** *Anagallis tenella*, *Campylium stellatum*, *Calliergon cuspidatum*, *Carex arenaria*, *Carex flacca*, *Carex nigra*, *Equisetum variegatum*, *Galium palustre*, *Hydrocotyle vulgaris*, *Lotus corniculatus*, *Mentha aquatica*, *Ononis repens*, *Potentilla anserine*, *Prunella vulgaris*, *Ranunculus flammula*.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Dunes with *Hippophae rhamnoides*	Vegetation succession and structure	Maintain at least three height classes of sea buckthorn scrub. Maintain a range of sea buckthorn age classes, in particular: • 30% of scrub area being in colonising stage (SD18a), and • 10% of older scrub being less than 10 years old, and • 20% of scrub more than 20 years old, allowing 5% of this to develop into dune woodland.	Relative proportions of height classes of sea buckthorn scrub: measured once every 6 years from aerial photos, and measured once every 12 years from sample surveys. Relative proportions of colonising (<50% cover sea buckthorn SD18a) and established scrub (>50% cover sea buckthorn SD18b): measured once every 6 years from aerial photos, and measured once every 12 years from sample surveys or NVC survey.	It is not yet clear how long structural variety can be maintained in stands of sea buckthorn by rotational cutting. Cutting of young buckthorn creates an homogenous stand of vigorous growth that easily climbs to medium-height or full-height scrub if left uncut. This type of management is unlikely to satisfy the criteria for colonising scrub, which may be better achieved through letting grassland areas become colonised with sea buckthorn and then clearing it when it reaches the 10 year or mature stage (depending on the objectives for the habitat being colonised). This would also assist in keeping a degree of dynamism in the community and prevent stands 'fossilising'. A scrub strategy needs to be developed and priority areas identified in which either *Hippophae* or dune grassland is preferred.	Yes

Criteria feature	Attributes	Targets	Method of Assessment	Comments	Use for CA?
Dunes with *Hippophae rhamnoides*	Absence of non-native flora	Less than 5% cover of non-native trees and shrubs.	Relative proportion of non-native trees and shrubs; measured once every 6 years from aerial photos, and measured once every 12 years from full survey.	Areas of scrub behind gardens tend to accumulate garden shrubs and ornamental trees. The role of sycamore *Acer pseudoplatanus* in dune woodlands needs to be determined. Sycamore is very salt spray tolerant and, in the England chapter of the Sand Dune Survey of Great Britain (Radley/English Nature 1991) it was the most common woodland found on dunes. It may well be appropriate to consider sycamore as a native, especially as attitudes towards the 'native-ness' of this species have changed in the last few years. Typical species accompanying senescing *Hippophae* are elder *Sambuchus nigra* and hawthorn *Crataegus monogyna*, ash *Fraxinus excelsior* is also a common early coloniser but on this site elm *Ulmus* spp. are also found, apparently suckering from the line of old hedgerows.	

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)

Site specific targets

1. **Transitions** – the transitions between dune and saltmarsh habitats is well developed at Gibraltar. This ecotone includes the nationally scarce *Frankenia laevis-Limonium binervosum* strip salting communities recognised in the SSSI citation with species on the list of 'outstanding assemblage of vascular plants' in the SSSI notification, other species on the list that occur in this habitat include *Salicornia pusilla* and *Suaeda fruticosa*.

   Transitions between saltmarsh, dune slack and wet grassland are also important as the development of the Freshwater Marsh (dune slack) is thought to be directly from saltmarsh following the construction of the Bulldog Bank sea wall that changed the area's hydrological regime to predominantly freshwater; other plants on the Assemblage list of the SSSI notification are *Corynephrus canescens* and *Carex divisa*. Small patches of vegetation in the upper saltmarsh still show a transition to freshwater wetlands and, together, these reflect an important part of the development of the site - both past and, potentially, future.

   Typical transitions where the baseline survey revealed an area of greater than 0.1ha (10,000 square metres) are as follows: Embryo dune mosaics with shifting dunes SM5 (0.1ha) and SD6 (SM10/SD4/SD6c/SD6e some 2.1ha) and saltmarsh communities especially SM10 (as mentioned). Shifting dunes with *Ammophila* zonations driftline SD6c/SM25 at 0.5ha. Fixed dune zonations with wet grassland SD7/MG11c (0.17ha), SD8/MG10b and (0.6ha), mesotrophic grassland SD7/MG1 (0.6ha), dune slack SD8/SD17b (0.4ha) sea buckthorn SD18 with SD7, SD8, SD9 (a total of 2.1ha) and driftline saltmarsh SD9/SM24 (0.1ha). Humid dune Slack with damp grassland SD17b/MG11 (0.2ha). Dunes with *Hippophae* with dry dune vegetation SD7, SD8 and SD9 (2.1ha), *Hippophae* also has zonations with dune slack, where water levels are not too high, but nutrient enrichment of vegetation from the nitrogen-fixing nodules on the buckthorn roots tends to turn these transitions into SD18a or SD18b – nevertheless clearance of substantial areas of sea buckthorn on Seacroft Golf Course has revealed a northward extension of the dune wetland proving that the natural zonation of *Hippophae* includes wet conditions. The extent and location of all these transitions will vary over the longer term but a range, appropriate to the physical situation at the time of assessment, should be present. Loss of major transitions would indicate that natural processes have stagnated and the dynamic nature of these habitats has been lost.

2. **Indicators of local distinctiveness** - Fixed dune. The target for proportions of SD8 and SD9 have been included to reflect the level of grazing required to maintain species rich dune grasslands. Without high rabbit grazing levels in earlier decades, and in the absence of grazing by liveltock, much of the dune grassland would have become *Arrhenatherum* dominated, species poor swards. Although rabbit numbers fluctuate, and have been through a recent low

period, the introduction of grazing by cattle and sheep in the dry dune areas should help to maintain a balance between these short- and long-sward communities.

Rationale for selection of measures of condition (features and attributes for use in condition assessment)
(The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).

Measuring attributes at Assessment

There are significant practical problems in assessing some of the Favourable Condition attributes using just aerial photographs and the CSM Guidance field techniques, especially zonation where some of the transitional swards are very similar in floristic composition e.g. wet grassland ecotone and dune slack community. There are also difficulties in assessing the extent of certain communities (see tables above), especially differentiation between Shifting Dunes and Fixed Dunes which, at this site, are very similar in appearance and species composition. In order to obtain the range of information at the accuracy required, an NVC survey should be undertaken every 12 years (every-other assessment cycle).

All dune habitats

Negative indicator species – *Senecio jacobaea* is often plentiful in dune habitats because of the free-draining sany soils and the natural occurrence of bare soil through mobility or parching. In white dunes (embryo and early stages of the mobile dunes) cover rarely exceeds 10% because nutrient availability in the upper sands is low. Higher cover than this in dunes where soil development is rudimentary might suggest the area is used as a dunging patch by grazing animals and should be investigated. In more developed swards where soil is forming - fixed dune habitats – ragwort can reach higher levels due to the local abundance of seed and the natural conditions favouring establishment (bare substrate and free-draining soils). These are often natural conditions and the grassland CSM guidance should not be taken as representative of dune habitats. A level of up to 15% *Senecio jacobaea* cover would be considered 'normal' for some areas of fixed dune grassland but may be indicative of adverse management if large areas of the habitat exhibited cover in excess of this.

Fixed dunes

Vegetation Composition (typical species) *Trifolium repens* has been removed from the list. White clover is often sown in agricultural swards to improve nitrogen content and the inclusion of this species in the 'typical' list may obscure those occasions when agricultural improvement has taken place to the detriment of a more natural sward. *Astragalus danicus* has also been removed as this plant does not occur in Lincolnshire which is too far south of its restricted range.

Humid Dune Slacks

Vegetation composition (*Salix repens*) – the attribute for *Salix repens* has been removed from these tables as the only true dune slack community present is SD17 *Potentilla anserina - Carex nigra* slack which does not have *Salix repens*, indeed, part of what differentiates this from other dune slack communities is the lack of creeping willow. *Salix repens* is absent from all coastal dunes in Lincolnshire.

Zonation – This target in the CSM Guidance states "All humid dune slack communities should be present – from embryonic dune slacks with a high percentage of bare ground to those with more closed vegetation and up to 33% cover of Salix repens. Early dune slack successional stages at least occasional". This is not appropriate for Gibraltar Point and has been modified. The formation of the dune slack at Gibraltar Point differs from the conventional process (deflation of sand down to the water table), its creation is due to the construction of Bulldog Bank cutting an area of saltmarsh off from the influence of the sea and allowing it to become, over time, freshwater. Because this was a single event effecting a single wetland, and the separation from the sea dates from around 1900, there are no early successional stage slacks. Indeed, there are no slacks created by conventional processes on site at present. There are areas of upper saltmarsh that show transition to wet grassland that may, in the long term, develop an SD17 dune slack character even these areas do not exhibit a high percentage of bare ground because of the processes involved in their origin. It is possible that the creation of a large blow-out may result in a conventional slack forming but this would seem unlikely at this site with its dominant and prevailing winds in opposition and the paucity of sand movement observed in vegetated parts of the site over the past 150 years (since the development of the East Dunes). If conventional dune slack processes became apparent on this site the inclusion of this target should be reviewed.

A map needs to be developed identifying the full extent of the dune slack resource on the site, the full extent has become more apparent since scrub clearance on Seacroft Golf Course and the wet summers of 1987 and 1988. This is needed to facilitate the calculation of the 5% to 10% ecotone with Hippophae rhamnoides target.

Typical species and Grass/forbe ratio (*Salix repens*) has been removed from the list and replaced with *Carex nigra* as *S. repens* does not occur in Lincolnshire and *C. nigra* is a community constant for SD17. The list given in the Guidance may need to be revised further; the baseline survey of 1988 was carried out after a string of dry years and the SD17b community identified is the driest of the sub-communities. Exploration of the annual monitoring transect records taken in the Freshwater Marsh by Lincolnshire Wildlife Trust staff is advised in order to ascertain the range of species typical of wetter periods so that the target here may be more appropriately modified. As already stated, the development of this dune wetland is through unusual processes and some of the species on the standard list, such as *Anagallis tenella*, may need to be removed. The %-cover figures from LWT's monitoring may also help inform the grass:forbe ratio as the Freshwater Marsh, at least, has a more mature and grassy/sedge-rich sward than typical slacks.

Open water - The effect of The Mere needs to be investigated. Hydrological guidance suggests that large areas of open water within the perched water tables of

dunes has a disproportionately high evaporation rate compared with evapo-transpiration from vegetated areas. If The Mere is having an adverse effect on the dune slack vegetation it should be filled in with a view to reverting the area to dune slack and transitions to dry dune which were destroyed in 1972 when the lake was excavated. In this case, a new target should be considered, setting a maximum area for open water within the wetland zone. It is especially important for the long term to evaluatae the impact of The Mere as climate change predictions forecast a reduction in rainfall for eastern England.

Dunes with *Hippophae rhamnoides*

Sea buckthorn is native on the coast of Lincolnshire and this is the only SAC (presently) for which it has been designated a feature of international importance. The *Hippophae* habitats in England appear to behave differently from those on the continent e.g. Holland. There the shrub is limited by a number of adaphic and biological factors which allow bushes to exist in a mosaic of dune grassland without forming the dense, tall monocultures typical of the Lincolnshire coast. Some of these limiting factors do not pertain to the east coast of England i.e. coincidence of the dominant and prevailing winds bearing high salt spray loads, acidification of the dune sands. Other factors have not been observed or studied in this country i.e. on the continent Hippophae seedlings only appear to become established where the roots can follow the route of species that pierce deep into the soil and sands below, especially marram grass *Ammophila arenaria*.

This raises questions as to what the conservation objectives should be for the SAC designation (*Hippophae* is not an SSSI feature). As there is no evidence to suggest that sea buckthorn has ever behaved at this site in the way that it does on the continent, an initial stance has been taken. The principles of the conservation objectives and targets set out in these tables are:

- *Hippophae rhamnoides* currently occupies too great a proportion of the dry dune area and fringes of the freshwater wetland, at the expense of fixed (grey) dune and dune slack habitat. Aerial photographs from the 1940s show that the extent of sea buckthorn 50 years ago was much more limited – to identifiable bushes and clumps – and that sea buckthorn has increased many hundred-fold in the absence of rabbit grazing and other management to restrict suckering. At the time of the baseline survey in 1988 the area of dry dune (NNR only) occupied by SD18a and SD18b was 80% (see Annex VIII of the report for a map of sea buckthorn scrub areas at the time of that survey) – some 46.5ha in its pure form and a further 5.4ha of mosaics and transitions – together: 52ha of a total 197ha vegetation or 26.4% of the total vegetated area of the site. It is neither desirable nor realistic to attempt to 'turn the clock back' but a balance must be achieved with the dune grassland habitats which were a major element of the SSSI designation in 1951.

  An initial 'working' principle has been set, until this can be refined, of one third sea buckthorn to two thirds other dune communities on the dry dune areas, this means extensive clearance of scrub of over 60% of stands present in 1998. Work on reducing the extent of sea buckthorn had already commenced at the time of writing these tables, both on the NNR and on Seacroft Golf Course (area figures for the golf course were not available for the 1988 baseline and are not included in the statistics quoted above.) Additional work will be required on the NNR and also on Seacroft Marsh (area figures not given in the 1989 report but may be able to be derived from digitising field maps made at that time).

- *Hippophae rhamnoides* should be represented on site in each of its life stages (seedling, suckering invasive growth, closed canopy mature growth and senescing aged stands reverting to grassland) and in each the habitats where it would normally be expected to occur (all dry dunes including embryo, shifting dune and fixed dunes, also dune slack edges).

- Stands of *Hippophae* should not be fossilised in the dune landscape at allocated locations but should be allowed a degree of dynamic interaction with surrounding habitats. This means that areas of mature sea buckthorn may be cleared in order to reinstate dune grassland with a view to allowing invasion by seedling/suckering *Hippophae*, or that senescing stands be allowed to revert to dune grassland whilst other mature stands be allowed to senesce in order to maintain representation of the oldest stages of growth on site.

As it is the European dunes which have given rise to the habitat 'dunes with *Hippophae*' becoming a SAC feature it would be useful to get data from continental calcareous dunes. This could include the area of dune habitat covered by *Hippophae* per se or *Hippophae* communities and the proportion of the sward occupied e.g. %cover *Hippophae* in the '*Hippophae* zone' (a mosaic of young sea buckthorn and dune grassland), the 'Marram zone' (mobile dunes) and the senescing *Hippophae* zone. This information would be useful in refining the approach to this prickly problem at Gibraltar Point and its sister SAC at Saltfleetby-Theddlethorpe Dunes.

A *Hippophae* strategy needs to be developed for both this site and Saltfleetby-Theddlethorpe Dunes, the other half of the terrestrial SAC.

Other Notes

Maps need to be prepared to show priority areas for *Hippophae rhamnoides* and the extent of dune slack across the site.

Table 3e Site-Specific definitions of Favourable Condition

CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE	To maintain the **Coastal Geomorphology** at **Gibraltar Point** in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition					
Criteria feature	**Attribute term in guidance**	**Site-specific Targets**	**Method of Assessment**	**Comments**	**Use for CA?**
Active process geomorph-ological	Condition of features of interest	The features of interest remain intact and are evolving naturally. These features are: dynamism of the coastal environment, tidal offshore sandbanks, ridge and runnel foreshore, a spit, sand dunes and saltmarshes in various stages of evolution.	Visual / fixed-point photography. All physical features should be present and demonstrate that processes are active e.g. barrier dune breaches on high tide storm events, curvature of spit tip, movement of ridge-runnel system from north to south – some of these processes may require a site visit during habitat assessment, such as availability of appropriate sediments for spit/ dune/ saltmarsh processes. Sand banks will need to be assessed at low spring tide, correlation may be possible with Sub-littoral habitat assessments.	The coastal geomorphological processes described in the Geological Conservation Review is a wide range of types of coastal accretion on a low, macrotidal coast in a relatively sheltered environment. The key features are taken from the GCR notification/citation. In addition to those listed in the targets the notification cites the relationship between landforms and the processes responsible for their evolution, which is rather hard to define here.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Method of Assessment	Comments	Use for CA?
cont… **Active process geomorphological**	Exposure of features of interest	The features of interest (see physical features above) are exposed or can be re-exposed by 1 or 2 people, using hand tools, in less than 3 hours approximately.	Visual / fixed-point photography. Information from assessment of the habitats i.e. dune, saltmarsh, littoral and sun-littoral features may be possible.	Whilst it is unlikely that features the size of the spit, sandbanks etc would become obscured, certain coastal protection works could play a role here in future. The Lincshore beach nourishment scheme is not presently considered to be a threat as it is providing sediment that is otherwise deprived to the system through hard sea defences. Some concerns have, however, been raised by the Lincolnshire Wildlife Trust about the nature of the sediment being used, which is a coarse grain, angular sand from offshore deposits.	No
	Tipping or landfill	There is no tipping or landfill obscuring or damaging the features of interest or adversely effecting coastal processes.	Visual / fixed-point photography	This target applies particularly to the sand dunes, spit and saltmarsh features.	Yes
	Engineering works	There are no unconsented engineering works obscuring or damaging the features of interest. Features of interest include active processes.	Visual / fixed-point photography. Engineering works beyond the boundary of the SSSI but having, or likely to have, an adverse impact on processes or features should be considered under the target.	This applies especially to coastal defence and offshore developments such as renewable energy schemes. Of relevance at the time of writing these tables is the sea defence at Skegness south shore called Lagoon Walk, immediately north of the SSSI boundary. This was given consent in the early 1990s on condition that the issue of the soft shore/hard defence interface was addressed. The so called 'Phase II' works which were to address this issue were to ensure that the dunes within the SSSI were not adversely effected were never progressed beyond the development of a brief for the investigations (in preparation at the time of the consent was issued). The legitimacy of the consent is now questionable.	Yes

Criteria feature	Attribute term in guidance	Site-specific Targets	Method of Assessment	Comments	Use for CA?
cont… **Active process geomorphological**	Quarrying	The features of interest have not been damaged or removed by quarrying.	Visual / fixed-point photography	This target includes marine dredging of sub-littoral sediments.	Yes
	Natural processes	There is no impediment to active geomorphological processes.	Visual / fixed-point photography. Impacts from outside the boundary of the SSSI but having, or likely to have, an adverse impact on processes should be considered under the target. Sediment supply should be considered.	The processes for which the site was designated are coastal geomorphology including the dynamism of the coastal environment and the relationship between coastal features and the processes that formed them.	Yes
	Capacity for re-creation	The features of interest can be re-created by natural processes where they have been damaged or destroyed.	Visual / fixed-point photography	This largely relies upon natural coastal processes remaining intact.	Yes
	Context and surroundings	The context and relationship of the features of interest to the surroundings have not been diminished through physical damage and use of the surrounding land does not lead to changes that might detrimentally affect the features of interest.	Visual / fixed-point photography.	The relationship between the physical features and the processes that form and maintain them is an important feature of this site. This target should be used to assess whether this dynamic relationship is still active.	Yes

Species Feature (species or assemblage)	Attribute	Site Specific Target Range and Measures (specify geographical range over which target applies *i.e.* site, BAP broad habitat or more specific)	Comments
Rationale for site-specific targets (including any variations from generic guidance)			
Little Tern is not considered to be a specific interest feature of The Wash SSSI/SPA that requires a condition assessment on account of the erroneous data included in the SPA citation and JNCC SPA review. The baseline population for Common Tern should only be based on the regular breeding population at Snettisham, since the breeding population on the Outer Trail Bank was short-lived and lost due to natural change.			
Other Notes			
The Marsh Harrier has been cited in the JNCC SPA Review as being a discretionary feature of the SPA and SSSI. However, the breeding population is mainly associated with habitats outside the designated site and whilst birds may use the SSSI and SPA for hunting and breeding, it is impossible to assess what proportion of the GB population is dependent upon habitat features within The Wash SSSI and SPA. The Montague Harrier also breeds sporadically within and outside The Wash SSSI and SPA. However, at current population levels it is very hard to determine if the breeding population is dependent upon habitat features within The Wash SSSI and SPA. Consequently, Marsh Harrier and Montague Harrier have been excluded specifically from the Conservation Objectives for The Wash SSSI and SPA, although the interest features supporting the breeding harrier populations will be assessed separately under the conservation objectives for the saltmarsh habitat.			

Table 3a Site-Specific definitions of Favourable Condition – Large shallow inlets and bays

Conservation Objective for this habitat type	To maintain the large shallow inlet and bay habitats at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition				
Attribute	**Target**	**Method of assessment**	**Comments**	**Use for CA?**

Diversity of component habitats	Maintain the variety of habitats identified for the site, allowing for natural succession/known cyclical change. These habitats are: Subtidal boulder and cobble communities Subtidal mixed sediment communities Subtidal sandbanks[1] Intertidal flats[1] Samphire and other annuals colonising mud and sand[1] Atlantic salt meadows[1] Mediterranean saltmarsh scrub[1] Reef[1] Saline lagoons[1]	Repeated assessment of overall habitat composition or a subset of specified habitats identified for the site. For details of assessment techniques see Section 3 and Davies *et al*. (2001).	Where changes in habitat composition are known to be attributable to natural processes then the target value should accommodate this variability. Where there is a change in habitat composition outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.	Yes
Distribution/spatial pattern of habitats	Maintain the pattern of distribution of predominant habitats throughout the feature. Subtidal boulder and cobble communities: **MCR.ByH.FIu** (Rich faunal Turf dominated by both tall and short bryozoans and hydroids) **ECR.EFaPomByC** (Encrusting bryozoans and coralline algae mixed with short tufted bryozoans) **MCR.ByH** (Sparse to moderately rich bryozoan/hydroid turf epifauna on a silty gravelly sand substratum with a *Sabellaria* gravel/shell component)	Assessment of the distribution of habitats identified for the site. Confirm the presence of named habitats at selected locations in the inlet or bay. The habitats will be representative of the inlet and bay. For details of assessment techniques see Davies *et al*. (2001).	Where changes in distribution/spatial pattern are clearly attributable to cyclical succession or expected shifts in distribution, or they occur as a consequence of natural geomorphological changes in the estuary (e.g. change in the position of the low water channel) then the target value should accommodate this variability. Where there is a change outside the expected variation or a loss of the conservation interest of the site, possibly as a consequence of anthropogenic developments, then condition should be considered unfavourable.	Yes

[1]Individual interest features in their own right in the site.

	Subtidal mixed sediment communities: IMX.MytX (Sub-littoral mussel beds) Key biotopes listed in Appendix 5 Distribution o f biotopes as set out in Fig 7.3 and 7.4 of Foster-Smith & Sotheran, 1999, and Fig 2.1 and 2.2 of Bailey, Coad & Bamber, 2005. For other habitats see individual interest feature conservation objectives.			
Water quality ***The specific representation of this attribute will depend on the local conservation interest of the feature and take into account any perceived threat to the system.*** **Nutrients – algal mats**	Target values should default to appropriate national or international standards where appropriate. If sufficient local data are available to establish the baseline condition, site-specific targets can be set.	Water quality parameters could be assessed directly using in water measurements or in appropriate biota, or using one or more indicators (for example, indicators of nutrient status are phytoplankton levels, chlorophyll-a concentrations or through the presence/thickness of green algal mats). For details of assessment techniques see Section 3 of JNCC, 2004.	Water quality standards are currently being established by the environmental protection agencies for European Directives (Water Framework Directive, Urban Waste Water Treatment Directive) and the OSPAR Convention. Monitoring data are or will be available from these agencies to support feature assessment under common standards monitoring. In all cases, local measurements should be compared with regional or national assessments to establish whether any local changes are part of a wider trend. Eutrophication due to effluent discharge or agricultural run-off will result in the condition of the attribute being designated as unfavourable.	Yes

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Other Notes
References: Davies et al. 2001. Marine Monitoring Handbook. JNCC. Bailey, Coad & Bamber, 2005. Wash Sublittoral Grab Survey Report 1991, 1993, 1999 and 2002. Draft Ecomaris Report to English Nature. Foster-Smith & Sotheran, 1999. Broadscale remote survey and mapping of sublittoral habitats and biota of The Wash and the Lincolnshire and the north Norfolk coasts. English Nature Research Reports, Number 336. JNCC, 2004. Common Standards Monitoring Guidance: Inlets and Bays. JNCC Feb 2004.

Table 3b Site-Specific definitions of Favourable Condition – Saline lagoons

Conservation Objective for this habitat type	To maintain the saline lagoon habitat at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:

Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)

The lagoons at Snettisham consist of 4 basins which are former gravel pits excavated between 1919 and 1957. The basins are percolation lagoons, largely receiving their water from the adjacent sea by percolation through the wide shingle bank which comprises the sea-wall or by ground-water. No freshwater stream input is observed. There is a further seawall embankment to landward. Site management of water levels is enabled by sluiced culverts between each lagoon (Bamber & Evans, 2006)

Site-specific standards defining favourable condition

Attribute	Target	Method of assessment	Comments	Use for CA?
Isolating barrier – presence and nature	No change in structure of shingle bank. This will maintain the percolation route into the lagoon system (based on shingle bank at	For details of assessment techniques see Davies *et al.*, 2001.	Where changes in the isolating barrier are attributable to natural processes (e.g. coastal erosion) also when restorative measures are not viable, the final assessment will require expert judgement to	Yes

	time of submission of site to Europe in October 1996?).		determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Where there is a change outside the expected variation or a loss of the conservation interest of the site (eg due to anthropogenic or unrecoverable natural losses) then condition should be considered unfavourable. Changes in presence, nature and integrity of the isolating barrier would be considered unfavourable if attributable to alterations in structure arising from anthropogenic activities or due to loss or damage of a sluice or other flow control mechanism.	
Salinity regime	Salinity should be maintained within the range 10 ppt to 50 ppt. Average salinity throughout a saline lagoon would be expected to lie within a range of between 15ppt and 40ppt. Sustained levels of <10ppt and >50ppt should trigger management action in many cases, but a good understanding of local ranges and periodic variability's is essential to individual site management. At this site it is expected that a salinity gradient occurs ranging from less saline waters in the northern lagoons to higher salinities in the southern lagoons.	Seasonal averages (ppt) to be assessed periodically. Salinity measurements should be made at different states of the tide and in different seasons to account for variation in the short term (tidal cycles), medium term (in direct response to rainfall) and in the longer term (in response to seasonal rainfall and periods of drought). Preferably in late winter/early spring and later summer to determine seasonal lows and highs. Information relating to recent / annual weather patterns should be considered when comparing records over time, to help interpret any variations observed Depending on the size and shape of the lagoon, it may be necessary to measure along a salinity gradient. In complex lagoon systems salinity gradients may occur on more than one horizontal axis and may also include vertical stratification.	Where the field assessment judges the salinity change to be unfavourable, and subsequent investigation reveals the cause is clearly attributable to natural processes, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Where there is a change outside the expected variation or a loss of the conservation interest of the site (e.g. due to anthropogenic activities or unrecoverable natural losses) then condition should be considered unfavourable. Changes in salinity would be considered unfavourable if attributable to the following: anthropogenic alterations to the isolating barrier; water abstraction or discharge altering the freshwater input; loss or damage to a sluice or other flow control mechanism. Only one set of samples available. Bamber & Evans (2006) measured salinity in lagoons in November 2005. Salinities were below sea-water normal,	Yes

		Essential that salinity regime is always assessed at a similar time of the year and state of tide. Salinity of adjacent source marine waters should be considered at the same time. Percolation lagoons have a long-term trend to become freshwater. This is a result of natural siltation preventing percolation of seawater into the system. It may also be a result of the separating barrier building up and preventing overtopping. The target may require revision over time to reflect such changes in salinity regime. In cases where reliable baseline data are unavailable the presence and abundance of lagoon species/biotopes may act as a proxy measure of salinity. Changes in the biota that indicate sustained change in the salinity regime should act as a trigger for more intensive salinity surveillance surveys. For details of assessment techniques see Davies *et al.*, 2001.	reflecting a fresh-water influence. Salinities decreased from the southern to northern lagoon. The southern two lagoons averaged 26ppt, the next lagoon measured 20ppt and the most northern lagoon was 18ppt. At the time of sampling the adjacent sea-water was 35ppt.	
Biotope composition of lagoon	Maintain the variety of biotopes identified for the site, allowing for succession/ known cyclical change. Bamber & Evans (2006), identified benthic community throughout lagoonal system as ENLag.IMS.Ann.	Repeated assessment of overall biotope composition or a subset of biotopes identified for the site. For details of assessment techniques see and Davies *et al.*, 2001.	Where the field assessment judges the biotope composition to be unfavourable, and subsequent investigation reveals the cause is clearly attributable to cyclical natural processes, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Where there is a change outside the	Yes

			expected variation or a loss of the conservation interest of the site, (e.g. due to anthropogenic activities or unrecoverable natural losses) then condition should be considered unfavourable. Little baseline information. Need for further monitoring over time to obtain better understanding of physical and biological characteristics of lagoonal system including absence of submerged plants. Barnes (2000) infers barley straw may be used in site - which has algaecidal properties. Shift to ENlag.IMS.Ann.Imp indicates impoverished biotope, stressed by low salinity or antrhopgenic interference. Barnes & Evans noted lack of submerged plants eg tasselweed (*Ruppia* spp.) and algae, although clumps of wireweed (*Chaetomorpha linum* – a lagoonal specialist alga) in one lagoon. Wireweed was also found in Barnes' survey in 2000.	
Extent of water	Lagoonal specialists are sublittoral species. At least 60% of the water of the lagoon persisting at all times of year and states of tide. Based on OS MasterMap data for the site.	Area of water occupying the basin should be assessed periodically, at the same time of year (preferably in late winter /early spring and late summer). This may be assessed by direct measurement of the position of the waterline by dGPS or in relation to fixed surface features. For details of assessment techniques see Davies *et al*., 2001.	Condition should be judged unfavourable if loss in extent of water is due to factors other than cyclical natural processes that are part of a wider coastal geomorphological management regime. See OS MasterMap data for the site. Where natural events (such as storm damage causing a barrier breach) cause a loss of extent of water greater than 40% of baseline value, then this would also be considered unfavourable.	Yes: not a mandatory CSM attribute but important measure of condition at this site
Distribution of biotopes	Maintain the distribution of ENLag.IMS.Ann biotope (identified throughout lagoonal system by Bamber & Evans, 2006), allowing for natural succession/known cyclical change.	Assessment of the distribution of biotope(s) identified for the site. For details of assessment techniques see Davies *et al*., 2001.	Where a field assessment judges the condition of this attribute to be unfavourable and subsequent investigation indicates the cause is due to natural factors, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its	Yes: not a mandatory CSM attribute but important measure of condition at this site

			target condition. Where there is a change in biotope distribution outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable. Little baseline information. Need for further monitoring over time to obtain better understanding of physical and biological characteristics of lagoonal system including absence of submerged plants. Barnes (2000) infers barley straw may be used in site - which has algaecidal properties.	
Species population measures - Presence or abundance of specified species	Maintain presence and/or abundance of the specified species (to ensure no decline in ENLag.IMS.Ann biotope quality due to changes in presence / abundance of specified species, allowing for natural succession/known cyclical change). Expect to find following characterising species identified in Bamber & Evans (2006), Barnes (2000): **Lagoonal specialists**: Polychaeta: *Polydora comuta*[2] Mollusca: *Ventrosa ventrosa* (formerly *Hydrobia ventrosa*), *Hydrobia arcana* (formerly *H. neglecta*), *Littorina saxatilis lagunae* Crustacea: *Corophium insidiosum*, *Idotea chelipes*, *Gammarus insensibilis*[1] *Gammarus duebeni*[2] Bryozoa: *Conopeum seurati* **Other species:** Polychaeta: *Nereis diversicolor, Tubificoides pseudogaster*[2] Chironimidae Fish: *Pomatoschistus microps*	Assessment of the presence / absence or abundance of a specified species identified for the feature. For details of assessment techniques see Section 2 (JNCC, 2004) and Davies et al, 2001.	Where disturbance causes a species of nature conservation importance to be lost, or if there is a significant reduction in abundance, then condition would be considered unfavourable. Species selected should reflect the specific biological characteristics of the lagoon. Species should be used from the list of lagoonal specialists in Appendix A of JNCC 2004. The advice concerning judgement of the feature condition provided under species composition equally applies to this section and should be consulted: "Where the field assessment judges the species composition to be unfavourable, and subsequent investigation reveals the cause is clearly attributable to cyclical natural processes such as mass recruitment and dieback of characterising species, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Where there is a change in species composition outside the expected variation or a loss of the conservation interest of the site (e.g. due to anthropogenic activities or unrecoverable natural	Yes: not a mandatory CSM attribute but important measure of condition at this site

	Underlined = key characterising species [1]Found in Barnes, 2000 only (& present at relatively abundant levels) [2]Found in Bamber & Evans, 2006 only (& present at relatively abundant levels) Highlighted = Annex A (JNCC 2004, listed species)		losses) then condition should be considered unfavourable." Little baseline information. Need for further monitoring over time to obtain better understanding of physical and biological characteristics of lagoonal system including absence of submerged plants. Barnes (2000) infers barley straw may be used in site - which has algaecidal properties.	

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) **(**The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Bamber & Evans (2006) noted surprising lack of submerged plants eg algae and tasselweeds (*Ruppia spp.*) in lagoonal system. The lagoons did not support the second major lagoonal biotope, ENLag.Veg. However, phosphate levels in lagoons high, particularly in southern lagoons. Phytoplankton blooms were noted in the northern lagoons. The survey was undertaken in November so it is possible the blooms had utilised the high dissolved organic content and in so doing created conditions unfavourable to other vegetation growth? Some clumps of wire weed were found in one of the southern lagoons. Bamber & Evans (2006) note that lagoonal communities usually tolerant of the naturally stressed lagoonal environment which shows variation in pH, oxygen, salinity, temperature etc, in short term in both time and space. In the absence of research, they assume communities are also tolerant of high organic content. They note that phytoplankton blooms are not unusual in lagoons and specialist lagoonal species are observed to thrive in lagoons where these occur. They speculate lack of plant life may be due to abundance of feeding wildfowl or the coarse substrate and lack of fine material which is not conducive to growth of vascular plants (eg tasselweeds prefer mud substratum). We have some concerns over these conclusions. Whilst lagoonal fauna may be resilient to algal blooms and high nutrient levels / pollution, no evidence exists that the fauan is resilient to regular blooms and high nutrient levels / pollution over a sustained period of time. The two surveys are also not consistent which may be due to differences in sampling or real changes in the lagoon. As a result it is difficult to draw firm and favourable conclusions especially when the Habitats Directive requires a more precautionary approach to be adopted when considering priority habitats. There is little baseline information. Need for further monitoring over time to obtain better understanding of physical and biological characteristics of lagoonal system including absence of submerged plants. Barnes (2000) refers to barley straw being used in site - which has algaecidal properties.

Other Notes
References Bamber & Evans (2006). Saline lagoon survey, Snettisham lagoons, Norfolk, November 2005. Natural History Museum Report to English Nature. Barnes (2000). Lagoon specialist surveys of RSPB Snettisham reserve. Brief report to RSPB. Davies et al, 2001. Marine Monitoring Handbook. JNCC JNCC (2004). Common Standards Monitoring Guidance for lagoons. JNCC, February 2004.

Table 3c Site-Specific definitions of Favourable Condition – Saltmarsh

Conservation Objective for this habitat type	To maintain the coastal saltmarsh habitat at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:

Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)
The location of saltmarsh within The Wash SSSI is shown in Figure 1a-g. This area includes habitats (such as borrow pits and creeks) which do not necessarily support saltmarsh vegetation but which contribute to the integrity of the saltmarsh. Artificial structures such as old training walls, buildings, air weapons targets and associated developments that have either been fully authorised since notification or were present prior to notification are excluded from the favourable condition standards.

Site-specific standards defining favourable condition			
Attribute	**Target**	**Method of assessment**	**Comments**
Physical structure: creeks and pans	There should be no alteration of natural creek patterns or loss of pans as determined at the time of notification as a result of anthropogenic factors.	The baseline information for established creek patterns and pans can be obtained from the series of aerial photographs taken by the Environment Agency and UK Perspectives in the period 1984 to 2000. Future changes to be monitored using aerial photographs combined with information gathered from site visits.	Major erosion of saltmarsh is indicated by internal dissection and enlargement of the drainage network, ultimately leading to the creation of mud basins.. However, caution needs to be taken when assessing creaks patterns in front of areas of set-back behind the sea wall. This is because considerable re-adjustment of natural creek patterns will occur for several years after the sea wall is breached.
Vegetation structure: zonation of vegetation	Maintain the baseline range of saltmarsh zonations, NVC communities and Annex 1 habitats within the levels recorded in the 1982-85 and 2001-02 saltmarsh surveys.	Details on how baseline information was determined can be obtained from: (i) Hill, M.I. (1988). Saltmarsh Vegetation of The Wash. An Assessment of Change from 1971 to 1985. NCC Research Report No 13. NCC, Peterborough	Saltmarsh has up to five main zones: pioneer, low-mid marsh, mid-upper marsh, saltmarsh strand plus transitions. The NVC saltmarsh categories recorded within The Wash SSSI are: SM6, SM8, SM9, SM10, SM11, SM13, SM14, SM16, SM17, SM23, SM24. However, nearly all the upper marsh around The Wash was lost by land reclamation prior to 1980. Many of the current upper marsh communities have since developed as a result of continuing accretion

		(ii) Hemphill, P., Whittle A. & Meakins, N. (2003) . NVC Survey of Saltmarsh and Other Habitats in The Wash European Marine Site. English Nature, Peterborough	and ecological succession.
Vegetation structure: sward height	Maintain the saltmarsh area as a mosaic of short turf swards (5 – 15 cm) interspersed with areas of tussocks (>15cm). These habitats should ideally occur together in roughly equal amounts, although actual levels will be determined by accessibility to grazing animals/birds, vulnerability to coastal erosion as well as the distribution and requirements of nationally important species.	Visual assessment during standard condition monitoring site visit.	Structural heterogeneity within the saltmarsh is best achieved by grazing the saltmarsh with cattle, sheep or horses. Grazing management should, however, be limited to the period April to November and stocking levels must be managed to avoid overgrazing and poaching. As a general guide, stocking levels on mature upper saltmarsh to be within the range of 0.4 – 1.0 LSU per hectare during the grazing period while in lower saltmarsh, stocking levels must not exceed 0.5 LSU per hectare at any one time during the grazing period.
Vegetation composition: characteristic species	Maintain frequency of characteristic species of saltmarsh zones as follows: Pioneer zone: At least one of the following species frequent and another occasional: *Salicornia* spp, *Suaeda maritime, Puccinellia maritime, Aster tripolium* Low-mid marsh: At least one of the following species dominant: *Puccinellia maritima, Atriplex portulacoides* or *Salicornia* spp; and two of the following species at least frequent: *Puccinellia maritima, Triglochin maritime, Plantago maritime, Atriplex, portulacoides, Aster tripolium, Spergularia maritime, Suaeda maritime, Salicornia* spp. Mid-upper marsh: At least one of	Visual assessment of cover, using structured walk using methodology recommended in Watts, S. & Brockington, S. (2004). Common standards monitoring: generic guidance on objective setting and condition assessment for saltmarsh. English Nature, Peterborough.	Communities may be dynamic in their distribution and are linked to the physical processes operating at the site, including topography, creek patterns etc. A variety of communities may also occur at the transition zone at the top of the salt marsh such as mesotrophic grassland, tall fen and swamp communities.

	the following species abundant and three frequent: *Festuca rubra, Armeria maritime, Agrostis stolonifera, Juncus maritimus, Limonium vulgare, Glaux maritime, Plantago maritime, Aster tripolium, Triglochin maritime, Artemisia maritime*		
Vegetation composition: negative indicator species *Spartina anglica*	Existing *Spartina anglica* stands to show no evidence of expansion into pioneer saltmarsh zone (with an indicative target of less than 10 % expansion in a 10 year time-span)	Aerial photographs, together with visual assessment of cover, using structured walk (see Watts, S. & Brockington, S. (2004). Common standards monitoring: generic guidance on objective setting and condition assessment for saltmarsh. English Nature, Peterborough).	*Spartina anglica* is a species that is considered undesirable in intertidal habitats where it is expanding at the expense of mudflats. However it can be a precursor to the development of saltmarsh where sediments are accreting. Natural die-back has occurred in some areas.
Other negative indicators	▪ Artificial drainage channels to be limited to those established by Internal Drainage Boards at their drainage outfalls prior to notification of SSSI and to be maintained at baseline levels. ▪ No unauthorised loss of saltmarsh through the erection of artificial structures. Artificial structures include roads, air weapons targets, embankments and associated developments ▪ No obvious signs of pollution. ▪ Turf cutting to be absent ▪ No creation of bare substrate as a result of anthropogenic activities such as vehicle use or trampling. ▪ With the exception of localised pathways created	Visual assessment during site visit	Baseline levels are determined at the time of notification of the site or from the time authorisation was granted for the operation to be undertaken on the SSSI.

	by livestock or horses to access the saltmarsh, poaching damage from livestock should not exceed 0.001 ha at any one location. ▪ No artificial decrease in fresh groundwater flows on to the saltmarsh.		
Indicators of local distinctiveness* *If part of the reason for the notification of the site, this is a mandatory attribute	▪ Maintain Annex 1 habitats (i.e. Pioneer SM8 and SM9 communities, SM10-17 Atlantic Salt Meadows and SM21 and SM25 Mediterranean and thermo-Atlantic halophilous scrubs) at the levels recorded in 2001-02. ▪ Maintain populations of nationally scarce plants (e.g. *Limonium bellidifolium, Limonium binervosum, Hordeum marinum*, *Sarcocornia perenne*, *Spartina maritime* and *Sueda vera)*. ▪ Maintain populations of nationally scarce invertebrates (*Conocephalis dorsalis, Eupithecia extensaria occidua* and *Haematopota bigoti*).	Site specific surveys	This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not adequately covered by the other attributes, or by separate guidance e.g. for notified species features.

Audit Trail
Rationale for limiting standards to specified parts of the site
Areas of saltmarsh which are being grazed with livestock or horses in 2005 are shown in Figure 2. Locations of IDP pumping station outfalls are shown in Figure 3 and features excluded from favourable condition standards are shown in Figure 4.
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Other Notes

Table 3d Site-Specific definitions of Favourable Condition – Intertidal Flats

Conservation Objective for this habitat type	To maintain the littoral sediment habitats at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:

Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)

Site-specific standards defining favourable condition				
Attribute	**Target**	**Method of assessment**	**Comments**	**Use for CA?**
Biotope composition of littoral sediment	Maintain the variety of biotopes in each sub-feature (mud, muddy sand, sand & gravel) identified for the site in Yates et al (2002) allowing for natural succession/ known cyclical change. Biotopes are listed in Appendix 1. 12 biotopes in The Wash.	Repeated assessment of overall biotope composition. Details on how baseline information was determined can be found in: Yates et al (2002). 118 sites sampled in 1998, 103 sites sampled in 1999. Both 1998 and 99 surveys included offshore banks. Comparison with ITE's 1985/1986 survey (192 sites but excluded offshore banks).	Target requires presence of biotopes listed in Appendix 1. Where changes in biotope composition are known to be attributable to natural processes (e.g. winter storm/flood events, changes in supporting processes or mass recruitment or dieback of characterising species) then the target value should accommodate this variability. Where there is a change in biotope composition outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.	Yes

		Survey undertaken September to Nov 1998 & 1999, during low water springs. Methodology as per Davies et al 2001 (Quantitative sampling of intertidal sediment species using cores). 1ha sample sites, arranged down shore in series of line transects. At each sample site 5 cores (10cm diameter, 30cm deep, sieved through 0.5mm mesh) & 5 surface sediment samples taken for particle size analysis. For further details of assessment techniques see Davies *et al.*, 2001.	Important to note characteristics of baseline years. For example CEH surveys 1986 seems to have been a particularly good recruitment year for range of invertebrates (eg when compared with 1973, 1998 & 1999 data see pg43, Yates et al, 2002). CEH surveys don't include mussel beds. Also ESFJC data showed good cockle recruitment in 1998 but not recorded in CEH survey? Biotope code used in baselines is version 97.06, updated recently version 04.05.	
Sediment character: sediment type	Maintain distribution of mud, muddy sand and sand and gravel across the feature, allowing for natural succession/known cyclical change. Spatial distribution of sediment types shown in: Figures 3.3.2a and b p88-89, Yates et al (2002). ESFJC qualitative sediment on shellfish beds. Yates et al (1993). CEH satellite imagery of The Wash as re-analysed in Bell & Walker 2007, Fig 2.2.	Distribution of sediment types should be assessed across the whole feature and compared to baseline conditions. Target requires maintenance of spatial juxtaposition of specified sediment types (mud, muddy sand, sand) across the feature. Details on how baseline information was determined can be found in: Yates et al (2002). PSA data from 1985/86, 1998 and 1999. For details of method see above. ESFJC qualitative assessment of sediment on shellfish beds. Visual inspection of sediment collected in day grabs during ESFJC cockle surveys.	Where changes in sediment type are known to be clearly attributable to natural processes (e.g. winter storm/flood events, changes in supporting processes) then the target value should accommodate this variability. Where extreme events cause a change in sediment type, then this may have caused a change in the structure of the feature, which may lead to the condition of the feature being considered as unfavourable. Sediment distribution across site is generally consistent between each survey. However, although CEH found sediments of The Wash changed little between 1986, 1998 & 1999 surveys the area to the east of Great Ouse became sandier. This was a marked change that occurred between 1997 & 98 (Yates et al, 2002) and is thought to be due to winter storm (extreme event?). Higher shore levels in the inner Wash may get muddier over time as a result of accretionary processes. Change is likely to be particularly marked in sites near most recent landclaim. Changes due to coastal squeeze are	Yes

	All the above data is compared in Fig 2.2-2.6 of Bell and Walker, 2007.	Yates et al (1993). ITE satellite imagery of Wash sediments. LANDSAT Thematic Mapper imagery collected in Dec 1986 & July 1989. Re-analysed by Bell & Walker (2007). For further details of assessment techniques see Davies *et al.*, 2001.	unfavourable change	
Distribution of biotopes	Maintain the distribution of biotopes in each sub-feature (mud, muddy sand, sand & gravel) set out in Appendix 1, allowing for natural succession/ known cyclical change. Map of biotopes see 1986, 1998 & 1999 biotope maps (Yates et al, 2002) See composition of biotopes attribute for selected biotope partners. See Appendix 2 for distribution of Wash mussel biotope See Appendix 3 for distribution of Wash cockle biotope	Assessment of the distribution of biotopes identified for the site in Appendix 1, key biotopes shown in bold. Details on how baseline information was determined can be found in Yates et al (2002) for details of method see above. ESFJC mussel and cockle survey methodology – for details see ESFJC Research Reports For further details of assessment techniques see Davies *et al.*, 2001.	Unlike biotope composition this attribute is concerned with presence or absence of biotopes at specific locations. Sediment biotopes show cyclical succession and have no clearly defined perimeter in the field. Target takes account of likely succession between biotopes & likely differences expected between biotopes. Where changes in distribution are known to be clearly attributable to cyclical natural processes (for example due to a movement of a drainage channel) then the target value should accommodate this variability. Where there is a change in biotope distribution outside the expected variation, or a loss of the conservation interest of the site, then condition should be considered unfavourable. Important to note characteristics of baseline years. For example CEH surveys 1986 seems to have been a particularly good recruitment year for range of invertebrates (eg when compared with 1973, 1998 & 1999 data see pg43, Yates et al, 2002). NB CEH surveys don't include mussel beds. ESFJC data showed good cockle recruitment in 1998 but not seemingly recorded in CEH survey. Biotope code used in baselines is version 97.06, updated recently 04.05. Need to convert biotopes.	Yes

			Indicators: HedMac biotope complex: spionids (*Pygospio*) take advantage of perturbations to get foothold. They stabilise sediment and then disappear once long-lived species become established. Change in proportion of HedMac.Pyg sub-biotope relative to other HedMac sub-biotopes could be an effective indicator of sediment changes. Declines in density of N hombergii, S.armiger and A.marina all associated with increased organic content (Yates et al, 2002), suggesting declines in these species could be used as indicators of organic enrichment. Indicator biotopes would be MacAre and MacAre.Mare	
Extent of mussel biotope	See Appendix 2 for extent of Wash mussel biotope			Yes: not a mandatory CSM attribute but mussel beds key conservation feature of the site.
Extent of cockle biotope	See Appendix 3 for extent of Wash cockle biotope			Yes: not a mandatory CSM attribute but cockle beds key conservation feature of the site
Species composition of representative or notable biotopes	No decline in biotope quality due to changes in species composition or loss of notable species, allowing for natural succession/known cyclical change. MacAre	Assessment of biotope quality through assessing species composition, where the biotope is representative of the site or contains a number of species of conservation importance. Assessing this attribute will require specialist taxonomic expertise. For details of assessment techniques see Davies *et al.*, 2001.	Where a change in species composition is known to be clearly attributable to natural succession, known cyclical change or mass recruitment or dieback of characterising species, then the target value should accommodate this variability. Where there is a change in biotope quality outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable. Dependant on future quantitative surveys	Yes: not a mandatory CSM attribute but Macoma, Arenicola and annelids beds key conservation feature of the site
Species population	Maintain age/size class structure & abundance of	Population structure and abundance should be assessed	Where there is a sizeable shift in the age/size class structure (i.e. loss of mature adults or recruitment failure) or	Yes: not a mandatory CSM

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measures – Population structure of a species. **- Presence or abundance of specified species**	mussel *Mytilus edulis* (see Appendix 2) and cockle *Cerastoderma edule* (see Appendix 3) Maintain abundance of named positive indicator species (see Appendix 4) No increase in presence or abundance of named negative indicator species: non-native *Ensis directus, Crassostrea gigas, Crepidula fornicata*	in terms of viability of the named species identified for the feature. For details of assessment techniques see Appendices 2 and 3. See also Davies *et al* 2001. Assessment of the presence or abundance of positive indicator species identified for the feature. For details of assessment techniques see Davies *et al*., 2001. Assessment of the presence or absence of negative indicator species identified for the feature. CEFAS *Ensis directus* surveys since 1998 (Palmer, 2003).	if disturbance causes a species of nature conservation importance to be lost, or if there is a significant reduction in abundance, then condition would be considered unfavourable. Increased abundance of negative indicator species i.e. those indicative of stressed habitats which would be detrimental to the feature as a whole, would also cause condition to be considered unfavourable. Abundance of *Ensis directus* cited as potential cause for poor productivity of shellfish on Daseley's Sand in recent years.	attribute but mussel, cockle, Macoma, Arenicola and annelids beds key conservation feature of the site. Invasive non-natives present in site.
Topography	No change in topography of the littoral sediment, allowing for natural responses to hydrodynamic regime. Topography as shown in EA beach profiles 1992-2006	Tidal elevation and shore slope to be assessed periodically. EA undertake beach profile surveys down transects around The Wash. Surveys from fixed point inland to Mean Low Water. Transects are spaced at intervals of 1km. For details of assessment techniques see Davies *et al*., 2001.	Obvious changes in topography in terms of an overall lowering (shallowing) of the shore slope may act as a trigger for further investigation. Scouring adjacent to sea defences, which lowers the shore slope, should be considered unfavourable. A suitable period over which to ascertain trends resulting in a net lowering of shore profiles is 5 years. Pethick (2002) indicated intertidal flat between Gibraltar Point and Witham lowering – particularly at Butterwick and Wrangle.	Yes: not a mandatory CSM attribute but changes in topography give an indication of the stability of the shore, whether erosion is occurring etc.

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
Other Notes
References: Bell & Walker (2007). Cockle suction dredging in The Wash & North Norfolk Coast European marine site. Part II – analysis of existing data. Unpublished report to Natural England Davies et al (2001). Marine Monitoring Handbook. JNCC Palmer (2003). The introduced razor fish *Ensis directus* in The Wash and North Norfolk. Shellfish News, No 16, Nov 2003. Pethick (2002). Coastal Data Analysis: The Wash. Study 3: long-term intertidal profile evolution modelling. Report to Environment Agency Posford Duvivier (1997). Wash extended shoreline evolution analysis. Report to Environment Agency University of Newcastle (1998). Management Options at North Sea Camp. Report to Environment Agency Yates et al (1993). The use of satellite imagery to determine distribution of surface sediments of The Wash. Estuarine, Coastal & Shelf Sciences, 36, 333-344. Yates et al (2002). Littoral sediments of The Wash and North Norfolk Coast SAC: The 1998 and 1999 surveys of intertidal sediment and invertebrates. English Nature Research Report 470.

Table 3e Site-Specific definitions of Favourable Condition – Subtidal sandbanks

Conservation Objective for this habitat type	To maintain the sub littoral sands and gravel habitats at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition				
Attribute	**Target**	**Method of assessment**	**Comments**	**Use for CA?**
Topography	No alteration in topography of the inshore sub littoral sediment, allowing for natural responses to hydrodynamic regime. Topography as shown on Admiralty Charts. Also Figure 8.7 and 8.8 of Foster-Smith & Sotheran (1999).	Assessment of the depth distribution/profile of the inshore sub littoral sediment and periodic comparison with baseline conditions. For details of assessment techniques see Davies *et al.*, 2001. Foster-Smith & Sotheran used AGDS supported by Admiralty Chart data to produce their bathymetric maps (Foster-Smith & Sotheran, 1999). Other potential data sources are from ESFJC AGDS / Sidescan surveys. Also EA shoreline monitoring programme bathymetric surveys (Uses side scan sonar. Along profiles to 15m depth. 1km spacing between profiles. Surveys undertaken once every 5 years. One survey available for entire Wash).	The depth distribution of the sediment has a direct influence on the structure and function of the system.	Yes
Sediment character: sediment type	No change in composition of sediment types across the feature, allowing for natural succession/ known cyclical change. Composition of sediment types as shown in Fig 1.3 Bailey, Coad & Bamber, 2005. Fig 7.2 and 9.2 of	Distribution of sediment types should be assessed across the whole feature and compared with baseline conditions. For details of assessment techniques see Davies *et al.*, 2001.	Where changes in sediment type are known to be clearly attributable to natural processes then the target value should accommodate this variability. Where extreme events cause a change in sediment type, then this may have caused a change in the structure of the feature, which may lead to the condition of the feature being considered as unfavourable.	Yes

	Foster-Smith & Sotheran, 1999.			
Distribution of biotopes	Maintain the distribution of biotopes in each sub-feature (gravel and sand communities, muddy sand communities), allowing for natural succession/ known cyclical change. Key biotopes listed in Appendix 5: Gravel & Sand communities sub-feature: CGS.VenBra (*Ophiura ophiura* beds) IGS. Fas.Lcon (*Lanice conchilega* beds)? Muddy Sand communities sub-feature: CMS.AbrNucCor (*Sabella pavonina* community; *Sabella discifera* / *Sabellaria* community; *Abra alba* community; dense *Ophiura albida* beds) IMS.FaMS.SpiSpi (*Scoloplos* / *Spiophanes* community) Distribution o f biotopes as set out in Fig 7.3 and 7.4 of Foster-Smith & Sotheran, 1999, and Fig 2.1 and 2.2 of Bailey, Coad & Bamber, 2005.	Assessment of the distribution of range of biotopes identified for the site. For details of assessment techniques see Davies *et al.*, 2001.	Where changes in distribution are known to be clearly attributable to cyclical succession or expected shifts in distribution then the target value should accommodate this variability. Where there is a change in biotope distribution outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable Biotopes of The Wash have been mapped using two different survey techniques. One is based on Environment Agency 'Wash grid' surveys which involves 3 day grab samples being taken at each survey site. 4 surveys have been undertaken – in 1991, 1993, 1999 and 2002. The number of sites surveyed varied each year (66, 14, 20, 66 respectively) (collectively analysed in Bailey, Coad & Bamber 2005). The other is based on acoustic techniques (AGDS, Sidescan Sonar) which were ground-truthed by grab and video (Foster-Smith & Sotheran, 1999). Difficulties arise in comparing the two sets of survey reports as the 1997 UK marine biotope classification used by Foster-Smith & Sotheran was replaced in 2004 and the updated version was used by Bailey, Coad & Bamber. The authors have also reported difficulties in assigning Wash samples to the national classification so have developed their own 'Wash biotopes'. Differences may also arise due to the different survey techniques used – although this may be minimised because Foster-Smith & Sotheran produced separate infaunal and epifaunal biotope maps (ie based on separate analysis of video and grab ground-truth data). Appendix 5 lists subtidal biotopes in The Wash using the national biotope classification but highlighted local distinctiveness where relevant based on the two reports. Foster-Smith & Sotheran, 1999 is probably the best baseline for the whole site as the survey covered the whole site whereas The Wash grid surveys only covered The Wash.	Yes

			Points of note: – deep central area of Wash, very stable and diverse . It's extent and distribution has been mostly consistent over the 12 years of EA surveys (Bailey, Coad & Bamber, 2005). -Marked change from mixed sediment (muddy sands) to fine sediments (coarser, cleaner sands) in north-west and south-east Wash and corresponding change in biotope (see Bailey, Coad & Bamber, 2005) -Abundance of non-native *Ensis directus* in 2002 Wash surveys.	
Extent of sub-feature	No change in extent of inshore sublittoral sediment biotopes or sub-feature (gravel and sand communities, muddy sand communities) identified for the site allowing for natural succession / known cyclical change	Assessment of the extent of biotopes identified for the site because of their nature conservation importance. For details of assessment techniques see Davies et al, 2001.	Where there is a clearly established natural variation in extent or in cyclical succession between biotopes, then the target value should accommodate this variability. Where there is a change in extent outside the expected variation or a change in the structure of the sub-feature leading to a loss of the site, then condition should be considered unfavourable.	Yes although not a mandatory CSM attribute
Species population measures: **Presence or abundance of specified species**	No increase in presence or abundance of negative indicator species (non-native American razor shell *Ensis directus*, Pacific oyster *Crassostrea gigas*, Slipper limpet *Crepidula fornicata*).	Assessment of the presence or abundance of positive/negative indicator species identified for the feature. For details of assessment techniques see Davies *et al.*, 2001. CEFAS have undertaken regular surveys of *Ensis directus* since 1999, using Hamon or Day grabs (Palmer 2003).	Where there is a sizeable shift in the age/size class structure (i.e. loss of mature adults or recruitment failure) or if disturbance causes a species of nature conservation importance to be lost, or a significant reduction in abundance then condition would be considered unfavourable. Increased abundance of negative indicator species i.e. those indicative of stressed habitats or polychaete worms indicative of organic pollution, which would be detrimental to the feature as a whole, would also cause the condition of the feature to be considered unfavourable. CEFAS hamon grab surveys have estimated adult populations of 200 per square metre in 1999 (Palmer, 2003). Distribution seems concentrated in south and east side of Wash ie Nene to Thornham although can occur in other areas (eg off Long Sand, Roger, Scullridge) Current population is estimated as exceeding 10,000 tonnes (Addison et al, 2006). Large settlements can occur but populations seem extremely sporadic and frequently fail	Yes not a mandatory CSM attribute but non-natives present in site which can have a serious negative impact on native communities

			altogether. There are concerns about inter-specific competition with other filter feeders including mussel and cockle.	
Audit Trail				
Rationale for limiting standards to specified parts of the site				
Rationale for site-specific targets (including any variations from generic guidance)				
Rationale for selection of measures of condition (features and attributes for use in condition assessment) (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).				
Other Notes				
References Addison, Palmer, Lart, Misson & Swarbick, 2006. Development of a suitable dredge for exploitation of razorfish (*Ensis directus*) in The Wash. CEFAS & Seafish Report. Davies et al. 2001. Marine Monitoring Handbook. JNCC. Bailey, Coad & Bamber, 2005. Wash Sublittoral Grab Survey Report 1991, 1993, 1999 and 2002. Draft Ecomaris Report to English Nature. Foster-Smith & Sotheran, 1999. Broadscale remote survey and mapping of sublittoral habitats and biota of The Wash and the Lincolnshire and the north Norfolk coasts. English Nature Research Reports, Number 336. JNCC, 2004. Common Standards Monitoring Guidance for inshore sublittoral sediment habitats. JNCC Feb 2004. Palmer, 2003. The introduced razor fish *Ensis directus* in The Wash and north Norfolk. Shellfish News, No 16 Nov 2003.				

Table 3f Site-Specific definitions of Favourable Condition – *Sabellaria spinulosa* (ross worm) Reef

Conservation Objective for this habitat type	To maintain the *Sabellaria spinulosa* reef habitats at this site in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition				
Attribute	**Target**	**Method of assessment**	**Comments**	**Use for CA?**
Distribution of reef biotope. Spatial arrangement of biotopes at specified locations	Assess the geographic distribution of specified biotopes identified for the site. Assess the zonation pattern or the juxtaposition of specified biotopes. Baseline distribution as set out in Jessop & Stoutt, 2006.	Maintain the distribution and/or spatial arrangement of biotopes, allowing for natural succession/known cyclical change	Most reef is concentrated in the Lynn Deeps, The Well area. However, reef also occurs in the Boston Deeps, Boston Lower Road, East of Roger Sand and intertidally (at LWM) at Inner West Mark Knock. See guidance on defining reef, and comments on baseline and considerations in selecting survey techniques in extent attribute section above. As noted above the target may need to be increased in future as understanding of reef distribution in relation to potentially damaging activities such as brown shrimp trawling increases. Where changes in distribution/spatial pattern are known to be clearly attributable to cyclical succession or an expected shift in distribution then the target value should accommodate this variability. Where there is a change in biotope distribution/spatial pattern outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.	Yes
Biotope composition of reef	Repeated assessment of overall biotope composition or a subset of specified biotopes identified for the site. Wash reef biotope identified in Foster-Smith & Sotheran, 1999. They identified two *Sabellaria* biotopes (based on 97.06 classification): CMX.SspiMx.reef - Sabellaria (super-abundant, including	Maintain the variety of biotopes identified for the site, allowing for natural succession or known cyclical change.	Where changes in biotope composition are known to be attributable to natural processes (e.g. winter storm/flood events, changes in supporting processes or mass recruitment or dieback of characterising species) then the target value should accommodate this variability. Where there is a change in biotope composition outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.	Yes

	reefs) and CMX.SspiMx - Sabellaria / Lanice (see pps 58-59).			
Topography	No alteration in topography of the inshore sub littoral sediment, allowing for natural responses to hydrodynamic regime.	Assessment of the depth distribution/profile of the inshore sub littoral sediment and periodic comparison with baseline conditions. For details of assessment techniques see Davies *et al.*, 2001.	*S. spinulosa* often favours slope areas. Where changes in topography are known to be clearly attributable to natural processes then the target value should accommodate this variability. Where extreme events cause a change in topography, then this may have caused a change in the structure of the feature, which may lead to the condition of the feature being considered as unfavourable.	Yes: not a CSM attribute for this feature but reef known to favour slopes
Sediment character: sediment type	No change in composition of sediment types across the feature, allowing for natural succession/ known cyclical change.	Distribution of sediment types should be assessed across the whole feature and compared with baseline conditions. For details of assessment techniques see Davies *et al.*, 2001	*S. spinulosa* typically associated with edges of sandbanks or areas where there are sand waves. Where changes in sediment type are known to be clearly attributable to natural processes then the target value should accommodate this variability. Where extreme events cause a change in sediment type, then this may have caused a change in the structure of the feature, which may lead to the condition of the feature being considered as unfavourable.	Yes: not a CSM attribute for this feature but reef known to favour particular subtrates

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) **(**The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).

Other Notes
References: Davies et al, 2001. Marine Monitoring Handbook. JNCC Foster-Smith & Sotheran (1999). Broad scale remote survey and mapping of sublittoral habitats and biota of The Wash and the Lincolnshire and the North Norfolk Coasts. English Nature Research report 336. Foster-Smith & Whyte (2001). *Sabellaria spinulosa* reef in The Wash and North Norfolk cSAC and its approaches: Part I Mapping techniques and ecological assessment. English Nature Research Report 545. Foster-Smith (2001) *Sabellaria spinulosa* reef in The Wash and North Norfolk cSAC and its approaches: Part II Fine scale mapping of the spatial and temporal distribution of reefs and the development of techniques for monitoring condition. English Nature Research Report 544. Foster-Smith & Hendrick (2003). *Sabellaria spinulosa* reef in The Wash and North Norfolk cSAC and its approaches: Part III Summary of Knowledge, recommended monitoring strategies and outstanding research requirements. English Nature Research Report 543. Gubbay S (2007). Defining and managing *Sabellaria spinulosa* reefs: Report of an inter-agency workshop 1-2 May, 2007. JNCC Report 405 Hendrick & Foster-Smith (2006). *Sabellaria spinulosa*: a scoring system for evaluating 'reefiness' in the context of the Habitats Directive. J Mar. Biol. Ass. UK 86: 66-677 Holt et al (1997). Sensitivity and vulnerability to man-induced change of selected communities: intertidal brown algal shrubs, *Zostera* beds and *Sabellaria spinulosa* reefs. Jessop & Stoutt (2006). Broad scale *Sabellaria spinulosa* distribution in the central Wash (Southern North Sea), as predicted with the Acoustic Ground Discriminating System (AGDS) Roxann™. Draft report by ESFJC for English Nature. Pearce et al (2007). Recoverability of *Sabellaria spinulosa* following aggregate extraction. Marine Ecological Surveys Ltd report for Natural England, the Crown Estate, Marine Ecological Surveys Ltd & Resource Management Assoc.

Table 3g Site-Specific definitions of Favourable Condition – Otter

Conservation Objective for species	To maintain the designated species in favourable condition, which is defined in part in relation to their population attributes. Favourable condition is defined at this site in terms of the following site-specific standards:
Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)	

Site-specific standards defining favourable condition				
Attribute	**Target**	**Method of assessment**	**Comments**	**Use for CA?**
Food availability	Fish biomass stays within expected natural fluctuations.	Environment Agency, local fishery trusts data.	Accurate information on fish stocks is difficult to obtain according to a recent review of data from England, produced by the Environment Agency (Research and Development Technical Report TR W256, Otters- Fish Prey Availability, Biomass and Sustainability) and may be extremely difficult to interpret. However, there is an obligation to monitor fish communities under the Water Framework Directive and a more comprehensive monitoring system is being instigated by the Environment Protection Agencies.	Yes
Habitat requirements coastal areas: Freshwater for rinsing sea salt from the fur	No reduction in overall availability of freshwater.	Number of streams or small pools on or near the site	Freshwater may be outside the site boundary. Due to the distance otters can range, this attribute can only be indicative for a site. Can be assessed on site and using map information.	Yes
Toxic chemicals	No increase in pollutants potentially toxic to otters.	Monitoring by relevant Environment Agency. Specialist group to meet at intervals to identify national trends and extract information on individual SACs.	Liaison between Country Agency Staff and EA essential.	Yes
Otter population - coastal	No decline in otter distribution or abundance. Interpretation of broadscale maps from 2000-02 national survey report suggests new positives found on river systems **close to** site on River Steeping and Babingley. There were no on-going positives and many negatives. NOTE: most recent	National surveys undertaken at approx 7 year intervals (surveys undertaken in 1977-79, 1984-86, 1991-94, 2000-2002). Survey sites selected at 5-8km intervals along main rivers / coasts / lake shore. Survey carried out in **alternate** 50-km squares. At each site 600m survey undertaken along one bank by searching for otter signs	The baseline data suggests otter are relatively few and far between in The Wash, with no on-going positive sites and most sites negative for otter presence, which contrasts with adjacent areas such as the Louth Coastal and Cam LEAP (Local Environment Agency Plan) areas. It is worth noting however, that there have been sightings in or close to the site, including in the most recent survey, which indicate otter can use habitat within the site. So the site may become more	Yes

	survey only covered the coast from Nene to Blakeney and a short section near Friskney (due to survey methodology of only surveying alternate 50 km-squares). Interrogation of full survey data set held on National Biodiversity Network reveals otter present in Wash at Snettisham coastal marshes (1978) and close to site R. Babingley (Sluice Gates nr Vinegar Middle, 2000; Hillington, Castle Rising, Wootton – all 1978), R. Ingol (Sluice Gate, 1978), R. Steeping (Wainfleet all Saints, Firsby Clough - both 2001).	usually 300m upstream and downstream of a bridge or other access point. Survey halted at first positive sign of an otter. Survey noted whether location is positive (and whether this is a new positive or on-going positive) or negative for otter.	important as otter extend their range into suitable habitats as their population recovery continues.	
Anthropogenic mortality	Otter populations not significantly impacted by human induced kills.	Road and rail casualties. -Deaths due to fishing gear etc. -Any site where there is a feature causing otter mortality. -Data from EA's reporting system.. Obtain views from EA on implications of recent data. -JNCC otter data on the CITES database.	Monitoring this attribute, where appropriate should provide data for installing mitigation. This attribute is not mandatory and should be assessed at a local level for individual sites where anthropogenic mortality appears to be a problem.	Disc

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
Rationale for selection of measures of condition (features and attributes for use in condition assessment) **(**The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).

Other Notes
Reference: Common Standards Monitoring Guidance for Terrestrial Mammals. JNCC, August 2004

Appendix D Spreadsheet of Policy Change and Summary Notes

Original Screening September 2012		Review November 2013			Review June 2016		
Strategic Policy Number	Assessed LSE	Strategic Policy Number	Changes to Policy	Assessed LSE	Strategic Policy Number	Changes to Policy	Assessed LSE
SP1 A Sustainable Pattern of Places	o	SP1 Sustainable Pattern of Places		o	**SP1 Sustainable Pattern of Places**	Including brownfield sites for market housing in small / medium villages.	o
		SP1A Sustainable Development	This policy is the same as 'Option 2 for growth' in previous assessment. Supporting text now includes reference to the natural environment and the need to take into account other Core Strategy Policies (SP16) to ensure the protection of internationally designated features.	o	**SP1A Sustainable Development**	Sets out the aims for planning in accordance with the NPPF.	o
Growth Option 2 - Moderately dispersed distribution of growth	-	SP1A Housing Growth and the Location of Inland Growth	Same as previous Option 2 for growth. Supporting text now includes reference to the natural environment and the need to take into account the Core Strategy Policis (SP16) to ensure the protection of internatioanlly-designated features.	o	SP2 Housing Growth and the Location of Inland Growth	Revised housing growth figures - housing target increases from 7,545 to 7,815 but decreases in the Coastal Flood Hazard area (down from 1,605 to 1,281) with the increase being in the District outside the Coastal Flood Hazard area. Consequently, as previously (2012 and 2013) this policy was concluded as having no LSE when taking into account other Core Strategy policies (i.e. Strategic Policy 16: Biodiversity and Geodiversity).	o
						In addition, when examining the locations of the allocations, many sites are over 7km away from the nearest European site, furthermore, where allocated sites are closer there are other constraints that would minimise any likelihood of an increase in visitor pressure such as lack of circular PRoW from settlements to the European site, and busy roads creating an effective barrier to resident recreational use in the direction of the European site, lack of direct vehicular access from allocated sites to the European sites. Essentially, all elements relating to sites and impacts on the European sites can therefore be ruled out on distance (for the most), or site specific focusses on access, and only in one possible case (Marshchapel) in general distance combined with limited PRoW access means that it is unlikely that a measurable increase at the specific European site in close proximity would be impacted in any way.	o
SP3 Affordable and Low Cost Housing	o	SP2 Delivering Affordable Housing		o	**SP3 Delivering Affordable Housing**	Threshold raised from 5 to 10.	o
SP4 Rural Exceptions	o	SP3 Rural Exceptions		o	**SP4 Rural Exceptions**	Removal of cross-subsidy on rural exception sites.	o
SP5 Single Plot Exceptions	o	SP4 Single Plot Exceptions		o	**SP5 Single Plot Exceptions**	Period before sale altered.	o
		SP5 Design		o	**SP6 Design**		o
SP7 Historic Environment	+	SP5A Historic Environment	Original landscape SP split into three, including SP5A.	o	**SP7 Historic Environment**	Edited to include non-des sites and shop fronts & Article 4 direction.	o

Original Screening September 2012		Review November 2013			Review June 2016		
Strategic Policy Number	Assessed LSE	Strategic Policy Number	Changes to Policy	Assessed LSE	Strategic Policy Number	Changes to Policy	Assessed LSE
SP8 Gypsies, Travellers and Showpeople	o	SP6 Gypsies, Travellers and Showpeople		o	**SP8 Gypsies, Travellers and Showpeople**		o
SP9 Inland Employment	o	SP7 Inland Employment		o	**SP9 Inland Employment**	Ammended amount of employment land (all in land and some distance form designated sites).	o
SP10 Town Village Centres and Shopping	o	SP8 Town Village Centres and Shopping		o	**SP10 Town Village Centres and Shopping**	Supporting text regarding town centre boundaries and floor space.	o
SP11 Widening the Inland Tourism and Leisure Economy	-	SP9 Widening the Inland Tourism and Leisure Economy	Plan level protection considered to be covered by other policies.	-	**SP11 Widening the Inland Tourism and Leisure Economy**	Plan level protection considered to be convered within other policies.	-
		SP10 Inland Flood Risk	Requirements set on developments in flood risk areas.	o	**SP12 Inland Flood Risk**		o
SP13 Coastal East Lindsey	o	SP11 Coastal East Lindsey		o	**SP13 Coastal East Lindsey**	Additional detail on what kind of development will be permitted on Skegness Foreshore, and additional section regarding prevention of coalesence of Chapel St Leonards, Ingoldmells and Addlethorpe, as well as alteration to supporting text regarding location of self-service holiday accomodation.	o
		SP12 Transport and Accessibility	Sets out the needs for transport links to be maintained enabling access for the enitre District.	o	**SP14 Transport and Accessibility**		o
SP15 Landscape	+	SP14 Landscape	Broken down into 3 separate policies (SP5A Historic Environment, SP15 Green Infrastructure, SP16 Biodiversity and Geodiversity). All above same level of LSE (o).	o	**SP15 Landscape**		o
SP16 Biodiversity and Geodiversity		SP16 Biodiversity and Geodiversity	Original landscape SP split into three, including SP16.	+	**SP16 Biodiversity and Geodiversity**	Supporting text on vetenal trees.	+
		SP15 Green Infrastructure	Original landscape SP split into three, including SP15.	+	**SP17 Green Infrastructure**		+
SP18 Open Space, Sport and Recreation	+	SP13 Open Space, Sport and Recreation		+	**SP18 Open Space, Sport and Recreation**	Marketing period from 18 to 12 months.	+
SP19 Renewable Energy	-	SP17 Renewable Energy	Supporting text now includes reference to designated sites and the need for rigourous assessment of imapcts, and other policies within the Core Strategy are referred to, including SP16. These conditions provide protection against the implementation of any policy that may have an LSE on any designated sites.	o	**SP19 Renewable Energy**	Alteration to definition of small scale and additional text on single glazing.	o
SP20 Infrastructure and S106 Obligations	+	SP18 Infrastructure and S106 Obligations		+	**SP20 Infrastructure and S106 Obligations**		+

Original Screening September 2012		Review November 2013			Review June 2016		
Strategic Policy Number	Assessed LSE	Strategic Policy Number	Changes to Policy	Assessed LSE	Strategic Policy Number	Changes to Policy	Assessed LSE
KEY		Key					
Current (final) policy		Potential for adverse effect	-				
Change from previous version		No significant effect	o				
Current LSE but with changes to policy		Potential positive effect, at the plan level	+				