Immingham Green Energy Terminal

Shadow Habitats Regulations Assessment: Appendices

Associated British Ports

August 2023

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1 HRA Baseline

1.1 Introduction

1.1.1 This appendix provides baseline ecological information relevant to the Shadow HRA. This information is a summary of baseline data provided in **Chapter 9: Nature Conservation (Marine Ecology) [TR030008/APP/6.2])** and **Chapter 10: Ornithology [TR030008/APP/6.2])** but focused specifically on features of relevant designated sites.

1.1.2 This report has been structured as follows:

- **Section 2: Designated sites** provides a summary of citation information for the Humber Estuary European Marine Site (EMS), the Wash and North Norfolk Coast Special Area of Conservation (SAC) and Greater Wash Special Protection Area (SPA).
- **Section 3: Marine ecology features** summaries baseline information on benthic habitats and species, lamprey and seal features of relevant designated sites; and
- **Section 4**: **Coastal waterbird features** summaries baseline information on coastal waterbirds features of relevant designated sites.

1.1.3 This appendix is also supported by the following figures and annexes:

- **Figure A-1**: Internationally and nationally designated conservation sites**;**
- **Figure A-2**: Project specific subtidal benthic sampling stations;
- **Figure A-3**: Annual grey seal pup counts at Donna Nook (Source: Ref 1-1);
- **Figure A-4**: Aerial counts of grey seals at Donna Nook (Source: Ref 1-1);
- **Figure A-5**: Monitoring locations of coastal waterbird surveys in the vicinity of the Project;
- **Figure A-6**: The 5-year mean peak number of birds in Sector C during different winter months;
- **Figure A-7**: The broad distribution of coastal waterbirds in Sector C;
- **ANNEX A.1**: Bird data for Sector C (between the Immingham Oil Terminal Jetty and Oldfleet Drain as shown in **Figure A-5**), covering the period October 2021 to September 2022 which covers winter, passage and summer months. In addition, a summary of surveys undertaken on terrestrial land within the proposed Project footprint to understand the potential for supporting coastal waterbird species is also provided; and Annex A.2: Summary bird data for Sectors A and B.

1.2 Designated sites

1.2.1 The Project falls within the boundaries of the Humber Estuary SAC, SPA and Ramsar site (collectively forming the Humber EMS; **Figure A-1**). For the Humber Estuary SAC, the primary reason for designation is the presence of two broad scale habitats, 1130 Estuaries and 1140 Mudflats and sandflats not covered by seawater at low tide (Ref 1-2). These broad scale habitats support other more specific habitats which are qualifying features but not a primary reason for designation. These are:

- 1110 Sandbanks which are slightly covered by sea water all the time;
- 1150 Coastal lagoons (identified as a priority feature);
- 1310 *Salicornia* and other annuals colonizing mud and sand;
- 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*);
- 2110 Embryonic shifting dunes;
- 2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes");
- 2130 Fixed coastal dunes with herbaceous vegetation ("grey dunes") (identified as a priority feature); and
- 2160 Dunes with *Hippopha rhamnoides*.

1.2.2 Alongside the habitats for which the SAC is designated, there are also three mobile species listed on Annex II of the EU Habitats Directive (92/43/EEC) (the Natural Habitats and Wild Fauna and Flora Directive) included in the designation (Ref 1-2), namely:

- 1095 Sea lamprey (*Petromyzon marinus*);
- 1099 River lamprey (*Lampetra fluviatilis*); and
- 1364 Grey seal (*Halichoerus grypus*).

1.2.3 Qualifying features of the Humber Estuary SPA and Humber Estuary Ramsar site are shown in **Table A-1**: and Table A-2 respectively.

Table A-1: Qualifying features of the Humber Estuary SPA (Ref 1-3)

Internationally Important Populations	
Internationally Important Populations of Regularly Occurring Annex 1 Species	
Breeding Species Population	
Bittern *Botaurus stellaris*	2 calling males (10.5% of the GB population)
Marsh Harrier *Circus aeruginosus*	10 breeding females (6.3% of the GB population)
Avocet *Recurvirostra avosetta*	64 pairs (8.6% of the GB population)
Little Tern *Sternula albifrons*	51 pairs (2.1% of the GB population)

Internationally Important Populations	
Wintering Species Population	
Bittern	4 (4.0% of the GB population)
Hen harrier *Circus cyaneus*	8 (1.1% of the GB population)
Bar-tailed Godwit *Limosa lapponica*	2,752 (4.4% of the GB population)
Golden Plover *Pluvialis apricaria*	30,709 (12.3% of the GB population)
Avocet *Recurvirostra avosetta*	54 (1.7% of the GB population)
On passage Species population	
Ruff *Calidris pugnax*	128 (1.4% of the GB population)
Internationally Important Populations of Regularly Occurring Migratory Species	
Wintering Species Population	
Teal† *Anas crecca*	2,322 (<1% of the population)
Wigeon† *Mareca penelope*	5,044 (<1% of the population)
Mallard† *Anas platyrhynchos*	2,456 (<1% of the population)
Turnstone† *Arenaria interpres*	629 (<1% of the population)
Common Pochard† *Aythya ferina*	719 (<1% of the population)
Greater Scaup† *Aythya marila*	127 (<1% of the population)
Brent Goose† *Branta bernicla*	2,098 (<1% of the population)
Goldeneye† *Bucephala clangula*	467 (<1% of the population)
Sanderling† *Calidris alba*	486 (<1% of the population)
Dunlin *Calidris alpina*	22,222 (1.7% of the Northern Siberia/Europe/Western Africa population)
Red Knot *Calidris canutus*	28,165 (6.3% of the North-eastern Canada/Greenland/Iceland/North-western Europe population)
Ringed Plover† *Charadrius hiaticula*	403 (<1% of the population)
Oystercatcher† *Haematopus ostralegus*	3503 (<1% of the population)
Black-tailed Godwit *Limosa*	1,113 (3.2% of the Icelandic Breeding population)
Curlew† *Numenius arquata*	3,253 (<1% of the population)

Internationally Important Populations	
Grey Plover† *Pluvialis squatarola*	1,704 (<1% of the population)
Shelduck *Tadorna tadorna*	4,464 (1.5% of the North-western Europe population)
Redshank *Tringa totanus*	4,632 (3.6% of the Eastern Atlantic Wintering population)
Northern Lapwing† *Vanellus vanellus*	22,765 (<1% of population)
On passage Species Population	
Sanderling†	818 (<1% of the population)
Dunlin	20,269 (1.5% of the Northern Siberia/Europe/Western Africa population)
Red Knot	18,500 (4.1% of the North-eastern Canada/Greenland/Iceland/North-western Europe population)
Ringed Plover†	1,766 (<1% of the population)
Black-tailed Godwit	915 (2.6% of the Icelandic Breeding population)
Whimbrel† *Numenius phaeopus*	113 (<1% of the population
Grey Plover†	1,590 (<1% of the population)
Greenshank† *Tringa nebularia*	77 (<1% of the population)
Redshank	7,462 (5.7% of the Eastern Atlantic Wintering population)
Internationally Important Assemblage of Waterfowl	
Waterfowl assemblage	153,934 waterfowl
†Species with this symbol do not represent a population that is > 1% of the international threshold but are included in the waterfowl assemblage.	

Table A-2: Qualifying marine features of the Humber Estuary Ramsar Site (Ref 1-4)

Ramsar Criterion	
Criterion 1 – Natural wetland habitats that are of international importance	
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.	
Criterion 3 – Supports populations of plants and/or animal species of international importance	
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.	
Criterion 5 – Bird Assemblages of International Importance	
Wintering waterfowl	153,934 waterfowl (5-year peak mean 1998/99-2002/3)
Criterion 6 – Bird Species/Populations Occurring at Levels of International Importance	
Species	Spring/Autumn Population (5-year peak mean 1996-2000)
Golden Plover	17,996 (2.2% of the Iceland & Faroes/East Atlantic population)
Red Knot	18,500 (4.1% of the West & Southern African wintering population)
Dunlin	20,269 (1.5% of the West Siberia/West Europe population)
Black-tailed Godwit	915 (2.6% of the Iceland/West Europe population)
Redshank	7,462 (5.7% of the population)
Species	Wintering Population (5-year peak mean 1996/7-2000/1)
Shelduck	4,464 (1.5% of the North-western Europe Population)
Golden Plover	30,709 (3.8% of the Iceland & Faroes/East Atlantic population)
Red Knot	28,165 (4.1% of the West & Southern African wintering population)
Dunlin	22,222 (1.7% of the West Siberia/West Europe population)
Black-tailed Godwit	1,113 (3.2% of the Iceland/West Europe population)
Bar-tailed Godwit	2,752 (2.3% of the West Paleartic population)
Criterion 8 – Internationally important source of food for fishes, spawning grounds, nursery and/or migration path	
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.	

1.2.4 The Greater Wash SPA is designated for a range of seabird and diving bird species and is located approximately 20km from the Project. Qualifying features of this site is shown in **Table A-3**.

Table A-3: Qualifying marine features of the Greater Wash SPA

Internationally Important Populations	
Internationally Important Populations of Regularly Occurring Annex 1 Species	
Breeding Species Population	
Little Tern *Sternula albifrons*	798 pairs (42% of GB breeding population)
Common Tern *Sterna hirundo*	510 pairs (5.1% of GB breeding population)
Sandwich Tern *Sterna sandvicensis*	852 pairs (35% of GB breeding population)
Wintering Species Population	
Little Gull *Hydrocoloeus minutus*	1,255 (no current GB population estimate)
Red-throated Diver *Gavia stellata*	1,407 (8.3% of GB non-breeding population)
Internationally Important Populations of Regularly Occurring Migratory Species	
Common Scoter *Melanitta nigra*	3,449 (0.6% of biogeographic population)

1.2.5 The Wash and North Norfolk Coast SAC supports common seal *Phoca vitulina* as a qualifying feature. This site is located over 75km from the Project but it is acknowledged that there could be potentially connectivity between the Wash and North Norfolk Coast SAC and the Humber Estuary with respect to common seal movements.

1.3 Marine ecology features

Data and information sources

1.3.1 Current baseline conditions have been determined by a desk-based review of available information. A project-specific subtidal benthic survey has also been undertaken to characterise seabed habitats and species within and near to the proposed dredge footprint.

1.3.2 The main desk-based sources of information that have been reviewed to inform the current baseline description within the vicinity of the Project include:

Benthic habitats and species

- Recent Port of Immingham Benthic Surveys between the Immingham Oil Terminal and Eastern Jetty. This included ten intertidal stations sampled in September 2021 using a 0.01 m² hand-held core and ten subtidal stations that were sampled in September 2021 using a 0.1 m² Day Grab. In addition, six stations were sampled at dredge disposal sites HU060 and HU056 in September 2021 using a 0.1 m² Day Grab (four within each of the disposal sites and two nearby to each of the disposal sites);
- Able Marine Energy Park Benthic Surveys: The results of intertidal benthic surveys (undertaken in 2015 and 2016) using a 0.01 m² core sample and a subtidal survey in 2016 using a 0.1 m² Day Grab in the North Killingholme area (Ref 1-5);
- Humber Estuary SAC Intertidal Sediment Survey: Ecological survey work undertaken in 2014 to monitor and assess the intertidal mudflat and sandflat communities of the Humber Estuary (Ref 1-6);
- Immingham Outer Harbour ("IOH") Benthic Surveys: Intertidal sampling at 14 stations (using a Day Grab (0.06 m²) or Van Veen Grab (0.03 m²) and subtidal sampling at 17 stations in the Port of Immingham area in 2009 (Ref 1-7);
- South Humber Channel Marine Studies: Benthic sampling in the intertidal (using a 0.01 m² core from 36 stations) and subtidal (0.1 m² Hamon grab from 30 stations) between the Humber Sea Terminal and Immingham Port undertaken in 2010 (Ref 1-8);
- HU056 Disposal Site Monitoring: Benthic invertebrate samples collected at five sites within the disposal sites and at six locations nearby (triplicate samples at all locations) in 2017 (Ref 1-9); and
- Clay Huts Disposal Site Benthic Monitoring: Benthic invertebrate samples collected from four stations in 2008 from within and near to the Clay Huts disposal sites (Ref 1-7).

1.3.3 Site specific surveys that have been undertaken to underpin the assessments include:

- **Subtidal benthic sampling:** Eight subtidal stations were sampled in July 2022 (using a 0.1m² Day Grab) within and near to the Project footprint. The location of the survey stations is shown in **Figure A-2**. All the samples collected were analysed for macrofaunal analysis (faunal composition, abundance and biomass), Particle Size Analysis (PSA) and Total Organic Carbon (TOC). The methods and results of these surveys are included in **Appendix 9.A of Chapter 9 of the ES [TR030008/APP/6.4]** and summarised in this appendix.

Lamprey

- Review of fish population data in the Humber Estuary: A review of available data to describe the fish populations in the Humber Estuary (Ref 1-10);

Seals

- Donna Nook Seal Counts: The latest pup counts available from the Lincolnshire Wildlife Trust for winter 2021/22 and 2020/21;
- Distribution maps of cetacean and seabird populations in the North-East Atlantic: Distribution maps of cetaceans and seabirds based on survey data in the North-East Atlantic between 1980 and 2018 collated and standardised (Ref 1-11);
- At-sea Distribution Data for Grey and Harbour Seals: The latest habitat-based predictions of at-sea distribution for grey and harbour seals in the British Isles (including the Humber Estuary region) estimated using data from animal-borne telemetry tags by the Sea Mammal Research Unit (SMRU) (Ref 1-12);
- Donna Nook Telemetry Data; The results of the tagging of 11 grey seals from the Donna Nook colony to understand the movements of grey seals in the region (Ref 1-13);
- Special Committee on Seals (SCOS) Annual Report: Information on the status of seals around the UK coast is reported annually by the SMRU advised SCOS (Ref 1-14);

Benthic habitats and species

Humber Estuary overview

1.3.4 The Humber Estuary supports a wide variety of marine habitats including intertidal mudflats and sandflats, intertidal seagrass beds, coastal lagoons, saltmarsh, reedbeds, subtidal sandbanks and mixed sediment habitats (Ref 1-15; Ref 1-16; Ref 1-6).

1.3.5 The intertidal area of the Humber Estuary is extensive, covering approximately 10,000 ha, of which more than 90% is mudflat and sandflat (Ref 1-17). The largest areas of mudflat occur in the outer Humber Estuary at Spurn Bight and Pyewipe, at Foul Holme and Skitter Sand in the mid Humber Estuary and across most of the Estuary width in the inner estuary above the Humber Bridge. This habitat changes from moderately exposed sandy shores at the mouth of the Humber Estuary to sheltered muddy shores within the main body of the Estuary and up into the tidal rivers. The mid and upper Humber Estuary is characterised by fringing reedbeds *Phragmites australis* on the upper shore while saltmarshes are present along the north bank and on the Lincolnshire coast east of Cleethorpes (Ref 1-17; Ref 1-18; Ref 1-19; Ref 1-6).

1.3.6 The subtidal area of the Humber Estuary is approximately 16,800 ha in extent (Ref 1-17). The subtidal environment of the Humber Estuary is highly dynamic and varies according to the composition of the bottom sediments, salinity, sediment load and turbidity and dissolved oxygen. Many of these factors vary with the season or state of the tide. Subtidal sand (including muddy sand) is the predominant subtidal sediment type in the Humber Estuary. The high mobility of sediments and high turbidity means that this habitat is typically relatively impoverished with a limited fauna characterised by very low densities of

opportunistic species and species adapted to these conditions (Ref 1-18; Ref 1-19; Ref 1-17).

1.3.7 Invasive marine species known to occur in the Humber Estuary region include slipper limpet *Crepidula fornicata*, Chinese mitten crab *Eriocheir sinensis*, Pacific oyster *Magallana gigas* and acorn barnacle *Austrominius modestus* (Ref 1-16; Ref 1-8; **Appendix 9.A of Chapter 9 of the ES [TR030008/APP/6.4]**).

Intertidal habitats and species in the Port of Immingham area

1.3.8 Intertidal benthic surveys undertaken in the Port of Immingham area in 2021 recorded sandy mud habitat with the number of taxa found in the samples ranging from four to 15. The number of individuals was also highly variable and ranged from 1,100 organisms per m² to 40,600 organisms per m². The samples were predominantly characterised by nematodes, the oligochaetes *Tubificoides benedii* and Enchytraeidae spp., the mud shrimp *Corophium volutator*, the mudsnail *Peringia ulvae*, Baltic tellin *Limecola balthica* as well as the polychaetes *Hediste diversicolor* and *Pygospio elegans* recorded in the samples. These species dominated the assemblage and contributed almost entirely to the total abundances of organisms recorded at most of the sites surveyed.

1.3.9 The assemblage recorded was considered typical of the community recorded on mudflats in the nearby area (Ref 1-7; Ref 1-8; Ref 1-5). For example, intertidal surveys at North Killingholme (located approximately 3km from the Project) in 2015 and 2016 also recorded a benthic assemblage characterised by species such as *Corophium volutator, Tubificoides benedii, Pygospio elegans, Hediste diversicolor, Limicola balthica* and nematodes with a broadly similar total number of individuals in the samples (up to around 50,000 organisms per m²) (Ref 1-5).

1.3.10 Many of the species recorded in the samples are considered prey species for coastal waterbirds such as polychaetes, Baltic tellin *Limecola balthica*, mudsnail *Peringia* spp. and mudshrimp *Corophium* spp. (Ref 1-20; Ref 1-21).

Project specific subtidal benthic surveys

1.3.11 In order to characterise the subtidal benthic communities present in the vicinity of the Project, subtidal sampling was undertaken in July 2022.

1.3.12 At each station, a sample was analysed for macrofaunal analysis (faunal composition, abundance and biomass), PSA and TOC.

1.3.13 The results of these project specific benthic surveys are summarised below in **Table A-4** with the methods and results described in more detail in **Appendix 9.A of Chapter 9 of the ES [TR030008/APP/6.4]**.

1.3.14 The sediment from samples collected from the area consisted of mud and sandy mud. The TOC in the samples ranged between approximately 3% and 6% (**Table A-4**).

1.3.15 The samples collected were highly impoverished with the number of taxa found in the samples ranging from one (Station 3) to 8 (Station 1), and the number of individuals from 10 organisms per m² (Station 3) to 190 organisms per m² (Station 1). The range in total species biomass in the samples was between <1 and 1.8 grams per m².

Table A-4: Subtidal benthic survey results

Station	Sediment Type	TOC (%)	No. of Taxa (per m²)	No. of Individuals (per m²)	Total Biomass (g per m²)	Key Characterising Species (Number per m² Shown in Brackets)
1	Mud	6.45	8	190	0.02	*Tubificoides swirencoides* (60) *Nephtys* spp (40) *Diastylis rathkei* (20) Nematoda (20) *Streblospio shrubsolii* (20) *Corophium volutator* (10) *Macoma balthica* (10) *Nephtys hombergii* (10)
2	Mud	6.34	2	30	0.05	Nematoda (20) *Diastylis rathkei* (10)
3	Mud	5.37	1	10	<0.01	*Streblospio shrubsolii* (10)
4	Sandy Mud	4.38	2	120	0.06	*Nepthys* spp (110) *Diastylis rathkei* (10)
5	Sandy Mud	3.07	2	70	0.03	*Nepthys* spp (60) *Scoloplos armiger* (10)
6	Sandy Mud	3.77	5	100	1.79	*Nepthys* spp (60) *Arenicola marina* (10) *Austrominius modestus* (10) *Scoloplos armiger* (10)
7	Sandy Mud	4.50	3	80	0.11	*Nepthys* spp (40) *Diastylis rathkei* (20) Nematoda (20)
8	Sandy Mud	3.67	4	110	0.03	*Nepthys* spp (80) *Mytilus edulis* (10) Nematoda (10) *Tubificoides swirencoides* (10)

1.3.16 The faunal samples were characterised by low numbers of species (occurring in low abundances) including polychaetes (such *Nephtys* spp, *Streblospio shrubsolii* and *Scoloplos armiger*), nematodes, oligochaetes *Tubificoides* spp and crustacean *Diastylis rathkei*. All the species recorded from the samples in this area were considered commonly occurring in the region and not protected.

1.3.17 The faunal assemblage recorded is considered characteristic of subtidal habitats in this section of the Humber Estuary. For example, subtidal benthic surveys undertaken in the Immingham area in 2009, 2010, 2016 and 2021 predominantly recorded mud or muddy sand habitat which was generally impoverished (with a low number of taxa occurring at the majority of sites). The most commonly recorded infaunal species (generally recorded in low abundances) were the polychaetes *Capitella capitata*, *Streblospio shrubsolii, ,Pygospio elegans, Polydora cornuta*, oligochaetes *Tubificoides* spp., mud shrimp *Corophium volutator*, and nematodes (Ref 1-7; Ref 1-8; Ref 1-5).

Subtidal habitats and species at the disposal site

1.3.18 Dredge material will be deposited at either the Clay Huts disposal site (HU060) or Holme Channel disposal site (HU056).

1.3.19 Benthic surveys undertaken in 2021 within and near to Clay Huts disposal site (HU060) recorded predominantly sand habitat with the samples characterised by a wide range of species but typically in low abundances including nematodes, barnacle *Amphibalanus improvises*, polychaetes (such as, *Pygospio elegans* and *Arenicola* spp.) and the amphipod *Corophium volutator*. Benthic sampling at the Holme Channel disposal site (HU056) recorded sand, gravelly sand and sandy gravel habitat with a highly impoverished assemblage characterised by low abundances of a few species (the amphipod *Corophium volutator*, mysid shrimp *Gastrosaccus spinifer*, bryozoan *Electra monostachys* and springtails *Collembola* spp.) (Ref 1-7).

Lamprey species

1.3.20 The river lamprey *Lampetra fluviatilis* and the sea lamprey *Petromyzon marinus* are both anadromous species, spawning in freshwater but completing part of their lifecycle in estuaries or at sea. The sea lamprey adult growth phase is short and lasts around two years. In this time, the species is parasitic, feeding on a variety of marine and anadromous fishes, including shad and salmon as well as herring, cod, haddock and basking sharks *Cetorhinus maximus.* Unlike sea lamprey, the growth phase of river lamprey is primarily restricted to estuaries.

1.3.21 River lamprey have been frequently recorded in the Humber Estuary, with the Ouse catchment believed to support one of the most important river lamprey populations in the UK. In the Humber basin, river lamprey mainly enters the rivers from the estuary in autumn and then spawn in April. Fish survey data has also recorded most river lamprey in summer and autumn in the Humber Estuary (Ref 1-10). Most river lamprey were caught in summer and autumn Sea lamprey spawning is almost entirely restricted to the Ouse catchment, principally the Rivers Ouse, Swale, Ure and Wharfe (Ref 1-10).

1.3.22 The spawning migration of sea lamprey usually takes place in April and May when the adults start to migrate back into freshwater. The upstream migration of river lamprey takes place almost exclusively at night, with adults being sedentary and resting under rocks and riverbanks during the day (Ref 1-10).

Seal species

1.3.23 The most commonly occurring marine mammals recorded in the Humber Estuary region are seals with populations of both grey seal *Halichoerus grypus* and common (harbour) seal *Phoca vitulina* occurring.

1.3.24 The intertidal area at Donna Nook is the main haul out site in the region and is an important breeding ground for grey seals. This colony is located over 25km from the Project at the mouth of the Humber Estuary. In 2019, there were an estimated 67,789 grey seal pups born in Britain (Ref 1-1) with approximately 3% of the pup production occurring at Donna Nook. Breeding occurs once a year between October and December and the vast majority of seals in this colony breed at Donna Nook, with a few seals breeding on Skidbrooke Ridge, south of Donna Nook. Peak grey seal pup numbers in winter 2021/22 and 2020/21 at Donna Nook consisted of 2,122 and 2,214 seals respectively with numbers having increased substantially in recent years from under 100 pups born annually in the 1980s (see **Figure A-3**).

1.3.25 The intertidal mudflats also provide an important habitat throughout the year for grey seals to haul out or rest, particularly during the spring when all grey seals (except young born the previous year) are moulting. Aerial seal counts undertaken in August 2021 recorded 3,897 grey seals hauled out at Donna Nook. Total numbers at this colony have increased from the low hundreds recorded in the late 1990s and early 2000s to counts over 4,000-6,000 seals in more recent years (Ref 1-1) (see **Figure A-4**).

1.3.26 Grey seals can undertake wide ranging seasonal movements over several thousand kilometres (Ref 1-22; Ref 1-12; Ref 1-13). However, while grey seals may range widely between haul out sites, tracking has shown that most foraging probably occurs within 100km of a haul-out site (Ref 1-14). Seals tagged at Donna Nook were recorded undertaking wide ranging movements in the outer Humber Estuary and approaches as well as more widely in the North Sea (Ref 1-13). This is reflected in high predicted at-sea densities of grey seals in the approaches to the Humber Estuary (Ref 1-12).

1.3.27 The Humber Estuary region also supports a small population of common seal. As for the grey seal, Donna Nook is also the key haul out site for common seals. A total of 122 common seals were recorded as part of annual aerial monitoring in the region in August 2021. Since the 1990s, numbers have generally fluctuated between 100 and 400 counts annually in the region (Ref 1-14). Common seals typically forage within 40km to 50km of haul out sites (Ref 1-14).

Immingham area

1.3.28 Marine mammal survey data or sighting records for the Immingham area are limited. However, given that seals (particularly grey seals) are regularly recorded foraging in the Humber Estuary, this species would be expected to occur relatively frequently in this area. For example, approximately 10 to 15 grey seals

were observed hauling out on mudflat at Sunk Island (on the north bank of the Humber Estuary) during recent benthic surveys as detailed in Ref 1-23. This haul out site is located approximately 4km northeast from the Project and around 3 - 4km from the dredge disposal sites (including transit routes). No seal haul out sites are known to occur nearer to the Project.

1.4 Coastal waterbird features

Data and information sources

1.4.1 Current baseline conditions have been determined by a desk-based review of available information (as well as the field surveys undertaken as set out below):

- Immingham Outer Harbour (IOH) Ornithology Surveys: Data from surveys carried out for a separate development (the IOH) have been used to inform the baseline for this Project as the IOH survey boundary overlaps with the Project area (see **Figure A-5**). The coastal waterbird surveys started in winter 1997/98 and have been ongoing annually since then with winter surveys undertaken between October and March twice a month. During each survey, either four counts (November to February) or five counts (other months) are undertaken every two hours after high water. The most recent 5-years of data (2018/19 to 2022/23) has been analysed. In addition, the 2021/22 survey season started in August rather than October. The surveys have been continued on a monthly basis throughout 2022 rather than stopping in March as per previous years. On this basis, the results from surveys covering passage and summer months (August and September 2021 and April to September 2022) have also been presented;
- Wetland Bird Survey (WeBS) Core Counts Data: Core count data for “Immingham Docks - Sector K” (ID 38905) which overlaps with the Project. These surveys are typically undertaken around high water. The most recent 5-years of data available from the British Trust for Ornithology (BTO) (2017/18 to 2021/22) has been analysed. In addition, estuary wide WeBS data for the Humber Estuary for 2017/18 to 2021/22 has also been reviewed to provide contextual information (Ref 1-24);
- Natural England Designated Sites Portal: Background information on the ecology of SPA qualifying bird species in the Humber Estuary (Ref 1-25);
- Population Trends for Species in the Humber Estuary: Information on long-term trends in the population status of waterbirds in the Humber Estuary is available for the period up to 2016/2017 from the latest WeBS “Alerts Report” (Ref 1-26). This is an information source describing waterbird numbers on protected areas and has an ‘alert system’ where species that have undergone major declines in numbers are identified; and
- BTO Research Report Analysing WeBS data for the Humber Estuary: Population trends of waterbird species in different parts of the Humber Estuary for the period 2000/01 to 2016/17 (Ref 1-27).

Humber Estuary overview

1.4.2 The Humber Estuary is a site of national and international importance for its waders and wildfowl (ducks and geese) populations, regularly supporting over 130,000 waterbirds during winter and passage periods (Ref 1-24; Ref 1-27).

1.4.3 Waterbird numbers are highly variable in the Humber Estuary throughout the year, but it is considered to be an important site year-round due to the presence of different populations of wintering, passage and breeding birds which move into and out of the estuary. In general, numbers of coastal waterbirds are at their lowest during June, when the assemblage is dominated by wildfowl, before numbers start increasing during July due to the return of waders such as Dunlin. Golden Plover starts to become more abundant in late summer. The arrival of wintering waterfowl such as Pink-footed Geese and Wigeon as well as wader species such as Knot typically occurs in early autumn. Numbers start to fall in late winter with the departure of species such as Golden Plover and Knot, before increasing slightly in spring as passage flocks start to move through the area and wildfowl depart (Ref 1-25).

1.4.4 **Table A-5** provides summary ecology information on key waterbird species occurring in the Humber Estuary in intertidal and marine habitats. This includes the 5-year estuary-wide mean peaks for these species for 2017/18 to 2021/22 (the most recent 5-years of data available from the BTO) (Ref 1-24).

Table A-5: Summary information for key species of coastal waterbird in the Humber Estuary

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
Wader	Golden Plover	Roosts but rarely feeds in the intertidal	Mainly insects, especially beetles, as well as other invertebrates and some plant material.	Golden Plover mainly uses the estuary to roost in areas including Alkborough Flats, Whitton Sands, Blacktoft Sands, Read's Island in the Inner Humber Estuary and Salt End, Stone Creek, Paull Holme Stray, Cherry Cobb Sands and Pyewipe in the Middle Humber.	Oct-Dec	20,812
	Knot	Intertidal benthivore	Mainly molluscs, including the bivalve *Limecola balthica*, cockles *Cerastoderma edulis* and mud snail *Peringia ulvae*, the latter especially in early winter. Diet proportions of 75% bivalves, 1% worms and 24% "other". Prey is eaten whole and crushed within the gizzard.	Knot is found in the outer Humber including Cherry Cobb Sands and the Lincolnshire coast south of Grimsby. Easington Lagoons provide an important roost site for Knot during high spring tides.	Jan, Oct-Dec	26,428
	Lapwing	Roosts but rarely feeds in the intertidal	Wide range of invertebrates including beetles and earthworms.	Lapwing mainly uses the estuary to roost in areas including Alkborough Flats, Whitton Sands, Blacktoft Sands and Read's Island in the Inner Humber Estuary as well as Salt	Jan-Feb, Nov-Dec	15,247

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
				End, Stone Creek, Paull Holme Stray, Cherry Cobb Sands and Pyewipe (all Middle Humber Estuary). The majority of feeding occurs inland, though some feeding on intertidal areas takes place during July to September.		
	Dunlin	Intertidal benthivore	Oligochaetes, polychaete worms (such as *Hediste diversicolor, Nephtys* spp., *Pygospio elegans* and *Scoloplos armiger*), bivalves (such as *Limecola balthica*) and the mud snail *Peringia ulvae*. Diet proportions of 70% worms, 14% bivalves and 16% "other".	Widespread with important areas including Read's Island (Inner Humber Estuary), Cherry Cobb Sands, Pyewipe, Stone Creek and Salt End (all Middle Humber Estuary) and Saltfleet (Outer Humber Estuary).	Aug, Nov	17,634
	Oystercatcher		Predominantly bivalves especially large cockles *Cerastoderma edule*, mussels *Mytilus edulis* and tellins *Limecola* spp. Diet might also include polychaete worms on mudflats and earthworms from wet fields.	Found predominantly in the Outer Humber Estuary. The most important areas for Oystercatcher are along the Lincolnshire coast.	Feb, Aug-Nov	5,806

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
	Black-tailed Godwit		Invertebrates, including beetles, polychaete worms (such as *Hediste diversicolor, Nephtys, Pygospio elegans* and *Scoloplos armiger*), molluscs (such as *Limecola balthica)* crustaceans and some plant material.	Key areas include Pyewipe and North Killingholme Haven Pits for this species during winter.	Aug-Oct	5,646
	Grey Plover		Polychaete worms (such as *Hediste diversicolor* and *Arenicola marina*), bivalves (such as *Limecola balthica*) and the muds snail *Peringia ulvae.*	Widespread usage across the Middle and Outer parts of the Humber Estuary. Typically, more usage of the north bank compared to the south bank. Particular key areas include Cherry Cob Sands, and Welwick.	Jan, Sep-Oct	2,985
	Redshank		Polychaete worms (such as *Hediste diversicolor, Nephtys spp., Pygospio elegans and Scoloplos armiger*), the bivalve *Limecola balthica,* crustaceans (such as brown shrimp *Crangon crangon and* mud shrimp *Corophium* spp.*) and* the mud snail *Peringia ulvae*. Will also consume terrestrial	Widespread with key areas including Cherry Cobb Sands and in the outer Humber Estuary.	Sep, Nov-Dec	2,659

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
			invertebrates, including insects and spiders. Diet proportions of 46% worms, 7% bivalves and 47% "other".			
	Curlew		Primarily bivalves (such as *Cerastoderma edule* and *Limecola balthica*), the ragworm *Hediste diversicolo*r and lugworm *Arenicola marina*. Earthworms on terrestrial habitats, Diet proportions during winter of 46% bivalves, 35% worms and 19% "other".	Important areas include Cherry Cobb sands and Patrington to Easington (Outer North), Read's Island (Inner Humber), Pyewipe, Salt End (both Middle Humber) and Theddlethorpe St. Helen (Outer South).	Jan, Oct, Dec	2,544
	Avocet		Benthic crustaceans e.g. *Corophium* spp. and worms such as ragworm *H. diversicolo*r. Insects, especially Chironomidae larvae, in freshwater habitats.	Largest wintering flocks are present in the inner Humber around Far Ings/Read's Islands, close to the favoured locations for breeding.	Aug-Sep	2,576
	Bar-tailed Godwit		Polychaete worms are the principal food source during winter such as *Hediste diversicolor, Nephtys, Pygospio elegans and Scoloplos armiger*. Diet proportions	The most important sectors for Bar-tailed Godwit are the three sectors that make up the Outer (North) area, and the adjacent Cherry Cobb Sands (Middle Humber), and Paull Holme	Feb, Sep, Nov-Dec	1,867

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
			comprise 94% worms. Other species sometimes consumed include the shrimp *Crangon crangon* and bivalve *Limecola balthica*.	Strays (also Middle Humber).		
	Ringed Plover		In winter, mainly marine worms, crustaceans (such as *Corophium* spp.) and molluscs (such as *Peringia ulvae*).	Most commonly recorded in the Outer Estuary.	Aug-Sep	1,070
	Sanderling		Polychaete worms (such as *Hediste diversicolor*), crustaceans and insects. Diet proportions comprise 60% worms, 1% molluscs and 39% “other”.	Within the Humber Estuary, Sanderling are found exclusively in the outer estuary, particularly on the sandflats of the Lincolnshire coast.	Feb, May, Aug, Nov-Dec	575
	Turnstone		A wide range of invertebrates and other food sources. This includes polychaete worms and mudshrimp *Corophium* spp. on mudflats. Also feeds on rocky shore species, including mussels, amphipods, molluscs (such as periwinkles) and crabs. Diet proportions comprise 20% bivalves,	Key areas for Turnstone include rocks around New Holland between Barton upon Humber and East Halton (Middle Humber) and between Grimsby and Cleethorpes (Outer South). Also feed on jetties and around the harbours.	Feb, Oct-Dec	287

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
			5% worms and 75% “other”.			
	Whimbrel		On passage the species consumes shrimps, molluscs, worm and crabs.	No obvious preferred areas, found throughout the Humber during migration periods.	Jul-Aug	58
	Ruff	Intertidal benthivore on mudflats but omnivores more generally	Omnivore feeding on insects, larvae, frogs, small fish and seeds.	The Humber Estuary is considered an important site for passage Ruff. The most important areas of the Humber for the ruff are the intertidal mud and sand flats and adjacent lagoons of Alkborough Flats and Blacktoft Sands with smaller numbers also observed wintering along the River Trent, at North Killingholme and at Tetney). During autumn, Paull Holme Strays, Sunk Island, Read’s Island, New Holland and Whitgift Sand on the River Ouse are also important areas.	Aug-Oct	76
Water-fowl	Pink-footed Goose	Herbivorous waterfowl	Herbivorous. Outside the breeding season this species feeds on improved grasslands, cereal stubbles and vegetables (e.g. potatoes, sugar beet,	Recorded mainly on Read’s Island, which it uses as a roosting site, flying inland during the day to feed in fields.	Oct-Nov	25,332

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
			carrots).			
	Shelduck	Intertidal benthivore	Invertebrates, with small molluscs predominant in north and west Europe, especially mud snail *Peringia* spp. Other species consumed include the mud shrimp *Corophium volutator*, bivalves and polychaetes.	Shelduck are found throughout the estuary with key areas including Read's Island and Alkborough Flats (Inner Humber) and at Pyewipe, Salt End, Cherry Cobb Sands and Paull Holme Sands (Middle Humber).	Jul, Oct-Nov	6,486
	Teal	Omnivorous waterfowl	Seeds of saltmarsh and other wetland plants, including glasswort Salicornia spp. and oraches *Atriplex* spp., and invertebrates (especially small oligochaetes) sifted from the benthos.	Key areas include Alkborough Flats, Read's Island and Blacktoft Sands.	Oct-Nov	5,286
	Dark-bellied Brent Goose	Herbivorous waterfowl	Mainly grasses, and on arable land the shoots of winter cereals, and oilseed rape. On estuaries, eelgrass *Zostera* spp. and saltmarsh plants.	The North Lincolnshire coast between Tetney and Donna Nook is a key area. Spurn is also important during spring passage.	Jan, Nov-Dec	2,645
	Wigeon		Plants (leaves, stems, stolons, bulbils and rhizomes).	Alkborough Flats and Read's Island as well as Faxfleet to Brough Haven (also Inner	Jan-Feb, Oct-Nov	3,669

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
				Humber) are key areas.		
	Greylag Goose		Grass, roots, cereal leaves and spilled grain.	Present within the Inner Humber to a greater extent (e.g. Faxfleet). Present in greatest numbers close to freshwater pools.	Aug-Nov	1,796
	Mallard	Omnivorous waterfowl	Omnivorous, including both plants and animal matter.	Occurs throughout Humber Estuary, with key areas including the River Ouse and Cherry Cobb Sands. The area around the outfall at New Holland is also a favoured area where the birds feed on grain spill from the dock.	Jan, Aug-Sep, Nov	1,109
	Barnacle Goose	Herbivorous waterfowl	The leaves and stems of grasses, roots and seeds.	Present on fields/arable land around the entire Humber Estuary in low densities.	Jan-Mar, Sep, Dec	755
	Common Scoter	Benthivorous diving duck	Molluscs.	Present within the Outer Humber due to their more pelagic lifestyle. Occurs in passage and winter.	Mar, Sep-Oct, Dec	408
	Canada Goose	Herbivorous waterfowl	Roots, grass, leaves and seeds.	Occurs within the Inner Humber in the largest numbers. Present in greatest numbers close to	Aug-Sep	691

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
				freshwater pools.		
	Goldeneye	Benthivorous diving duck	Mostly aquatic insects, molluscs and crustaceans. Occasional fish. Plant material generally less than 25%.	Goxhill to New Holland and Barrow to Barton (including Barton Pits) are key areas.	Nov-Dec	299
Gull	Black-headed Gull	Omnivorous/ scavenging gull	Worms, insects, small fish, crustacea and carrion.	Widely distributed.	Aug-Oct	13,018
	Common Gull		Worms, insects, fish and carrion.	Widely distributed.	Feb, Sep-Oct, Dec	1,293
	Herring Gull		Carrion, offal, seeds, fruits, young birds, eggs, crustaceans, small mammals, insects and fish.	Widely distributed.	Feb, Apr, July, Sep, Dec	1,334
	Great Black-backed Gull		Shellfish, birds and carrion.	Widely distributed.	Feb, Nov-Dec	213
Terns, and other diving birds	Sandwich Tern	Piscivorous plunge diver	Fish such as sandeels, sprats and whiting.	Widely distributed.	Jul-Aug	578
	Common Tern		Fish and crustaceans in some areas.	Widely distributed.	Aug-Sep	247
	Cormorant	Piscivorous	Feeds on fish such as flatfish,	Widely distributed.	Jan-Mar,	438

Species group	Species	Feeding behaviour in the marine environment [1]	Diet [2]	Distribution in the Humber Estuary [3]	Month of peak count [4]	WeBS Core Count 5-year estuary-wide mean peaks (2017/18 to 2021/22) [5]
		pursuit diver	blennies gadoids, sandeel, salmonid and eels.		Nov	
	Red-throated Diver	Piscivorous pursuit diver	Diet consists predominantly of fish (mainly clupeids, mackerels, flatfish, gadoids and sand eels).	Recorded mainly in the outer Humber Estuary and approaches.	Jan, Oct, Dec	33

1. Feeding behaviour based on Ref 1-28 and Ref 1-29:

    Intertidal benthivore: Waterbird species feeding on infaunal and/or epibenthic invertebrates in intertidal habitats;

    Herbivorous waterfowl: Geese, swans and ducks feeding on plant material;

    Omnivorous waterfowl: Ducks feeding on a range of animal and plant food;

    Benthivorous diving duck: Diving ducks/seaducks feeding on epibenthic and infaunal invertebrates on the seabed;

    Omnivorous/scavenging gull: Gulls feeding on a range of animal and plant food including through scavenging;

    Piscivorous plunge diver: Seabirds foraging for fish through plunge diving; and

    Piscivorous pursuit diver: Seabirds foraging for fish through pursuit diving.

2. Based on Ref 1-30; Ref 1-31 and Ref 1-32.
3. Based on Ref 1-31 and Ref 1-33.
4. Months when peaks count occurred in the 2017/18 to 2021/22 estuary-wide BTO Core Counts (Ref 1-24).
5. Data from Ref 1-24.

1.4.5 The most abundant wading bird species recorded in the Humber Estuary are Knot and Golden Plover (5-year mean peak for 2017/18 to 2021/22 of 26,428 and 20,812 birds respectively). Other wading birds occurring in large numbers include Lapwing (5-year mean peak of 15,247 birds) and Dunlin (5-year mean peak of 17,634 birds) as well as Oystercatcher, Black-tailed Godwit, Grey Plover, Curlew, Avocet and Bar-tailed Godwit (Ref 1-24). Important areas for feeding and roosting waders include the Pyewipe frontage on the south bank and Paull Holme, Cherry Cobb, Foulholme, Spurn and Sunk Island Sands on the north bank of the Humber Estuary. In the inner section of the Humber Estuary, sites such as Blacktoft Sands, Alkborough and Read's Island Flats are considered important (Ref 1-25). The numbers of different waders in the Humber Estuary can show a high degree of interannual variation with some species (such as Black-tailed Godwit, Avocet, Oystercatcher) showing an overall long-term increase in estuary wide numbers with other species such as Dunlin, Redshank and Knot showing an overall decline (Ref 1-31; Ref 1-26).

1.4.6 Key prey items for waders on the Humber Estuary include annelid worms (such as *ragworm Hediste diversicolor, lugworm Arenicola marina, Pygospio elegans, Streblospio shrubsolii, Tubificoides spp., and Nephtys spp), the bivalves Cerastoderma edule and Limecola balthica, the mudsnail Peringia spp. and mud shrimp Corophium spp* (Ref 1-30; Ref 1-31).

1.4.7 The most abundant wildfowl bird species recorded in the Humber Estuary are Pink-footed Goose and Shelduck (5-year mean peak of 25,332 and 6,486 birds respectively). The number of Shelduck in the Humber Estuary has remained relatively stable with Pink-footed Goose showing a long-term increase (Ref 1-27; Ref 1-26). Other commonly occurring wildfowl include Teal, Dark-bellied Brent Geese, Wigeon, Greylag Goose and Mallard (Ref 1-24). Pink-footed Goose are recorded in large numbers at Read's Island with Dark-bellied Brent Geese and Wigeon, principally occur in areas along the southern shore from Cleethorpes to Saltfleetby (Ref 1-25).

1.4.8 Black-headed Gull (5-year mean peak of 13,018 birds) as well as Herring Gull and Common Gull (occurring in lower numbers) are widespread in the Humber Estuary.

1.4.9 The Humber Estuary also supports several heron species including Grey Heron, Little Egret and Great Bittern. Grey Heron and Little Egret are recorded in a wide variety of intertidal and coastal habitats with Great Bittern recorded within reedbed habitats such as around Blacktoft Sands, Far Ings, Barton and North Killingholme Haven clay pits (Ref 1-25).

1.4.10 Diving birds occurring in the Humber Estuary include Common Scoter and Goldeneye (5-year mean peak of 408 and 299 birds respectively) with Cormorants and Tufted Duck also occurring in relatively large numbers.

1.4.11 Little Tern breed at Easington Lagoon, which is located approximately 20km from the Project (Ref 1-25), with data suggesting this species forages within 5km of nesting sites (Ref 1-34. Sandwich Tern (5-year mean peak of 578 birds) and Common Tern (5-year mean peak of 247 birds) are also regularly recorded, particularly in passage periods in the Humber Estuary.

Coastal waterbirds on the foreshore in the Immingham area

1.4.12 Pre and post consent monitoring of coastal waterbird surveys as part of the IOH development have been undertaken annually since winter 1997/98. The foreshore in the area of the Project overlaps with 'Sector C' (between the Immingham Oil Terminal Jetty and Oldfleet Drain (as shown in **Figure A-5**). The most recent 5-years of data (2018/19 to 2022/23) has been analysed for this sector (**Table A-6**). During this period, surveys were undertaken between October and March twice a month. During each survey, either five counts (October and March) or four counts (November to February) were undertaken every two hours after high water. In addition, the 2021/22 survey season started early in August rather than October. The surveys have continued on a monthly basis in 2022 rather than stopping in March as per previous years. On this basis, the results from passage and summer months (August and September 2021 and April to September 2022) have been presented separately (**Table A-7**). **ANNEX A.1** presents monthly peak counts for the period October 2021 to September 2022 in Sector C. In order to provide contextual information on bird numbers in the wider area, **Annex A.2** provides a summary of bird data for Sector A and B (the location of these sectors are shown in **Figure A-5**).

1.4.13 To summarise the findings from the survey work, the annual peak count (maximum count from each winter period between October and March) for birds feeding, roosting as well as the combined total[1] is presented in **Table A-6**. The 5-year average of the annual peak counts for each species (referred to as the mean peak)[2] is also presented in **Table A-6**. This table also compares the 5-year mean peak against the thresholds and values outlined below, to provide objective criteria to help determine the value of the area in an international, national and regional context:

a. **Internationally Important Threshold Level**: The threshold for an individual species (or subspecies) is set at 1% of the biogeographic population[3];

b. **Nationally Important Threshold Level:** The threshold for an individual species (or subspecies) is set at 1% of the British population i.e. if a site

1 The combined peak count is a summed value derived from the largest count of both feeding and roosting birds during the same hourly count.

2 It is standard practice to present the average of the annual peaks for a certain duration of time (sometimes referred to as the mean of peaks). This is calculated as the average of the maximum annual counts and for the most recent 5-years of available data if possible. Mean peaks (using five years of winter values) is the approach presented in the WeBS annual reports. For most migratory species, the WeBS 5-year mean of peak is also the value that is used when identifying qualifying features for each SPA. Using mean of peaks is also useful for characterising the relative importance of sectors within a site, as it gives a good indication of how many individuals of a given species a sector typically supports (Ref 1-35).

3 The thresholds levels are available at: https://www.bto.org/volunteer-surveys/webs/data/species-threshold-levels. It should be noted that, where 1% of the population is less than 50 birds, 50 is normally used as a minimum qualifying threshold for the designation of sites of national or international importance (accessed 04/04/23) (Ref 1-36).

supports more than 1% of the British population it is considered Nationally Important (for that species or subspecies); and

c. **Latest Humber Estuary WeBS Core Counts 5-year average:** The 5-year mean peak from the latest Humber Estuary WeBS Core Counts. Core Count surveys are typically undertaken around high water. Within this assessment, this is from 2017/18 to 2021/22 (Ref 1-24). For the purposes of this assessment, numbers representing more than 10% of the estuary-wide Core Counts for an individual species are considered regionally important and numbers representing between 1% and 10% are considered locally important.[4]

1.4.14 The 5-year mean peak number of birds in Sector C during different winter months is presented in **Figure A-6** to show any seasonal trends over the winter period. The distribution of birds within Sector C based on distribution data collected in the surveys is shown in **Figure A-7**.

1.4.15 During the surveys, over 25 waterbird species have been recorded on the foreshore within Sector C with approximately 20 species considered regularly occurring.

1.4.16 The most numerous wading bird species recorded foraging within the area over this period were Black-tailed Godwit and Dunlin (5-year mean peaks of 1609 and 579 birds respectively). It should be noted that during winter 2018/19 and 2019/20 Black-tailed Godwit were recorded in nationally important numbers (annual peak counts of 944 and 752 birds respectively) and in internationally important numbers in 2020/21 2021/22 and 2022/23 (2016,2591 and 1740 birds respectively) (**Table A-6**). Dunlin were regularly recorded in numbers considered locally important (i.e., representing >1% estuary wide numbers[5]) feeding (annual peak counts ranging from 371 to 842 birds). Other wading birds regularly recorded in numbers considered to be locally important included Bar-tailed Godwit, Curlew, Redshank and Turnstone.

1.4.17 Shelduck were the most abundant wildfowl species recorded foraging (5-year mean peak of 128 birds) with this species recorded in numbers considered to be locally important. Lower numbers of other ducks such as Teal and Mallard were also recorded.

1.4.18 With respect to roosting birds, Black-tailed Godwit was the most numerous species recorded (5-year mean peaks of 574 birds) with internationally important numbers recorded in 2019/20 (1352 birds) and nationally important numbers in 20/21 and 22/23 (700 and 580 birds respectively). Other species regularly recorded roosting included Shelduck and Curlew (5-year mean peak of 32 and 26 birds, respectively) as well as Knot, Redshank and Turnstone.

4 The 1% local threshold has been requested to be used in the baseline data analysis by Natural England as part of previous developments on the Humber Estuary.

5 Compared against the estuary-wide WeBS 5-year mean peak (2017/18 to 2021/22).

Table A-6: Coastal waterbird species recorded as part of the IOH Ornithology Surveys within Sector C during the last five winters

Species	Peak count per winter (feeding)						Peak count per winter (roosting)						Peak count per winter (combined – non-behavioural)					
	18/19	19/20	20/21	21/22	22/23	MP	18/19	19/20	20/21	21/22	22/23	MP	18/19	19/20	20/21	21/22	22/23	MP
Avocet		42	2		3	9		64				13		64	2		3	14
Bar-tailed Godwit	30	54	45	141	55	65	2		3		3	2	30	54	45	141	55	65
Black-headed Gull				83	137	44				76	138	43				83	138	44
Black-tailed Godwit	944	752	2,016	2,591	1,740	1,609	1	1,352	700	238	580	574	944	1,352	2,016	2,591	1,740	1,729
Common Gull				1	15	3				5	47	10				5	47	10
Common Sandpiper					1	<1											1	<1
Cormorant					1	<1	1				1	<1	1				1	<1
Curlew†	35	24	35	37	46	35	11	14	57	16	32	26	35	24	57	37	46	40
Dunlin	371	571	554	556	842	579	9	110	6	4	27	31	371	571	554	556	842	579
Gadwall		1				<1					2	<1		1			2	<1
Golden Plover				13	1	3			4			<1			4	13	1	4
Goldeneye				1		<1										1		<1
Great Black-backed Gull				1	4	1				2	7	2				2	7	2
Grey plover†		11	20	75	12	24			1			<1		11	20	75	12	24
Greylag Goose				2		<1										2		<1
Herring Gull				13	11	5				8	14	4				13	14	5
Knot	191	110	16	39	24	76		210	2			42	191	210	16	39	24	96
Lapwing†								1			1	<1		1			1	<1
Lesser Black-backed Gull				2	1	<1				4		<1				4	1	1
Little Egret		3			2	1								3			2	1
Little Ringed Plover										1		<1				1		<1
Mallard†	2	3				1		2	2			<1	2	3	2			1

Species	Peak count per winter (feeding)						Peak count per winter (roosting)						Peak count per winter (combined – non-behavioural)					
	18/19	19/20	20/21	21/22	22/23	MP	18/19	19/20	20/21	21/22	22/23	MP	18/19	19/20	20/21	21/22	22/23	MP
Mute swan										1	1	<1				1	1	<1
Oystercatcher†	4	9	7	7	5	6	2	2	7	2	4	3	4	9	7	7	5	6
Pink-footed Goose									1			<1			1			<1
Purple Sandpiper					1	<1											1	<1
Red-breasted Merganser					1	<1											1	<1
Redshank	38	50	48	80	64	56	5	12	13	44	3	15	38	50	48	80	64	56
Ringed Plover†	3	12	25	2	6	10	1	7	22	16	16	12	3	12	25	16	16	14
Shelduck	152	125	139	128	96	128	26	64	35	18	15	32	152	125	139	128	96	128
Teal†	8	13	3	3	47	15					3	<1	8	13	3	3	47	15
Turnstone†	15	21	28	35	27	25		15	18	23	11	13	15	21	28	35	27	25

SPA qualifying species highlighted in bold. † Species with this symbol are included within the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year MP.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year MP.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Black-tailed Godwit the regional importance (> 10% of the estuary wide WeBS 5-year MP – 565 birds) is higher than the national importance threshold (390 birds).
	Cells highlighted red indicate the count is of international importance.

1.4.19 As shown in **Figure A-6**, during the surveys, the largest numbers of wintering Black-tailed Godwit and Bar-tailed Godwit were typically recorded in October. Shelduck numbers were typically largest from January to early March. The numbers of other wintering species were highly variable with no clear pattern.

1.4.20 The data collected during passage and summer periods (August to September 2021 and April to September 2022) recorded a range of species some of which were recorded in relatively large numbers (**Table A-7**). The number of birds using Sector C was generally higher in the spring months (April to May) than in autumn passage months (August and September) with peak counts of 400 Dunlin and 581 Black-tailed Godwit recorded in the spring and 222 Dunlin and 160 Black-tailed Godwit in the autumn respectively. The count of 581 Black-tailed Godwit exceeded nationally important thresholds. However, counts of these species along with other species including Redshank and Shelduck were typically lower in the passage and summer months than the winter.

1.4.21 All of the species observed in Sector C are frequently recorded in large numbers during both passage and winter periods in the Humber Estuary more widely with the estuary-wide peak abundances of passage birds typically showing a high degree of both monthly and annual variability. This would be expected given the more transient nature of passage birds with numbers fluctuating on a daily basis as birds arrive and depart from sites in the Humber Estuary (Ref 1-27).

1.4.22 Within Sector C, the largest numbers of waterbirds typically occur on mudflat in the east of the sector towards the Pyewipe mudflats near Grimsby. Within this area approximately 500 to 2000 Black-tailed Godwit, 100s of Dunlin as well as lower numbers (<50) of other species such as Shelduck, Redshank and Knot are regularly recorded (**Figure A-7**). Lower numbers are recorded in the western section of Sector C which is described in more detail in the Section below.

1.4.23 The upper shore sea defences in the area are regularly used through the tide by individuals or small flocks of Turnstone (typically < 20 to 30 birds throughout the sector) year round.

1.4.24 The assemblage recorded in the surveys is broadly similar to that recorded during the WeBS Core Counts for the period 2017/18 to 2021/22 (the most recent 5-years of data available from the BTO for the “Immingham Docks Sector K”). The most commonly recorded species were Dunlin (mean peak of 186 birds), Redshank (mean peak of 100 birds), Black-tailed Godwit (mean peak of 40 birds) Shelduck (mean peak of 45 birds), Turnstone (mean peak of 45) and Curlew (mean peak of 12 birds). It is worth noting that this WeBS sector covers a much larger area than Sector C and so it is not directly comparable in terms of spatial extent.[6] Core counts are also only typically undertaken around high water periods and so do not provide information through the tide or during low water periods.

[6] The sector includes foreshore adjacent to the Port of Immingham and also extents east of the IOT terminal jetty (Ref 1-37).

Table A-7: Coastal waterbird species recorded as part of the IOH Ornithology Surveys within Sector C during August to September 2021 and April to September 2022

Species	Peak count per passage/summer month (feeding)								Peak count per passage/summer month (roosting)								Peak count per passage/summer (combined – non-behavioural)							
	Aug 21	Sept 21	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sept 22	Aug 21	Sept 21	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sept 22	Aug 21	Sept 21	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sept 22
Avocet			2	1															2	1				
Bar-tailed Godwit	2	3			248		3	27								5	2	3			248		3	27
Black Headed Gull			9	15	44	219	449	297			2	10	2	181	61	216			9	15	44	219	449	297
Black-tailed Godwit	66	160	581	106			39	108		13						38	66	160	581	106			39	108
Common Gull					20	21	1	4				6		5	34	18				6	20	21	34	18
Common Sandpiper	2					2			2							4	2					2		4
Cormorant		1						1		1	1							1	1					1
Curlew†	14	16	43	16	4	19	20	23	3	3	6	1	3	3	3	4	14	16	43	16	4	19	20	23
Dunlin	1	222	400				47	131	2	3							2	222	400				47	131
Golden Plover			12																12					
Great Black-backed Gull			8	4		4	2	11					1			4			8	4	1	4	2	11
Grey Plover†								4																4
Herring Gull			13	2	4	7	16	27			21	6	2	8	1	31			21	6	4	8	16	31
Knot		6	4	26	3			24										6	4	26	3			24
Lesser Black-backed Gull			6	1	1	14	4	1			2			4					6	1	1	14	4	1
Little Egret	2	1		1			1	1		1			1			1	2	1		1	1		1	1
Little Ringed Plover	3																3							
Mallard†	1																1							
Oystercatcher†			5	5	3	3	3	2	2	1	2	2					2	1	5	5	3	3	3	2

Species	Peak count per passage/summer month (feeding)								Peak count per passage/summer month (roosting)								Peak count per passage/summer (combined – non-behavioural)							
	Aug 21	Sept 21	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sept 22	Aug 21	Sept 21	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sept 22	Aug 21	Sept 21	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sept 22
Pink-footed Goose								1																1
Redshank	6	7	24			13	9	13		2	1					1	6	7	24			13	9	13
Ringed Plover†		1			2			10						2		7		1			2	2		10
Shelduck	88	90	12	5	2	8	116	26		42	10			3		22	88	90	12	5	2	8	116	26
Teal†																2								2
Turnstone†	16	41	8				16	31	6	12	5			5		6	16	41	8			5	16	31
Whimbrel	1		4	3		1											1		4	3		1		

SPA qualifying species highlighted in bold. † Species with this symbol are included within the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary-wide WeBS 5-year MP.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary-wide WeBS 5-year MP.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Black-tailed Godwit the regional importance (> 10% of the WeBS 5-year MP – 565 birds) is higher than the national importance threshold (390 birds). The national importance threshold for Common Sandpiper and Whimbrel is set as 1.

Intertidal bird abundance and distribution in the vicinity of the Project

1.4.25 In order to better understand the abundance and distribution of waterbirds within and near to the Project, distribution mapping data for the section of Sector C foreshore between the IOT Jetty and the mudflat fronting North Beck drain (within approximately 400-500 m of the Project) has been analysed in more detail. This data was further complimented with discussions with the ornithological surveyors covering the count sector to ensure the information presented is considered representative of this area.

1.4.26 The distribution of waterbirds in this area is shown in **Figure A-7** with the typical range in abundance of the main species recorded from surveys over the last five years (2018/19 to 2022/23) presented in **Table A-8.** The abundance levels of these species have also been compared against the estuary-wide WeBS 5-year mean peak (2017/18 to 2021/22). Other species such as Bar-tailed Godwit occur in numbers of a few individuals (<5 birds) and have not been included in the table.

1.4.27 The data shows flocks of up to 100 Black-tailed Godwit and Dunlin as well as lower numbers (<10-20 birds) of other waders (such Curlew, Dunlin, Knot, Oystercatcher, Redshank) have been recorded feeding in the area during the winter months. With respect to ducks, Teal (<20-30 birds) and Shelduck (<10-20 birds) have been recorded in this area during the winter months (**Figure A-7**).

1.4.28 As mentioned above, the upper shore boulders and sea defences in Sector C are regularly used through the tide by individuals or small flocks of Turnstone with flocks recorded in the vicinity of the project (typically < 20 to 30 birds feeding and roosting year-round). The sea defences and upper shore in this area are typically only used infrequently as a roost by other waders and wildfowl (<10 birds of each species).

1.4.29 When compared to estuary-wide numbers, wintering Black-tailed Godwit and Turnstone (both feeding and roosting) occurred in locally important numbers with counts representing up to 2% and 10% respectively of the estuary-wide WeBS 5-year mean peak (2017/18 to 2021/22). Counts of other species represent < 1 of the estuary-wide WeBS 5-year mean peak.

1.4.30 Data for surveys during the passage and summer periods (August to September 2021 and April to September 2022) recorded lower numbers of waterbirds in this area compared to the winter. With respect to Black-tailed Godwit <10 feeding birds were recorded during some of the autumn surveys with no birds recorded during surveys from April to July 2022. Other waders and Shelduck were also typically present in low numbers feeding (<10 birds) with the exception of Turnstone (discussed above). During passage periods all counts represented < 1 of the estuary-wide WeBS 5-year mean peak.

Table A-8: Counts recorded as part of the IOH Ornithology Surveys in Sector C between the IOT Jetty and the mudflat fronting North Beck drain as a proportion of the current estuary-wide WeBS 5-year mean peak

Species	Winter months (October to March from 2018/19 to 2022/23)			Passage months (August to September 2021 and April to September 2022)		
	Abundance in area (feeding)*	Abundance in area (roosting)*	Counts recorded as a % of the current estuary-wide WeBS 5-year mean peak	Abundance in area (feeding)*	Abundance in area (roosting)*	Counts recorded as a % of the current estuary-wide WeBS 5-year mean peak
Black-tailed Godwit	<100 birds	<10 birds	Up to 2% (feeding) and <1% roosting	<5-10 birds	No birds recorded	< 1%
Curlew†	<10-20 birds	<10 birds	< 1%	<5-10 birds	1-2	< 1%
Dunlin	<100 birds	<10 birds	< 1%	<5-10 birds	No birds recorded	< 1%
Knot	<10-20 birds	<10 birds	< 1%	<5-10 birds	No birds recorded	< 1%
Oystercatcher†	<10-20 birds	<10 birds	< 1%	<5-10 birds	No birds recorded	< 1%
Redshank	<10-20 birds	<10 birds	< 1%	<5-10 birds	No birds recorded	< 1%
Shelduck	<10-20 birds	<10 birds	< 1%	<5-10 birds	No birds recorded	< 1%
Teal†	<20-30 birds	<10 birds	< 1%	<5-10 birds	No birds recorded	< 1%
Turnstone†	<20-30 birds	<20-30 birds	Up to 10% (feeding/roosting	<20-30 birds	1-2	Up to 10% (feeding/roosting
*All other species have been recorded as single individuals or very small flocks (<5 birds).						

Terrestrial Habitats (Passage and Wintering SPA/Ramsar Waterbirds)

1.4.31 Habitats within the majority of the land impacted by the pipeline route are unsuitable for coastal waterbirds, as they comprise scrub/woodland that are not suitable for high tide roosting/loafing/feeding waterbirds, and areas of land currently used for port-related storage/ operational areas.

1.4.32 The habitat within the West Site is dominated by tall-swarded grassland having been abandoned from agricultural cultivation approximately ten years ago. Consequently, the habitats within the West Site are not suitable for high tide roosting/loafing/feeding waterbirds from the nearby Humber Estuary SPA/Ramsar. This is because there is insufficient scanning distance for birds to observe approaching ground-based predators, and they therefore typically avoid taller swarded grassland. This conclusion is supported by the findings of a limited suite of wintering bird surveys undertaken to coincide with the high tide period in February and March 2022, which did not record any SPA/Ramsar waterbird species (**ANNEX A.1**). Previous wintering bird surveys of these fields undertaken for a 2013 Drax planning application (planning reference: DM/1027/113/OUT) also did not record any SPA/Ramsar waterbirds, and the habitats were concluded to be unsuitable for waterbirds. Further survey of these habitats for wintering/ passage SPA/Ramsar waterbirds was therefore scoped out and it is reasonable to conclude that the land is not functionally linked to the Humber Estuary SPA/ Ramsar.

1.4.33 The large arable field adjacent to the Humber Estuary within the Temporary Compound Area off Laporte Road was identified within the PEA (**Appendix 8.B of the ES [TR030008/APP/6.4]**) as being potentially suitable for coastal waterbirds, given its proximity to intertidal feeding habitats. Surveys were undertaken across the passage and wintering period of 2022/2023[7] and the surveys did not record any locally important aggregations of SPA/Ramsar waterbirds (i.e. at numbers >1% of the WeBS 5 year mean peak count). Records of SPA/ Ramsar waterbirds were limited to occasional observations of single or low numbers (<5) of curlew on three occasions. These numbers are well below 1% of the Humber Estuary WeBS 5 year mean peak count for this species of curlew, which is 25 birds. It is therefore concluded that the land is not functionally linked to the Humber Estuary SPA/ Ramsar. The survey results are presented in **ANNEX A.1**.

Terrestrial Habitats (Breeding SPA/ Ramsar Species)

1.4.34 There is no suitable terrestrial habitat (i.e. above Mean High Water) within the Site for breeding SPA/Ramsar species Bittern, Marsh Harrier or Avocet. Marsh Harrier has been previously recorded overflying West Site in 2013 (information contained within an ecology report submitted with planning application DM/1027/13/ OUT) but there are no extensive areas of reedbed/marsh habitat that would be suitable nesting habitat within the West Site; the reedbed habitat

[7] Terrestrial surveys were undertaken twice monthly across the High Water period between September 2022 and March 2023 inclusive.

within the West Site is restricted to narrow bands within/on the margins of the ditches. Similarly there are no areas of reedbed/ marsh habitat within the terrestrial areas of the Site boundary suitable for breeding Bittern, and no pools suitable for breeding Avocet (the nearest known breeding habitat for Avocet is the open water/ islands at Rosper Road Pools Local Wildlife Site, which is approximately 5km north of the Site). Breeding SPA/Ramsar species are therefore not considered further and are scoped out of the assessment.

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Figure A-1: Internationally designated conservation sites

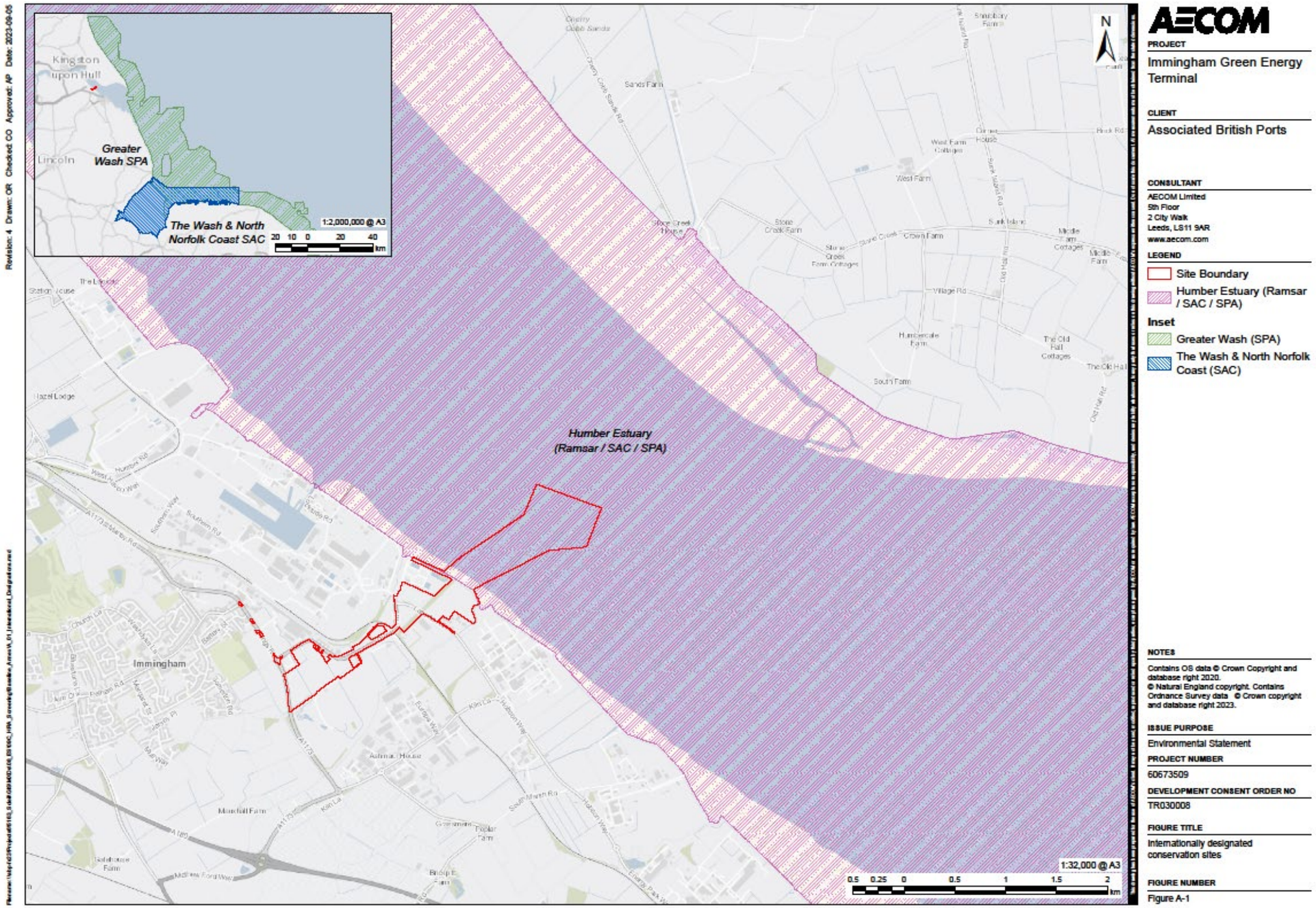


Figure A-2: Project subtidal benthic sampling stations

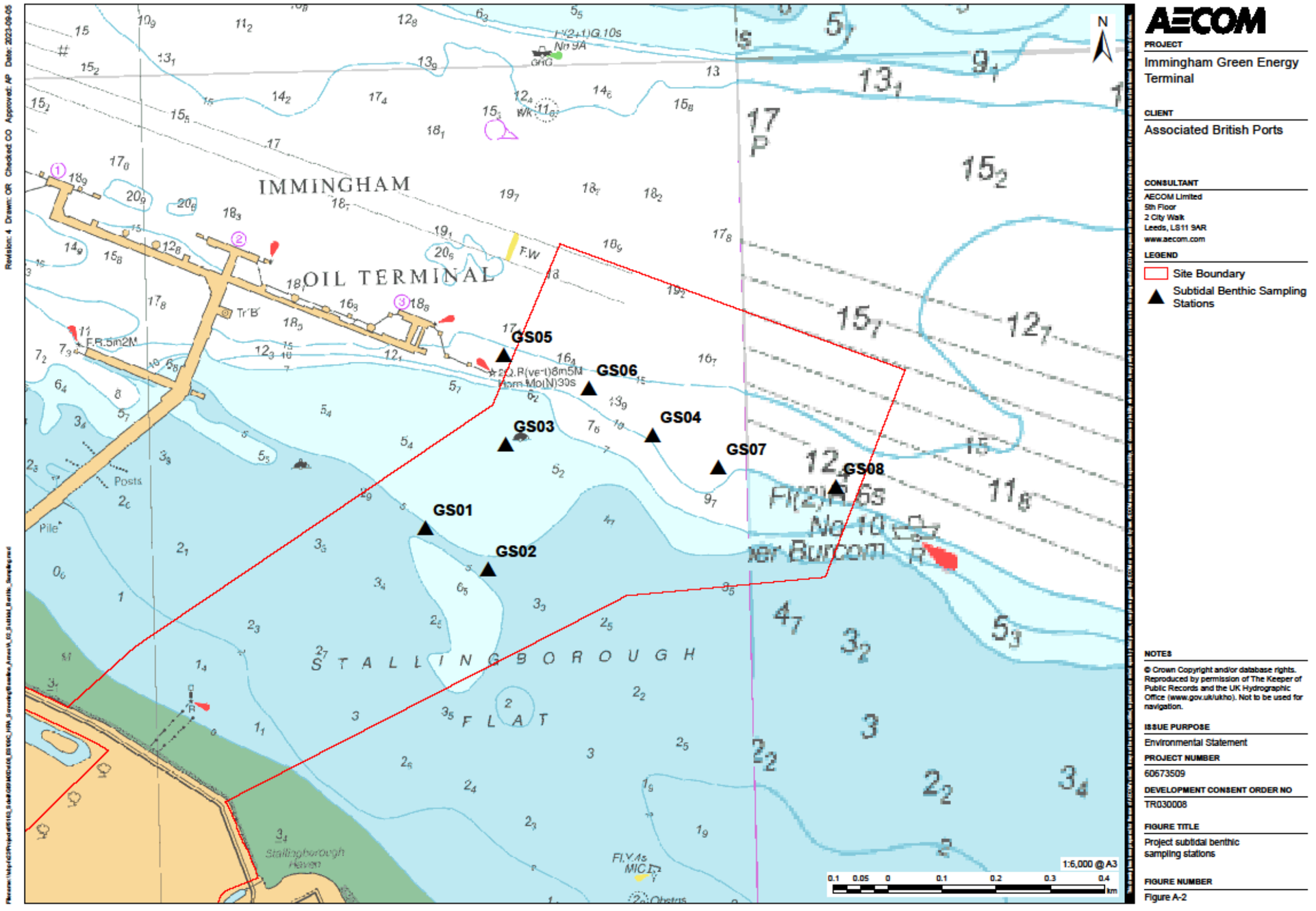


Figure A-3: Annual grey seal pup counts at Donna Nook

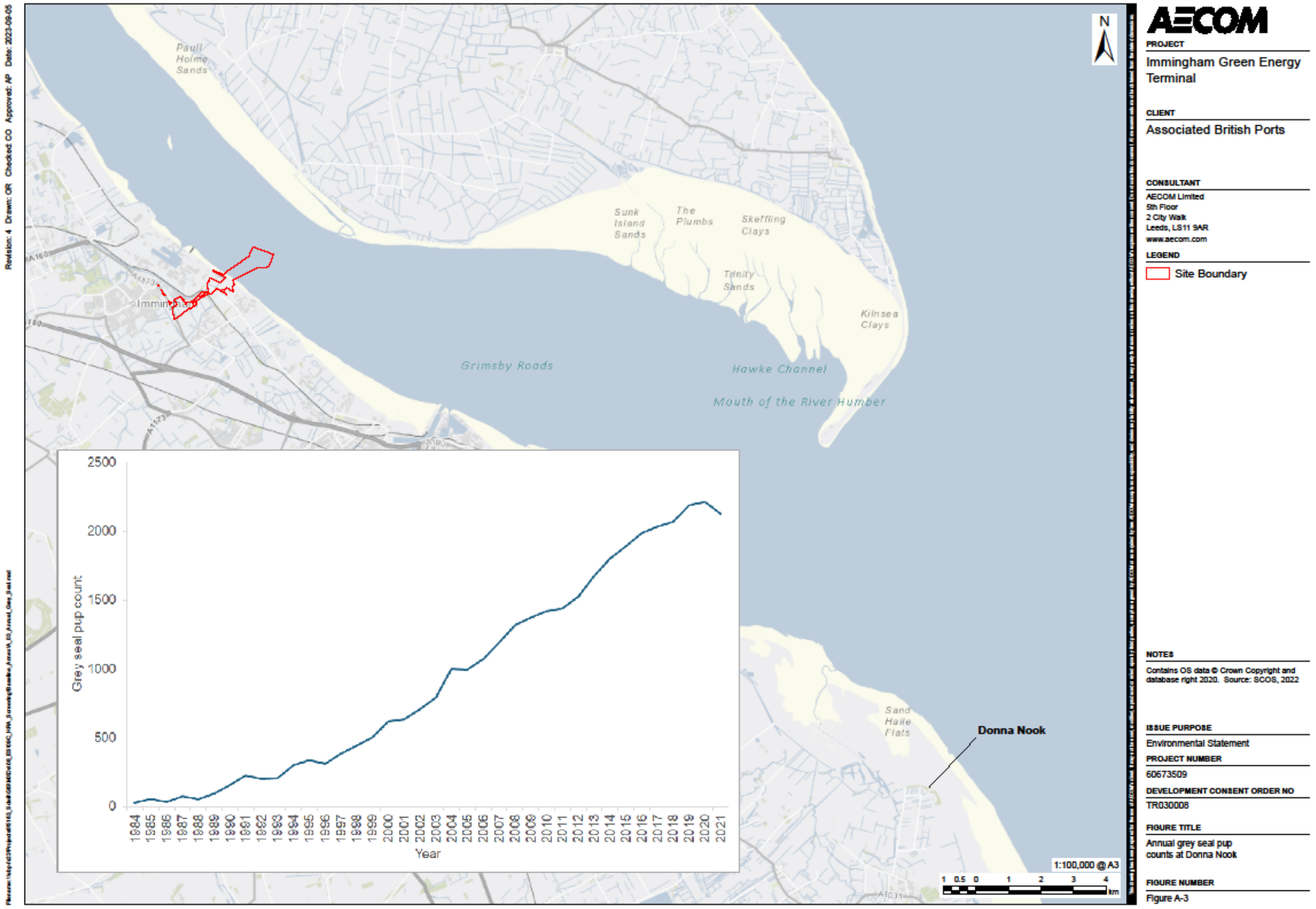


Figure A-4: Aerial counts of grey seals at Donna Nook

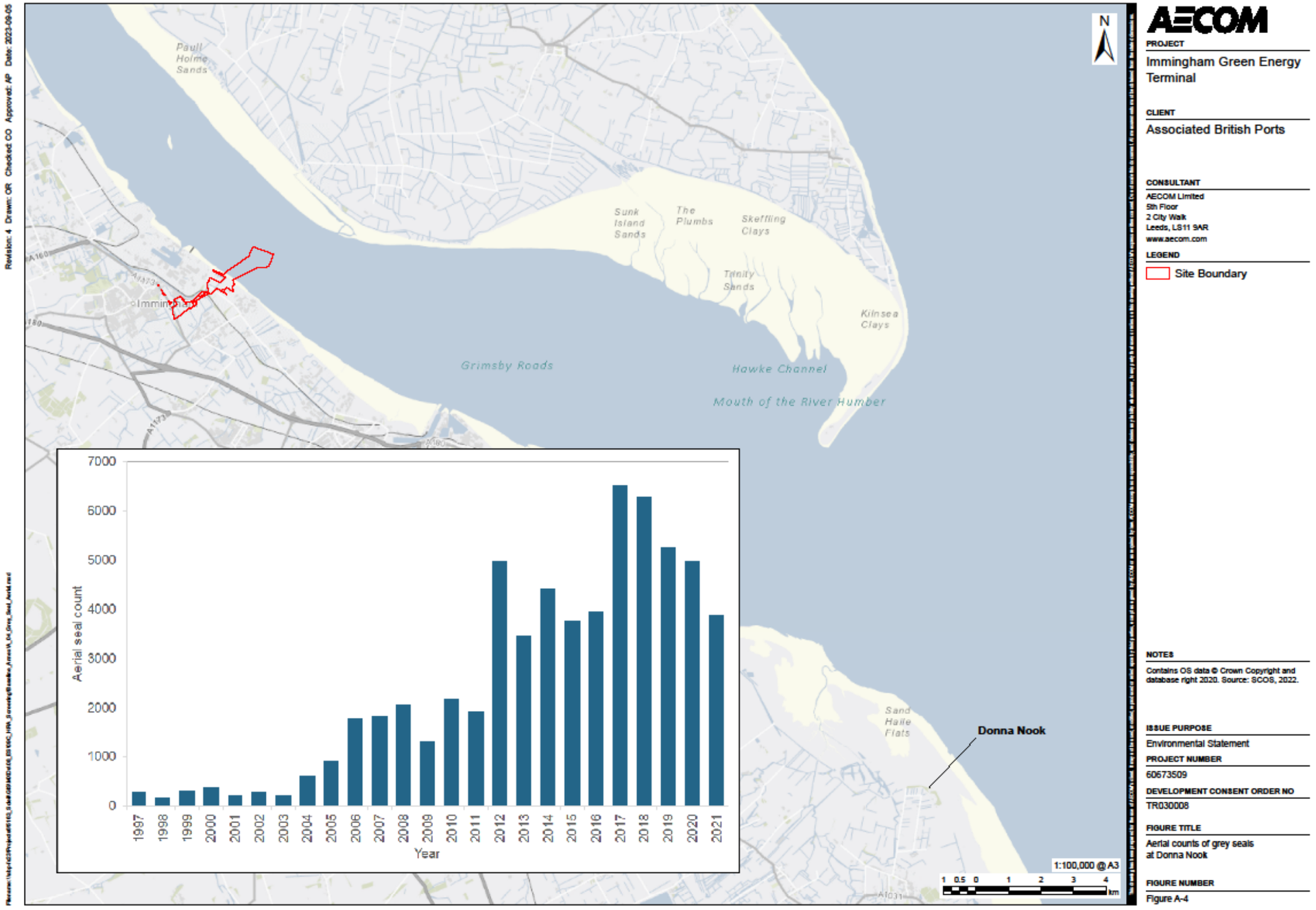


Figure A-5: Locations of coastal waterbird surveys

Figure A-6: The 5-year mean peak number of birds in Sector C during different months

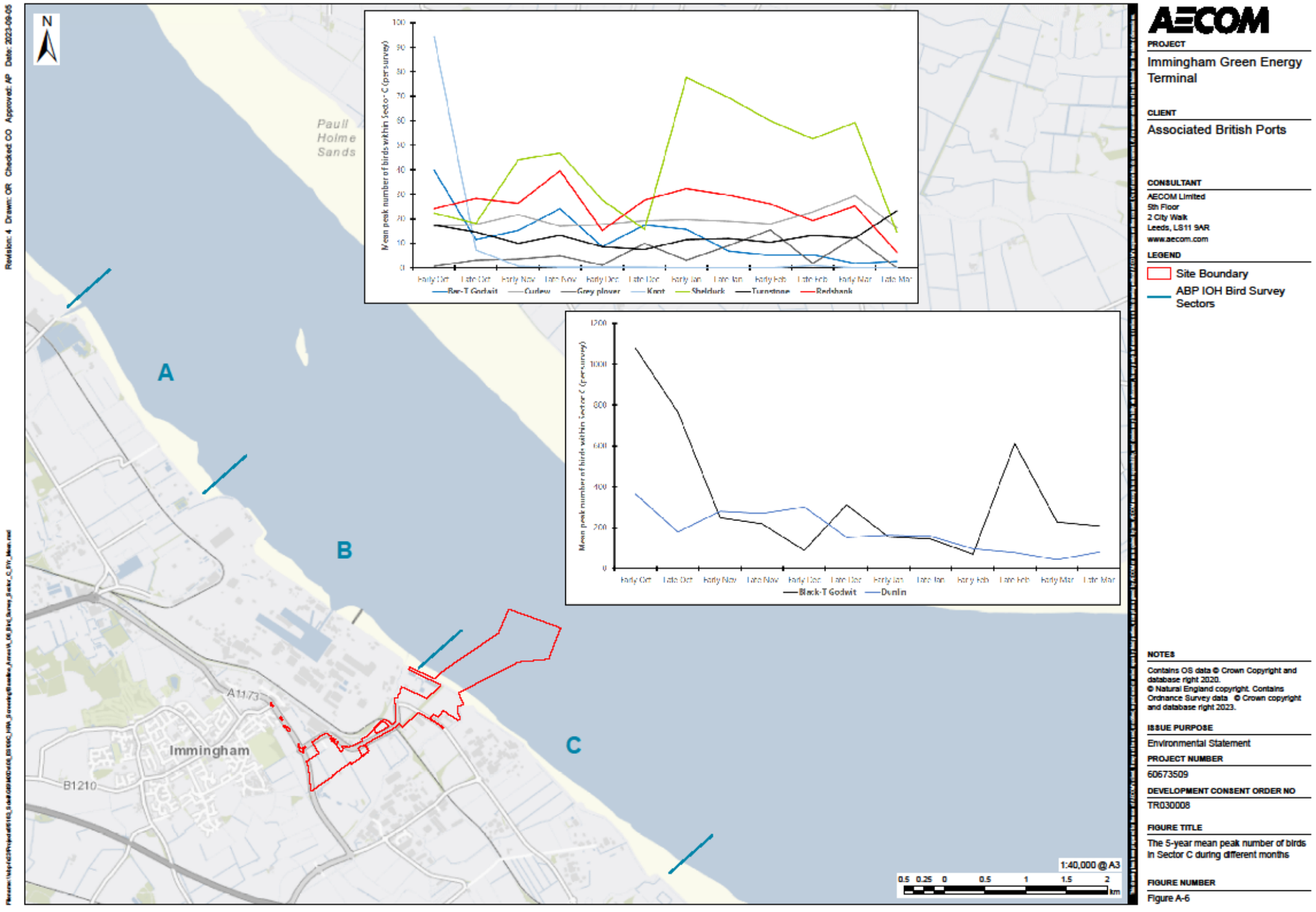
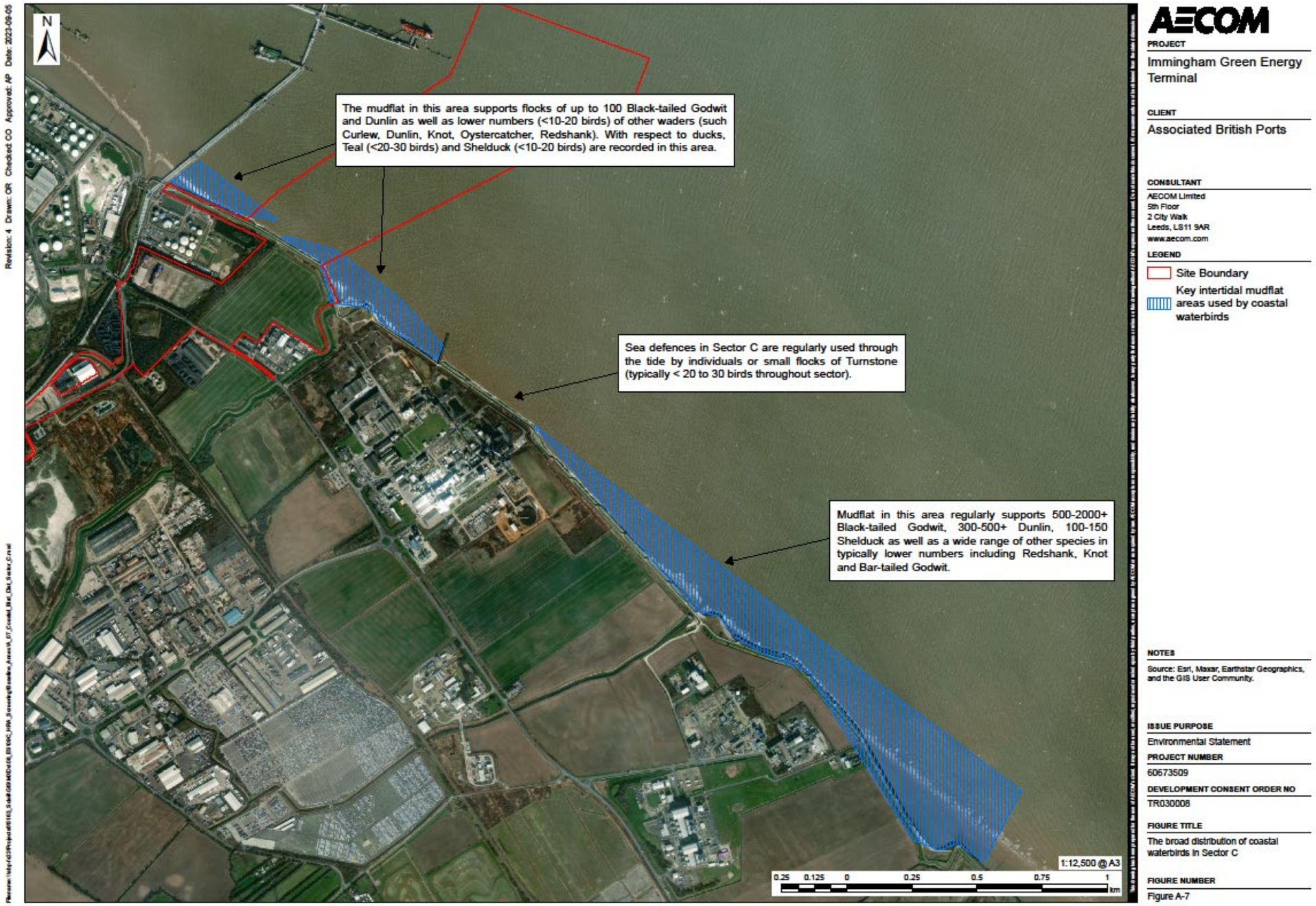


Figure A-7: The broad distribution of coastal waterbirds in Sector C



ANNEX A.1 Baseline Ornithology Data

Immingham Green Energy Terminal

TR030008

Volume 7

Annex A.1: Baseline Ornithology Data

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Tables

1. Introduction

1.1. Baseline Ornithology Data - Intertidal

1.1.1 Pre and post consent monitoring of coastal waterbird surveys as part of the Immingham Outer Harbour development have been undertaken annually since winter 1997/98.

1.1.2 The foreshore in the area of the Project overlaps with 'Sector C' (between the Immingham Oil Terminal Jetty and Oldfleet Drain (as shown in **Figure 10.1 [TR030008/APP/6.3]).** Error! Reference source not found. presents monthly peak counts for the period October 2021 to September 2022. During this period, surveys were undertaken between October and March twice a month. During each survey, either five counts (October and March) or four counts (November to February) were undertaken every two hours after high water.

Table 1- Monthly peak counts of coastal waterbirds for the period October 2021 to September 2022

Species	Peak count (feeding)													Peak count(roosting)												Peak count (combined – non-behavioural)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	MP	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	MP	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	MP
Avocet							2	1					0.3																				2	1					0.3
Bar-T Godwit	141	14	26	21	23	8			248		3	27	43												5	0.4	141	14	26	21	23	8			248		3	27	43
Black Headed Gull						83	9	15	44	219	449	297	93	46	30	71	238	0	213	0	0	0	0	0	38	53						83	9	15	61	219	449	297	94
Black-T Godwit	2591	720	250	511	940	416	581	106			39	108	522														2591	720	250	511	940	416	581	106			39	108	522
Canada Goose								4					0.3																					4					0.3
Common Gull						1			20	21	1	4	4																			5		6	34	21	5	18	7
Common Sandpiper							4	3		1			1																				4	3		1		4	1
Cormorant												1	0.1							1						0.1							1					1	0.2
Curlew	33	37	21	29	25	33	43	16	4	19	20	23	25	3	1	2	16	5	12	6	1	3	3	3	4	5	33	37	21	29	25	33	43	16	4	19	20	23	25
Dunlin	152	462	126	556	254	61	400				47	131	182	4		2	1	1	3							1	152	462	126	556	254	61	400				47	131	182
Golden Plover		1			13								1															1			13							1
Goldeneye†		1											0.1															1											0.1
Great Black-backed Gull						1	8	4		4	2	11	3																			2	8	4		4	2	11	3
Grey Plover†	1	4	41	24	75	60	12					4	18														1	4	41	24	75	60	12					4	18
Greylag Goose						2							0.2																			2							0.2
Herring Gull						13	13	2	4	7	16	27	7																			13	21	6	4	7	16	31	8
Knot	39						4	26	3			24	8														39						4	26	3			24	8
Lesser Black-backed Gull						2	6	1	1	14	4	1	2																			4	6	1	1	14	4	1	3
Little Egret								1			1	1	0.3											1		1	0.2							1		1	1	1	0.3
Little Ringed Plover																																1							0.1
Mute swan																			1							0.1						1							0.1
Oystercatcher†		1		2	3	7	5	5	3	3	3	2	3					1	2	2	2					1		1		2	3	7	5	5	3	3	3	2	3
Pink-footed Goose										2		1	0.3																						2		1	0.3
Redshank	11	80	31	42	22	23	24			13	9	13	22	2		15	44	1	10	1					1	6	11	80	31	44	22	23	24			13	9	13	23
Ringed Plover†				2					2			10	1	7	12	7	10	16	10					2	7	6	7	12	7	10	16	10			2		2	10	6
Shelduck	45	128	22	55	78	43	12	5	2	8	116	26	45		3	4	0	1	18	10				3	22	5	45	128	22	55	78	43	12	5	2	8	116	26	45
Teal†						3							0.3												2	0.2						3					2	0.4
Turnstone†	32	14	14	23	12	35	8				16	31	15	3	7		17	6	23	5				5	6	6	32	14	14	23	12	35	8				16	31	15
Yellow-legged Gull						1							0.1																			1							0.1

SPA qualifying species highlighted in **bold.** † Species with this symbol are included within the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year MP.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year MP.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Black-tailed Godwit the regional importance (> 10% of the estuary wide WeBS 5-year MP – 565 birds) is higher than the national importance threshold (390 birds). The national importance threshold for Common Sandpiper and Whimbrel is set as 1.
	Cells highlighted red indicate the count is of international importance.

1.2. Baseline Ornithology Data – Terrestrial Overwintering SPA/ Ramsar Species

Scoping

1.2.1 Following the completion of a Preliminary Ecological Appraisal ("PEA") **[TR030008/APP/6.4]** of terrestrial habitats within the Project boundary, the following areas were subject to terrestrial wintering bird surveys as they were identified as having habitats that could support SPA/ Ramsar waterbirds across the high tide period and thus may be functionally linked to the Humber Estuary SPA/Ramsar:

a. West Site – this is formerly arable land (comprising three fields separated by ditches) that was taken out of agricultural cultivation around 10 years ago, and has consequently developed through natural succession into an area of rank neutral grassland, with some areas of establishing scrub in the south (which is self seeded from the adjacent hedgerow).

b. Temporary Compound Area – this is a large (c. 11 ha) arable field fronting the Humber Estuary off Laporte Road, which was under a winter wheat crop in winter 2022/23.

1.2.2 No other areas of terrestrial habitat within the Project boundary were identified as being suitable to support overwintering SPA/Ramsar waterbirds, and were therefore scoped out of further survey effort for wintering birds.

Method

1.2.3 Surveys of wintering birds using the West Site and Temporary Compound Area were undertaken to assess whether land is functionally linked to the Humber Estuary SPA/Ramsar site (and thus afforded additional protection in the planning process). The survey was based on methods following Bibby et al (2000) (Ref 1-1) and Gilbert et al, (1998) (Ref 1-2), with all areas within the West Site and the Temporary Compound Area surveyed.

1.2.4 The surveys were undertaken twice per month for a period of two hours either side of high tide, with surveys alternating between early in the morning, commencing just after sunrise and late afternoon, finishing before dusk. This approach helped to establish the overall use of the Site by different species groups, particularly any species which may arrive at or after dusk to roost overnight. Surveys of the West Site were undertaken twice per month in February and March 2022, and of the Temporary Compound Area twice per month between September and March (inclusive) over two wintering seasons in 2021/22 and 2022/23.On each survey visit the route was walked at a slow pace with start and finish times noted. All birds seen and heard were recorded directly onto a base map of the Site. Registrations of birds were recorded using standard British Trust for Ornithology ("BTO") two letter species codes. All bird species were recorded and mapped across the Site. Each survey visit was undertaken to coincide with high tide at the adjacent Immingham Docks during appropriate weather conditions (dry with a wind speed <F5) for recording birds survey. The times and dates of the surveys and the weather conditions are set out in the table below.

1.2.5 No anthropogenic sources of disturbance (e.g. walkers, horse riders), or any other sources of disturbance (e.g. peregrine) that could have displaced birds were observed during the surveys.

Table 2: Dates and Weather Conditions for Terrestrial Wintering Bird Surveys (West Site)

Visit Number	Date	High Tide Time	Sunrise/Sunset	Survey Times	Weather Conditions
1	04/02/2022	08:14	07:40	07:14 – 09:14	F3SW, 4°C, dry, good visibility, cloud cover 7/8.
2	28/02/2022	16:14	17:40	12:35 – 16:35	F3S, 10°C, dry (then rain from 15:00), cloud cover 8/8.
3	17/03/2022	17:33	18:08	12:30 – 14:30	F4SW, 13°C, dry, good visibility, cloud cover 2/8.
4	21/03/2022	07:53	06:01	06:50 – 08:50	F1SE, 4 to 11°C, dry, good visibility, cloud cover 2/8.

Table 3: Dates and Weather Conditions for Terrestrial Wintering Bird Surveys (Temporary Compound Area)

Visit Number	Date	High Tide Time	Sunrise/Sunset	Survey Times	Weather Conditions
Winter 2021/22					
1	01/09/2021	13:52 5.36m	06:09	11:50-15:55	wind NE F5, Cloud 6/8, Temp 15, Visabilty >2km, Dry
2	16/09/2021	14:56 5.73m	19:13	12:56-16:57	wind SW F3, Cloud 4/8, Temp 12, Visabilty >2km, Dry
3	11/10/2021	09:36 7.05m	07:20	07:35-11:36	wind W F2, Cloud 2/8, Temp 11, Visabilty >2km, Dry
4	30/10/2021	14:07 5.43m	17:31	12:07-16:07	wind SE F3, Cloud 8/8, Temp 10, Visabilty >2km, Dry
5	11/11/2021	10:43 6.01m	07:19	08:43-12:43	wind S F3, Cloud 3/8, Temp 10, Visabilty >2km, Dry

Visit Number	Date	High Tide Time	Sunrise/Sunset	Survey Times	Weather Conditions
6	29/11/2021	13:22 5.77m	15:46	11:21-15:23	wind SW F4, Cloud 6/8, Temp 10, Visabilty >2km, Dry
7	10/12/2021	10:31 6.16m	08:06	08:31-12:31	wind SE F2, Cloud 4/8, Temp 6, Visabilty >2km, Dry
8	28/12/2021	12:26 5.80m	15:47	10:25-14:27	wind SE F3, Cloud 6/8, Temp 8, Visabilty >2km, Dry
9	08/01/2022	10:01 6.30m	08:14	08:01-12:01	wind S F4, Cloud 8/8, Temp 6, Visabilty >2km, Dry
10	27/01/2022	12:47 5.75m	16:33	10:47-14:47	wind SSW F5, Cloud 6/8, Temp 6, Visabilty >2km, Dry
11	07/02/2022	09:54 6.10m	07:35	07:54-11:54	wind SW F3, Cloud 4/8, Temp 4, Visabilty >2km, Dry
12	22/02/2022	09:14 6.43m	07:04	07:14-11:14	wind S F2, Cloud 8/8, Temp 6, Visabilty >2km, Dry
13	12/03/2022	13:03 5.13m	17:59	11:02-15:04	wind SE F5, Cloud 6/8, Temp 12, Visabilty >2km, Dry
14	29/03/2022	16:50 6.35m	19:30	14:50-18:50	wind NE F4, Cloud 6/8, Temp 12, Visabilty >2km, Dry
Winter 2022/23					
1	01/09/2022	09:21 6.94m	06:09	11:50-15:55	wind NNE F5, Cloud 8/8, Temp 12, Visabilty >2km, Dry
2	17/09/2022	10:49 6.15m	06:37	08:49-12:49	wind N F2, Cloud 5/8, Temp 10, Visabilty >2km, Dry
3	15/10/2022	09:37 6.48m	07:27	07:37-11:37	wind NW F3, Cloud 5/8, Temp 8, Visabilty >2km, Dry
4	31/10/2022	09:31 6.27m	06:58	07:30-11:32	wind SW F2, Cloud 8/8, Temp 8, Visabilty >2km, Dry

Visit Number	Date	High Tide Time	Sunrise/Sunset	Survey Times	Weather Conditions
5	05/11/2022	15:56 6.60m	16:20	13:56-17:57	wind S F4, Cloud 8/8, Temp 10, Visabilty >2km, Dry
6	29/11/2022	09:36 6.35m	07:51	07:35-11:37	wind SW F6, Cloud 8/8, Temp 6, Visabilty >2km, Dry
7	03/12/2022	14:25 6.13m	15:43	12:25-16:25	wind NE F2, Cloud 6/8, Temp 4, Visabilty >2km, Dry
8	30/12/2022	11:31 6.06m	15:48	09:30-13:32	wind NW F6, Cloud 6/8, Temp 8, Visabilty >2km, Dry
9	14/01/2023	10:14 5.88m	08:10	08:15-12:15	wind SSE F3, Cloud 6/8, Temp 4, Visabilty >2km, Dry
10	30/01/2023	12:36 5.53m	07:50	10:35-14:37	wind SW F5, Cloud 8/8, Temp 6, Visabilty >2km, Dry
11	11/02/2023	08:56 6.31m	07:28	06:56-10:57	wind SSW F2, Cloud 4/8, Temp 4, Visabilty >2km, Dry
12	18/02/2023	16:16 6.45m	17:16	14:15-18:15	wind S F2, Cloud 8/8, Temp 8, Visabilty >2km, Dry
13	14/03/2023	09:50 6.17m	06:21	07:49-11:51	wind NW F1, Cloud 4/8, Temp 7, Visabilty >2km, Dry
14	29/03/2023	11:25 5.46m	06:42	09:25-13:25	wind SSE F4-5, Cloud 4/8, Temp 8, Visability >2km, Dry

Results

West Site

1.2.6 The purpose of the surveys undertaken in this part of the Survey Area was to determine whether the land could be potentially functionally linked to the Humber Estuary SPA/Ramsar, and thus merit further wintering bird surveys to cover a full passage/wintering season. However, no SPA/Ramsar waterbirds were recorded within the West Site during the surveys. The grassland habitats within the West Site boundary are too overgrown to support high tide roosting waterbirds, and this was supported by the findings of the limited wintering bird surveys undertaken as detailed below.

1.2.7 During the four winter bird survey visits conducted at the Main Site between 17 February and 21 March 2022, a total of 22 bird species were recorded at the Site. This included five SPIs, five Red List and seven Amber List BoCC five species. These are listed in **Table 4**.

Table 4: Results of Wintering Bird Survey (Terrestrial) in West Site - 2022

English Name	Scientific Name	Birds of Conservation Concern 5 (BOCC5)	Annex 1 of the EU Birds Directive (Annex 1)	Schedule 1 Wildlife and Countryside Act 1981 (Schedule 1)	UK Biodiversity Action Plan Priority Species (UK BAP)	NERC Act 2006	Visit 1 04/02/2022	Visit 2 28/02/2022	Visit 3 17/03/2022	Visit 4 21/03/2022
Blackbird	*Turdus merula*						7	5	3	1
Blue Tit	*Cyanistes caeruleus*								1	
Carrion crow	*Corvus corone*						3	2		
Dunnock	*Prunella modularis*	Amber			✓	s.41 species	1		2	2
Goldfinch	*Carduelis carduelis*						2	2	2	2
Great Tit	*Parus major*						1	1	1	2
Linnet	*Linaria cannabina*	Red			✓	s.41 species			1	2
Long-tailed Tit	*Aegithalos caudatus*						6	1	2	2
Magpie	*Pica pica*						3	4	3	2
Meadow Pipit	*Anthus pratensis*	Amber					4	2	2	4
Pheasant	*Phasianus colchicus*						1	1	1	1
Redwing	*Turdus iliacus*	Amber					2	10		1
Reed Bunting	*Emberiza schoeniclus*	Amber			✓	s.41 species	4	1		4
Robin	*Erithacus rubecula*						2	3	1	1
Skylark	*Alauda arvensis*	Red			✓	s.41 species	1	1	2	1
Snipe	*Gallinago gallinago*	Amber					1	5		1
Starling	*Sturnus vulgaris*	Red			✓	s.41 species	7			
Woodpigeon	*Columba palumbus*	Amber					7	3	6	28
Woodcock	*Scolopax rusticola*	Red					4			1
Wren	*Troglodytes troglodytes*	Amber					4	2	4	4
Yellowhammer	*Emberiza citrinella*	Red			✓	s.41 species		1		1
Total number of species recorded per visit							18	16	15	18

Temporary Compound Area

1.2.8 The purpose of the surveys undertaken in this part of the Survey Area was to determine whether the land was functionally linked to the Humber Estuary SPA/ Ramsar. The arable land was identified as potentially suitable for SPA/Ramsar waterbirds due to it being estuary-fronting, and consequently in close proximity to mudflats that support wintering waterbirds, which are known to use terrestrial fields in and around the estuary across the high tide period for feeding, roosting and loafing.

1.2.9 The surveys only recorded one SPA/Ramsar species (curlew) in very low numbers, typically as single or small groups of individuals and flocks.

1.2.10 The survey results indicate that this field does not support aggregations of SPA/ Ramsar waterbirds in locally important numbers, i.e. does not support >1% of the Humber Estuary five-year peak mean for any species,and is therefore not functionally linked to the Humber Estuary SPA/Ramsar.

Table 5: Results of Wintering Bird Survey (Terrestrial) in Temporary Compound Area - 2023

Visit	Species English Name	Species Latin Name	Count Cycle Before HT		Count Cycle After HT	
			Number	Activity	Number	Activity
11.10.21	Curlew	Numnius arquata	2	Roosting	2	Roosting
10.12.21	Curlew	Numnius arquata	4	Feeding & roosting	4	Roosting
08.01.21	Curlew	Numnius arquata	1	Roosting	1	Roosting

1.3. Baseline Ornithology Data – Terrestrial Breeding non-SPA/ Ramsar Species

Survey Area

1.3.1 Following the completion of a PEA **[TR030008/APP/6.4]** of terrestrial habitats within the Project boundary, the following areas were subject to breeding bird surveys as they were identified as having habitats that could support assemblages of breeding birds:

a. West Site – this is formerly arable land (comprising three fields separated by ditches) that was taken out of agricultural cultivation around 10 years ago, and has consequently developed through natural succession into an area of rank neutral grassland, with some areas of establishing scrub in the south (which is self seeded from the adjacent hedgerow).

b. East Site – Ammonia Storage site – this is also formerly arable land that was taken out of agricultural cultivation around 10 years ago; the marginal areas have become invaded with dense areas of bramble scrub and self-seeded silver birch. The central portion has been previously cleared and crushed aggregate installed to create storage for port-related activities; this area is consequently open and free of scrub, with ephemeral/ short perennial vegetation becoming established

c. Long Strip Woodland (within the Pipe Rack and Jetty Access Road) – this is a narrow (c. 40m) band of mature ash and oak woodland that is bound by the Associated Petroleum Terminal site to the north, and a large arable field to the south. Laporte Road runs along the south-western boundary, and the woodland terminates at its northernmost point where it meets the flood embankment fronting the Humber Estuary. A public right of way runs along the south-eastern boundary of the woodland connecting Laporte Road to the coastal footpath/ bridleway that runs along the top of the flood embankment.

1.3.2 No other areas of habitat within the Project boundary were identified as having habitats with the potential to support anything other than a very small number of common species of nesting birds,and were therefore scoped out of further survey effort for breeding birds.

Survey Scope

1.3.3 The scope of works for the breeding bird surveys within the Survey Area defined above was as follows:

a. Five walked transects to be conducted covering all parts of the site to be lost/ damaged within Site Boundary (referred to as the ‘Survey Area’).

b. Maps showing the distribution of birds within the Survey Area with notes on breeding behaviour (singing, display flights, courtship etc.) as necessary.

c. Identify any important breeding bird species or assemblages within the Project Site Boundary and within adjacent areas where there may be potential for direct and indirect effects.

d. Use information gathered on the breeding bird assemblage of the Site to inform mitigation/compensation and enhancement opportunities as appropriate.

1.3.4 Habitats within the West Site were surveyed in 2022. Following changes to the Project and red line boundary, habitats within the East Site – Ammonia Storage site and Long Strip Woodland were surveyed in 2023.

Method

1.3.5 All survey work and reporting has been undertaken and reviewed by suitably qualified ecologists who are full members of the Chartered Institute of Ecology and Environmental Management.

1.3.6 The Survey Area was visited on five occasions during the bird breeding season (late April – mid June), following an amended Common Bird Census methodology (Ref 1-3). On each visit, an experienced AECOM ornithologist walked along a transect to cover the Survey Area and immediate surrounding area (up to around 200m from the Site boundary, where visible from accessible land), and identified all birds present. Records were made as to whether the bird was seen or heard (calling or singing), and further details were made, including evidence of bird nesting behaviour and activity (e.g. bird carrying food, nesting material or occupied nest seen).

1.3.7 Optimal times for breeding bird survey occur between dawn and mid-morning (approximately 10:30) and from early evening (approximately 17:30) to dusk. During these times, breeding birds are more active and can be detected in song more frequently. The surveys were carried out in the West Site within these time frames with all five surveys carried out in the morning. For the East Site – Ammonia Storage site and Long Strip Woodland, the survey timing was pushed later in the day to avoid the dawn period, due to the limitations to the surveyor in adequately recording birdsong in the dawn period in these habitat types. However, this is not considered to represent a limitation to the survey data, which adequately recorded the species, breeding status and distribution within the habitats to establish a reasonable estimate as to the breeding assemblage present and thus the nature conservation status of the habitats for nesting birds.

1.3.8 The survey duration for each transect was approximately two hours. Surveys were carried out as far as possible on days with little or no wind, rain or mist in order to maximise the potential for detection of birds by sound as well as sight and also to avoid the possibility of bird activity being suppressed by inclement weather conditions.

1.3.9 Contacts with birds (by song, call or sighting) were marked on the survey map using British Trust for Ornithology (“BTO”) two-letter species codes and standard symbols to record behaviour. Typically a number of records for a specific species are clustered across the survey visits, which allows an estimation of breeding numbers of each species to be carried out.

1.3.10 The timings, dates and weather conditions for the surveys are detailed in **Table 6** and **Table 7**.

Table 6: Dates and Weather Conditions for Breeding Bird Surveys (West Site)

Visit Number	Date	Sunrise	Survey Times	Weather Conditions
1	17/03/2022	06:10	08:00 – 10:00	F2SW, 11-13°C, cloud cover 0/8, dry
2	11/04/2022	06:00	08:30 – 10:30	F2SE, 9-11°C, cloud cover 6/8, dry
3	05/05/2022	05:15	06:15 – 08:15	F1W 9-11°C, cloud cover 2/8, dry
4	21/05/2022	04:30	08:00 – 10:00	F1SW, 17-19°C, cloud cover 2/8, dry
5	25/05/22	04:45	05:45 – 07:45	F2SW, 11-12°C, cloud cover 7/8, dry

Table 7: Dates and Weather Conditions for Breeding Bird Surveys (East Site – Ammonia Storage site and Long Strip Woodland)

Visit Number	Date	Sunrise	Survey Times	Weather Conditions
1	03/03/2023	06:45	09:25 – 11:25	F1-2N, 6°C, cloud cover 8/8, dry
2	31/03/2023	06:38	09:35 – 11:15	F1-2E, 11-12°C, cloud cover 8/8, dry
3	18/04/2023	05:54	10:00 – 12:00	F2E, 10°C cloud cover 1/8, dry
4	05/05/2023	05:18	11:45 – 13:15	F1SW, 12°C, cloud cove 6/8, dry
5	19/05/2023	04:54	09:35 – 11:00	F2SW, 20°C, cloud cover 2/8, dry (heavy rain previous day)

Results

1.3.11 The species recorded within each part of the Survey Area and their breeding status are stated in **Table 8**. Detailed territory mapping was not undertaken given the density of the woodland habitats present within Long Strip woodland, and the scrub habitats present within East Site – Ammonia Storage site; however, it was possible to estimate of the number of territories within the West Site Survey Area.

Table 8: Breeding Bird Survey Results

English Name	Scientific Name	Birds of Conservation Concern 5 (BOCC5)	Annex 1 of the EU Birds Directive (Annex 1)	Schedule 1 Wildlife and Countryside Act 1981 (Schedule 1)	UK Biodiversity Action Plan Priority Species (UK BAP)	NERC Act 2006	Breeding Status: Confirmed, Probable, Possible or Not Breeding (Estimated number of territories listed in brackets where assessed)		
							West Site	East Site – Ammonia Storage site	Long Strip Woodland
Pheasant	*Phasianus colchicus*						Probable (1)	Possible	Possible
Woodpigeon	*Columba palumbus*	Amber					Probable (2)	Probable	Probable
Blue Tit	*Cyanistes caeruleus*						Possible (1)	Confirmed	Confirmed
Great Tit	*Parus major*						Possible (1)	Confirmed	Confirmed
Skylark	*Alauda arvensis*	Red			✓	s.41 species	Probable (1)		
Cetti's Warbler	*Cettia cetti*			✓			Probable (1)		Possible
Long-tailed Tit	*Aegithalos caudatus*						Probable (1)	Confirmed	Confirmed
Willow Warbler	*Phylloscopus trochilus*	Amber					Probable (1)		
Chiffchaff	*Phylloscopus collybita*						Probable (1)	Probable	Probable
Sedge Warbler	*Acrocephalus schoenobaenus*	Amber					Probable (3)		Possible
Reed Warbler	*Acrocephalus scirpaceus*						Probable (2)		
Blackcap	*Sylvia atricapilla*						Possible (1)	Probable	Probable
Whitethroat	*Sylvia communis*						Probable (3)		Possible
Wren	*Troglodytes troglodytes*	Amber					Probable (4)	Confirmed	Confirmed
Blackbird	*Turdus merula*						Probable (1)	Confirmed	Confirmed
Song Thrush	*Turdus philomelos*	Amber			✓	s.41 species	Probable (1)		Possible
Robin	*Erithacus rubecula*						Probable (1)	Probable	Probable

English Name	Scientific Name	Birds of Conservation Concern 5 (BOCC5)	Annex 1 of the EU Birds Directive (Annex 1)	Schedule 1 Wildlife and Countryside Act 1981 (Schedule 1)	UK Biodiversity Action Plan Priority Species (UK BAP)	NERC Act 2006	Breeding Status: Confirmed, Probable, Possible or Not Breeding (Estimated number of territories listed in brackets where assessed)		
							West Site	East Site – Ammonia Storage site	Long Strip Woodland
Meadow Pipit	*Anthus pratensis*	Amber					Probable (1)		
Chaffinch	*Fringilla coelebs*						Probable (1)	Probable	Probable
Linnet	*Linaria cannabina*	Red			✓	s.41 species	Probable (1)	Not breeding	
Goldfinch	*Carduelis carduelis*						Probable (1)	Probable	Probable
Reed Bunting	*Emberiza schoeniclus*	Amber			✓	s.41 species	Probable (3)		
Magpie	*Pica pica*						Not breeding	Possible	
Carrion crow	*Corvus corone*						Not breeding	Possible	
Dunnock	*Prunella modularis*	Amber			✓	s.41 species	Not breeding	Possible	
Yellowhammer	*Emberiza citrinella*	Red			✓	s.41 species	Not breeding		
Bullfinch	*Pyrrhula pyrrhula*	Amber				s.41 species			Possible
Buzzard	*Buteo buteo*							Possible	
Garden warbler	*Sylvia borin*								Not breeding
Goldcrest	*Regulus regulus*							Not breeding	
Great spotted woodpecker	*Dendrocopus major*								Possible
Lesser whitethroat	*Curruca curruca*								Possible
Redwing	*Turdus iliacus*	Amber						Not breeding	
Stock dove	*Columba oenus*	Amber							Possible
Swallow	*Hirundo rustica*							Not breeding	
Total number of confirmed/ probable/ possible breeding species							22	16	20

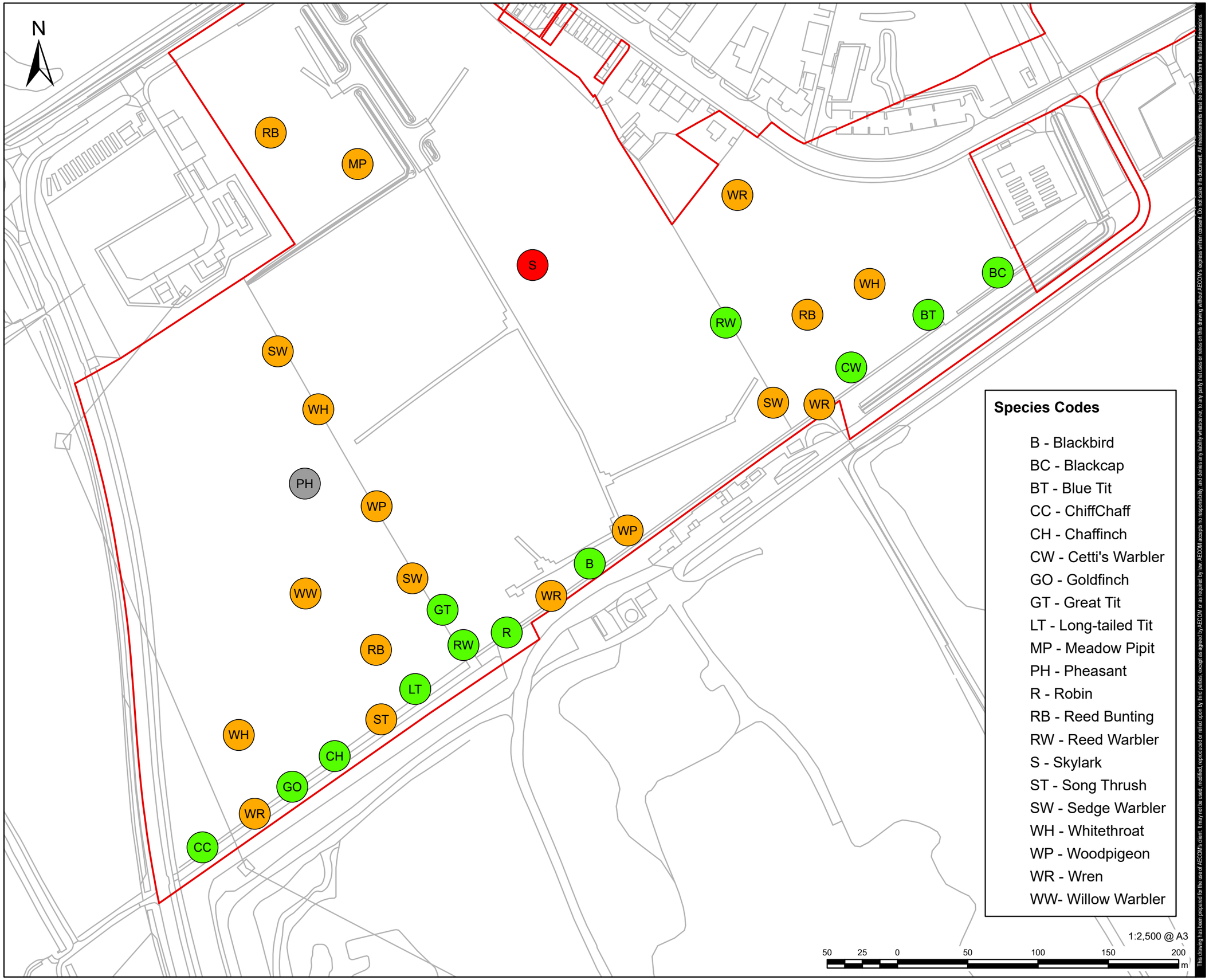
1.4. References

Ref 1-1 Bibby *et al* (2000). *Bird Census Techniques*. Academic Press, London.

Ref 1-2 Gilbert *et al* (1998). *Bird Monitoring Methods: A Manual of Techniques for Key UK Species*. The Royal Society for the Protection of Birds, Sandy.

Ref 1-3 Bibby CJ, Burgess ND, Hill DA and Mustoe SH (2000). *Bird Census Techniques, 2nd Edition*. Academic Press, London; Marchant, J.H. (1983) *Common Birds Census instructions*. BTO, Tring. 12pp.

Figure 1A Bird Survey Results



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LEGEND

Site Boundary

RSPB Conservation Status (2021)

Red

Amber

Green

No Status

NOTES

ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60673509

DEVELOPMENT CONSENT ORDER NO

TR030008

FIGURE TITLE

Bird Survey Results

FIGURE NUMBER

Figure 1a

Figure 1B Bird Survey Results

Revision: 1 Drawn: EB Checked: DF Approved: JA Date: 2023-09-04

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N

Species Codes

B - Blackbird
BC - Blackcap
BF - Bullfinch
BT - Blue tit
CC - Chiffchaff
CH - Chaffinch
CW - Cetti's warbler
GO - Goldfinch
GS - Great spotted woodpecker
GT - Great tit
GW - Garden warbler
LT - Long-tailed tit
LW - Lesser whitethroat
PH - Pheasant
R - Robin
SD - Stock dove
ST - Song thrush
SW - Sedge warbler
WH - Whitethroat
WP - Woodpecker
WP - Woodpigeon
WR - Wren

SW WR R CH 3WP CC BT LW GO BF 2SD B CH WR GO GS BC CW GT GW BT 2WP 2LT ST 4BT GO GT 6GO 2BF R BT WH 2GO WR PH WR CC

1:750 @ A3

10 5 0 10 20 30 40 m

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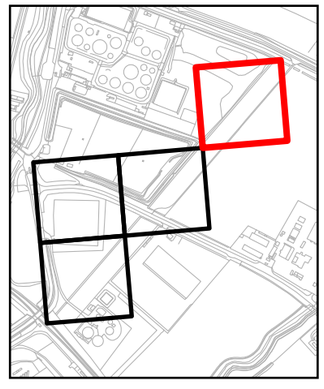
LEGEND
Site Boundary
RSPB Conservation Status (2021)
Red
Amber
Green
No Status



NOTES

ISSUE PURPOSE
Environmental Statement

PROJECT NUMBER
60673509

DEVELOPMENT CONSENT ORDER NO
TR030008

FIGURE TITLE
Bird Survey Results - Sheet 1 of 4

FIGURE NUMBER
Figure 1b

Revision: 1 Drawn: EB Checked: DF Approved: JA Date: 2023-09-04

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N

WR
PH
CC
2LT
GT
ST
WP
CH
BC
WH
WR
B
BT
GO
CH
R
CC
GT
CC
2LT
CC
GT
2GO
R
GO
BC
BT

Species Codes

- B - Blackbird
- BC - Blackcap
- BT - Blue tit
- CC - Chiffchaff
- CH - Chaffinch
- GO - Goldfinch
- GT - Great tit
- LT - Long-tailed tit
- PH - Pheasant
- R - Robin
- ST - Song thrush
- WH - Whitethroat
- WP - Woodpigeon
- WR - Wren

1:750 @ A3

10 5 0 10 20 30 40 m

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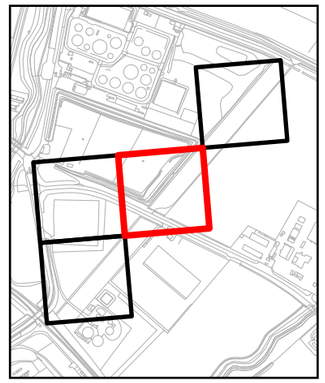
LEGEND

Site Boundary

RSPB Conservation Status (2021)

- Red
- Amber
- Green
- No Status



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ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60673509

DEVELOPMENT CONSENT ORDER NO

TR030008

FIGURE TITLE

Bird Survey Results - Sheet 2 of 4

FIGURE NUMBER

Figure 1b

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N

Species Codes

BC - Blackcap
CC - Chiffchaff
CH - Chaffinch
D - Dunnock
GO - Goldfinch
GT - Great tit
LT - Long-tailed tit
MG - Magpie
R - Robin

2LT
MG
D
R
CH
R
CC
CC
CC
R
GT
BC
GO

10 5 0 10 20 30 40 m

1:750 @ A3

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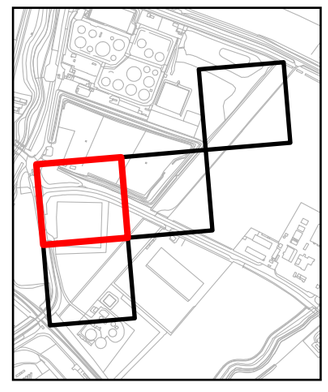
LEGEND

Site Boundary

RSPB Conservation Status (2021)

Red
Amber
Green
No Status



NOTES

ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60673509

DEVELOPMENT CONSENT ORDER NO

TR030008

FIGURE TITLE

Bird Survey Results - Sheet 3 of 4

FIGURE NUMBER

Figure 1b

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N

D GO BT PH CC WP WR 2LI CH R CC GO BC WP PH B CH D GT SL GC CC GO BC R RE CC WP GT WR 7C WP BT GO WR BZ B CH BT

Species Codes

B - Blackbird
BC - Blackcap
BT - Blue tit
BZ - Buzzard
C - Carrion crow
CC - Chiffchaff
CH - Chaffinch
D - Dunnock
GC - Goldcrest
GO - Goldfinch
GT - Great tit
LI - Linnet
PH - Pheasant
R - Robin
RE - Redwing
SL - Swallow
WP - Woodpigeon
WR - Wren

1:750 @ A3

10 5 0 10 20 30 40 m

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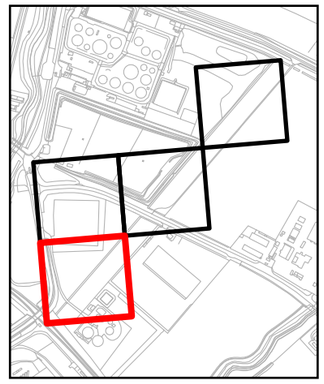
LEGEND
Site Boundary
RSPB Conservation Status (2021)
Red
Amber
Green
No Status



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ISSUE PURPOSE
Environmental Statement

PROJECT NUMBER
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DEVELOPMENT CONSENT ORDER NO
TR030008

FIGURE TITLE
Bird Survey Results - Sheet 4 of 4

FIGURE NUMBER
Figure 1b

Figure 2 Terrestrial Wintering Bird Survey Area

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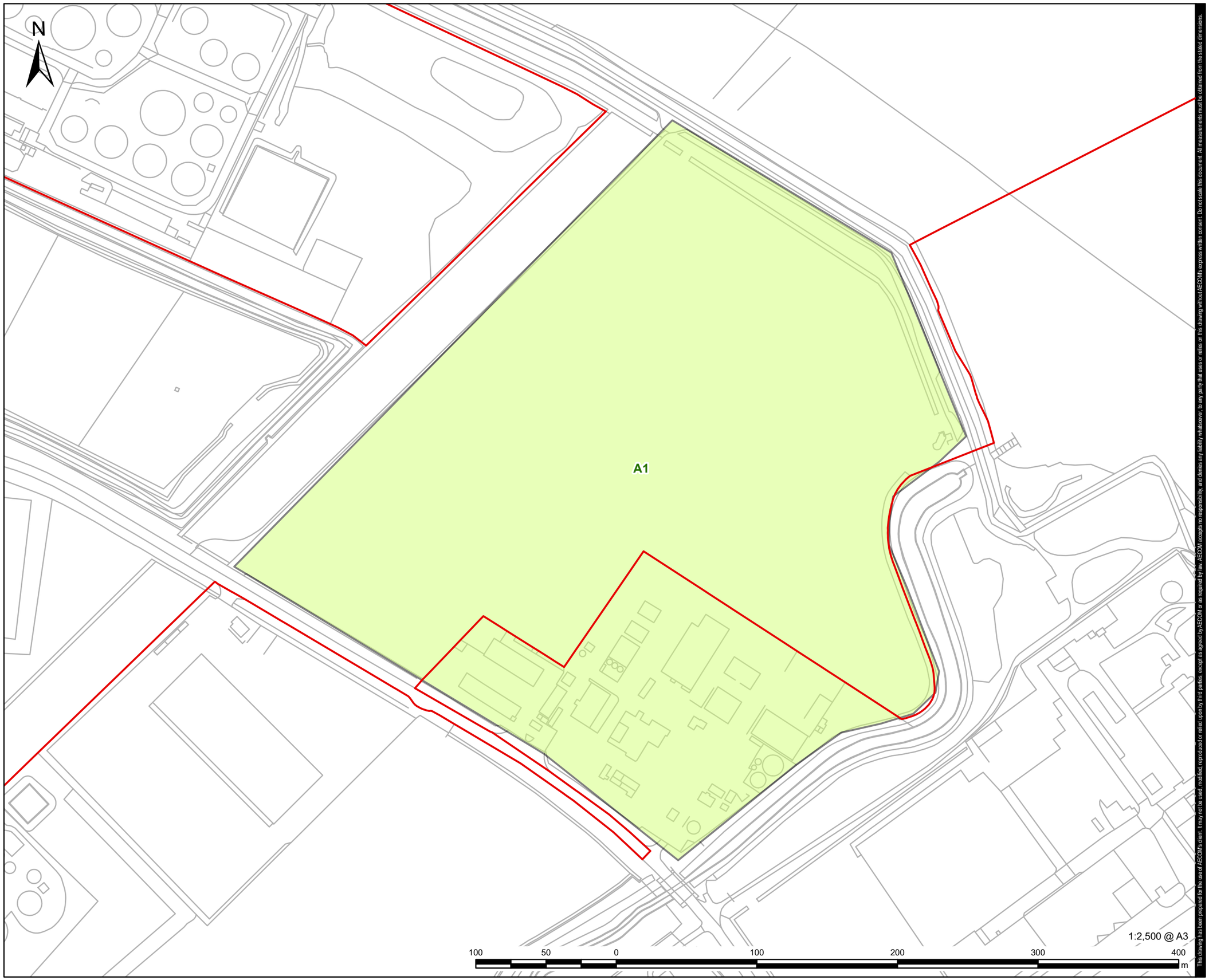
Revision: 1 Drawn: EB Checked: DF Approved: JA Date: 2023-08-21



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LEGEND

- Site Boundary
- Terrestrial Wintering Bird Survey Area

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PROJECT NUMBER

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TR030008

FIGURE TITLE

Terrestrial Wintering Bird Survey Area

FIGURE NUMBER

Figure 2

ANNEX A.2 Bird Count Data

Table A2.1 Peak counts of coastal waterbird species recorded within Sector A over the 5-year period between 2017/18 to 2021/22

Species	Peak count per winter (feeding)						Peak count per winter (Roosting)						Peak count per winter (combined – non-behavioural)					
	17/18	18/19	19/20	20/21	21/22	MP	17/18	18/19	19/20	20/21	21/22	MP	17/18	18/19	19/20	20/21	21/22	MP
Avocet	104	223	270	171	252	204	81	251	243	146	165	177	104	251	270	171	252	210
Bar-tailed Godwit	2	14	4	0	2	4	0	0	0	1	0	0.2	2	14	4	1	2	5
Black-headed Gull	0	0	0	21	26	9	0	0	0	0	46	9	0	0	0	21	46	13
Black-tailed Godwit	126	2,183	515	1,950	5,500	2,055	2,070	1,950	2,350	2,828	720	1,984	2,070	2,183	2,350	2,828	5,500	2,986
Common Gull	0	0	0	4	14	4	0	0	0	0	0	0	0	0	0	4	14	4
Common Sandpiper	0	0	0	1	1	0.4	0	0	0	0	1	0.2	0	0	0	1	1	0.4
Cormorant	0	4	3	3	3	3	0	2	3	3	3	2	0	4	3	3	3	3
Curlew†	32	63	99	71	64	66	68	82	39	120	42	70	68	82	99	120	64	87
Dunlin	680	512	592	557	474	563	22	22	850	122	130	229	680	512	850	557	474	615
Golden Plover	0	0	0	0	0	0	0	1	3	0	0	1	0	1	3	0	0	0.8
Great Black-backed Gull	0	0	0	0	4	1	0	0	0	0	1	0.2	0	0	0	0	4	0.8
Grey Heron	0	0	0	0	1	0	0	0	0	1	0	0.2	0	0	0	1	1	0.4
Grey Plover†	0	1	2	0	2	1	0	0	0	0	0	0	0	1	2	0	2	1
Greylag Goose	0	27	47	21	10	21	0	3	0	2	5	2	0	27	47	21	10	21
Herring Gull	0	0	0	1	5	1	0	0	0	1	7	2	0	0	0	1	7	2
Knot	2	22	5	18	0	9	0	68	14	18	0	20	2	68	14	18	0	20
Lapwing†	1054	772	320	201	715	612	2,374	1,254	829	2,932	846	1,647	2,374	1,254	829	2,932	846	1,647
Lesser Black-backed Gull	0	0	0	0	0	0	0	0	0	0	2	0.4	0	0	0	0	2	0.4
Little Egret	1	0	1	3	3	2	0	0	0	0	1	0.2	1	0	1	3	3	2
Little Stint	0	0	1	0	0	0.2	0	0	0	0	0	0	0	0	1	0	0	0.2
Mallard†	22	10	6	5	28	14	0	3	0	2	0	1	22	10	6	5	28	14
Mute Swan	4	0	0	0	0	1	0	0	0	0	0	0	4	0	0	0	0	0.8
Oystercatcher†	8	4	5	6	4	5	1	2	4	2	1	2	8	4	5	6	4	5
Pink-footed Goose	0	0	0	1	0	0.2	0	0	0	0	0	0	0	0	0	1	0	0.2
Purple Sandpiper	0	0	0	1	0	0.2	0	0	0	0	0	0	0	0	0	1	0	0.2
Redshank	204	112	177	245	260	200	40	124	62	141	72	88	204	124	177	245	260	202
Ringed Plover†	19	24	8	4	17	14	0	2	5	2	0	2	19	24	8	4	17	14
Ruff†	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0	0	1	0.2
Sanderling†	0	2	0	0	0	0.4	0	0	3	0	0	1	0	2	3	0	0	1
Shelduck	76	56	28	65	14	48	6	28	14	26	14	18	76	56	28	65	14	48
Shoveler	0	0	14	0	0	3	0	0	14	0	0	3	0	0	14	0	0	3
Snipe	4	15	24	1	18	12	0	0	3	22	14	8	4	15	24	22	18	17
Teal†	888	391	1,620	329	2,560	1,158	1,016	742	1,623	1,111	2,560	1,410	1,016	742	1,623	1,111	2,560	1,410
Turnstone†	17	12	21	2	12	13	0	37	0	0	0	7	17	37	21	2	12	18
Wigeon†	0	4	0	0	0	1	0	0	0	0	2	0.4	0	4	0	0	2	1

SPA qualifying species highlighted in **bold**. † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that for the Common Sandpiper, Grey Heron, Little Stint, and Ruff the local importance threshold is < 1.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that the regional importance threshold for the Little Stint was <1.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Avocet and Black-tailed Godwit the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak (258 and 565 birds respectively) is higher than the national importance threshold (87 and 390 birds respectively). The national importance threshold for the Common Sandpiper and Little Stint is set as 1.
	Cells highlighted red indicate the count is of international importance.

Table A2.2. Peak counts of coastal waterbird species recorded within Sector B over the 5-year period between between 2017/18 to 2021/22

Species	Peak count per winter (feeding)						Peak count per winter (Roosting)						Peak count per winter (combined – non-behavioural)					
	17/18	18/19	19/20	20/21	21/22	MP	17/18	18/19	19/20	20/21	21/22	MP	17/18	18/19	19/20	20/21	21/22	MP
Arctic Tern	0	0	0	1	0	0.2	0	0	0	1	0	0.2	0	0	0	1	0	0.2
Avocet	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0	0	1	0.2
Bar-tailed Godwit	2	22	10	8	16	12	0	12	12	1	5	6	2	22	12	8	16	12
Black-headed Gull	0	0	0	49	210	52	0	0	0	24	152	35	0	0	0	49	210	52
Black-tailed Godwit	286	563	303	1,300	532	597	6	222	3	38	390	132	286	563	303	1,300	532	597
Common Gull	0	0	0	55	16	14	0	0	0	55	663	144	0	0	0	55	663	144
Common Sandpiper	0	0	0	2	5	1	0	0	0	0	0	0	0	0	0	2	5	1
Common Tern	0	0	0	30	0	6	0	0	0	30	0	6	0	0	0	30	0	6
Cormorant	4	3	2	14	3	5	14	6	14	14	15	13	14	6	14	14	15	13
Curlew†	12	12	11	12	12	12	6	7	8	8	7	7	12	12	11	12	12	12
Dunlin	270	115	638	494	474	398	120	2	300	494	360	255	270	115	638	494	474	398
Golden Plover	0	0	0	0	0	0	0	0	1	0	0	0.2	0	0	1	0	0	0.2
Great Black-backed Gull	0	0	0	2	5	1	0	0	0	2	22	5	0	0	0	2	22	5
Greenshank	0	1	0	0	0	0.2	0	0	0	0	0	0	0	1	0	0	0	0.2
Grey Heron	0	1	1	0	0	0.4	0	0	1	0	0	0.2	0	1	1	0	0	0.4
Grey Plover†	0	0	1	1	2	0.8	1	0	1	0	0	0.4	1	0	1	1	2	1
Herring Gull	0	0	0	5	12	3	0	0	0	2	7	2	0	0	0	5	12	3
Knot	0	23	14	0	4	8	0	4	10	0	0	3	0	23	14	0	4	8
Lapwing†	0	0	0	0	0	0	0	1	0	0	1	0.4	0	1	0	0	1	0.4
Lesser Black-backed Gull	0	0	0	8	3	2	0	0	0	8	8	3	0	0	0	8	8	3
Little Egret	0	0	0	1	2	0.6	0	1	0	0	1	0.4	0	1	0	1	2	0.8
Little Ringed Plover	0	0	0	1	0	0.2	0	0	0	0	0	0	0	0	0	1	0	0.2
Mallard	4	8	0	7	3	4	6	2	0	7	4	4	6	8	0	7	4	5
Mute swan	0	0	0	0	0	0	1	0	0	0	0	0.2	1	0	0	0	0	0.2
Oystercatcher†	8	10	8	12	7	9	5	6	4	4	4	5	8	10	8	12	7	9
Redshank	204	166	125	153	209	171	110	121	110	153	140	127	204	166	125	153	209	171
Ringed Plover†	12	1	7	5	5	6	0	0	0	0	1	0.2	12	1	7	5	5	6
Shelduck	69	56	70	67	55	63	74	39	45	46	58	52	74	56	70	67	58	65
Teal†	11	21	9	27	88	31	1	9	3	27	71	22	11	21	9	27	88	31
Turnstone†	35	33	29	28	34	32	15	5	6	2	14	8	35	33	29	28	34	32
Woodcock	1	0	0	0	0	0.2	0	0	0	0	0	0	1	0	0	0	0	0.2

SPA qualifying species highlighted in bold. † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that for the Arctic Tern, Common Sandpiper, Greenshank, Grey Heron, Little Ringed Plover, and Woodcock the local importance threshold is < 1.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that the regional importance threshold for the Arctic Tern, Little Ringed Plover, and Woodcock are <1.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Black-tailed Godwit and Common Sandpiper the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak (565 and 4 birds respectively) is higher than the national importance threshold (390 and 1 birds respectively).
	Cells highlighted red indicate the count is of international importance.

Table A2.3. Coastal waterbird species recorded within Sector A during October 2021 to September 2022 (peak counts – feeding and roosting).

Species	Peak count (feeding)												Peak count(roosting)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Avocet	171	15	0	0	0	115	7	5	6	18	8	225	146	99	0	0	35	92	12	0	24	19	0	165
Barnacle goose	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bar-tailed Godwit	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
Black-headed Gull	0	0	0	0	0	21	56	16	43	181	137	18	0	0	0	0	0	0	19	6	62	205	137	19
Black-tailed Godwit	1,950	4	0	6	30	15	25	44	121	176	420	3,620	2,828	28	0	578	142	0	0	7	131	166	0	720
Canada Goose	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Gull	0	0	0	0	0	4	3	0	2	2	0	14	0	0	0	0	0	0	0	0	0	2	8	0
Common Sandpiper	0	0	0	0	0	0	1	2	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	1
Cormorant	1	1	1	0	0	3	0	1	1	0	2	3	1	0	0	0	0	0	0	0	2	1	2	3
Curlew†	54	9	25	71	24	50	47	11	19	33	17	42	35	18	108	120	71	78	4	3	4	3	2	1
Dunlin	181	163	557	181	215	40	30	25	0	9	0	32	122	0	2	36	13	0	0	0	0	0	0	0
Great Black-backed Gull	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Grey Heron	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Grey Plover†	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Greylag Goose	21	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0
Herring Gull	0	0	0	0	0	1	2	3	8	2	0	4	0	0	0	0	0	1	2	1	7	12	3	4
Knot	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0
Lapwing†	0	201	21	0	0	4	1	4	49	22	0	3	145	389	509	388	2,932	1	2	6	39	68	0	3
Lesser Black-backed Gull	0	0	0	0	0	0	0	0	0	9	5	0	0	0	0	0	0	0	3	1	1	7	6	1
Little Egret	1	0	0	0	0	2	0	0	0	0	1	2	0	0	0	0	0	0	0	1	1	0	0	0
Mallard†	0	0	5	0	0	1	2	0	0	0	0	2	2	0	0	0	0	0	2	2	0	0	0	0
Mediterranean Gull	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Oystercatcher†	0	0	0	1	0	6	4	1	4	6	1	0	0	0	0	0	0	2	5	2	2	1	0	0
Pink-footed Goose	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purple sandpiper	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Redshank	169	124	245	123	48	57	64	3	1	201	85	154	141	12	119	27	18	16	8	2	1	10	0	0
Ringed Plover†	0	0	0	0	0	4	14	48	1	6	9	17	0	0	0	0	0	2	1	13	0	0	0	0
Ruff†	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shelduck	11	12	21	14	16	65	26	18	21	23	6	8	2	7	14	9	26	15	25	5	10	9	3	7
Snipe	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0
Teal†	329	174	148	275	164	97	38	0	0	0	0	275	326	831	273	1111	362	100	44	0	0	0	30	285
Turnstone†	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Whimbrel†	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0

SPA qualifying species highlighted in bold. † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that for the Common Sandpiper, Grey Heron, Mediterranean Gull, Ruff and Whimbrel the local importance threshold is < 1.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that the regional importance threshold for the Mediterranean Gull was <1.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Avocet, Black-tailed Godwit, Common Sandpiper and Whimbrel, the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak (258 and 565, 4, and 6 birds respectively) is higher than the national importance threshold which is currently set at 87 and 390 individuals for the avocet and Black-tailed Godwit and 1 individual for both the Common Sandpiper and Whimbrel.
	Cells highlighted red indicate the count is of international importance.

Table A2.4. Coastal waterbird species recorded within Sector B during October 2021 to September 2022 (peak counts – feeding and roosting)

Species	Peak count (feeding)												Peak count (roosting)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Bar-tailed Godwit	8	3	0	0	1	0	0	0	0	0	2	16	0	1	0	0	0	0	0	0	0	0	0	5
Black-headed Gull	0	0	0	0	0	49	30	18	107	171	224	210	0	0	0	0	0	24	2	5	29	34	168	65
Black-tailed Godwit	589	311	2	1300	10	341	535	264	102	44	22	109	9	38	1	30	2	3	2	24	29	20	6	7
Common Gull	0	0	0	0	0	55	0	1	13	7	1	5	0	0	0	0	0	55	18	0	4	0	8	30
Common Sandpiper	0	0	0	0	0	0	0	0	0	3	1	5	0	0	0	0	0	0	0	0	0	0	0	0
Cormorant	14	4	5	4	7	10	1	0	0	0	0	1	14	4	5	4	7	10	9	0	7	7	16	15
Curlew†	12	8	9	11	11	12	13	14	18	18	13	11	7	4	4	2	5	2	1	6	1	4	4	4
Dunlin	494	406	174	340	215	169	10	12	0	0	1	108	494	400	100	10	150	0	2	3	0	0	0	2
Great Black-backed Gull	0	0	0	0	0	2	1	1	1	1	2	2	0	0	0	0	0	2	1	0	1	0	3	12
Grey Plover†	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Herring Gull	0	0	0	0	0	5	3	6	2	3	5	7	0	0	0	0	0	2	10	1	1	1	1	2
Knot	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lesser Black-backed Gull	0	0	0	0	0	8	4	2	2	6	5	2	0	0	0	0	0	8	5	3	3	9	9	8
Little Egret	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	1
Little Ringed Plover	0	0	0	0	0	1	4	1	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mallard†	0	0	7	2	0	2	2	0	0	0	0	3	0	0	7	2	0	2	4	1	0	0	0	0
Mediterranean Gull	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Oystercatcher†	0	0	0	1	5	12	8	4	5	5	2	0	0	0	0	1	4	3	2	2	1	1	3	0
Redshank	153	128	115	105	101	142	124	1	6	111	143	143	153	100	50	3	61	72	107	1	1	74	57	123
Ringed Plover†	0	0	0	0	0	0	0	72	0	0	3	5	0	0	0	0	0	0	0	24	0	0	0	0
Shelduck	18	48	48	67	24	23	22	15	7	8	23	21	15	32	46	29	18	12	15	15	3	0	8	20
Teal†	0	1	0	21	27	25	16	0	0	0	0	0	0	1	0	18	27	4	2	0	0	0	0	0
Turnstone†	28	27	6	24	26	25	24	2	5	29	17	34	2	0	1	0	1	0	0	0	0	0	4	2
Whimbrel†	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0

SPA qualifying species highlighted in bold. † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that for the Common Sandpiper, Mediterranean Gull, and Whimbrel the local importance threshold is < 1.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that the regional importance threshold for the Mediterranean Gull was <1.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Avocet, Black-tailed Godwit, Common Sandpiper and Whimbrel, the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak (565, 4, and 6 birds respectively) is higher than the national importance threshold which is currently set at 390 individuals for the Black-tailed Godwit and 1 individual for both the Common Sandpiper and Whimbrel.
	Cells highlighted red indicate the count is of international importance.

Table A2.5. Coastal waterbird species recorded within Sector A during October 2021 to September 2022 (peak counts – all behaviours)

Species	Peak count (all behaviour)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Avocet	171	99	0	0	35	115	12	5	24	19	8	225
Barnacle goose	0	0	0	0	0	0	0	0	1	0	0	0
Bar-tailed Godwit	1	0	0	0	0	0	0	0	0	0	0	2
Black-headed Gull	0	0	0	0	0	21	56	16	62	205	137	19
Black-tailed Godwit	2828	28	0	578	142	15	25	44	131	176	420	3620
Canada Goose	0	0	0	0	0	0	0	0	1	0	0	0
Common Gull	0	0	0	0	0	4	3	0	2	2	8	14
Common Sandpiper	0	0	0	0	0	0	1	2	0	1	3	1
Cormorant	1	1	1	0	0	3	0	1	2	1	2	3
Curlew†	54	18	108	120	71	78	47	11	19	33	17	42
Dunlin	181	163	557	181	215	40	30	25	0	9	0	32
Great Black-backed Gull	0	0	0	0	0	0	0	0	0	0	0	4
Grey Heron	1	0	0	0	0	0	0	0	0	0	0	0
Grey Plover†	0	0	0	0	0	0	0	0	0	0	0	1
Greylag Goose	21	0	0	0	0	4	2	2	0	0	0	0
Herring Gull	0	0	0	0	0	1	2	3	8	12	3	4
Knot	0	0	0	0	18	0	0	0	0	0	0	0
Lapwing†	145	389	509	388	2932	4	2	6	49	68	0	3
Lesser Black-backed Gull	0	0	0	0	0	0	3	1	1	9	6	1
Little Egret	1	0	0	0	0	2	0	1	1	0	1	2
Mallard†	2	0	5	0	0	1	2	2	0	0	0	2
Mediterranean Gull	0	0	0	0	0	0	0	0	0	0	3	0
Oystercatcher†	0	0	0	1	0	6	5	2	4	6	1	0
Pink-footed Goose	0	1	0	0	0	0	0	0	0	0	0	0
Purple sandpiper	0	1	0	0	0	0	0	0	0	0	0	0
Redshank	169	124	245	123	48	57	64	3	1	201	85	154
Ringed Plover†	0	0	0	0	0	4	14	48	1	6	9	17
Ruff†	0	0	0	0	0	0	0	1	0	0	0	0
Shelduck	11	12	21	14	26	65	26	18	21	23	6	8
Snipe	1	0	0	0	22	0	0	0	0	0	0	0
Teal†	329	831	273	1,111	362	100	44	0	0	0	30	285
Turnstone†	0	0	0	2	0	0	1	0	0	1	0	0
Whimbrel†	0	0	0	0	0	0	0	2	0	1	1	0

SPA qualifying species highlighted in **bold**. † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that for the Common Sandpiper, Grey Heron, Mediterranean Gull, Ruff and Whimbrel the local importance threshold is < 1.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that the regional importance threshold for the Mediterranean Gull was <1.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Avocet, Black-tailed Godwit, Common Sandpiper and Whimbrel, the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak (258 and 565, 4, and 6 birds respectively) is higher than the national importance threshold which is currently set at 87 and 390 individuals for the Avocet and Black-tailed Godwit and 1 individual for both the Common Sandpiper and Whimbrel.
	Cells highlighted red indicate the count is of international importance.

Table A2.6. Coastal waterbird species recorded within Sector B during October 2021 to September 2022 (peak counts – all behaviours)

Species	Peak count (all behaviour)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Bar-tailed Godwit	8	3	0	0	1	0	0	0	0	0	2	16
Black-headed Gull	0	0	0	0	0	49	30	18	107	171	224	210
Black-tailed Godwit	589	311	2	1300	10	341	535	264	102	44	22	109
Common Gull	0	0	0	0	0	55	18	1	13	7	8	30
Common Sandpiper	0	0	0	0	0	0	0	0	0	3	1	5
Cormorant	14	4	5	4	7	10	9	0	7	7	16	15
Curlew	12	8	9	11	11	12	13	14	18	18	13	11
Dunlin	494	406	174	340	215	169	10	12	0	0	1	108
Great Black-backed Gull	0	0	0	0	0	2	1	1	1	1	3	12
Grey Plover†	0	0	0	1	0	1	0	0	0	0	0	2
Herring Gull	0	0	0	0	0	5	10	6	2	3	5	7
Knot	0	0	0	0	0	0	0	0	0	1	0	0
Lesser Black-backed Gull	0	0	0	0	0	8	5	3	3	9	9	8
Little Egret	1	0	0	0	0	0	0	0	0	0	1	2
Little Ringed Plover	0	0	0	0	0	1	4	1	6	3	0	0
Mallard†	0	0	7	2	0	2	4	1	0	0	0	3
Mediterranean Gull	0	0	0	0	0	0	0	0	0	0	4	0
Oystercatcher†	0	0	0	1	5	12	8	4	5	5	3	0
Redshank	153	128	115	105	101	142	124	1	6	111	143	143
Ringed Plover†	0	0	0	0	0	0	0	72	0	0	3	5
Shelduck	18	48	48	67	24	23	22	15	7	8	23	21
Teal†	0	1	0	21	27	25	16	0	0	0	0	0
Turnstone†	28	27	6	24	26	25	24	2	5	29	17	34
Whimbrel†	0	0	0	0	0	0	0	1	0	2	0	0

SPA qualifying species highlighted in bold. † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that for the Common Sandpiper, Mediterranean Gull, and Whimbrel the local importance threshold is < 1.
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22). It should be noted that the regional importance threshold for the Mediterranean Gull was <1.
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Avocet, Black-tailed Godwit, Common Sandpiper and Whimbrel, the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak (565, 4, and 6 birds respectively) is higher than the national importance threshold which is currently set at 390 individuals for the Black-tailed Godwit and 1 individual for both the Common Sandpiper and Whimbrel.
	Cells highlighted red indicate the count is of international importance.

Immingham Green Energy Terminal

Shadow Habitats Regulations Assessment: Appendix B

Associated British Ports

August 2023

STANDARD DATA FORM for sites within the 'UK national site network of European sites'

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK0030170**

SITENAME **Humber Estuary**

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1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
B	UK0030170

1.3 Site name

Humber Estuary

1.4 First Compilation date	1.5 Update date
2007-08	2015-12

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

Date site proposed as SCI:	2007-08
Date site confirmed as SCI:	2008-12
Date site designated as SAC:	2009-12
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-0.734722222	53.58916667

2.2 Area [ha]:

36657.15

2.3 Marine area [%]

91.6

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKE1	East Yorkshire and Northern Lincolnshire
UKF3	Lincolnshire
UKZZ	Extra-Regio

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1110			1656.9	0	P	C	A	C	C
1130			36657.15	0	G	B	B	B	B
1140			9384.23	0	G	B	B	B	B
1150	X		7.33	0	G	C	C	B	C
1210				0		D			
1310			47.65	0	P	C	C	B	C
1320			135.63	0	G	D			
1330									

			784.46	0	G	C	B	C	C
2110			18.33	0	G	C	A	C	C
2120			14.66	0	G	C	B	C	C
2130	X		14.66	0	G	C	C	C	C
2160			65.98	0	G	C	B	C	C

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
F	1102	Alosa alosa			p				P	DD	D			
F	1103	Alosa fallax			p				P	DD	D			
M	1364	Halichoerus grypus			p	1800	1800	i		G	C	B	B	C
F	1099	Lampetra fluviatilis			p				P	DD	A	B	C	C
F	1095	Petromyzon marinus			p	251	500	i		M	B	C	C	C
M	1365	Phoca vitulina			p				P	DD	D			

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N03	4.4
N07	0.4
N04	0.4
N02	94.9
Total Habitat Cover	100.10000000000002

Other Site Characteristics

1 Terrestrial: Soil & Geology: shingle,sedimentary,sandstone,neutral,mud,sand,alluvium,clay 2 Terrestrial: Geomorphology and landscape: coastal,floodplain,lowland 3 Marine: Geology: gravel,mud,sedimentary,sand,sandstone/mudstone,clay,shingle,limestone/chalk 4 Marine: Geomorphology: shingle bar,lagoon,islands,estuary,subtidal sediments (including sandbank/mudbank),intertidal sediments (including sandflat/mudflat),cliffs

4.2 Quality and importance

Sandbanks which are slightly covered by sea water all the time for which the area is considered to support a significant presence. Estuaries 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. Salicornia and other annuals colonising mud and sand for which the area is considered to support a significant presence. Atlantic salt meadows (Glauco-Puccinellietalia maritimae) for which the area is considered to support a significant presence. Embryonic shifting dunes for which the area is considered to support a significant presence. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Shifting dunes along the shoreline with Ammophila arenaria (?white dunes?) for which the area is considered to support a significant presence. Dunes with Hippophae rhamnoides for which the area is considered to support a significant presence. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Fixed dunes with herbaceous vegetation (?grey dunes?) for which the area is considered to support a significant presence. Petromyzon marinus for which the area is considered to support a significant presence. Lampetra fluviatilis for which the area is considered to support a significant presence. Halichoerus grypus for which the area is considered to support a significant presence.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	M01		B
H	E02		O
H	J02		B
H	H02		B
H	K01		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	D05		I
H	A02		I
H	B02		I
H	A04		I

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation

advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	1.8	UK04	100.0		

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
☒	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK9006111**

SITENAME **Humber Estuary**

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1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
A	UK9006111

1.3 Site name

Humber Estuary

1.4 First Compilation date	1.5 Update date
2007-08	2015-12

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

1.7 Site indication and designation / classification dates

Date site classified as SPA:	2007-08
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.0569	53.5497

2.2 Area [ha]:

37630.24

2.3 Marine area [%]

89.5

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKZZ	Extra-Regio
UKF3	Lincolnshire
UKE1	East Yorkshire and Northern Lincolnshire

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment		
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C	
						Min	Max				Pop.	Con.	Iso.
B	A052	Anas crecca			w	2322	2322	i		G	C		C
B	A050	Anas penelope			w	5044	5044	i		G	C		C
B	A053	Anas platyrhynchos			w	2456	2456	i		G	C		C
B	A169	Arenaria interpres			w	629	629	i		G	C		C
B	A059	Aythya ferina			w	719	719	i		G	C		C
B	A062	Aythya marila			w	127	127	i		G	C		C
B	A021	Botaurus stellaris			r	2	2	cmales	P	G	B		C
B	A021	Botaurus stellaris			w	4	4	i		G	B		C
		Branta											

B	A675	bernicla bernicla			w	2098	2098	i		G	C		C
B	A067	Bucephala clangula			w	467	467	i		G	B		C
B	A144	Calidris alba			c	818	818	i		G	B		C
B	A144	Calidris alba			w	486	486	i		G	B		C
B	A672	Calidris alpina alpina			c	20269	20269	i		G	B		C
B	A672	Calidris alpina alpina			w	22222	22222	i		G	B		C
B	A143	Calidris canutus			w	28165	28165	i		G	B		C
B	A143	Calidris canutus			c	18500	18500	i		G	B		C
B	A137	Charadrius hiaticula			c	1766	1766	i		G	C		C
B	A137	Charadrius hiaticula			w	403	403	i		G	C		C
B	A081	Circus aeruginosus			r	10	10	bfemales	P	G	B		B
B	A082	Circus cyaneus			w	8	8	i		G	C		C
B	A130	Haematopus ostralegus			w	3503	3503	i		G	C		C
B	A157	Limosa lapponica			w	2752	2752	i		G	B		C
B	A616	Limosa limosa islandica			w	1113	1113	i		G	B		C
B	A616	Limosa limosa islandica			c	915	915	i		G	B		C
B	A160	Numenius arquata			w	3253	3253	i		G	C		C
B	A158	Numenius phaeopus			c	113	113	i		G	C		C
B	A151	Philomachus pugnax			c	128	128	i		G	C		C
B	A140	Pluvialis apricaria			w	30709	30709	i		G	B		C
B	A141	Pluvialis squatarola			w	1704	1704	i		G	B		C
B	A141	Pluvialis squatarola			c	1590	1590	i		G	B		C
B	A132	Recurvirostra avosetta			w	59	59	i		G	C		B
B	A132	Recurvirostra avosetta			r	64	64	p		G	C		B
B	A195	Sterna albifrons			r	51	51	p		G	B		C
		Tadorna											

B	A048	tadorna			w	4464	4464	i		G	B		C
B	A164	Tringa nebularia			c	77	77	i		G	C		C
B	A162	Tringa totanus			w	4632	4632	i		G	B		C
B	A162	Tringa totanus			c	7462	7462	i		G	B		C
B	A142	Vanellus vanellus			w	22765	22765	i		G	C		C

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B	WATR	Waterbird assemblage			153934	153934	i						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N06	0.6
N03	4.6

N04	0.8
N02	93.6
N07	0.3
Total Habitat Cover	99.89999999999998

Other Site Characteristics

1 Terrestrial: Soil &
Geology: mud,shingle,alluvium,sandstone,sand,neutral,clay,limestone,sedimentary,sandstone,shingle,sand,neut
Terrestrial: Geomorphology and landscape: lowland,floodplain,coastal,lowland,floodplain,coastal 3 Marine:
Geology: sand,gravel,mud,sedimentary,clay,sandstone/mudstone,shingle,limestone/chalk,clay,sedimentary,sanc
Marine: Geomorphology: shingle bar,islands,intertidal sediments (including
sandflat/mudflat),cliffs,estuary,intertidal sediments (including sandflat/mudflat),islands,lagoon,estuary,subtidal
sediments (including sandbank/mudbank),shingle bar,cliffs

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports: Botaurus stellaris (Europe - breeding) 10.5% of the population in Great Britain 2000-2002 Circus aeruginosus 6.3% of the population in Great Britain 1998-2002 Recurvirostra avosetta (Western Europe/Western Mediterranean - breeding) 8.6% of the population in Great Britain 1998-2002 Sterna albifrons (Eastern Atlantic - breeding) 2.1% of the population in Great Britain 1998-2002 Over winter the area regularly supports: Botaurus stellaris (Europe - breeding) 4% of the population in Great Britain 1998/9 to 2002/3 Circus cyaneus 1.1% of the population in Great Britain 1997/8 to 2001/2 Limosa lapponica (Western Palearctic - wintering) 4.4% of the population in Great Britain 1996/7 to 2000/1 Pluvialis apricaria [North-western Europe - breeding] 12.3% of the population in Great Britain 1996/7 to 2000/1 Recurvirostra avosetta (Western Europe/Western Mediterranean - breeding) 1.7% of the population in Great Britain 1996/7 to 2000/1 On passage the area regularly supports: Philomachus pugnax (Western Africa - wintering) 1.4% of the population in Great Britain 1996-2000 ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Calidris alpina alpina (Northern Siberia/Europe/Western Africa) 1.7% of the population 1996/7 to 2000/1 Calidris canutus (North-eastern Canada/Greenland/Iceland/North-western Europe) 6.3% of the population 1996/7 to 2000/1 Limosa limosa islandica (Iceland - breeding) 3.2% of the population 1996/7 to 2000/1 Tadorna tadorna (North-western Europe) 1.5% of the population 1996/7 to 2000/1 Tringa totanus (Eastern Atlantic - wintering) 3.6% of the population 1996/7 to 2000/1 On passage the area regularly supports: Calidris alpina alpina (Northern Siberia/Europe/Western Africa) 1.5% of the population 1996-2000 Calidris canutus (North-eastern Canada/Greenland/Iceland/North-western Europe) 4.1% of the population 1996-2000 Limosa limosa islandica (Iceland - breeding) 2.6% of the population 1996-2000 Tringa totanus (Eastern Atlantic - wintering) 5.7% of the population 1996-2000 ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: 153934 waterfowl (5 year peak mean 1991/92-1995/96) Including: Botaurus stellaris , Branta bernicla bernicla , Tadorna tadorna , Anas penelope , Anas crecca , Anas platyrhynchos , Aythya ferina , Aythya marila , Bucephala clangula , Haematopus ostralegus , Recurvirostra avosetta , Charadrius hiaticula , Pluvialis apricaria [North-western Europe - breeding], Pluvialis squatarola , Vanellus vanellus , Calidris canutus , Calidris alba , Calidris alpina alpina , Philomachus pugnax , Limosa limosa islandica , Limosa lapponica , Numenius phaeopus , Numenius arquata , Tringa totanus , Tringa nebularia , Arenaria interpres

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	K01		I
H	I01		B
H	G01		I
H	M02		B
H	M01		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A02		I
H	D05		I
H	B02		I
H	D05		I
H	A04		I
H	A03		I

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

7. MAP OF THE SITES

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INSPIRE ID:

Map delivered as PDF in electronic format (optional)

- [ ] Yes
- [X] No

Reference(s) to the original map used for the digitalisation of the electronic boundaries (optional).

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

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 (wintering)	18500 individuals, representing an average of 4.1% of the population (1996-2000)
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 (wintering)	28165 individuals, representing an average of 6.3% of the population (1996/7 to 2000/1)
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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STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK9020329**

SITENAME **Greater Wash**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
A	UK9020329

1.3 Site name

Greater Wash

1.4 First Compilation date	1.5 Update date
2018-03	-

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	2018-03
National legal reference of SPA designation	Regulations 15 and 17-19 of The Conservation of Habitats and Species Regulations 2017 (https://www.legislation.gov.uk/uksi/2017/1012/contents/made), and Regulations 12, 19 and 20 of The Conservation of Offshore Marine Habitats and Species Regulations 2017 (http://www.legislation.gov.uk/uksi/2017/1013/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.7264	53.2356

2.2 Area [ha]:

353577.86

2.3 Marine area [%]

100.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKH1	East Anglia
UKF3	Lincolnshire
UKZZ	Extra-Regio
UKE1	East Yorkshire and Northern Lincolnshire

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A001	Gavia stellata			w	1407	1407	i		G	B		C	
B	A177	Larus minutus			w	1255	1255	i		M			C	
B	A065	Melanitta nigra			w	3449	3449	i		G	A		C	
B	A195	Sterna albifrons			r	798	798	p		G	A		C	
B	A193	Sterna hirundo			r	510	510	p		G	B		C	
B	A191	Sterna sandvicensis			r	3852	3852	p		G	A		C	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)

- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N01	99.0
N02	1.0
Total Habitat Cover	100

Other Site Characteristics

3 Marine: Geology: a mixture of coarse sediments, sand, mud, muddy sand and mixed sediments. 4 Marine: Geomorphology: intertidal mudflats and sandflats, subtidal sandbanks and biogenic reef, including Sabellaria reefs and mussel beds.

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC): During the breeding season the area supports Annex I populations of little tern (Sternula albifrons) (798 pairs, 5-year peak mean 2009-2013, 42% of GB breeding population), common tern (Sterna hirundo) (510 pairs, 5-year peak mean 2010-2014, 5.1% of GB breeding population) and Sandwich tern (Sterna sandvicensis) (3,852 pairs, 5-year peak mean 2010-2014, 35% of GB breeding population) (stage 1.1). During the winter, the site also supports populations of overwintering Annex I species: little gull (Hydrocoloeus minutus) (1,255 peak mean 2004/05-2005/06, no current GB population estimate) (stage 1.4) and red-throated diver (Gavia stellata) (1,407 individuals, 5-year peak mean 2002/03-2005/06, 8.3% of GB non-breeding population) (stage 1.1). ARTICLE 4.2 QUALIFICATION (2009/147/EC): Site regularly supports 3,449 Common scoter (Melanitta nigra) (5-year peak mean 2002/03-2007/08, 0.6% of biogeographic population), a regularly occurring migratory species not listed in Annex I of the EC Birds Directive is also supported within the site (stage 1.4).

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	G01		b
M	D03		b
H	C03		b
L	H03		b
L	F02		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

The weblink 'http://jncc.defra.gov.uk/page-6895' allows access to site specific information for all marine MPAs in UK offshore waters.

Link(s): http://consult.defra.gov.uk/natural-england-marine/greater-wash-potential-special-protection-area-com/supporting_docur

http://publications.naturalengland.org.uk/publication/4597871528116224

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

Organisation:	For information about relevant management offshore please contact JNCC
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information on relevant conservation measures of the site, including the Conservation Objectives, see section 4.5.

7. MAP OF THE SITES

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INSPIRE ID:

Map delivered as PDF in electronic format (optional)

- [ ] Yes
- [X] No

Reference(s) to the original map used for the digitalisation of the electronic boundaries (optional).

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK0017075**

SITENAME **The Wash and North Norfolk Coast**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0017075

1.3 Site name

The Wash and North Norfolk Coast

1.4 First Compilation date	1.5 Update date
1996-10	2015-12

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

Date site proposed as SCI:	1996-10
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.318055556	52.93694444

2.2 Area [ha]:

107718.0

2.3 Marine area [%]

94.3

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKH1	East Anglia
UKF3	Lincolnshire

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1110			44164.38	0	M	A	B	B	A
1140			18312.06	0	M	A	B	A	A
1150	X		21.54	0	G	C	C	B	C
1160			42010.02	0	M	A	B	B	A
1170				0		A	C	A	A
1310			430.87	0	P	A	A	A	A
1320				0		D			
1330			2800.67	0	P	A	B	A	A

1420			107.72	0	P	A	A	A	A

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
M	1364	Halichoerus grypus			p				P	DD	D			
M	1355	Lutra lutra			p				V	DD	C	C	C	C
M	1365	Phoca vitulina			p	1001	10000	i		M	B	B	C	A

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N01	51.0
N02	46.0
N03	3.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: sandstone,sand,nutrient-rich,alluvium,mud,clay,shingle 2 Terrestrial: Geomorphology and landscape: coastal 3 Marine: Geology: limestone/chalk,gravel,sand,chert/flint,mud,biogenic reef,peat,shingle 4 Marine:

Geomorphology: barrier beach,enclosed coast (including embayment),estuary,subtidal sediments (including sandbank/mudbank),lagoon,intertidal sediments (including sandflat/mudflat),open coast (including bay),shingle bar

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 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	M01		B
H	F02		I
H	G01		I
H	A02		I
H	J02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	A02		I
H	D05		I
H	D05		I
H	G03		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	61.4	UK01	2.8	UK00	38.7

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
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G01	Outdoor sports and leisure activities, recreational activities	65
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G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
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IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

Immingham Green Energy Terminal

Shadow Habitats Regulations Assessment: Appendix C

Associated British Ports

August 2023

Appendix C: Summary Table of Sites, Features and Effects

Key	N/A	Effects are not relevant to this feature	N/R	HRA stage not required
	No LSE	Likely Significant Effect can be excluded	LSE	Likely Significant Effect cannot be excluded
	No AEOI	Adverse Effect On Integrity can be excluded	AEOI	Adverse Effect On Integrity cannot be excluded
	C	Construction	O	Operation

Table C1. European sites and qualifying features, and each pathway of effect considered at each relevant HRA Stage for each phase of the Project

Site	Qualifying features	HRA Stage	Physical loss of habitat and associated species (Section 4.3)		Physical damage through disturbance and/or smothering of habitat (Section 4.4)		Physical loss or damage of habitat through alterations in physical processes (Section 4.5)		Direct changes to qualifying habitats beneath marine infrastructure due to shading (Section 4.6)		Physical change to habitats resulting from the deposition of airborne pollutants (Section 4.7)		Non-toxic contamination through elevated suspended sediment concentrations (Section 4.8)		Toxic contamination through release of toxic contaminants bound in sediments, and accidental oil, fuel or chemical releases (Section 4.9)		Airborne noise and visual disturbance (Section 4.10)		Disturbance through underwater noise and vibration (Section 4.11)		Biological disturbance due to potential introduction and spread of non-native species (Section 4.12)	
			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Humber Estuary SAC	H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks	Stage 1 Screening	No LSE	No LSE	LSE	N/A	LSE	No LSE	No LSE	No LSE	N/A	N/A	LSE	N/A	LSE	N/A	N/A	N/A	N/A	N/A	LSE	LSE
		Stage 2 Appropriate Assessment	N/R	N/R	No AEOI	N/R	No AEOI	N/A	N/A	N/R	N/R	N/R	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI
	H1130. Estuaries	Stage 1 Screening	LSE	No LSE	LSE	LSE	LSE	No LSE	No LSE	LSE	No LSE	No LSE	LSE	No LSE	LSE	No LSE	N/A	N/A	N/A	N/A	LSE	LSE
		Stage 2 Appropriate Assessment	No AEOI	N/R	No AEOI	No AEOI	No AEOI	N/R	N/R	No AEOI	N/R	N/R	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI
	H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats	Stage 1 Screening	LSE	No LSE	LSE	LSE	LSE	No LSE	No LSE	LSE	No LSE	No LSE	LSE	No LSE	LSE	No LSE	N/A	N/A	N/A	N/A	LSE	LSE
		Stage 2 Appropriate Assessment	No AEOI	N/R	No AEOI	No AEOI	No AEOI	N/R	N/R	No AEOI	N/R	N/R	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI
	H1150. Coastal lagoons	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Site	Qualifying features	HRA Stage	Physical loss of habitat and associated species (Section 4.3)		Physical damage through disturbance and/or smothering of habitat (Section 4.4)		Physical loss or damage of habitat through alterations in physical processes (Section 4.5)		Direct changes to qualifying habitats beneath marine infrastructure due to shading (Section 4.6)		Physical change to habitats resulting from the deposition of airborne pollutants (Section 4.7)		Non-toxic contamination through elevated suspended sediment concentrations (Section 4.8)		Toxic contamination through release of toxic contaminants bound in sediments, and accidental oil, fuel or chemical releases (Section 4.9)		Airborne noise and visual disturbance (Section 4.10)		Disturbance through underwater noise and vibration (Section 4.11)		Biological disturbance due to potential introduction and spread of non-native species (Section 4.12)	
			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
	H1310. Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	H1330. Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	H2110. Embryonic shifting dunes	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	H2120. Shifting dunes along the shoreline with Ammophila arenaria ("white dunes"); Shifting dunes with Marram	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	H2160. Dunes with Hippophae rhamnoides; Dunes with sea-buckthorn	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE
		Stage 2	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Site	Qualifying features	HRA Stage	Physical loss of habitat and associated species (Section 4.3)		Physical damage through disturbance and/or smothering of habitat (Section 4.4)		Physical loss or damage of habitat through alterations in physical processes (Section 4.5)		Direct changes to qualifying habitats beneath marine infrastructure due to shading (Section 4.6)		Physical change to habitats resulting from the deposition of airborne pollutants (Section 4.7)		Non-toxic contamination through elevated suspended sediment concentrations (Section 4.8)		Toxic contamination through release of toxic contaminants bound in sediments, and accidental oil, fuel or chemical releases (Section 4.9)		Airborne noise and visual disturbance (Section 4.10)		Disturbance through underwater noise and vibration (Section 4.11)		Biological disturbance due to potential introduction and spread of non-native species (Section 4.12)	
			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
		Appropriate Assessment																				
	S1095. Petromyzon marinus; Sea lamprey	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	LSE	No LSE	LSE	No LSE	N/A	N/A	LSE	No LSE	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	N/R	No AEOI	N/R	N/R	N/R	No AEOI	N/R	N/R	N/R
	S1099. Lampetra fluviatilis; River lamprey	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	LSE	No LSE	LSE	No LSE	N/A	N/A	LSE	No LSE	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	N/R	No AEOI	N/R	N/R	N/R	No AEOI	N/R	N/R	N/R
	S1364. Halichoerus grypus; Grey seal	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	LSE	No LSE	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	N/R	N/R	N/R
Humber Estuary SPA	A021 Botaurus stellaris; Great bittern (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A021 Botaurus stellaris; Great bittern (Breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Site	Qualifying features	HRA Stage	Physical loss of habitat and associated species (Section 4.3)		Physical damage through disturbance and/or smothering of habitat (Section 4.4)		Physical loss or damage of habitat through alterations in physical processes (Section 4.5)		Direct changes to qualifying habitats beneath marine infrastructure due to shading (Section 4.6)		Physical change to habitats resulting from the deposition of airborne pollutants (Section 4.7)		Non-toxic contamination through elevated suspended sediment concentrations (Section 4.8)		Toxic contamination through release of toxic contaminants bound in sediments, and accidental oil, fuel or chemical releases (Section 4.9)		Airborne noise and visual disturbance (Section 4.10)		Disturbance through underwater noise and vibration (Section 4.11)		Biological disturbance due to potential introduction and spread of non-native species (Section 4.12)	
			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
	A048 Tadorna tadorna; Common shelduck (Non-breeding)	Stage 1 Screening	LSE	LSE	LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	LSE	LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
	A081 Circus aeruginosus; Eurasian marsh harrier (Breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A082 Circus cyaneus; Hen harrier (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A132 Recurvirostra avosetta; Pied avocet (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A132 Recurvirostra avosetta; Pied avocet (Breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A140 Pluvialis apricaria; European golden plover (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A

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			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A143 Calidris canutus; Red knot (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
	A149 Calidris alpina alpina; Dunlin (Non-breeding)	Stage 1 Screening	LSE	LSE	LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	N/A	LSE	LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
	A151 Philomachus pugnax; Ruff (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A156 Limosa limosa islandica; Black-tailed godwit (Non-breeding)	Stage 1 Screening	LSE	LSE	LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	N/A	LSE	LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
	A157 Limosa lapponica; Bar-tailed godwit (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R

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			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
		Appropriate Assessment																				
	A162 Tringa totanus; Common redshank (Non-breeding)	Stage 1 Screening	LSE	LSE	LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	N/A	LSE	LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
	A195 Sterna albifrons; Little tern (Breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Waterbird assemblage	Stage 1 Screening	LSE	LSE	LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	LSE	LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
Humber Estuary Ramsar	Criterion 1 – natural wetland habitats that are of international importance: Near-natural estuary with component habitats, specifically dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.	Stage 1 Screening	LSE	No LSE	LSE	LSE	LSE	No LSE	No LSE	LSE	No LSE	LSE	LSE	No LSE	LSE	No LSE	N/A	N/A	N/A	N/A	LSE	LSE
		Stage 2 Appropriate Assessment	No AEOI	N/R	No AEOI	No AEOI	No AEOI	N/R	N/R	No AEOI	N/R	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI
	Criterion 3 – supports populations of plants	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	LSE	No LSE	N/A	N/A

Site	Qualifying features	HRA Stage	Physical loss of habitat and associated species (Section 4.3)		Physical damage through disturbance and/or smothering of habitat (Section 4.4)		Physical loss or damage of habitat through alterations in physical processes (Section 4.5)		Direct changes to qualifying habitats beneath marine infrastructure due to shading (Section 4.6)		Physical change to habitats resulting from the deposition of airborne pollutants (Section 4.7)		Non-toxic contamination through elevated suspended sediment concentrations (Section 4.8)		Toxic contamination through release of toxic contaminants bound in sediments, and accidental oil, fuel or chemical releases (Section 4.9)		Airborne noise and visual disturbance (Section 4.10)		Disturbance through underwater noise and vibration (Section 4.11)		Biological disturbance due to potential introduction and spread of non-native species (Section 4.12)	
			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
	and/or animal species of international importance: Breeding colony of grey seals Halichoerus grypus at Donna Nook.	Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	N/R	N/R	N/R
	Criterion 5 – Bird Assemblages of International Importance: Wintering waterfowl.	Stage 1 Screening	LSE	LSE	LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	LSE	LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
	Criterion 6 – Bird Species/Populations Occurring at Levels of International Importance: Golden Plover, Red Knot, Dunlin, Black-tailed Godwit, Redshank (passage) Shelduck, Golden Plover, Red Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit (overwintering).	Stage 1 Screening	LSE	LSE	LSE	No LSE	LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	LSE	LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	No AEOI	No AEOI	No AEOI	N/R	No AEOI	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	No AEOI	N/R	N/R	N/R	N/R
	Criterion 8 – Internationally important source of food for fishes, spawning grounds, nursery and/or migration path: River lamprey Lampetra fluviatilis and sea lamprey Petromyzon marinus.	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	LSE	No LSE	LSE	No LSE	N/A	N/A	LSE	No LSE	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	N/R	No AEOI	N/R	N/R	N/R	No AEOI	N/R	N/R	N/R
Greater Wash SPA	A001 Gavia stellata; Red-throated diver (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Site	Qualifying features	HRA Stage	Physical loss of habitat and associated species (Section 4.3)		Physical damage through disturbance and/or smothering of habitat (Section 4.4)		Physical loss or damage of habitat through alterations in physical processes (Section 4.5)		Direct changes to qualifying habitats beneath marine infrastructure due to shading (Section 4.6)		Physical change to habitats resulting from the deposition of airborne pollutants (Section 4.7)		Non-toxic contamination through elevated suspended sediment concentrations (Section 4.8)		Toxic contamination through release of toxic contaminants bound in sediments, and accidental oil, fuel or chemical releases (Section 4.9)		Airborne noise and visual disturbance (Section 4.10)		Disturbance through underwater noise and vibration (Section 4.11)		Biological disturbance due to potential introduction and spread of non-native species (Section 4.12)	
			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
		Appropriate Assessment																				
	A065 Melanitta nigra; Common scoter (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A177 Hydrocoloeus minutus; Little gull (Non-breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A191 Sterna sandvicensis; Sandwich tern (Breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A193 Sterna hirundo; Common tern (Breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	A195 Sternula albifrons; Little tern (Breeding)	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	N/A	N/A	N/A	N/A	No LSE	No LSE	N/A	N/A	N/A	N/A
		Stage 2 Appropriate Assessment	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Site	Qualifying features	HRA Stage	Physical loss of habitat and associated species (Section 4.3)		Physical damage through disturbance and/or smothering of habitat (Section 4.4)		Physical loss or damage of habitat through alterations in physical processes (Section 4.5)		Direct changes to qualifying habitats beneath marine infrastructure due to shading (Section 4.6)		Physical change to habitats resulting from the deposition of airborne pollutants (Section 4.7)		Non-toxic contamination through elevated suspended sediment concentrations (Section 4.8)		Toxic contamination through release of toxic contaminants bound in sediments, and accidental oil, fuel or chemical releases (Section 4.9)		Airborne noise and visual disturbance (Section 4.10)		Disturbance through underwater noise and vibration (Section 4.11)		Biological disturbance due to potential introduction and spread of non-native species (Section 4.12)	
			C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
The Wash and North Norfolk Coast SAC	S1365 Harbour seal *Phoca vitulina*	Stage 1 Screening	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	LSE	No LSE	N/A	N/A
		Stage 2	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	No AEOI	N/R	N/R	N/R