

Outer Dowsing Offshore Wind Preliminary Environmental Information Report Volume 2, Appendix 22.1: Ornithology Desk Study

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**OUTER DOWSING OFFSHORE
WIND**

**PRELIMINARY
ENVIRONMENTAL
INFORMATION REPORT**

**VOLUME 2, APPENDIX 22.1:
ORNITHOLOGY DESK STUDY**

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1.0 Introduction

This Appendix presents the scope and results of the onshore ornithological desk study undertaken to inform the Environmental Impact Assessment (EIA) for the Outer Dowsing Offshore Wind (ODOW) Project (the Project).

The aim of the desk study was to identify important ecological features such as designated sites and species populations within the zone of influence of the Project, and to gather information on such features, contributing to an understanding of the ornithological baseline. Onshore export cable corridor (ECC) options detailing the location of the proposed landfall area and proposed onshore ECCs can be found in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives.

2.0 Methodology

2.1 Changes in Response to Scoping Opinion

An EIA Scoping Report (ODOW, 2022a) was prepared in accordance with Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and Regulation 6 of the Marine Works (Environmental Impact Assessment) Regulations 2007. The Scoping Report was submitted to the Planning Inspectorate (the Inspectorate) in July 2022. Within the Scoping Report, the methods for, and results of, an initial desk study were presented. In addition, the Scoping Report set out a proposed approach for further collation of biological records and local wildlife site data to be presented in the EIA Report.

The Scoping Opinion (The Inspectorate, 2022) provided by the Inspectorate in response to the Scoping Report, contained comments from Natural England in relation to the study areas adopted for certain receptors.

In response to these comments, and related further discussions with the Onshore Biodiversity Expert Topic Group (ETG) on 19th July 2022, the scoping methodology for the desk study was modified. Modifications include:

- Expansion of the data requested to include Local Wildlife Sites (LWS) and candidate LWS, as per Point 136 of Natural England's response presented in the Scoping Opinion;
- Screening for designated sites was based on a 15km search area around the Scoping Project boundary, which covered a greater area than the PEIR Boundary. The search area has been extended where there is evidence of connectivity, for example to include the North Norfolk Special Protection Area (SPA) in relation to non-breeding pink-footed goose; and
- Expansion of the data requested to include Royal Society for the Protection of Bird (RSPB) reserves, as per Point 139 of Natural England's response presented in the Scoping Opinion.

In addition, with regard to 'transmission assets' (taken to mean the onshore elements of the Project), Natural England specifically advised (p.8 of Natural England email Scoping Response as provided in Appendix 2 of the Planning Inspectorate's Scoping Response) that the Environmental Statement (ES) should include a full impact assessment for the following sites, which have therefore been included in the desk study:

- Gibraltar Point SPA;
- North Norfolk Coast SPA;
- The Wash SPA;
- Flamborough Head Site of Special Scientific Interest (SSSI);
- The Wash SSSI;
- Gibraltar Point SSSI;
- Chapel Point –Wolla Bank SSSI;

- Saltfleetby –Theddlethorpe Dunes SSSI;
- Humber Estuary SSSI; and
- Sea Bank Clay Pits SSSI.

2.2 Study Area

The study/survey area selected for each ornithological receptor is listed below:

- Desk study areas include the following:
 - Internationally designated ornithological sites (SPA and Ramsar Sites) and nationally designated sites with notified bird features (SSSI) within 15 km. Designated ecological sites (such as Special Areas of Conservation) have been considered within the Volume 1, Chapter 21: Onshore Ecology.
 - Onshore elements of Local Nature Reserves (LNR) and LWS within 2km from the PEIR Boundary; and
 - Section 41 Priority Species of the NERC Act and protected or notable species within 2km from the PEIR Boundary.

An initial desk-based study has been undertaken to identify sources of existing ornithological data to inform the initial Scoping Report which included a search for internationally important sites (SPAs and Ramsar Sites) within a 15km buffer of the Project (onshore); nationally important sites (SSSIs) and National Nature Reserves (NNRs) and locally important sites designated (Local Nature Reserves (LNRs)) within a 2km buffer of the Project (onshore).

Table 2.1: Summary of data sources relating to ornithology

Source	Summary	Spatial coverage of study area
Multi-agency Geographic Information Centre (MAGIC) website and Natural England’s datasets at data.gov.uk	Impact Risk Zones (IRZs) for component SSSIs, spatial extent and citation.	Area of Study (AoS) plus 15km buffer.
	SPAs and potential SPAs and Impact Risk Zones, spatial extent and citation.	
	Ramsar Sites and proposed Ramsar Sites, spatial extent and citation.	
	SSSIs and NNR and IRZs, spatial extent, and citation.	
	LNR and spatial extent.	AoS plus 2km buffer.
	Priority species layers.	AoS plus 2km buffer.
Greater Lincolnshire Nature Partnership (GNLP)	Protected and Notable Species Records location and date, and locally designated sites, location and citation.	AoS plus 2km buffer.
Lincolnshire Wildlife Trust (LWT): Nature conservation from the Humber to the Wash	Designated site and LNR details, including qualifying interest features.	AoS plus 15km buffer.
	LNR and LWS sites and site information.	AoS plus 2km buffer.
The Royal Society for the Protection of Birds (RSPB)	RSPB reserve details, including qualifying interest features, and conservation objectives. Not yet received.	AoS plus 2km buffer
Wetland Bird Survey Data held by the British Trust for Ornithology	Wetland and coastal bird data from specific count areas, species and counts taken from freely available online Wetlands Bird Survey (WeBS) survey data. Will be presented at the ES stage.	AoS plus 2km buffer
Gov.uk: Natural England	Designated site and LNR details, including qualifying interest features.	AoS plus 15km buffer.
Lincolnshire Biodiversity Action Plan (BAP)	Local BAP ornithological strategies/conservation efforts and their distribution in Lincolnshire.	AoS plus 2km buffer.

Source	Summary	Spatial coverage of study area
Lincolnshire Bird Club	Bird data from specific count areas, species, counts and breeding records in the form of two books 'Lincolnshire Bird Report 2020' and 'Birds of Lincolnshire'.	AoS plus 2km buffer.
Lindsey Marsh Internal Drainage Board	Local BAP ornithological strategies/conservation efforts within drainage board catchment areas. Will be presented at the ES stage.	Non applicable
Witham Fourth District Internal Drainage Board	Local BAP habitats and species ornithological strategies/conservation efforts within drainage board catchment areas. Will be presented at the ES stage.	Non applicable
Black Sluice Internal Drainage Board	Local BAP habitats and species ornithological strategies/conservation efforts within drainage board catchment areas. Will be presented at the ES stage.	Non applicable
South Holland Internal Drainage Board	Local BAP habitats and species ornithological strategies/conservation efforts within drainage board catchment areas. Will be presented at the ES stage.	Non applicable
Welland & Deepings Internal Drainage Board	Local BAP habitats and species ornithological strategies/conservation efforts within drainage board catchment areas. Will be presented at the ES stage.	Non applicable

2.3 Limitations

A very large data set was obtained from the GLNP. Due to the low resolution of some records, for example those that were provided for 1 km², where such records overlapped the study area boundary it was not possible to determine if they originated from within or without the study area. In such instances, the record has been used to provide context only. For example, there is a record of kingfisher within fields inside the PEIR Boundary. However, the grid reference given only has a 1 km² accuracy which includes the River Steeping and so the record was more feasibly made at the river and therefore outside of the onshore PEIR Boundary.

Desk study data are unlikely to be exhaustive, especially in respect of species, and are intended mainly to set a context for the study. It is therefore possible that protected and priority species not identified during the data search do in fact occur within the study area.

3.0 Results

3.1 Designated Sites

Wolla Bank to Lincolnshire Node

Statutory Designations

There are four SPAs (three onshore, one offshore) and three Ramsar sites within the study area.

There are four SSSIs within the study area.

There are two NNRs, but no LNRs, within the study area.

Table 3.1 provides an overview of the international designations and SSSIs within the study area. The NNRs and LNRs are detailed in the text below. Figure 3.1 illustrates the locations of the statutory designations.

Table 3.1 Overview of the international designations and SSSIs within the study area

Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Section	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
The Wash, SPA, Ramsar, SSSI (and NNR)	0.1	Landfall to A52 – Mumby	SSE	62,044	<p><u>SPA:</u> The area of the SPA includes a range of marine habitats, including intertidal mudflats and sandflats, subtidal sandbanks and biogenic reef, including Sabellaria reefs and mussel beds. Much of the area is less than 30m water depth, with a deep channel of 90m depth at the Wash approaches and covers an area of c. 3,536 km² and supports important populations of Annex I species. Assemblages of 214,000 waterfowl in winter including the following species during non-breeding season:</p> <ul style="list-style-type: none"> ▪ Bewick’s swan (<i>Cygnus cygnus</i>) – 3% of GB population ▪ Pink-footed goose (<i>Anser brachyrhynchus</i>) – 10.7% of GB population ▪ Dark-bellied brent goose (<i>Branta bernicla</i>) – 10.4% of GB population ▪ Common Shelduck (<i>Tadorna tadorna</i>) – 3.2% of GB population ▪ Wigeon (<i>Anas Penelope</i>) 2% of GB population ▪ Gadwall (<i>Anas strepera</i>) 3% of GB population ▪ Pintail (<i>Anas acuta</i>) – no population estimate available ▪ Goldeneye (<i>Bucephala clangula</i>) – 1% of GB population ▪ Eurasian oystercatcher (<i>Haematopus ostralegus</i>) – 1.1% of GB population ▪ Grey plover (<i>Pluvialis squatarola</i>) – 5.2% of GB population ▪ Red knot (<i>Calidris canutus islandica</i>) – 15.3% of GB population ▪ Sanderling (<i>Calidris alba</i>) - 3% of GB population ▪ Dunlin (<i>Calidris alpina</i>) – 2.7% of GB population ▪ Black-tailed godwit (<i>Limosa limosa</i>) – 6% of GB population ▪ Bar-tailed godwit (<i>Limosa lapponica</i>) – 13.7% of GB population ▪ Eurasian curlew (<i>Numenius arquara arquata Europe</i>) – 2.5% of GB population ▪ Redshank (<i>Tringa totanus</i>) – 5% of GB population ▪ Turnstone (<i>Arenaria interpres</i>) - 2% of GB population ▪ Red throated diver (<i>Gavia stellata</i>) – 8.3% of GB population ▪ Little gull (<i>Hydrocoloeus minutus</i>) – no population estimate available ▪ Common scoter (<i>Melanitta nigra</i>) – 0.6% of GB population

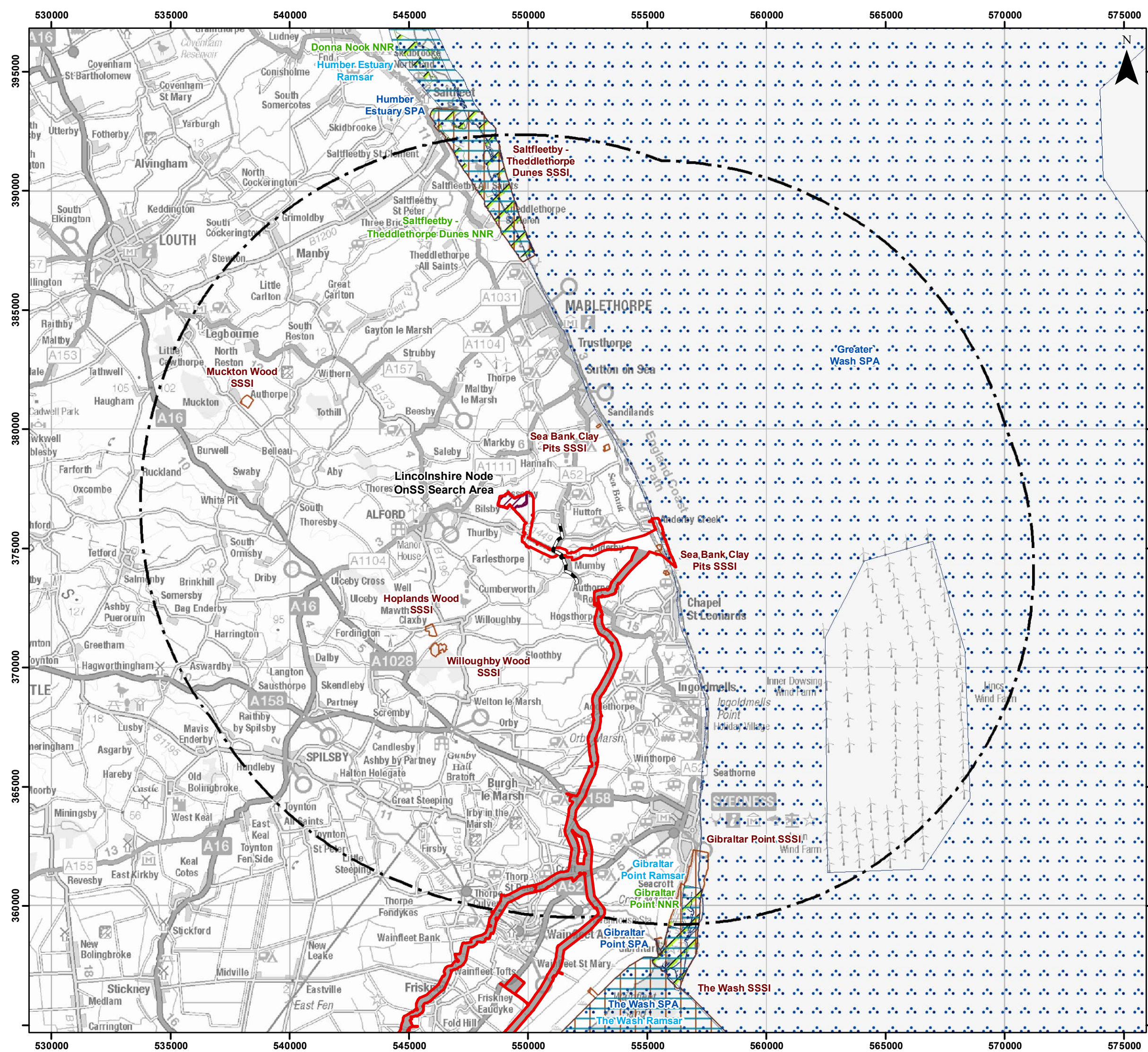
Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Section	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
					<p><i>Breeding populations of:</i></p> <ul style="list-style-type: none"> ▪ <i>Sandwich tern (Sterna sandvicencis)</i> – 35% of GB population ▪ <i>Little tern (Sternula albifrons)</i> – 42% of GB population ▪ <i>Common tern (Sterna hirundo)</i> – 5.1% of GB population
	0.1	Landfall to A52 – Mumby	SSE	62,044	<p><u>Ramsar site:</u> Covers the same area and footprint as the SPA. Qualifying features are the extensive saltmarshes, intertidal banks of sand and mud, shallow water, and deep channels. The interrelationship between these components provides a primary source of organic material and other organic matter, which together forms the basis for the high productivity of the estuary. Assemblages of 292,541 waterfowl in winter including the following species with peak counts:</p> <ul style="list-style-type: none"> ▪ Black-headed gull (<i>Larus ridibundus</i>) – 1.57% of GB population ▪ Common eider (<i>Somateria mollissima</i>) – 1.5% of GB population ▪ Bar-tailed godwit (<i>Limosa lapponica</i>) – 13.7% of GB population ▪ Common shelduck (<i>Tadorna tadorna</i>) – 3.2% of GB population ▪ Dark-bellied brent goose (<i>Branta bernicla</i>) – 10.4% of GB population ▪ Dunlin (<i>Calidris alpina</i>) – 2.7% of GB population ▪ Pink-footed goose (<i>Anser brachyrhynchus</i>) – 10.7% of GB population <p>Species with peak counts in spring/ autumn:</p> <ul style="list-style-type: none"> ▪ Eurasian curlew (<i>Numenius arquara arquata Europe</i>) – 2.5% of GB population ▪ Eurasian oystercatcher (<i>Haematopus ostralegus</i>) – 1.1% of population ▪ Grey plover (<i>Pluvialis squatarola</i>) – 5.2% of GB population ▪ Red knot (<i>Calidris canutus islandica</i>) – 15.3% of GB population ▪ Sanderling (<i>Calidris alba</i>) – 2.9% of GB population <p>Additional species that are not currently a qualifying feature but are to be considered in the future include:</p> <ul style="list-style-type: none"> ▪ Black-tailed godwit (<i>Limosa limosa islandica</i>) – 2.3% of GB population ▪ Ringed plover (<i>Charadrius hiaticula</i>) – 2% of GB population ▪ European golden plover (<i>Pluvialis apricaria altrifrons</i>) – 2.3% of GB population ▪ Northern lapwing (<i>Vanellus vanellus</i>) – 2.3% of GB population

Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Section	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
	0.1	Landfall to A52 – Mumby	SSE	62,044	<u>SSSI</u> : Covers the same area and footprint as the SPA and Ramsar. An area of international biological interest. The intertidal mudflats and saltmarshes represent one of Britain’s most important winter-feeding areas for waders and wildfowl outside of the breeding season. Enormous numbers of migrant birds, of international significance, are dependent on the rich supply of invertebrate food. The saltmarsh and shingle communities are of considerable botanical interest and the mature saltmarsh is a valuable bird breeding zone. In addition, the Wash is also very important as a breeding ground for Common Seals.
Greater Wash SPA	0	Landfall to A52 – Mumby	E	353,578	<u>SPA</u> : Intertidal habitats include mudflats and sandflats. The marine geology includes a mix of coarse sediments, sand, mud, muddy sand and mixed sediment. Qualifies under Article 4.1 of the Directive 2009/147/EC for the supporting the following Annex I species: Non-breeding wintering species: <ul style="list-style-type: none"> ▪ red-throated diver – 8.3% of GB population ▪ common scoter – 0.6% of GB population ▪ little gull – no current GB population estimate available Breeding species: <ul style="list-style-type: none"> ▪ sandwich tern – 35% of GB population ▪ common tern – 5.1% of GB population ▪ little tern – 42% of GB population Qualifies under Article 4.2 by regularly supporting migrating common scoter – (0.6% of GB population).
Gibraltar Point SPA, Ramsar, SSSI (and NNR)	2.3	Landfall to A52 – Mumby	E	422	<u>SPA</u> : The site consists of a sand dunes system, freshwater and saltmarsh, extensive intertidal flats, and open water. Qualifies under Article 4.1 of the Directive 2009/147/EC for the supporting the following breeding Annex I species: <ul style="list-style-type: none"> ▪ little tern – 1.7% of GB population Qualifies under Article 4.2 for the following wintering populations: <ul style="list-style-type: none"> ▪ bar-tailed godwit – 14% of GB population ▪ sanderling – 8% of GB population ▪ grey plover – 10% of GB population

Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Section	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
	2.3	Landfall to A52 – Mumby	E	414	<p><u>Ramsar site:</u> The site regularly supports over 20,000 waterfowl including 10,000 bar tailed godwit, 3,000 grey plover and 2,300 sanderling. Furthermore, the site regularly supports:</p> <ul style="list-style-type: none"> ▪ over 1% of the European population of several species including sanderling of which it supports approximately 8.2% of the Western European population, ▪ bar-tailed godwit supporting approximately 8.1% of the total for the Atlantic coast of Europe; and, ▪ 3,000 Brent geese (<i>Branta bernicla</i>) which is approximately 1.7% of the Western European population. <p>The site also supports 40 breeding pairs (1991 figures) of little tern.</p>
	2.3	Landfall to A52 – Mumby	E	414	<p><u>SSSI:</u> An actively accreting sand-dune system, saltmarsh and extensive intertidal flats as well as small areas of freshwater marsh and open water supporting at least 20,000 waterfowl. Qualifying populations of European importance include breeding little tern (<i>Sterna albifrons</i>), overwintering bar-tailed godwit, and oystercatcher (<i>Haematopus ostralegus</i>). The site also supports populations of overwintering migratory species: grey plover and knot (<i>Calidris canutus</i>). The site is also designated as Gibraltar Point NNR. The SSSI is managed by the Lincolnshire and South Humberside Trust for Nature Conservation. Designated for its sand dunes, saltmarsh, freshwater marsh, and associated fauna. Invertebrates include Lepidoptera, Diptera and Coleoptera, including 12 species which are nationally rare. Breeding birds include mallard (<i>Anas platyrhynchos</i>), shelduck, ringed plover, little tern, oystercatcher and redshank (<i>Tringa totanus</i>). Passage and wintering birds of internationally important numbers include oystercatcher, grey plover, knot, sanderling and bar-tailed godwit and the area is of national importance for its numbers of ringed plover.</p>
Humber Estuary SPA and Ramsar	10.7	A52 – Mumby to Lincolnshire Node Substation Search	NW	37,630	<p><u>SPA:</u> Qualifies under Article 4.1 of the Directive 2009/147/EC for the supporting the following wintering Annex I species:</p> <ul style="list-style-type: none"> • Avocet (<i>Recurvirostra avosetta</i>) – 1.7% of GB population • Bittern (<i>Botaurus stellaris</i>) – 4.0% of GB population • Hen harrier (<i>Circus cyaneus</i>) – 1.1% of GB population • Golden plover (<i>Pluvialis apricaria</i>) – 12.3% of GB population • Bar-tailed godwit – 4.4% of GB population <p>Passage:</p>

Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Section	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
					<ul style="list-style-type: none"> • Ruff (<i>Philomachus pugnax</i>) – 1.4% of GB population Breeding <ul style="list-style-type: none"> • Bittern (<i>Botaurus stellaris</i>) – 10.5% of GB population • Marsh harrier (<i>Circus aeruginosus</i>) – 6.3% of GB population • Avocet – 8.6% of GB population • Little tern – 2.1% of GB population Qualifies under Article 4.2 for wintering: <ul style="list-style-type: none"> • Shelduck – 1.5% of NW Europe population (breeding) • Knot – 6.3% <i>islandica</i> • Dunlin – 1.7%, Western Europe (non-breeding) • Black tailed godwit – 3.2% • Redshank – 3.6% Qualifies under Article 4.2 for passage: <ul style="list-style-type: none"> • Knot – 4.1% • Dunlin – 1.5%, Western Europe (non-breeding) • Black-tailed godwit – 2.6% • Redshank – 5.7% It also qualifies under article 4.2 of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season. In the non-breeding season, the area regularly supports 153,934 individual waterbirds, including dark-bellied brent goose, shelduck, wigeon (<i>Mareca penelope</i>), teal (<i>Anas crecca</i>), mallard, pochard (<i>Aythya farina</i>), scaup (<i>Aythya marila</i>), goldeneye (<i>Bucephala clangula</i>), bittern, oystercatcher, avocet, ringed plover, golden plover, grey plover, lapwing, knot, sanderling, dunlin, ruff, black-tailed godwit, bar-tailed godwit, whimbrel (<i>Numenius phaeopus</i>), curlew, redshank, greenshank (<i>Tringa nebularia</i>) and turnstone (<i>Arenaria interpres</i>).
	10.7	A52 – Mumby to Lincolnshire Node	NW	37,630	<p><u>Ramsar site</u>: The designation is 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 supports a breeding colony of grey seal and natterjack toad (<i>Epidalea calamita</i>) and an assemblage of non-breeding waterfowl (153,934) of international importance. The following species also occur at levels internationally important</p>

Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Section	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
		Substation Search			numbers of shelduck, golden plover, red knot, dunlin, bar-tailed godwit, bar-tailed godwit, common redshank (% populations provided in SPA designation above). Finally, it acts as an important migration route for river and sea lamprey.
Hoplands Wood SSSI	5.1	A52 - Mumby to Lincolnshire Node Substation Search	SW	23.4	SSSI: A representative of the series of ancient woodlands found on the middle Marsh Boulder Clay on the edge of the Lincolnshire Wolds. It is predominantly oak-ash and hazel, managed as coppice with standards. This supports a characteristic and rich ground flora. The site is notable for its breeding birds.
Muckton Wood SSSI	11.1	A52 - Mumby to Lincolnshire Node Substation Search	N	972	<p>SSSI: This nationally important site includes flats, dunes, salt and freshwater marsh which together support an exceptionally rich flora and fauna. There are outstanding assemblages of vascular plants, invertebrates and breeding birds and it is the most north-easterly breeding site in Britain for the natterjack toad. The rapid accretion of dunes and saltmarsh make this an important site for research into the processes of coastal development.</p> <p>The intertidal sands and muds provide extensive feeding and roosting grounds for wildfowl and waders including brent geese, shelduck and dunlin. Yellow wagtails (<i>Motacilla flava</i>) breed on the saltmarsh and there is a small colony of little tern on the shingle bank. Diverse and successional saltmarsh and rich fen communities, supporting a colony of orchids including southern and early marsh orchids (<i>Dactylorhiza praetermissa</i> and <i>D. incarnata</i>), pyramidal and bee orchids (<i>Anacamptis pyramidalis</i> and <i>Ophrys apifera</i>) and rare plants such as needle spike rush (<i>Eleocharis acicularis</i>), divided sedge (<i>Carex divisa</i>), marsh pea (<i>Lathyrus palustris</i>) and greater water-parsnip (<i>Sium latifolium</i>). Invertebrates recorded include several notable moths and nationally rare species from the moth and beetle families. There are outstanding breeding densities of birds in the dune scrub, with whitethroat (<i>Sylvia communis</i>) a major constituent. Also present are lesser whitethroat (<i>Sylvia curruca</i>) and long eared owl (<i>Asio otus</i>). The oldest areas of scrub now contain breeding blackcap (<i>Sylvia atricapilla</i>), garden warbler (<i>Sylvia borin</i>) and nightingale (<i>Luscinia megarhynchos</i>).</p> <p>Part of the site is also designated as Theddlethorpe Dunes and Gibraltar Point SAC.</p>



Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- Lincolnshire Node OnSS Search Area
- Onshore PEIR Boundary 15 km Buffer
- Special Protection Area (SPA)
- Ramsar
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)

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Coordinate System: British National Grid
 0 4 8 km
 Scale: 1:150,000

Preliminary Environmental Information Report
 Ornithology Desk Study Appendix
 Statutory Ornithological Designations for Lincolnshire Node

Figure 3.1



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National Nature Reserves

There are no NNRs within the PEIR Boundary. However, two NNRs are situated within 15km study area: Gibraltar Point and Saltfleetby-Theddlethorpe Dunes.

Gibraltar Point

This is a 429ha site which forms a small part of Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC and SSSI. It is situated 13.35km south of the Landfall to A52 Section of the PEIR Boundary.

The majority of the NNR is also included within the Gibraltar Point Ramsar and SPA. Habitats include sand dunes, saltmarsh, marshes and meadows. It is an important site for birds and is described in Table 3.1.

Saltfleetby-Theddlethorpe Dunes NNR

Saltfleetby-Theddlethorpe Dunes NNR is an 8km stretch of coastline covering 618.93ha. It is situated 9.84km north of the A52 – Mumby to Lincolnshire Node Substation section of the PEIR Boundary. This NNR forms part of the Saltfleetby-Theddlethorpe Dunes SSSI, as well as part of the Humber Estuary SPA, SAC and Ramsar; all of which are described in Table 3.2. It is an important reserve containing tidal sand and mudflats, salt and freshwater marshes and sand dunes. On the foreshore, accreting mud and silt flats and saltmarsh in the north give way to a narrower sandy beach at the southern end.

Non-statutory Designations

There are ten LWS and five LWT reserves within the study area. Some sites are designated as both a LWS and a LWT reserve, for example Chapel Six Marshes, although it should be noted that the surface area of each site does vary slightly between the two types of designation. The locations and extent of these sites is presented in Figure 3.2.

Table 3.2 and Table 3.3 below provide an overview of each non-statutory designation and, where available, the full citations for each designation are also provided at Appendix A.

There are no RSPB reserves within the study area.

Table 3.2: Local Wildlife Sites for Wolla Bank to Lincolnshire Node

Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
Anderby Creek Sand Dunes	0	Landfall to A52 – Mumby	ENE	11.9ha	<p><u>Main Habitats:</u> Coarse or rank grassland, sand dune, scrub and ditch.</p> <p>A 1.1km long stretch of coast on the seaward side of Anderby Marsh and Wolla Bank Reedbed nature reserves. Due to lack of management, most places support coarse and weedy vegetation, with substantial cover of scrub and trees. Good, open dune is very limited in extent.</p> <p><u>Birds:</u> Common reed bunting (<i>Emberiza schoeniclus</i>), Eurasian reed warbler (<i>Acrocephalus scirpaceus</i>) and migrating Barn swallow (<i>Hirundo rustica</i>).</p>
Chapel Six Marshes	0	Landfall to A52 – Mumby	ESE	12.9ha	<p><u>Main Habitats:</u> Coarse or rank grassland, lake, reedbed, scrub - scattered/dense (also ditch, marsh/ fen, non-native plantation - on ancient/ new habitat, pond). A 750m stretch of coast, with a 2.2ha area managed as Chapel Six Marshes LWT Reserve. Wetland plants typical of brackish water.</p> <p>The remainder of the site is managed by Lincolnshire County Council (LCC) and is publicly accessible. Major works have been carried out in 2014/ 2015 to enhance the value of the site for wetland flora and fauna, involving creation of winding water channels on land to north and south of the entrance road. Habitats present over the site as a whole are bare sand and short vegetation in car parking areas, coarse grassland, a little open water, much reedbed, and varying cover of trees and scrub. The resulting flora is diverse and interesting.</p> <p><u>Birds:</u> Moorhen (<i>Gallinula chloropus</i>), migrating whimbrel (<i>Numenius phaeopus</i>) and wood pigeon (<i>Columba palumbus</i>).</p>
Marsh Yard to Anderby Creek Dunes	0	Landfall to A52 – Mumby	NNE	16.8ha	<p><u>Main Habitats:</u> coarse or rank grassland, scrub – scattered/ dense (also semi-improved, neutral grassland, non-native plantation, reedbed).</p> <p>A 1.75km stretch of coast comprising bare sand on the upper beach with some young dunes; a line of low, fixed dunes supporting much coarse grassland, which widens in the south and supports plentiful woody vegetation, including garden escapes; and a range of habitats inland</p>

Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
					<p>of the dunes, particularly planted and naturally occurring trees and scrub on both dry and damp land, grassland, sparsely vegetated car parking areas, a track and a little bare sand.</p> <p>To the north is a huge population of scarce strawberry clover (<i>Trifolium fragiferum</i>) along the car park and species rich neutral grassland. Many parts of the dune ridge are dominated by coarse vegetation.</p> <p><u>Birds:</u> Whimbrel, reed bunting (<i>Emberiza schoeniclus</i>) and house martin (<i>Delichon urbicum</i>).</p>
Wolla Bank South	0	Landfall to A52 – Mumby	ESE	5ha	<p><u>Main Habitats:</u> Coarse or rank grassland, semi-improved, neutral grassland, reedbed (also drain and pond).</p> <p>Coastline comprising bare sand on the upper beach; a line of low fixed dunes grading into wetland; and an old embankment beside the road. As a result of recent landscaping works, much of the site is now far wetter than previously, with substantial areas of open water and reedbed, as well as coarse grassland in the central island and on the embankment. The wetland and dunes support a rich flora and fauna.</p> <p><u>Birds:</u> Coot (<i>Fulica atra</i>), sedge and reed warbler (<i>Acrocephalus schoenobaenus</i> and <i>A. scirpaceus</i>), swift (<i>Apus apus</i>) and common whitethroat (<i>Curruca communis</i>).</p>
Anderby Gravity Outfall	0.06	Landfall to A52 – Mumby	NE	0.6ha	<p><u>Main Habitats:</u> Drain, semi-improved neutral and coarse grassland.</p> <p>The canalised downstream end of Main Drain and its steep banks on the southern edge of Anderby Creek. Adjacent to both Anderby Creek Sand Dunes and Anderby Marsh LWT nature reserve. The drain is maintained, limiting the brackish floral community present. Sea club-rush (<i>Bolboschoenus maritimus</i>) and common reed are abundant on both of the steep lower banks, as is typical of brackish drains. Few aquatic species can survive the saline conditions, but any that do are kept under control by regular management. The very steep banks prevented comprehensive study of water plants, but at the more accessible landward end there is much fennel pondweed and some bulrush.</p>

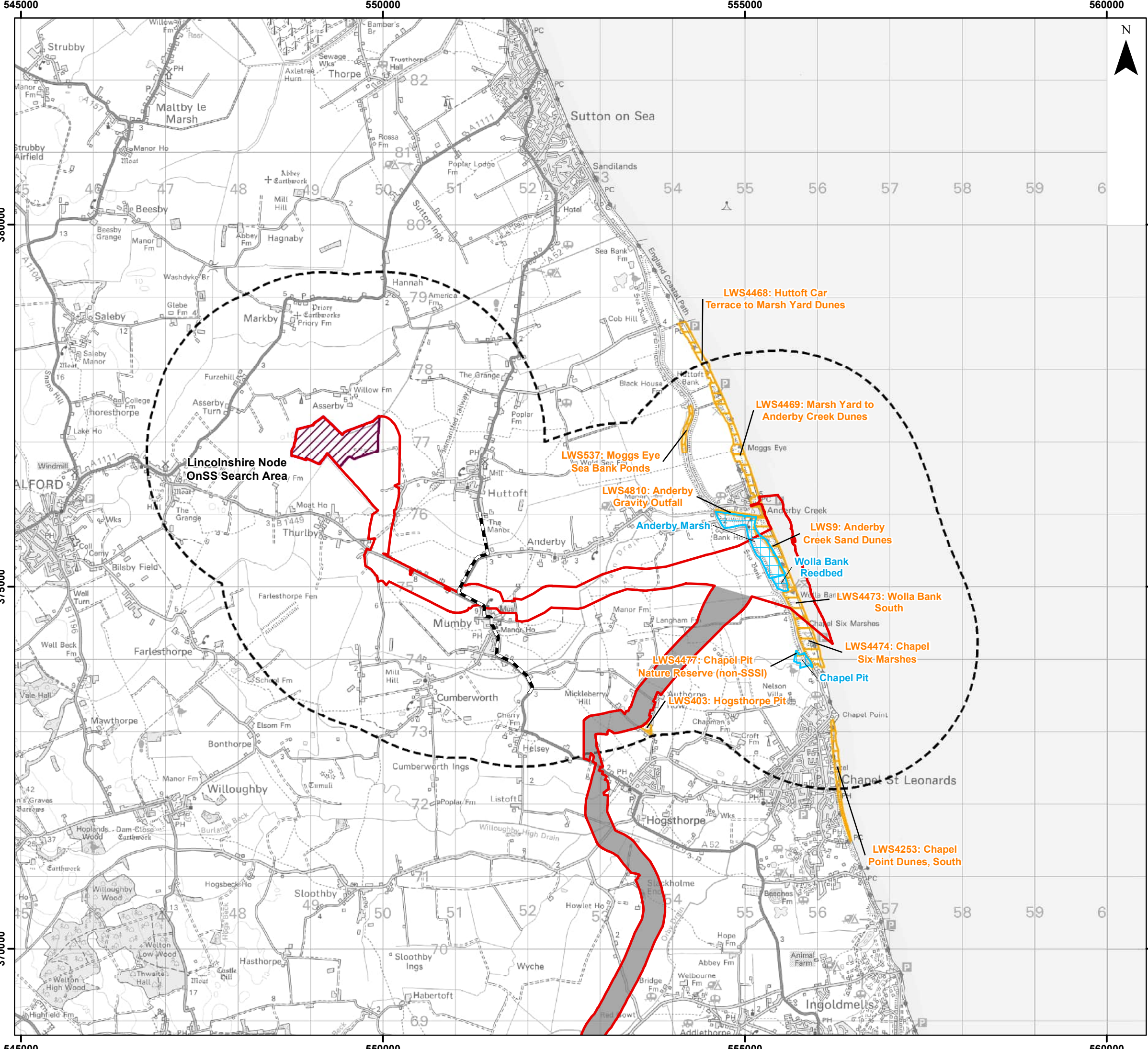
Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
					<u>Birds:</u> Reed warbler, sedge warbler, common whitethroat, wren (<i>Troglodytes troglodytes</i>), swallow (<i>Hirundo rustica</i>), swift, and house martin.
Chapel Pit Nature Reserve	0.3	Landfall to A52 – Mumby	SE	0.3ha	<p><u>Main Habitats:</u> Scrub, rough grassland, ditch and hedgerow.</p> <p>This site comprises two small unmanaged parts of Chapel Pit nature reserve, all the rest of which is part of Sea Bank Clay Pits Site of Special Scientific Interest. This LWS includes two small areas of the larger Chapel Pit LWT Reserve designation. The smaller element is a very small spur of land in the south-eastern corner of the reserve, supporting much scrub and a little remnant grassland. The remainder of the site lies on the northern edge of the reserve, immediately adjacent to an east-west orientated track within the SSSI. In the west there is a triangular area of rough grassland and scrub. East of this is a ditch and overgrown hedgerow.</p> <p><u>Birds:</u> 15 species of duck have been recorded at the site, mainly winter visitors. Bittern (<i>Botaurus stellaris</i>) and bearded tit (<i>Panurus biarmicus</i>) are recorded occasionally on the site. Breeding species have included reed warbler, sedge warbler, lesser whitethroat (<i>Curruca curruca</i>) and little grebe (<i>Tachybaptus ruficollis</i>).</p>
Chapel Point Dunes, South	1.0	Landfall to A52 – Mumby	SE	7.7ha	<p><u>Main Habitat:</u> Sand dune</p> <p>A north-south aligned strip of coastal land, 1.6km long and varying in width between 25m and 75m. The site comprises developing low sand dunes on the upper beach, between un-vegetated sand to the east and the concrete promenade in the west. The generally sparse sward includes a diverse sand dune flora.</p> <p><u>Birds:</u> Swallow, house martin, dunnock and goldfinch (<i>Carduelis carduelis</i>).</p>
Moggs Eye Sea Bank Ponds	1.2	Landfall to A52 – Mumby	N	2.9ha	<p><u>Main Habitat:</u> Standing water, reedbed</p> <p>A long, thin area of standing water, possibly formed by excavation of the earth sea wall. To the north, the site is almost 100% common reed with the road embankment supporting wooded patches of crack willow, alder and sycamore.</p> <p><u>Birds:</u> Bittern and garganey (<i>Spatula querquedula</i>) have been recorded on site.</p>

Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
Huttoft Carr Terrace to Marsh Yard Dunes	1.4	Landfall to A52 – Mumby	N	10.4ha	<p><u>Main Habitat:</u> Coarse or rank grassland, sand dune, scrub – scattered/dense (also native plantation). A 1.2km stretch of coast comprising bare sand on the upper beach with some botanically-poor foredunes; a concrete pathway and linear car parking area at the top of the beach; a line of low, fixed dunes and flatter ground inland, supporting much unmanaged vegetation, dominated by dense scrub and trees in central and northern parts, with larger amounts of grassland further south; and a gravel car parking area inland of the dunes at the southern end of the site, characterised by a short, open sward.</p> <p>The most interesting flora is typical of neutral soils. It is largely restricted to the vicinity of the southern car park and along a track that extends northwards.</p> <p><u>Birds:</u> Common whitethroat, reed bunting, swallow and Sandwich tern (<i>Thalasseus sandvicensis</i>).</p>
Hogsthorpe Pit	1.8	Landfall to A52 – Mumby	NNE	1.4ha	<p><u>Main Habitat:</u> Standing water, willow carr, grassland.</p> <p>Around the pond is diverse wetland vegetation and some drier grassland and scrub. Lesser bulrush (<i>Typha angustifolia</i>) and common reed are abundant at the water's edge. Botanically rich grassland is restricted to small areas of dry bank on the southern and northern margins of the pond.</p> <p><u>Birds:</u> Coot and moorhen.</p>

Table 3.3: Lincolnshire Wildlife Trust Reserves for Wolla Bank to Lincolnshire Node

Site Name	Distance from corridors/ landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/ Length of Site	Description
Anderby Marsh	0	Landfall to A52 - Mumby	ENE	24ha	<p><u>Main Habitat:</u> Traditional coastal grazing marsh.</p> <p>Managed to support a range of conservation priority birds including lapwing, curlew, redshank, snipe, barn owl (<i>Tyto alba</i>), starling (<i>Sturnus vulgaris</i>) and reed bunting. The adjacent reedbed fringes attract numerous reed, sedge and Cetti's warblers (<i>Cettia cetti</i>). Marsh harrier is a regular sight in the summer as is cuckoo (<i>Cuculus canorus</i>).</p> <p>The southern section of the Reserve is also designated as Anderby Creek Sand Dunes LWS.</p>
Chapel Six Marshes	0	Landfall to A52 - Mumby	ESE	2.2ha	<p><u>Main Habitat:</u> coarse or rank grassland, lake, reedbed, scrub – scattered/ dense.</p> <p>A 750m stretch of coast forming part of the wider Chapel Six Marshes LWS designation. The northern, smaller area forms part of the Chapel Six Marshes LWS, while the remainder has visitor facilities much used by the public, owned and managed by LCC. Features common to both, from east to west, are bare sand on the upper beach; a line of low fixed dunes succeeded westwards by flatter dry habitat; and finally, an old embankment beside the road. The upper beach is within Chapel Point to Wolla Bank geological SSSI.</p> <p><u>Birds:</u> Reed warbler, moorhen, migrating whimbrel and wood pigeon.</p>
Wolla Bank Pit	0	Landfall to A52 - Mumby	ESE	4ha	<p><u>Main Habitat:</u> Flooded clay pits, reed bed, chalk grassland.</p> <p>Extensive reedbeds and sea club-rush, with great reedmace (<i>Typha latifolia L.</i>), fennel pondweed, wild celery (<i>Apium graveolens</i>), sea arrowgrass and water-crowfoot. Colonies of common spotted orchid. Winter birds include snipe, fieldfare (<i>Turdus pilaris</i>), redwing (<i>Turdus iliacus</i>) and song thrush (<i>Turdus philomelos</i>), with bittern and bearded tit (<i>Panurus Biarmicus</i>) occasionally visiting. Also important for breeding populations of reed and sedge warblers,</p>

Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
					reed bunting and little grebe (<i>Tachybaptus ruficollis</i>). Invertebrates include many species of lepidoptera and odonata. The Reserve has no other designation but is adjacent to Wolla Bank South LWS.
Wolla Bank Reedbed	0	Landfall to A52 - Mumby	E	3ha	<u>Main Habitats:</u> Small pools, grassland with sea club-rush and sea couch. Water rail (<i>Rallus aquaticus</i>), reed warbler, sedge warbler, cetti's warbler, grasshopper warbler (<i>Locustella naevia</i>), reed bunting and whitethroat all nest. Marsh harrier and hobby (<i>Falco Subbuteo</i>) occur regularly in the summer and short-eared owls (<i>Asio flammeus</i>) can be present in winter. Bearded tit is a regular visitor in the winter. Starling murmurations can sometimes be present in the winter months. The Reserve has no other designation but lies between Anderby Creek Sand Dunes LWS to the north and Wolla Bank South LWS to the south.
Chapel Pit	0.3	Landfall to A52 - Mumby	SE	3ha	Excavated for clay for the repair of the sea banks following the floods of 1953, the flooded pit has marginal reedbeds and aquatic plants, such as water-crowfoot and great reedmace. Fifteen species of duck have been recorded, mainly winter visitors. Bearded tit and bittern are recorded occasionally. In summer breeding species include reed and sedge warblers, lesser whitethroat and little grebes can also be seen. In August and September thousands of migrating swallows and house martins roost in the reedbeds. Screens of willows round the banks of the pits have been planted in order to reduce disturbance to birds. A 0.3ha area of this LWT is also designated as Chapel Pit LWS.



Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- Lincolnshire Node OnSS Search Area
- Onshore PEIR Boundary 2 km Buffer
- Local Wildlife Site
- Local Wildlife Trust

Sources:
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 Locally Designated Sites provided by Lincolnshire Environmental Records Centre (October 2022)



Coordinate System: British National Grid
 0 1 2 km
 Scale: 1:50,000

Preliminary Environmental Information Report
 Ornithology Desk Study Appendix
 Non-Statutory Ornithological Designations for
 Lincolnshire Node
 Figure 3.2



Date: 10/05/2023
 Produced By: DB
 Revision: 0.1



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Wolla Bank to Weston Marsh (Both onshore ECCs)

Statutory Designations

There are four SPAs (three onshore, one offshore) and three Ramsar sites within 15km of the onshore PEIR Boundary. There are five SSSIs and three NNRs within 15km. In addition, there is one LNR within 2km of the onshore ECC. Table 3.4 and Table 3.5 below and Figure 3.3 and Figure 3.4 provide an overview of statutory and non-statutory designated sites within the study area, and within 15km in respect of SPAs and Ramsar sites.

Table 3.4: Statutory Designated Sites for Wolla Bank to Weston Marsh (Both onshore ECCs)

Site Name & Designation	Distance from the onshore ECC (km)	Nearest Section of the onshore ECC	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
Greater Wash SPA	0	Landfall to A52 - Hogsthorpe	E	353,578	As detailed in Table 3.1.
The Wash (and North Norfolk Coast) SPA, Ramsar, SSSI (and NNR)	0.01	The Haven to Marsh Road	E	62,044	SPA: As detailed in Table 3.1.
	0.01	The Haven to Marsh Road	E	62,044	Ramsar: As detailed in Table 3.1.
	0.01	The Haven to Marsh Road	E	62,044	SSSI: As detailed in Table 3.1
Gibraltar Point SPA, Ramsar, SSSI (and NNR)	2.3	Steeping River to Ivy House Farm/ Marsh Yard	E	414	Ramsar: As detailed in Table 3.1.
	2.3	Steeping River to Ivy House Farm/ Marsh Yard	E	581	SSSI: As detailed in Table 3.1.
	2.3	Landfall to A52 - Hogsthorpe	NW	37,630	SPA: As detailed in Table 3.1.

Site Name & Designation	Distance from the onshore ECC (km)	Nearest Section of the onshore ECC	Compass Direction	Area of Designation (ha)	Reason for Notification/Designation
Humber Estuary SPA and Ramsar	10.7	Landfall to A52 - Hogsthorpe	NW	37,630	SPA: As detailed in Table 3.1.
	107	Landfall to A52 - Hogsthorpe	NW	37,988	Ramsar: As detailed in Table 3.1.
Surfleet Lows SSSI	3.5	A52 - Fosdyke Bridge to Weston Marsh Substation South	W	0.52	<p>This meadow is the best example of the permanent unimproved neutral grassland once common over Lincolnshire Middle Marsh boulder clay. Well over one hundred species have been recorded from its small acreage. Surrounded by hedgerows, this field is still managed by the traditional means of taking a hay crop followed by grazing. Two small ponds are located at the field's edge.</p> <p>Birds: Lesser whitethroat and common whitethroat.</p>
Willoughby Meadow SSSI	5.5	A52 - Hogsthorpe to Marsh Lane	W	23.4	<p>A representative of the series of ancient woodlands found on the middle Marsh Boulder Clay on the edge of the Lincolnshire Wolds. It is predominantly oak-ash and hazel, managed as coppice with standards. This supports a characteristic and rich ground flora.</p> <p>The site is notable for its breeding birds including woodcock, tawny owl, greater spotted woodpecker, tree creeper and four species of warblers.</p>

National Nature Reserves

Three NNRs are situated within the 15km study area: The Wash, Gibraltar Point and Saltfleetby-Theddlethorpe Dunes.

The Wash NNR

The Wash NNR is an 8777.5ha site of mixed of open deep water, permanent shallow water, mudflats and saltmarsh, representing one of Britain's most important winter-feeding areas for waders and wildfowl (Natural England via Lincolnshire's National Nature Reserves Webpage). It comprises Kirton Marsh, Terrington St Clement Marsh, Point Green and the North Wootton Marsh. It's a valuable breeding zone for birds such as redshank.

The Wash NNR borders Frampton RPSB Reserve to the north and forms part of The Wash SPA. It is situated 530m from the edge of the PEIR Boundary.

Gibraltar Point NNR

This is 429ha site which forms a small part of Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC and SSSI. It is situated 2.51km east of the Weston Marsh PEIR Boundary.

The majority of the NNR is also included within the Gibraltar Point Ramsar and SPA. Habitats include sand dunes, saltmarsh, marshes, and meadows. It is an important site for birds and is described in Table 3.1.

Saltfleetby-Theddlethorpe Dunes NNR

Saltfleetby-Theddlethorpe Dunes NNR is an 8km stretch of coastline covering 618.93ha. It is situated 12.25km north, northwest of the Weston Marsh PEIR Boundary. This NNR forms part of the Saltfleetby-Theddlethorpe Dunes SSSI and Humber Estuary SPA SAC and Ramsar, all of which are described in Table 3.1. It is an important reserve containing tidal sand and mudflats, salt and freshwater marshes and sand dunes. On the foreshore, accreting mud and silt flats and saltmarsh in the north give way to a narrower sandy beach at the southern end.

Local Nature Reserves

There is only one LNR within the 2km study area: Havenside Country Park.

Havenside Country Park is an 18.91ha reserve is situated within the 'Church End Lane to The Haven' onshore ECC section and is also designated as an LWS. Appendix A provides details on the reasons for designation of Havenside as an LWS. The Boston Borough Council website also mentions Havenside being 'a superb mix of rough grassland with scrub and brambles, cattle grazed meadows, shallow seasonal ponds, estuary and mud flat. Salt marsh plants such as sea lavender and grasswort colonise the mud.' It is also thought to be important for barn owls, bats and common seals.

Non-statutory Designations

RSPB Reserves

There are two RSPB Reserves within the 2km study area: Frampton Marsh and Freiston Shore.

Frampton Marsh RSPB Reserve

Frampton Marsh is a 172ha reserve measuring 140m to the east, southeast of the Weston Marsh PEIR Boundary. It is a coastal reserve, primarily comprising wetlands, reedbeds, large freshwater scrapes and wet grassland. The eastern two thirds of the Reserve are internationally important for birds and form part of The Wash SPA. A description of The Wash is provided above in Table 3.1.

The reserve is grazed together with the Frampton Marsh LWT reserve to the north. See Table 3.6 for an overview of that reserve.

Freiston Shore RPSB Reserve

Freiston Shore measures 1.46km from the edge of the onshore ECC. This Reserve protects 683ha of tidal saltmarsh and mudflats and approximately four fifths of the reserve is also designated for its importance to bird populations forming part of The Wash SPA (RSPB Website). It includes 15ha of saline lagoons and 66ha of managed realignment and supports large populations of black-tailed godwit (up to 5,000 individuals), brent goose (up to 3,000), hen harrier, knot (up to 16,000 birds) and oystercatcher.

Local Wildlife Sites

A total of 21 non-statutory LWS occur within the 2km study area, eight of which are inside the PEIR Boundary, and 13 of which are within the Survey Area. These are: Anderby Creek Sand Dunes, Havenside, Hobhole Bank, Hobhole Drain, Hogsthorpe Pit, Lincolnshire Coast Submerged Forest, Moulton Marsh and Shore Road Drain.

Table 3.6 provides summary details for each designation, along with their distance from the nearest section of the Weston Marsh PEIR Boundary. The descriptions are extracted from each LWS citation and are available in Volume 1, Chapter 21 Onshore Ecology.

Table 3.5: Local Wildlife Sites for Wolla Bank to Weston Marsh

Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
Anderby Creek Sand Dunes	0	Landfall to A52 - Hogsthorpe	NNE	11.9 ha	As detailed in Table 3.2.
Chapel Six Marshes	0	Landfall to A52 - Hogsthorpe	E	12.9ha	As detailed in Table 3.2.
Hogsthorpe Pit	0	Landfall to A52 - Hogsthorpe	SW	1.4ha	As detailed in Table 3.2.
Marsh Yard to Anderby Creek Dunes	0	Landfall to A52 - Hogsthorpe	N	16.8ha	As detailed in Table 3.2.
Wolla Bank South	0	Landfall to A52 - Hogsthorpe	ENE	5ha	As detailed in Table 3.2.
Havenside	0	Church End Lane to The Haven	W	33.1ha	<u>Main Habitat:</u> Coarse or rank grassland (also new-native plantation, scrub, semi-improved neutral grassland, improved grassland, ditch, pond, coastal grazing marsh, marsh, reedbed). The mosaic of woodland, grassland and wetland is very valuable in the local context and of significant value to local bird, mammal and invertebrate populations. The linear nature of the site provides a good wildlife corridor through Boston.
Hobhole Bank	0	Church End Lane to The Haven	SSW	3.7ha	<u>Main Habitat:</u> Scrub, semi-improved neutral grassland, semi-improved calcareous grassland (also coarse or rank grassland).

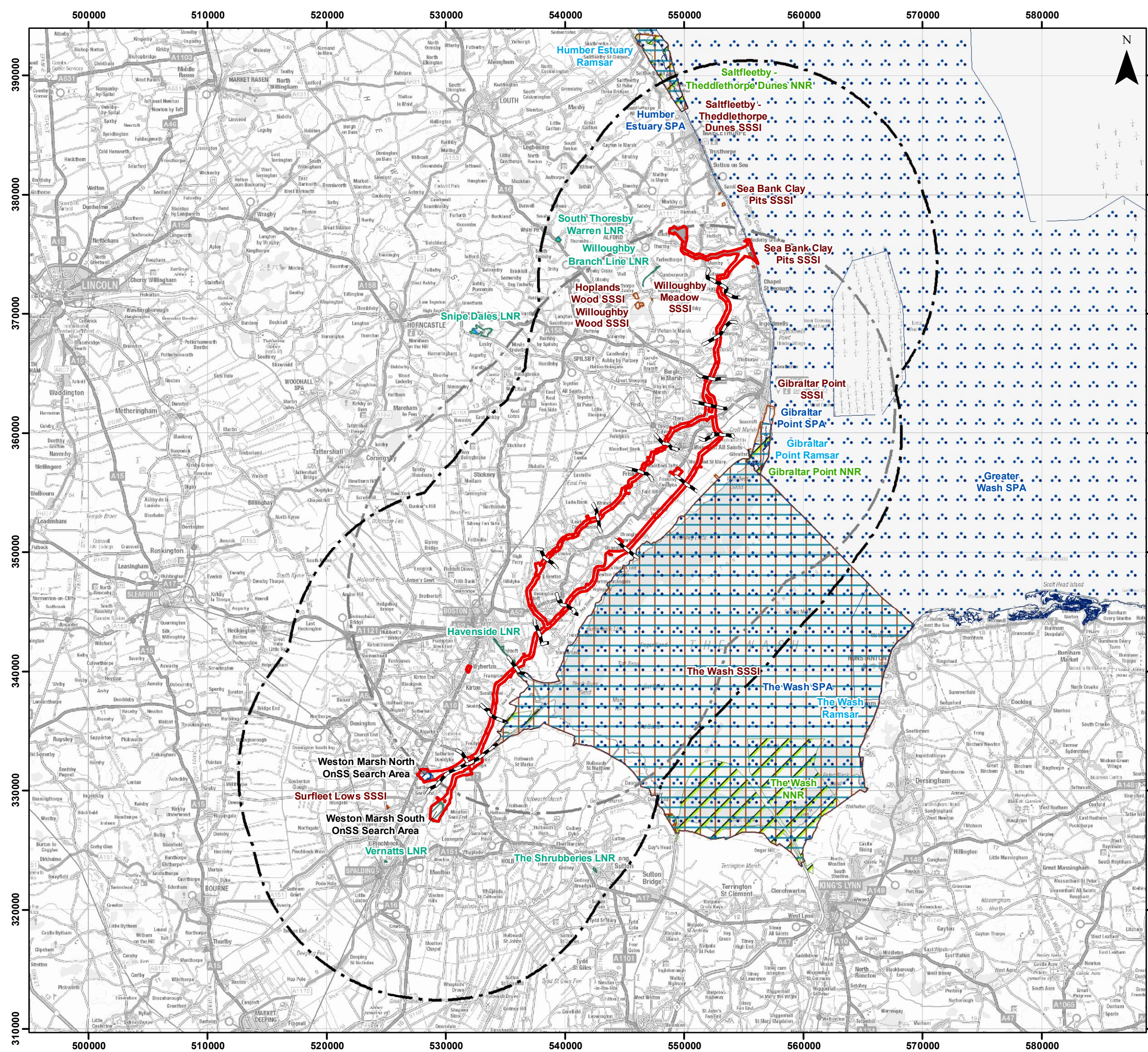
Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
					<p>The site is a LWT Reserve and is actively managed in order to try and maintain the finer grassland sward on the bank top. Scrub invasion from the bank slopes is a threat to the floristic diversity of this site.</p> <p>It supports a good bird assemblage and is known locally for the long-eared owls which over winter on site.</p>
Risegate Eau	0	Fosdyke Bridge to Weston Marsh Substation North	W	9km	<p><u>Main Habitat:</u> Coarse or rank grassland, drain, linear reedbed, scrub.</p> <p>A central 9km of a 15km long watercourse extending from South Forty Foot Drain in the west to River Welland in the east. Channel size varies from one to about six metres wide.</p> <p>Birds: Reed warbler, kingfisher (<i>Alcedo atthis</i>), common snipe, grey heron (<i>Ardea cinerea</i>), moorhen and green sandpiper.</p>
Anderby Gravity Outfall	0.06	Landfall to A52 - Hogsthorpe	N	0.6ha	As detailed in Table 3.2.
Chapel Pit Nature Reserve (non-SSSI)	0.3	Landfall to A52 - Hogsthorpe	ESE	0.3ha	As detailed in Table 3.2.
Middlemarsh Farm	0.1	A158 - Skegness Road to Steeping River	ESE	73.5ha	<p><u>Main Habitat:</u> Grazing marsh, standing water</p> <p>Around 7 fields surrounded by ditches and some hedges. In the mid-2000s, the area was transformed from arable land into a topographically varied wetland where breeding, passage and wintering birds typical of the Lincolnshire coastal grazing marshes could flourish.</p> <p>The impressive list of breeding birds since 2008 includes lapwing, redshank, snipe, avocet, yellow wagtail, reed and sedge warbler, reed bunting, skylark</p>

Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
					(<i>Alauda arvensis</i>), shoveler (<i>Anas clypeata</i>), mallard and mute swan (<i>Cygnus olor</i>). Wigeon, lapwing, curlew and other birds use the area in winter. Amongst the wetland plants present are horned pondweed, water-crowfoot, pink water-speedwell (<i>Veronica catenate</i>), branched bur-reed, common reed and saltmarsh rush, plus the scarce orange foxtail (<i>Alopecurus aequalis</i>).
Moulton River	0.4	Fosdyke Bridge to Weston Marsh Substation South	ENE	5.4 km	<p><u>Main Habitat:</u> Coarse or rank grassland, drain, reedbed.</p> <p>A 0.5m to 3m wide stretch of canalised drain with very little flow of water. Although there is plentiful algal growth in places, water quality appears to be good and supports an interesting wetland flora.</p> <p>Birds: Mallard, reed bunting, sedge warbler, common snipe, little egret (<i>Egretta garzetta</i>), swallow, skylark, linnet (<i>Linaria cannabina</i>) and the declining corn bunting (<i>Emberiza calandra</i>).</p>
Surfleet Seas End Saltmarsh	0.7	Fosdyke Bridge to Weston Marsh Substation South	WSW	1.7km	<p><u>Main Habitat:</u> River, marsh, calcareous grassland (also saltmarsh, mudflat, anthills, steep slopes, seasonally wet/ damp areas).</p> <p>This site is adjacent to the tidal River Welland and forms the part of the flood plain for this river. some of the flat is inundated daily but most is only flooded at Spring tide. There are three main habitats: patches of tidal mud flat, tidal salt marsh and calcareous grassland higher up the bank and on the bank top. The Vernatt’s Drain runs the length of the site on the other side of the bank.</p> <p>It is one of very few accessible salt marshes in this area with a public footpath through part of the site and the entire length on the adjacent bank. Few birds were observed on the day, but this stretch of river is known to be valuable for birds with regular visits from waders of all sorts, birds of prey, sand martins (<i>Riparia riparia</i>) and many others.</p>

Site Name	Distance from corridors/ landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/ Length of Site	Description
Sloothby Low Lane	0.7	A52 - Hogsthorpe to Marsh Lane	WNW	4.6km	<p><u>Main Habitat:</u> Neutral grassland (also damp grassland, standing water, seasonally wet areas, undulating ground, deep ditches, species-poor hedgerows).</p> <p>This wide green lane is an area of neutral grassland occasionally grazed by cattle. Good flora occurs in small patches, particularly at the edges of the site.</p> <p>Birds: Redwing, moorhen, mute swan, woodpigeon, heron, magpie (<i>Pica pica</i>), pheasant (<i>Phasianus colchicus</i>), long-tailed tit (<i>Aegithalos caedatus</i>), blackbird (<i>Turdus merula</i>), skylark, carrion crow (<i>Corvus corone</i>) and linnet.</p>
Middlemarsh Meadows	0.7	A158 - Skegness Road to Steeping River	NNE	4.7ha	<p><u>Main Habitat:</u> Unimproved neutral grassland, coarse grassland (also semi-improved neutral grassland, hedgerows, drain).</p> <p>Four contiguous hay meadows, each one adjacent to the north-eastern edge of Middlemarsh Farm LWS. The two eastern fields are very rich in plants typical of high-quality neutral grassland, whereas the sward in the two western fields is less rich.</p> <p>Birds: Sedge warbler and reed warbler, chaffinch (<i>Fringilla coelebs</i>), wren, blue tit (<i>Cyanistes caeruleus</i>), starling and woodpigeon.</p>
Vernatt's Drain	0.7	Fosdyke Bridge to Weston Marsh Substation South	SW	10.7km	<p><u>Main Habitat:</u> Drain, calcareous grassland, neutral grassland, reedbed, coarse grassland (also scattered non-planted trees, tussocky vegetation, steep slopes. South-facing slopes, earthworks/ hummocky ground).</p> <p>Vernatt's Drain is a large man-made watercourse resulting from the amalgamation of Counter Drain, North Drove Drain and South Drove Drain at Pode Hole</p>

Site Name	Distance from corridors/ landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/ Length of Site	Description
					Substantial stretches with a rich grassland flora and plants typical of calcareous soils are also present. Birds: The site supports a good range of fauna, including breeding populations of reed and sedge warblers, reed bunting and sand martin.
Chapel Point Dunes, South	1.0	Landfall to A52 - Hogsthorpe	SE	7.7ha	As detailed in Table 3.2.
Moggs Eye Sea Bank Ponds	1.2	Landfall to A52 - Hogsthorpe	N	2.9ha	As detailed in Table 3.2.
Frampton Hall	0.3	The Haven to Marsh Road	WNW	21.3ha	<u>Main Habitat:</u> Parkland (including a mosaic of semi-natural woodland, scrub, semi-improved neutral grassland, semi-improved calcareous grassland, improved grassland, coarse or rank grassland, ditch, pond) veteran trees are abundant. The site also has significant nature conservation value for local bird populations.
Huttoft Carr Terrace to Marsh Yard Dunes	1.4	Landfall to A52 - Hogsthorpe	N	10.4ha	As detailed in Table 3.2.
Pinchbeck Marsh	1.5	Fosdyke Bridge to Weston Marsh Substation South	SW	2.3km	<u>Main Habitat:</u> Calcareous grassland (also river, reedbed). The original Site of Nature Conservation Interest (SNCI) here is now a large area of arable land between the Vernatt's Drain and the River Welland. Two crops were being grown there at the time of survey, wheat and potatoes. The potato crop had recently been sprayed with acid. The southern end of this site is formed by the bank of the A16 Spalding Bypass and was also once the bank on the old Spalding to Boston Railway. When the

Site Name	Distance from corridors/landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/Length of Site	Description
					<p>road was completed in the early 1990s the verge was landscaped, and some planting took place on this bank.</p> <p>The Welland bank is more open and true grassland. On the river side of the bank there are patches of rank vegetation, but most is grassland, cut once a year by the Environment Agency. Some areas on the field side have been closed off and used to graze cattle.</p> <p>This stretch of the Welland is tidal. Incidental bird sightings included 35 mallards, a grey heron and a shag (<i>Gulosus aristotelis</i>) on or by the water.</p>



Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- Weston Marsh North OnSS Search Area
- Weston Marsh South OnSS Search Area
- Onshore PEIR Boundary Rev 1 15 km Buffer
- Onshore PEIR Boundary Rev 1a 15 km Buffer
- Special Protection Area (SPA)
- Ramsar
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)

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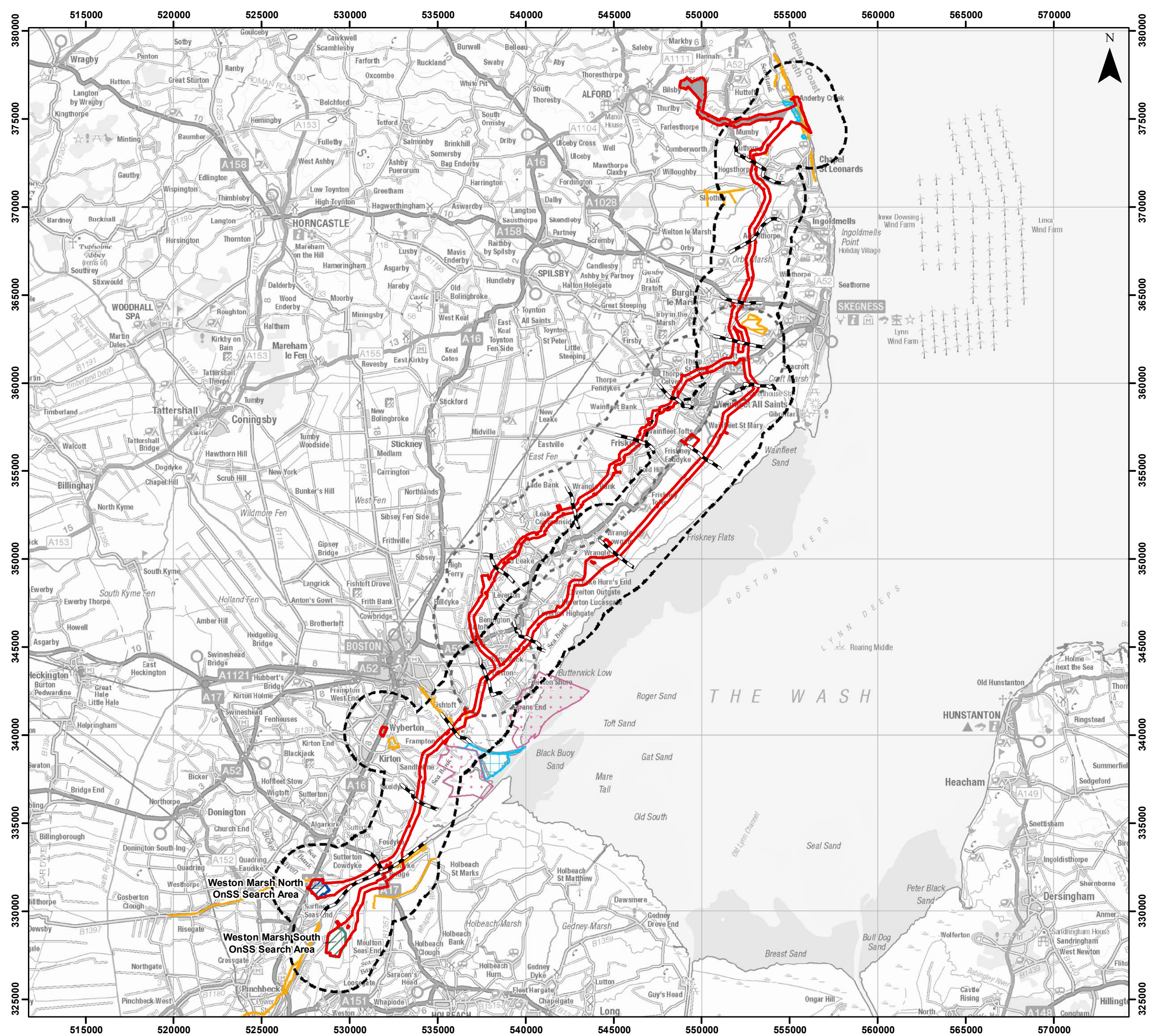
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 Ornithology Desk Study Appendix
 Statutory Ornithological Designations for
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Figure 3.3

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Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- Weston Marsh North OnSS Search Area
- Weston Marsh South OnSS Search Area
- PEIR Boundary Weston Marsh Rev 1 2 km Buffer
- PEIR Boundary Weston Marsh Rev 1a 2 km Buffer
- RSPB Reserve
- Local Wildlife Site
- Local Wildlife Trust

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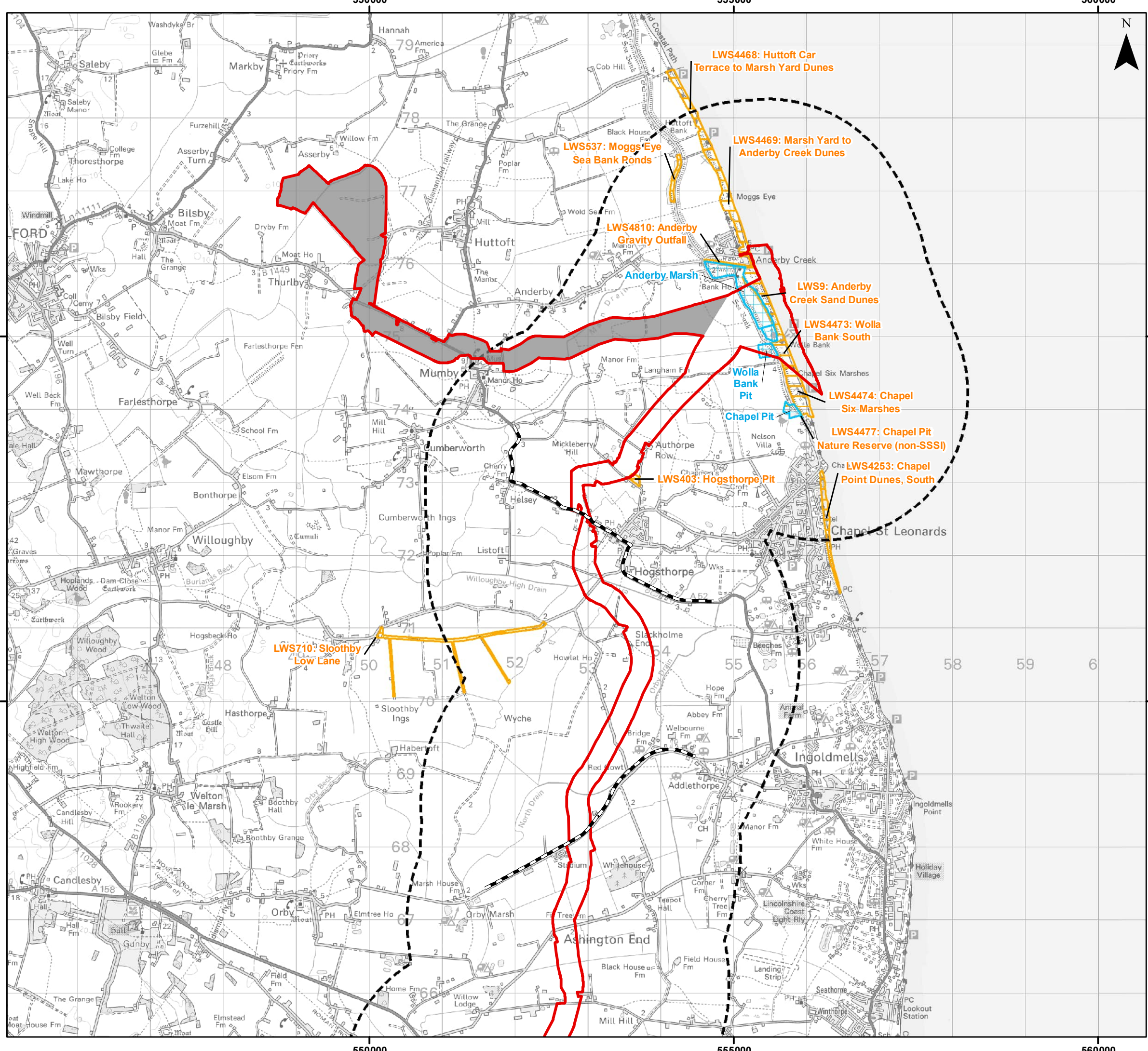
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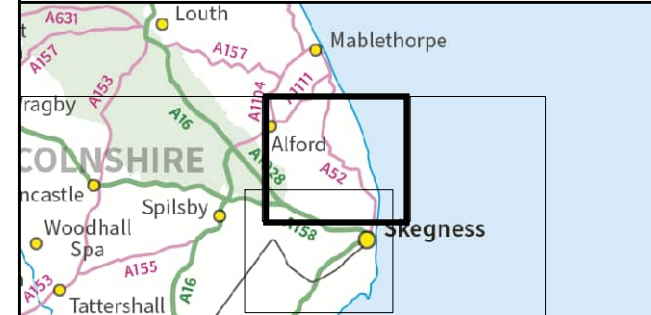
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Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- PEIR Boundary Weston Marsh Rev 1 2 km Buffer
- Local Wildlife Site
- Local Wildlife Trust

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 Weston Marsh
 Figure 3.4.2

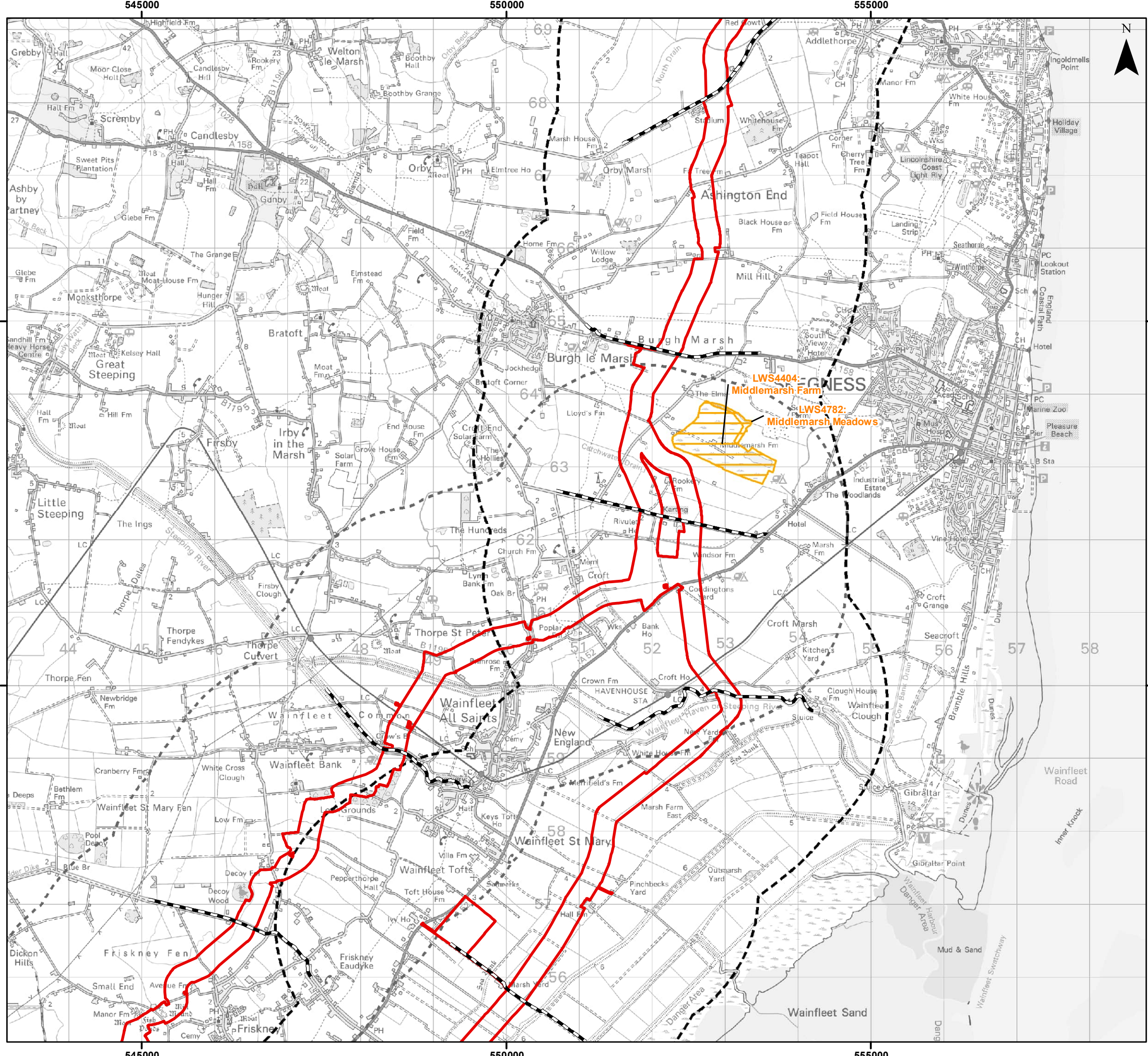


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Legend

- Onshore PEIR Boundary
- Onshore Segment Break
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- PEIR Boundary Weston Marsh Rev 1a 2 km Buffer
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Figure 3.4.3

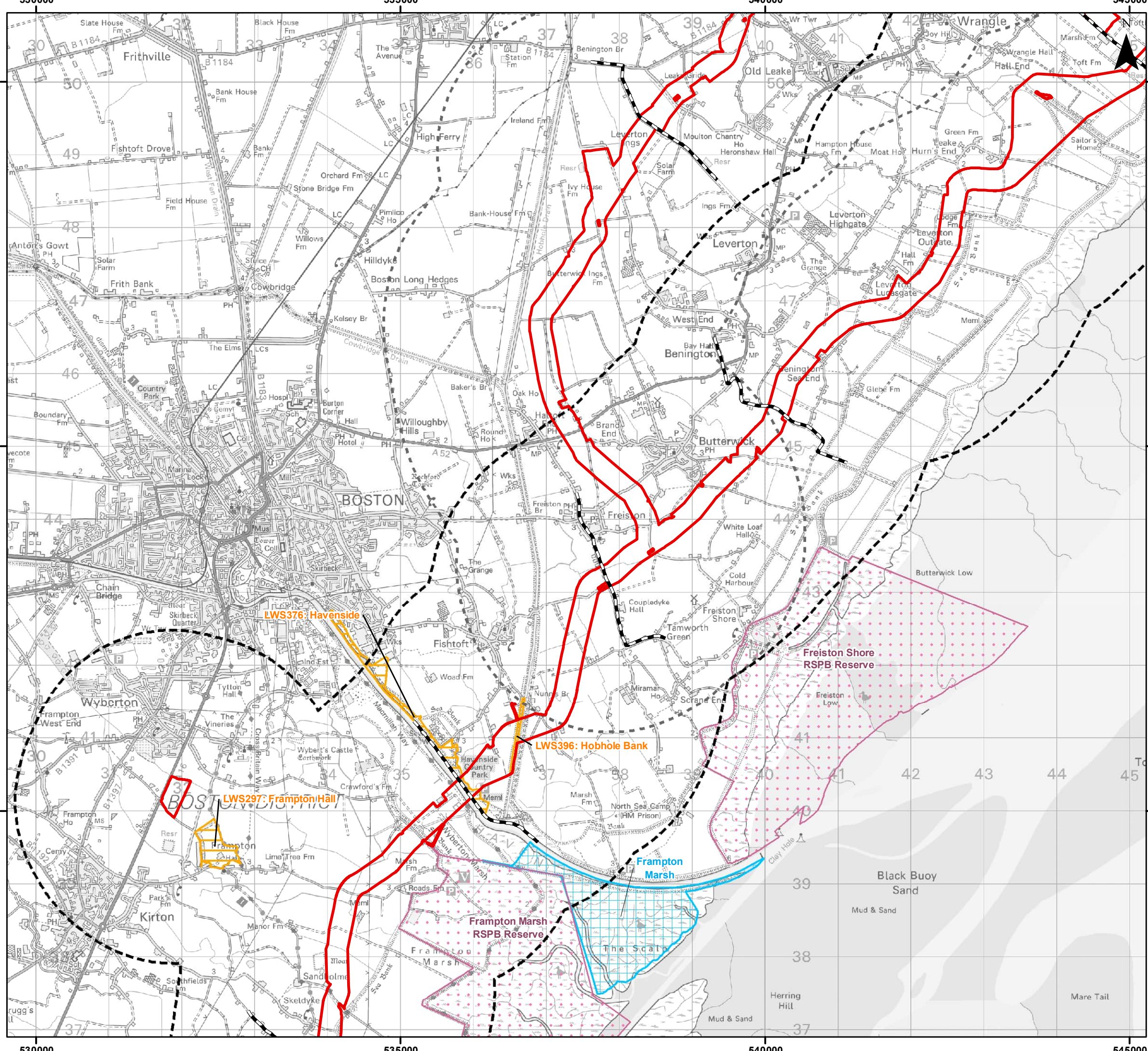


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Legend

- Onshore PEIR Boundary
- Onshore Segment Break
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- RSPB Reserve
- Local Wildlife Site
- Local Wildlife Trust

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Figure 3.4.4

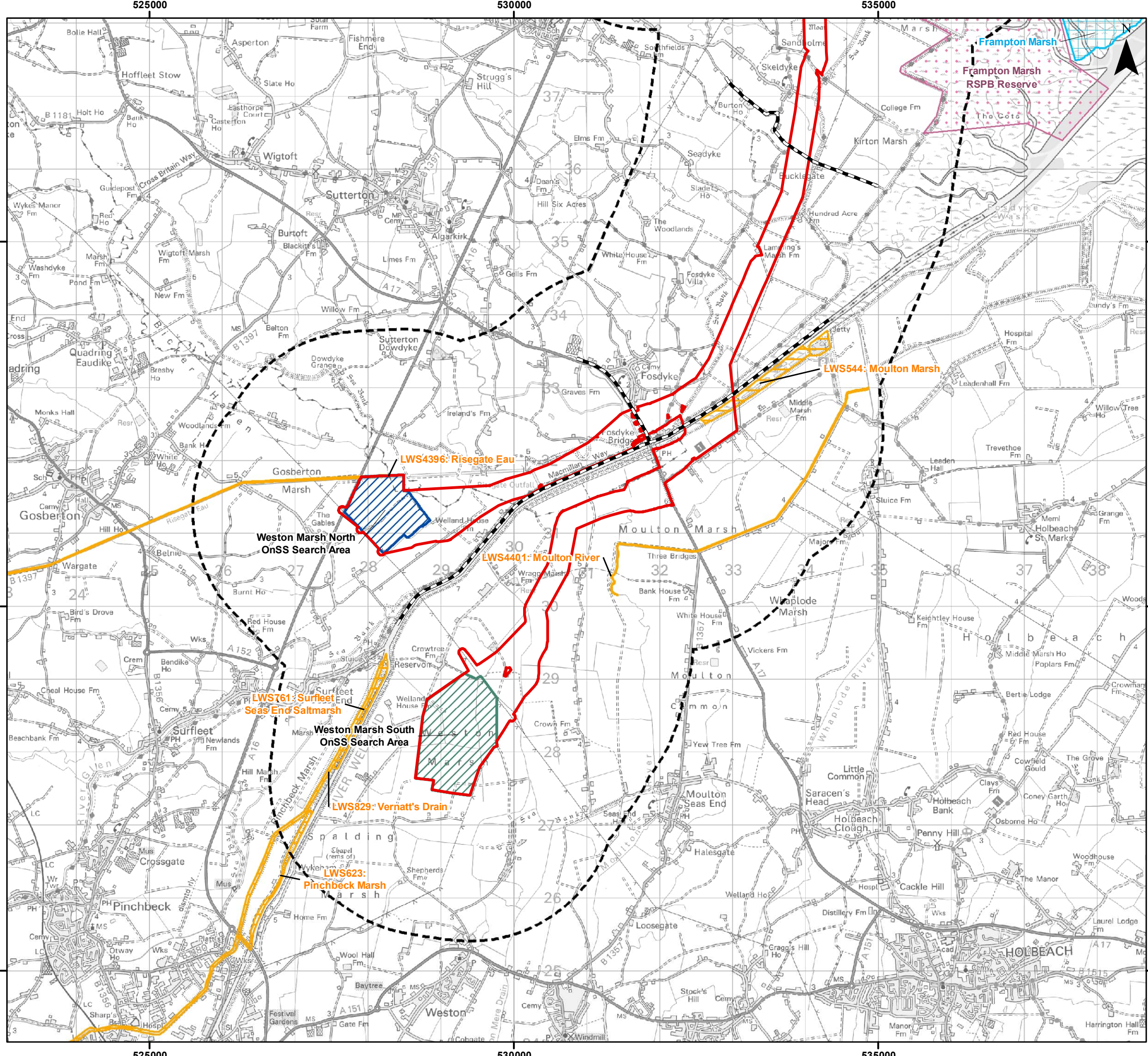


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Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- Weston Marsh North OnSS Search Area
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- PEIR Boundary Weston Marsh Rev 1 2 km Buffer
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Figure 3.4.5



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Lincolnshire Wildlife Sites

There are seven LWSi the 2km study area and two within the PEIR Boundary – Anderby and Moulton Marsh. Table 3.7 provides summary details for each designation, along with their distance from the PEIR Boundary. Where available, the full citations for each designation are provided within the Volume 1, Chapter 21:Onshore Ecology.

Table 3.6: Lincolnshire Wildlife Sites for Weston Marsh

Site Name	Distance from corridors/ landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/ Length of Site	Description
Anderby Marsh	0	Landfall to A52 - Hogsthorpe	NNE	24ha	As detailed in Table 3.3.
Chapel Six Marshes	0	Landfall to A52 - Hogsthorpe	E	2.2ha	As detailed in Table 3.3.
Wolla Bank Pit	0	Landfall to A52 - Hogsthorpe	ENE	4ha	As detailed in Table 3.3.
Wolla Bank Reedbed	0	Landfall to A52 - Hogsthorpe	NE	3ha	As detailed in Table 3.3.
Moulton Marsh	0	Fosdyke Bridge to Weston Marsh Substation South	NE	36ha	<p><u>Main Habitat:</u> Broad-leaved woodland, scrub, saline lagoons, shallow tidal scrapes, grassland, saltmarsh.</p> <p>Young, planted broad-leaved woodland (6ha), two large saline lagoons with islands, river with shall tidal scrapes, and saltmarsh totalling 6.5ha in area. This reserve also includes the 26.3ha Moulton Marsh LWS.</p> <p>The woodland and scrub habitats support a good population of tits, finches, whitethroats and buntings. The lagoons are an important wintering area for little grebe and water rail. Redshank and little egret are regularly seen on the scrapes.</p>

Site Name	Distance from corridors/ landfall (km) to site	Nearest Section of the onshore ECC	Compass Direction	Area/ Length of Site	Description
Chapel Pit	0.3	Landfall to A52 - Hogsthorpe	ESE	3ha	As detailed in Table 3.3.
Frampton Marsh	0.7	The Haven to Marsh Road	E	172ha	<p>The reserve is part of the most mature saltmarsh in The Wash and is exceptionally rich in plants, birds and invertebrates.</p> <p>The area supports regular breeders such as redshank, oystercatcher, reed bunting, meadow pipit and skylark. In winter the saltings attract wigeon, mallard, shelduck, teal and brent geese, with large flocks of finches and buntings, notably linnet and twite (<i>Linaria flavirostris</i>) and birds of prey such as hen harrier and merlin (<i>Falco columbarius</i>). The tidal mudflats form part of the wader feeding grounds, which give the Wash its international status. Large flocks of dunlin occur, as well as considerable numbers of grey plover, whimbrel, curlew, bar-tailed godwit and greenshank.</p> <p>The Trust's reserve is grazed together with the RSPB's reserve to the south.</p>

3.2 Species Records

The desk study data included records dating back to the 1970 for a wide range of legally protected or otherwise notable bird species within the study area. A total of 164,868 records of protected or notable species were returned from the GLNP for the entire study area.

Records were provided by the GLNP on a ‘breeding’ and ‘non-breeding’ basis with confidential records of breeding protected species being highlighted and non-breeding protected species un-highlighted. It appears that ‘breeding’ records are not necessarily confirmed nest sites but is unclear whether breeding behaviour was observed, or they were simply observations during the breeding season.

Wolla Bank to Lincolnshire Node

A total of 9,011 records of protected or notable species were returned from GLNP for the Wolla Bank to Lincolnshire Node study area.

Non-Breeding Birds

Table 3.7 presents records of Annex 1 of the EC Birds Directive (Annex 1), Schedule 1 of the Wildlife and Countryside Act (Schedule 1), a list produced under the powers given to the SoS by Section 41 of the Natural Environment Research Council (NERC) Act (NERC41), Birds of Conservation Concern (BOCC) Red and BOCC Amber species from within 2km of the Wolla Bank to Lincolnshire Node section.

Table 3.7: GLNP Non-Breeding Bird Species Records within 2km of onshore ECC to Lincolnshire Node

Total Number of Records				
	LN1	LN2	Conservation & Protection Status (Annex 1, Schedule 1, NERC41, BOCC Red/Amber)	Total
Bewick's swan	5	0	A1, S1, NERC41	5
Whooper swan	160	1	A1, S1, Amber	161
Pintail	45	0	S1	45
Scaup	10	0	S1, NERC41, Red	10
Velvet scoter	18	0	S1, Red	18
Common scoter	202	0	S1, NERC41, Red	202
Long-tailed duck	10	0	Red	10
Goldeneye	40	0	S1, Red	40
Slavonian grebe	6	0	S1, Red	6
Black-winged stilt	1	0	A1, S1	1
Whimbrel	12	0	S1, Red	12
Purple sandpiper	11	0	S1	11

Total Number of Records				
Red-necked phalarope	0	2	A1, S1, Red	2
Green sandpiper	4	0	S1, Amber	4
Wood sandpiper	1	2	A1, S1, Amber	3
Greenshank	8	0	S1, Amber	8
Little gull	24	0	S1	24
Roseate tern	1	0	A1, S1, NERC41, Red	1
Black tern	5	0	A1, S1	5
Red-throated diver	209	0	A1, S1, Amber	209
Black-throated diver	26	0	A1, S1, Amber	26
Great northern diver	28	0	A1, S1, Amber	28
Leach's petrel	1	0	A1, S1, Red	1
Spoonbill	1	0	A1, S1, Amber	1
Hen harrier	6	0	A1, S1, NERC41, Red	6
Merlin	18	0	A1, S1, Red	18
Redwing	131	12	S1, Red	143
Fieldfare	101	6	S1, Red	107
Brambling	33	1	S1	34
Lapland bunting	8	0	S1, Amber	8
Snow bunting	29	0	S1, Amber	29

Breeding Birds

Records of breeding Annex 1, Schedule 1, NERC 41, BOCC Red and BOCC Amber species are documented within Appendix 22.2 Ornithology Desk Study Confidential Annex.

Wolla Bank to Weston Marsh ECC South of the A52

A total of 25,870 records of protected or notable species from the last 15 years were returned from GLNP within 2km for the Wolla Bank to Weston Marsh study area.

Non-Breeding Birds

Table 3.8 presents records of Annex 1, Schedule 1, NERC 41, BOCC Red and BOCC Amber species from within 2km of the Wolla Bank to Weston Marsh ECC South of the A52.

Table 3.8: GLNP Non-Breeding Bird Species Records within 2km of onshore ECC to Weston Marsh

Total Number of Records																
	WM1	WM2	WM3	WM4	WM5	WM6	WM7	WM8	WM9	WM10	WM11	WM12	WM13	WM14	Conservation & Protection Status (Annex 1, Schedule 1, NERC41, BOCC Red/Amber)	Total
Bewick's swan	5	66	0	1	3	0	0	0	2	0	6	0	0	140	A1, S1, NERC 41, Red	223
Whooper swan	159	339	3	23	14	1	0	10	13	2	74	1	2	1150	A1, S1, Amber	1791
Pintail	45	89	0	12	25	1	0	0	55	1	105	0	0	937	S1, Amber	1270
Scaup	10	18	0	6	0	0	0	0	8	0	24	0	0	388	S1, NERC 41, Red	454
Velvet scoter	18	52	0	0	0	0	0	0	1	0	0	0	0	1	S1, Red	72
Common scoter	202	278	0	0	2	0	0	3	3	0	1	0	0	7	S1, NERC 41, Red	65
Long-tailed duck	10	33	0	0	0	0	0	0	5	0	0	0	0	17	S1, Red	995
Goldeneye	40	68	0	1	17	0	0	5	64	0	49	0	0	751	S1, Red	35
Slavonian grebe	6	6	0	0	0	0	0	0	3	0	0	0	0	20	A1, S1, Red	16
Black-winged stilt	1	1	0	0	0	0	0	0	0	0	5	0	0	9	A1, S1, Amber	124
Dotterel	0	1	0	0	0	0	0	0	0	0	0	0	0	21	A1, S1, Red	19

Total Number of Records																
Whimbrel	6	10	0	0	1	0	0	18	5	0	3	0	0	81	S1, Red	43
Temminck's stint	0	0	0	0	0	0	0	0	0	0	1	0	0	18	S1	6
Purple sandpiper	11	12	0	0	0	0	0	0	0	0	2	0	0	18	S1, Red	274
Red-necked phalarope	0	1	0	0	0	0	0	0	0	0	1	0	0	4	A1, S1, Red	162
Green sandpiper	4	10	0	26	22	0	0	24	0	0	3	0	1	184	S1, Amber	548
Wood sandpiper	1	1	0	16	0	0	0	1	0	0	12	0	0	131	A1, S1, Amber	88
Greenshank	6	12	0	25	6	0	0	25	4	0	32	0	0	438	S1, Amber	4
Little gull	24	42	0	4	0	0	0	0	1	0	0	0	0	17	A1	36
Roseate tern	1	3	0	0	0	0	0	0	0	0	0	0	0	0	A1, S1, NERC 41, Red	514
Black tern	5	12	0	0	0	0	0	0	1	0	1	0	0	17	A1, S1	76
Red-throated diver	209	295	0	0	0	0	0	0	6	0	0	0	0	4	A1, S1, Amber	79
Black-throated diver	26	48	0	0	0	0	0	0	2	0	0	0	0	0	A1, S1, Amber	21
Great northern diver	28	42	0	0	1	0	0	1	5	0	0	0	0	2	A1, S1, Amber	223
Leach's petrel	1	19	0	0	0	0	0	0	0	0	0	0	0	1	A1, S1, Red	1791

Total Number of Records																
Spoonbill	1	2	0	6	3	0	0	0	1	0	55	0	0	216	A1, S1, Amber	284
Hen harrier	6	4	0	4	6	0	2	10	19	0	87	0	1	966	A1, S1, NERC 41, Red	1268
Merlin	18	33	0	10	17	0	0	8	18	1	32	0	0	1131	A1, Red	662
Subalpine warbler	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A1	191
Redwing	131	128	0	35	73	2	0	31	9	0	13	0	1	122	S1, Red	2
Fieldfare	101	109	0	83	78	2	0	22	10	1	20	0	3	233	S1, Red	218
Brambling	33	33	0	0	27	0	0	4	4	0	9	0	0	81	S1	269
Parrot crossbill	0	0	0	0	0	0	0	0	0	0	0	0	0	2	S1, Amber	284
Lapland bunting	8	8	0	1	7	0	0	0	2	0	5	0	0	187	S1, Amber	1105
Snow bunting	29	59	0	0	7	1	0	0	1	0	5	0	0	167	S1, Amber	545

Breeding Birds

Records of breeding a list produced under the powers given to the Schedule 1 of the Wildlife and Countryside Act, Annex 1 of the EC Birds Directive and Section 41 of the NERC Act (Annex 1, Schedule 1, NERC41), BOCC Red and BOCC Amber species are located within Appendix 22.2 Ornithology Desk Study Confidential Annex.

Wolla Bank to Weston March onshore ECC North of the A52

A total of 3,096 records of protected or notable species from the last 15 years were returned from GLNP within 2km for the Weston March onshore ECC North of the A52 study area.

Non-Breeding Birds

Table 3.9 presents records of Annex 1, Schedule 1, NERC 41, BOCC Red and BOCC Amber species from within 2km of the Wolla Bank to Weston Marsh onshore ECC North of the A52.

Table 3.9: Non-Breeding Species Records within 2km of Weston March onshore ECC North of the A52

Total Number of Records							
	A1	A2	A3	A4	A5	Conservation & Protection Status (Annex 1, Schedule 1, NERC41, BOCC Red/Amber)	Total
Bewick's swan	6	0	0	0	2	A1, S1, NERC 41, Red	8
Whooper swan	42	0	0	10	17	A1, S1, Amber	69
Pintail	55	0	0	7	60	S1, Amber	122
Scaup	6	0	0	0	10	S1, NERC 41, Red	16
Velvet scoter	0	0	0	1	1	S1, Red	2
Common scoter	2	1	0	5	3	S1, NERC 41, Red	11
Goldeneye	34	0	0	5	70	S1, Red	109
Slavonian grebe	1	0	0	0	3	A1, S1, Red	4
Dotterel	0	0	0	2	0	A1, S1, Red	2
Whimbrel	25	0	0	29	12	S1, Red	66
Temminck's stint	1	0	0	0	0	S1	1
Purple sandpiper	0	0	0	1	0	S1, Red	1
Red-necked phalarope	2	0	0	0	0	A1, S1, Red	2
Green sandpiper	84	0	0	24	1	S1, Amber	109
Wood sandpiper	26	0	0	1	0	A1, S1, Amber	27
Greenshank	44	0	0	25	5	S1, Amber	74
Little gull	6	0	0	0	1	A1	7

Total Number of Records							
Roseate tern	0	0	0	0	1	A1, S1, NERC 41, Red	1
Black tern	1	0	0	0	1	A1, S1	2
Red-throated diver	0	0	0	0	6	A1, S1, Amber	6
Black-throated diver	0	0	0	0	2	A1, S1, Amber	2
Great Northern diver	1	0	0	1	5	A1, S1, Amber	7
Spoonbill	11	0	0	0	1	A1, S1, Amber	12
Hen harrier	15	2	0	11	20	S1	48
White-tailed eagle	0	0	0	1	0	A1, S1, Amber	1
Snowy owl	1	2	0	0	0	A1, S1	3
Merlin	42	0	0	8	20	A1, Red	70
Redwing	161	0	0	31	9	S1, Red	201
Fieldfare	207	0	0	22	11	S1, Red	240
Brambling	53	0	0	4	4	S1	61
Lapland bunting	13	0	0	0	2	S1, Amber	15
Snow bunting	10	1	0	0	1	S1, Amber	12

Breeding Birds

Records of breeding Annex 1, Schedule 1, NERC41, BOCC Red and BOCC Amber species are located within Volume 6, Appendix 22.2 Ornithology Desk Study Confidential Annex.

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