

**APPENDIX 10C: SOUTH HUMBER BANK ENERGY CENTRE PRELIMINARY
ECOLOGICAL APPRAISAL (PEA).**

South Humber Bank Energy Centre

South Marsh Road, Stallingborough, DN41 8BZ

Appendix 10C: Preliminary Ecological Appraisal Report



Applicant: EP SHB Limited
Date: December 2018

DOCUMENT HISTORY

Revision	1		
Author	S Dixon		
Signed		Date	December 2018
Approved By	D Broughton		
Signed		Date	December 2018
Document Owner	AECOM		

CONTENTS

SUMMARY	1
1.0 INTRODUCTION	2
2.0 WILDLIFE LEGISLATION AND PLANNING POLICY	4
3.0 METHODS	8
4.0 DESK STUDY RESULTS	12
5.0 FIELD SURVEY RESULTS	18
6.0 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES	27
7.0 REFERENCES	33
ANNEX A: WILDLIFE LEGISLATION AND PLANNING POLICY	35
ANNEX B: PHASE 1 TARGET NOTES	40
ANNEX E: GCN EDNA RESULTS	52
FIGURE 10C.1 SITE LOCATION PLAN	53
FIGURE 10C.2 STATUTORY AND NON-STATUTORY DESIGNATIONS	54
FIGURE 10C.3 PHASE 1 HABITAT MAP	55
TABLES	
Table 10C.1: Summary of Previous Ecology Surveys on Site	3
Table 10C.2: Summary of Relevant Legislation	4
Table 10C.3: Summary of Planning Policy and Guidance	5
Table 10C.4: Desk study data sources	8
Table 10C.5: Statutory nature conservation designations within 10 km	12
Table 10C.6: Non-statutory nature conservation designations within 2 km	14
Table 10C.7: Summary of Protected Species Records from LERC within 1 km	15
Table 10C.8: Peak Counts of Wintering Birds (Field 39)	16
Table 10C.9: Peak Counts of Wintering Birds (Field 37)	16
Table 10C.10: Peak Counts of Wintering Birds (Fields 30 and 31)	17
Table 10C.11: Habitats present within the Main Development Area	20
Table 10C.12: Summary of Protected and notable species relevant or potentially relevant to the Proposed Development	24
Table 10C.13: Summary of EclA Scoping and Further Surveys Required	29

SUMMARY

EP SHB Limited is submitting an application to North East Lincolnshire Council for a proposed 49.9MW energy from waste plant, referred to as the South Humber Bank Energy Centre (SHBEC) (the Proposed Development). The Proposed Development is located on a parcel of land to the east of the South Humber Bank Power Station, off South Marsh Road, Immingham (centred on approximate grid reference TA 230 133). This preliminary appraisal is intended to contribute to the evidence base to support the Ecological Impact Assessment undertaken for the Proposed Development.

The Proposed Development is set in a landscape dominated by the industrial areas of the Humber Estuary hinterland and mainly arable land. The Main Development Area is dominated by semi-improved neutral grassland that was created as part of a habitat creation scheme undertaken in the mid-2000s by the South Humber Bank Power Station. Two ponds were also created as part of power station development; these are located within the grassland areas to the east of the existing South Humber Bank Power Station. Small blocks of semi-mature broad-leaved woodland have been planted to the west and south of the power station, although these are outside the Main Development Area.

Further surveys for protected and notable species were recommended in advance of the submission of the planning application as follows:

- Reptiles – the rough grassland and ditches on the site represent suitable habitat for reptiles, particularly grass snake;
- Water vole and otter – potential for these species to be present in drainage ditches surrounding the site; and
- Aquatic invertebrates – the ponds and ditches on the site provide opportunities for a range of aquatic invertebrates, potentially including nationally or regionally notable species, and these habitats may be directly impacted by the Proposed Development.

The Proposed Development is located adjacent to the Humber Estuary European Marine Site, which is designated as a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site and Site of Special Scientific Interest (SSSI). The Proposed Development is therefore likely to require Habitat Regulations Assessment (HRA) screening to determine the potential for likely significant effects (LSE) under the Conservation of Habitats and Species Regulation 2017. If the HRA screening determines that there is the potential for the Proposed Development to result in LSE, then an appropriate assessment should be undertaken to examine whether the proposals will result in any adverse effects on the integrity of the European site.

1.0 INTRODUCTION

Purpose of Survey

- 1.1 AECOM was instructed by EP SHB Limited to carry out a Preliminary Ecological Appraisal (PEA) of habitats within and adjacent to the planning application boundary of a proposed 49.9 MW waste fired energy plant referred to as the South Humber Bank Energy Centre (referred to hereafter as 'the Proposed Development'). The Proposed Development is located on a parcel of land to the east of the South Humber Bank Power Station, off South Marsh Road, Immingham (centred approximately on grid reference TA 230 133).
- 1.2 The PEA was commissioned to identify whether there are known or potential ecological features (nature conservation designations, and protected and notable habitats and species) that may constrain or influence the design and implementation of the proposed development. The approach applied when undertaking this PEA accords with the *Guidelines for Preliminary Ecological Appraisal* published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017). The PEA addresses relevant wildlife legislation and planning policy as summarized in Section 2 of this report, and is consistent with the requirements of *British Standard 42020:2013 Biodiversity: Code of Practice for Planning and Development*.
- 1.3 The survey area referenced in this PEA are as follows:
- Main Development Area (shown on Figure 10C.3) – refers to all land within the boundary of the Proposed Development, including the Energy Centre, access roads; and
 - Wider Survey Area – refers to remaining land outside the Main Development Area that is within the red line planning application boundary.

Scope of Works

- 1.4 In order to deliver the PEA, a desk study and an extended Phase 1 Habitat survey were undertaken by an appropriately experienced ecologist in May 2018, to identify ecological features within the site and the wider potential zone of influence of the Proposed Development (where access to adjacent land had been agreed). The potential zone of influence (see also Section 3: Methods) was defined with reference to available information about the likely nature of the Proposed Development.
- 1.5 The purpose of the PEA was to:
- identify and categorise all habitats associated with the Main Development Area and any adjacent areas where there may be potential for direct or indirect effects (the "zone of influence");
 - carry out an appraisal of the potential of the habitats recorded to support protected or notable species of fauna and flora;
 - provide advice on any potential ecological constraints and opportunities in the zone of influence, including the identification (where relevant) of any requirements for follow-up habitat and species surveys and/or requirements for ecological mitigation; and
 - provide a map showing the location of the identified ecological features of relevance.
- 1.6 The purpose of this report is to provide a high level appraisal of the ecological risks and opportunities associated with the Proposed Development and to provide a basis for the identification of relevant ecological features that might be impacted by the Proposed

Development, and requirements for further survey and impact assessment to assess this further. The report makes evidence based recommendations on the scope of further work (where necessary) that would be required to support a planning application. High level recommendations are made on:

- (a) potential options for the avoidance, mitigation or compensation of the potential impacts of the Proposed Development (where known or where they can reasonably be anticipated) on the identified ecological features in accordance with objectives to deliver No Net Loss for biodiversity; and
- (b) potential enhancements that could be delivered in accordance with objectives to secure Net Gain for biodiversity as a consequence of new development.

Background Information

- 1.7 The land parcel where the Proposed Development would be located is within an area of meadow currently managed for nature conservation by the adjacent South Humber Bank Power Station, created around 10 years ago. The nature conservation area also comprises an orchard and areas of broad-leaved woodland (located to the west and south of the power station), and two man-made ponds. There are also a number of drainage ditches around the perimeter of the Wider Survey Area, to the north, east, south and west of the existing South Humber Bank Power Station. A Biodiversity Action Plan (BAP) has been prepared for the nature conservation area, and the grassland is managed through sheep grazing and annual mowing in September (Humber INCA, 2011).
- 1.8 Ecological surveys of the nature conservation area were undertaken in 2010 on behalf of Centrica Plc to feed into the BAP for the South Humber Bank Power Station; these surveys are summarised in Table 10C.1 below. These were reported in a Phase 1 Habitat survey report (Humber INCA, 2010).

Table 10C.1: Summary of Previous Ecology Surveys on Site

SURVEY	DATE	REFERENCE	COMMENTS
Phase 1 habitat survey	18.05.10	Humber INCA, 2010	Habitat on site is dominated by semi-improved grassland seeded with flowers and managed for nature conservation. A network of ditches surrounds the site and two ponds are present. Small woodland copses are present to the west and south of the power station.
Water vole survey	15.04.10	Humber INCA, 2010	Water vole presence confirmed on ditches within the site.
Amphibian survey	15.04.10 18.04.10	Humber INCA, 2010	Two visits undertaken (torch survey and egg search) No GCN recorded

2.0 WILDLIFE LEGISLATION AND PLANNING POLICY

Wildlife Legislation

- 2.1 The following wildlife legislation is potentially relevant to the Proposed Development (Table 10C.2). This legislation has been considered when planning and undertaking this PEA using the methods described in Section 3, when identifying potential constraints to the Proposed Development, and when making recommendations for further survey, design options and mitigation, as discussed in Section 5. Compliance with legislation may require the attainment of relevant protected species licences prior to the implementation of the Proposed Development.
- 2.2 Further information on the requirements of the above legislation is provided as Appendix 10A.

Table 10C.2: Summary of Relevant Legislation

DOCUMENT	REQUIREMENTS/ PURPOSE
The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations)	Affords protection to European Protected Species, such as bats and great crested newt (<i>Triturus cristatus</i>), listed on Schedule 2 (animals) and 5 (plants). It is an offence (subject to exceptions) to deliberately capture, kill, disturb or trade in listed animals. In certain circumstances, licences can be granted to permit some actions prohibited under the Act. Section 10 of the Regulations requires that competent authorities must take such steps in the exercise of their functions as they consider appropriate to secure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds as appropriate, and having regard to the requirements of Article 2 of the new Wild Birds Directive. This includes the use of planning and development control measures.
Wildlife and Countryside Act 1981 (as amended) (WCA)	Part 1 of the Act affords general protection to all species of wild bird and specific protection to flora and fauna listed on Schedules 1 (birds protected by special penalties), 5 (other animals) and 8 (flora, fungi and lichens). In certain circumstances, licences can be granted to permit some actions prohibited under the Act. The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, including prohibiting the planting and spread of plants listed in Schedule 9.
Countryside and Rights of Way (CRoW) Act 2000	The Act increases powers for the protection and management of SSSIs and places a duty on public bodies to further the conservation and enhancement of SSSIs.
Natural Environment and Rural Communities (NERC) Act 2006	Section 41 (s41) includes a list of habitats and species of principal importance for nature conservation in England which is to be used by decision-makers to guide the implementation of their duties under section 40 of the Act, so as to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

DOCUMENT	REQUIREMENTS/ PURPOSE
Protection of Badgers Act 1992	If badger (<i>Meles meles</i>) is present, the legislation may have a bearing on post-consent implementation and mitigation, and the baseline evidence required to support development of this. Legislation makes it an offence to kill or take a badger, to cruelly ill-treat a badger, or to interfere with a badger sett, including disturbing a badger while it is occupying a sett. In certain circumstances, licences can be granted to permit some actions prohibited under the Act.
The Water Environment (Water Framework Directive) (WFD)(England and Wales) Regulations 2017	Proposed developments or activities that have the potential to affect the water environment require a WFD Assessment. Compliance with the WFD means attainment of good ecological status, prevention of deterioration in status, and prevention of failure to achieve future attainment of good status where it is not already achieved within waterbodies.

Relevant Planning Policy and Related Guidance

- 2.3 Relevant national and local planning policies and related guidance applicable to North East Lincolnshire are detailed in Table 10C.3. For the precise wording of each specific policy please refer back to the source documents. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation, as described in Section 5.

Table 10C.3: Summary of Planning Policy and Guidance

DOCUMENT	PLANNING POLICY	PURPOSE
National Planning Policy Framework (NPPF)	Section 15	The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity. It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this it to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

DOCUMENT	PLANNING POLICY	PURPOSE
North East Lincolnshire Local Plan 2018	Policy 9	Habitat Mitigation – South Humber Bank - sets out the approach to delivering mitigation within the Local Plan area for the loss of wintering bird habitat that is functionally linked to the Humber Estuary internationally designated site. Within the Mitigation Zone identified on the policies map, development proposals on greenfield land that adversely affect the Humber Estuary SPA/ Ramsar site due to the loss of functionally linked land will be required to make contributions towards the provision and management of the mitigation sites identified. This is secured on a proportional approach relating to the site area.
	Policy 41	Biodiversity and Geodiversity – relates to the protection of statutory and non-statutory designated sites, biodiversity features and the county's ecological network.
Natural England and Defra Standing Advice	-	The purpose of standing advice is to guide decision-makers on the determination of proposals with potential to affect protected species. The guidance sets out responsibilities and minimum requirements for survey and mitigation.
Providing and protecting habitat for wild birds	-	Standing advice to local planning authorities on how they should maintain wild bird populations by supporting and protecting their habitats. This guidance has been prepared to support delivery of a legal obligation specified through amendment of the Habitats Regulations. It is important to acknowledge that this guidance requires competent authorities to 'consider' and 'take steps', but it does not require the complete protection of all bird habitats, the mitigation of all losses, and there are no national population targets have been set for wild birds.
National Character Area (NCA) Profile: 41 Humber Estuary	-	NCA profiles are guidance documents intended to help local decision-making. The information they contain supports the planning of conservation initiatives at a landscape scale, informs the delivery of Nature Improvement Areas and encourages broader partnership working through Local Nature Partnerships. Each profile includes a description of the relevant natural and cultural features. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

3.0 METHODS

Desk Study

- 3.1 A desk study was carried out to identify nature conservation designations, and protected and notable habitats and species potentially relevant to the Proposed Development.
- 3.2 A stratified approach was taken when defining the desk study area, based on the likely worst case zone of influence of the Proposed Development on different ecological features, and an understanding of the maximum distances typically considered by statutory consultees. Accordingly, the desk study identified any international nature conservation designations within 10 km of the Main Development Area¹, other statutory nature conservations designations within 2 km of the Main Development Area, local non-statutory nature conservation designations within 2 km of the Main Development Area, and protected and notable habitats and species within 1 km of the Main Development Area.
- 3.3 The desk study was carried out using the data sources detailed in Table 10C.4. Protected and notable habitats and species include those listed under Schedules 1, 5 and 8 of the WCA; Schedules 2 and 5 of the Habitats Regulations; species and habitats of principal importance for nature conservation in England listed under section 41 (s41) of the NERC Act; and other species that are Nationally Rare, Nationally Scarce or listed in national or local Red Data Lists and Biodiversity Action Plans.

Table 10C.4: Desk study data sources

DATA SOURCE	DATE OBTAINED	SUMMARY OF DATA OBTAINED
Multi-Agency Geographic Information for the Countryside (MAGIC) website	25.05.18	International statutory designations within 10 km Other statutory designations within 2 km Ancient woodlands within 2 km Higher Level Environmental Stewardship agreements applied to the site Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints
Lincolnshire Environmental Records Centre (LERC)	01.06.18	Non-statutory designations within 2 km Protected and notable species records within 1 km (records for the

¹ This has been extended to reflect the potential zone of influence considered for developments that may result in changes in air quality.

DATA SOURCE	DATE OBTAINED	SUMMARY OF DATA OBTAINED
		last 10 years only)
Humber Environmental Data Centre	19.09.18	Records of wintering/ passage waterbirds within Fields 30, 31, 37 and 39 from South Humber Bank wintering surveys completed in 2006/07, 2007/08 and 2010/11.
Ordnance Survey 1:2500 Pathfinder maps and aerial photography	16.05.18	Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints
Lincolnshire BAP (LBAP) (Greater Lincolnshire Biodiversity Partnership, 2015)	25.05.18	General information on Local Biodiversity Action Plan Priority Habitats and Species
North Lincolnshire Local Plan Proposals Map	25.05.18	Non-statutory designations within 2 km Designated green corridors, wildlife networks and other such features
Ecological Assessment of Centrica South Humber Bank Power Station (Humber INCA, 2010)	-	Phase 1 Habitat survey of the Main Development Area and Wider Survey Area Survey results for water vole and GCN
Centrica South Humber Bank Biodiversity Action Plan (Humber INCA, 2011)	-	Habitat and protected species information relevant to the Main Development Area and Wider Survey Area.

Wintering Bird Desk Study

- 3.4 In addition to the desk study referred to above, a specific desk study exercise was undertaken to determine the importance of the land parcel in which the Proposed Development is located, and the large arable field to the south (between the South Humber Bank Power Station and Old Fleet Drain), to wintering/ passage waterbirds. This data will be needed subsequently to inform the ecological impact assessment and HRA of the Proposed Development. These assessments will be provided as standalone chapters or appendices and are not within the remit of this PEA report.
- 3.5 The following data sources were consulted for this desk study:
- 2006/07, 2007/08 and 2010/11 South Humber Bank winter high tide count data provided by the Humber Environmental Data Centre (EDC);
 - Habitats Regulations Assessment (HRA) undertaken for the Stallingborough Power Station (Department of Energy & Climate Change, 2012))

- Planning application information including HRA for the re-development of the former Acordis site (Planning Ref: DM/0455/14/OUT); and
- Planning application information including HRA for the South Humber Bank Link Road (Planning Ref: DM/0094/18/FUL).

Field Survey

Phase 1 Habitat Survey

- 3.6 A Phase 1 Habitat survey was undertaken in accordance with the standard survey method (Joint Nature Conservation Committee, 2010). Phase 1 Habitat survey is a standard method of environmental audit. It involves categorising different habitat types and habitat features within a survey area. The information gained from the survey can be used to determine the likely ecological value of a site, and to direct any more specific survey work which may need to be carried out prior to the submission of a planning application. The standard Phase 1 Habitat survey method can be “extended” to record target notes on protected, notable and invasive species.
- 3.7 The survey was undertaken on 18th May 2018 by a suitably qualified AECOM ecologist who recorded and mapped habitat types, along with any associated relevant ecological features observed. The survey area encompassed all safely accessible parts of the Main Development Area and Wider Survey Area (Figure 10C.3).
- 3.8 Where relevant to the PEA, target notes (Annex B) were recorded and the position of these is shown on the Phase 1 Habitat map (Figure 10C.3). Typical and notable plant species were recorded for different habitat types and reflect the conditions at the time of survey. This was not intended to be a detailed inventory of the plant species present in the survey area, as this is not required for the purposes of Phase 1 Habitat survey.

Appraisal of potential suitability of habitats to support protected and notable species

- 3.9 An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants or animals. Field signs, habitat features with potential to support protected species, and any sightings or auditory evidence were recorded when encountered. No detailed surveys were carried out for any particular species, because such surveys are beyond the scope of this PEA, with the exception of the following:
- examination of aerial photography and 1:25,000 Ordnance Survey mapping to attempt to identify all potential permanent standing waters within 250 m of the Main Development Area. This process could not guarantee to definitively identify all waterbodies present, but is the best that can be achieved within the limits of available data; and
 - inspection of all accessible waterbodies to appraise their suitability for great crested newt (GCN) (*Triturus cristatus*). In particular, the aim was to identify permanent waterbodies (referred to as ponds in this report) which would need further survey, and temporary waterbodies which could be discounted as they would not retain water for long enough to allow breeding by GCN.
- 3.10 A note was made of visible instances of invasive non-native plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), including Japanese knotweed (*Fallopia japonica*). Locations of plants or stands of any such invasive non-native plant species found were recorded.

GCN Environmental DNA Survey

- 3.11 Water samples were collected by AECOM from Ponds 1 and 2 within the Main Development Area on 18th May 2018 and sent for analysis in accordance with approved field and laboratory protocols. Waterbodies were not entered by surveyors during sample collection, and new sterile equipment was used to collect each water sample, to prevent contamination between samples. Samples were collected by a suitably qualified ecologist holding a Natural England GCN survey licence.
- 3.12 The initial result returned from the laboratory for Pond 1 was inconclusive, and therefore this pond was re-tested on 8th June 2018.
- 3.13 The presence or likely absence of great crested newt from each of the ponds was determined based on the results of the eDNA analysis. If eDNA is detected this provides confirmation of presence and the relevant waterbodies are likely to represent a development constraint that requires further consideration. If eDNA is not detected then this provides high confidence that there is no reasonable likelihood of great crested newt being present in the relevant waterbodies, and they require no further assessment with regard to this species.

Limitations

- 3.14 The data obtained from third party data providers and online databases is based on existing records but does not necessarily constitute a comprehensive list of protected and notable species records. These records are not exhaustive, as there is currently no national or regional policy for systematic data gathering. Therefore, absence of data does not constitute evidence of absence. It is also possible that other data exist within this area that has not been made available to AECOM. The quality of the ecological data from the different sources may be highly variable.
- 3.15 No limitations to the collection of field data were identified.

4.0 DESK STUDY RESULTS

Nature Conservation Designations

Statutory Designations

- 4.1 Table 10C.5 details the statutory nature conservations designations identified by the desk study, based on the method given in Section 3.1 of this report. The designations are listed in descending order, with those closest to the Main Development Area listed first and are presented on Figure 10C.2

Table 10C.5: Statutory nature conservation designations within 10 km

DESIGNATION	REASON(S) FOR DESIGNATION	RELATIONSHIP TO THE MAIN DEVELOPMENT AREA
Humber Estuary SAC	<p>Internationally important for its estuary and inter-tidal mudflat and sandflat habitats. Other qualifying features encompass:</p> <p><u>Habitats</u></p> <ul style="list-style-type: none"> • Sandbanks which are slightly covered by sea water all the time • Coastal lagoons • Salicornia and other annuals colonizing mud and sand • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) • Embryonic shifting dunes • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") • Fixed coastal dunes with herbaceous vegetation ("grey dunes") • Dunes with <i>Hippophae rhamnoides</i> <p><u>Species</u></p> <ul style="list-style-type: none"> • Sea lamprey (<i>Petromyzon marinus</i>) • River lamprey (<i>Lampetra fluviatilis</i>) • Grey seal (<i>Halichoerus grypus</i>) 	Approx. 175 m east
Humber Estuary SPA	<p>The estuary supports important numbers of waterbirds (especially geese, ducks and waders) during the migration periods and in winter. In summer, it supports important breeding populations of bittern (<i>Botaurus stellaris</i>), marsh harrier (<i>Circus aeruginosus</i>), avocet (<i>Recurvirostra</i></p>	Approx. 175 m east

DESIGNATION	REASON(S) FOR DESIGNATION	RELATIONSHIP TO THE MAIN DEVELOPMENT AREA
	<i>avosetta</i>) and little tern (<i>Sterna albifrons</i>).	
Humber Estuary Ramsar	<p>Internationally important as 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.</p> <p>Internationally important for its breeding colony of grey seal, and its assemblage of non-breeding and wintering waterfowl and the component populations of individual bird species.</p>	Approx. 175 m east
Humber Estuary SSSI	<p>Supports a series of nationally important habitats. These are the estuary itself (with its component habitats of intertidal mudflats and sandflats and coastal saltmarsh) and the associated saline lagoons, sand dunes and standing waters. The site is also of national importance for the geological interest at South Ferriby Cliff (Late Pleistocene sediments) and for the coastal geomorphology of Spurn. The estuary supports nationally important numbers of 22 wintering waterfowl and nine passage waders, and a nationally important assemblage of breeding birds of lowland open waters and their margins. It is also nationally important for a breeding colony of grey seal, river lamprey and sea lamprey, a vascular plant assemblage and an invertebrate assemblage.</p>	Approx. 175 m east

Non-statutory Designations

4.2 Table 10C.6 details the non-statutory nature conservation designations identified by the desk study based on the method given in Section 3.1 of this report. The designations are listed in descending order, with those closest to the Main Development Area listed

first. Two Sites of Nature Conservation Importance (SNCI) were identified in the desk study area and four Local Wildlife Sites (LWS)². These are presented on Figure 10C.2.

- 4.3 There are no ancient woodlands in the search area, and there are no Higher Level Countryside Stewardship agreements applied to land in the boundary of the Main Development Area.

Table 10C.6: Non-statutory nature conservation designations within 2 km

DESIGNATION	REASON(S) FOR DESIGNATION	RELATIONSHIP TO THE MAIN DEVELOPMENT AREA
Field West of Power Station, Stallingborough SNCI	No citation available ³	30 m south
Healing Cress Beds Stallingborough LWS	Former watercress beds (created in 1945, ceased production in 1970), which have become vegetated with scrub and woodland. Wetland scrapes and a new pond have been recently created, and the site is managed to maintain its botanical interest.	1.7 km south-west
Sweedale Croft Drain LWS	1 km long spring-fed canalised drain that supports scarce aquatic plants including opposite-leaved pondweed (<i>Groenlandia densa</i>).	1.8 km south-east
North Moss Lane Meadow SNCI	No citation available ³	1.9 km west
Laporte Road Brownfield Site LWS	Brownfield mosaic habitat on a former industrial site. Supports a diverse assemblage of breeding birds, and a population of water vole.	2 km north-west
Fish Ponds to the West of Power Station, Stallingborough LWS	Mosaic of ponds surrounded by woodland, scrub and coarse	2 km south-west

² The LWS designation supersedes the SNCI designation. GLNP aims to assess all SNCIs against the LWS selection criteria, but until sites have been assessed they retain their SNCI designation. On a precautionary basis they are assumed to have a comparable nature conservation value to LWS until such time that they have been formally assessed.

³ It is assumed that a citation is not available because either this SNCI has not been re-assessed against LWS criteria, or it has not previously been surveyed.

DESIGNATION	REASON(S) FOR DESIGNATION	RELATIONSHIP TO THE MAIN DEVELOPMENT AREA
	vegetation.	

Protected Species

- 4.4 A summary of the relevant protected species records returned by LERC is provided in Table 10C.7. These data have been screened to include only records post-2000. In addition, records from previous surveys of the Site and other nearby developments have been referred to as necessary within this PEA.
- 4.5 A large number of records of coastal bird species were also returned for the Pyewipe mudflats. These have not been included in the table below as they are not directly relevant to the scope of this PEA report.

Table 10C.7: Summary of Protected Species Records from LERC within 1 km

DESIGNATION	LOCATION OF RECORD(S)	RELATIONSHIP TO THE MAIN DEVELOPMENT AREA
Great crested newt (<i>Triturus cristatus</i>)	Several records from Stallingborough in 2007 at TA 255 128, TA 228 137, TA 230 127 and TA 230 133	Nearest records are approximately 200 m north and 400 m south respectively
Water vole (<i>Arvicola amphibius</i>)	Oldfleet Drain, various drains in Stallingborough area	Nearest records are approximately 400 m south (on Oldfleet Drain)
Otter (<i>Lutra lutra</i>)	Humber Estuary	Approximately 500 m east

Wintering Birds

- 4.6 A summary of the wintering bird peak counts for each of the fields within the potential zone of influence of the Main Development Area is provided below. The field numbers are shown on Figure 10C.4, and raw data obtained from the Humber EDC wintering bird counts for these fields is provided in Annex 10F. The fields relevant fields are:
- Field 39 – within the Main Development Area;
 - Field 37 – large arable field to the south of the Main Development Area (between the southern boundary and Oldfleet Drain); and
 - Fields 30 & 31 – two large arable fields to the north of South Humber Bank Power Station (between South Marsh Road and Middle Drain).

Main Development Area (Field 39)

- 4.7 The Main Development Area occupies a parcel of grassland in close proximity to the Humber Estuary SPA/ Ramsar, in which a number of shallow scrapes have been constructed to attract feeding, loafing and roosting birds at high tide when they are

displaced from coastal mudflats. This field is referred to as 'Field 39' in the South Humber Bank (SHB) Wintering Bird Surveys undertaken in 2007/08 and 2010/11 to inform the South Humber Gateway strategic mitigation approach (Policy 9 in the North East Lincolnshire Local Plan).

- 4.8 Surveys of the Site in winter 2007/ 08 recorded very few SPA/ Ramsar birds. Turnstone (*Arenaria interpres*) were recorded in small numbers (1 or 2 birds) at the far eastern end of the field (i.e. nearest to the coastal mudflats) in November, December, January, February and March across this period. The only other species recorded were redshank (*Tringa tetanus*), with one record of 1 bird in December 2017, and curlew (*Numenius arquata*), with two records of 7 birds in January 2008 and one record of 1 bird in April 2008. No birds were recorded in the field in the 2010/11 surveys.
- 4.9 A summary of the peak counts of birds in the 2007/08 survey season is provided in Table 10C.8, with comparison against the Humber Estuary 5-year peak mean counts (from Frost *et al.*, 2018) and the thresholds for international importance.

Table 10C.8: Peak Counts of Wintering Birds (Field 39)

SPECIES	PEAK COUNT ON SITE (2007/08)	HUMBER ESTUARY 5-YEAR MEAN PEAK COUNT	PERCENTAGE OF HUMBER ESTUARY POPULATION ON SITE	THRESHOLD FOR INTERNATIONAL IMPORTANCE
Turnstone	2	249	0.8%	1,400
Redshank	1	3,368	0.03%	2,400
Curlew	7	2,806	0.2%	8,400

Field to the South (Field 37)

- 4.10 The large arable field to the south of the Main Development Area, for which the southern boundary is defined by Oldfleet Drain, is referred to as 'Field 37' in the South Humber Bank counts.
- 4.11 This field regularly supported lapwing (*Vanellus vanellus*), curlew and golden plover (*Pluvialis apricaria*) across the surveyed winter months, and was noted to be one of the most important fields in the South Humber Bank survey area for high tide roosting, loafing and feeding birds. Although outside the Humber Estuary SPA/ Ramsar designated site boundary, this field is considered to be functionally linked to the SPA/ Ramsar. A summary of the survey results, with the peak counts from the three seasons of survey in 2006/07, 2007/08 and 2010/11 is provided in Table 10C.9, with comparison against the Humber Estuary 5-year mean peak counts (from Frost *et al.*, 2018) and thresholds for international importance.
- 4.12 Sparrowhawk (*Accipiter nisus*), buzzard (*Buteo buteo*), peregrine (*Falco peregrinus*) and barn owl (*Tyto alba*) were all recorded hunting over the field during the survey period. Other records were made during the survey period of snow bunting (*Plectrophenax nivalis*) and snipe (*Gallinago gallinago*).

Table 10C.9: Peak Counts of Wintering Birds (Field 37)

SPECIES	PEAK COUNT ON SITE (2006/07 –	HUMBER ESTUARY 5-YEAR MEAN	PERCENTAGE OF HUMBER ESTUARY POPULATION	THRESHOLD FOR INTERNATIONAL IMPORTANCE
---------	-------------------------------	----------------------------	---	--

	2010/11)	PEAK COUNT	ON SITE	
Curlew	75	2,806	2.7%	8,400
Golden plover	228	33,994	0.7%	9,300
Lapwing	510	11,702	4.4%	20,000
Ringed plover	17	1,089	1.6%	730
Black-tailed godwit	15	2,951	0.5%	610
Mallard	46	1,204	3.8%	20,000

Fields to the North (Fields 30 & 31)

- 4.13 Two large arable fields to the north of the Main Development Area (on the north side of South Marsh Road) were also included within the baseline study area; these are Fields 30 and 31 in the South Humber Bank counts.
- 4.14 These fields are also considered to be functionally linked to the Humber Estuary. Peak counts in 2006/07 for golden plover and lapwing were particularly significant, but in the most recent survey years they have supported very low numbers of birds. A summary of the survey results, with the peak counts from the three seasons of survey in 2006/07, 2007/08 and 2010/11, is provided in Table 10C.10 and is compared against the Humber Estuary 5-year mean peak counts (from Frost *et al.*, 2018) and thresholds for international importance.
- 4.15 Ringed plover (*Charadrius hiaticula*) and mallard (*Anas platyrhynchos*) were also recorded in these fields.

Table 10C.10: Peak Counts of Wintering Birds (Fields 30 and 31)

SPECIES	PEAK COUNT ON SITE 2006/07 – 2010/11	HUMBER ESTUARY 5-YEAR MEAN PEAK COUNT	PERCENTAGE OF HUMBER ESTUARY POPULATION ON SITE	THRESHOLD FOR INTERNATIONAL IMPORTANCE
Curlew	41	2,806	1.5%	8,400
Golden plover	3,600	33,994	10.6%	9,300
Lapwing	1,130	11,702	9.7%	20,000
Ringed plover	16	1,089	1.5%	730
Mallard	6	1,204	0.5%	20,000

5.0 FIELD SURVEY RESULTS

Habitats

Phase 1 Habitat Types

- 5.1 The Main Development Area is set in a landscape dominated by the industrial areas of the Humber Estuary hinterland and mainly arable land. The semi-natural habitat surrounding the Main Development Area is dissected by a series of man-made drains, and a small watercourse (Oldfleet Drain) is located to the south.
- 5.2 The habitats recorded within the Main Development Area and Wider Survey Area are shown on Figure 10C.3. These habitats are described below and are summarised in Table 10C.11, with the latter also detailing their relative extent within the Main Development Area. The associated target notes are provided in Annex 10B and located on Figure 10C.3. Illustrative photographs are provided where relevant in Annex 10D.
- 5.3 The Main Development Area is dominated by semi-improved neutral grassland that was created as part of a habitat creation scheme undertaken in the mid-2000s by the South Humber Bank Power Station. Two ponds were also created as part of this scheme; these are located within the grassland areas to the east of the existing South Humber Bank Power Station (SHBPS). Small blocks of semi-mature broad-leaved woodland have been planted to the west and south of the power station, although these are outside the Main Development area.
- 5.4 The topography of the area is fairly flat, although there are undulations and shallow hollows in the grassland to the east of the power station that are likely to be seasonally inundated. There are also banked areas in the northern part of the grassland area, close to the northern pond. The Main Development Area is surrounded by ditches.
- 5.5 The above habitats are managed as part of the Biodiversity Action Plan (BAP).
- 5.6 Further information about the habitats within the Main Development Area is provided in the paragraphs below.

Ponds

- 5.7 Pond 1 (located at TA 230 133 in the southern part of the Main Development Area) is an oval pond approximately 10m x 20m. The margins are dominated by common reed (*Phragmites australis*), with rare pendulous sedge (*Carex pendula*). Water lily (*Nymphaea* sp.) is present in the open water (TN1, Photographs 1 & 2). Two artificial hibernacula for amphibians/reptiles have been created immediately adjacent to the pond (Photos 3 & 4).
- 5.8 Pond 2 (located at TA 231 134 in the north-eastern corner of the Main Development Area) is an oval pond approximately 15m x 35m. The margins are again dominated by common reed, and there is also a small stand in the centre of the waterbody (TN2, Photographs 5 & 6). Around the margins there was occasional greater willowherb (*Epilobium hirsutum*), pendulous sedge, marsh marigold (*Caltha palustris*), meadowsweet (*Filipendula ulmaria*), yellow iris (*Iris pseudacorus*) and cuckooflower (*Cardamine pratensis*). In the open water submerged water milfoil (*Myriophyllum* sp.) was abundant.

Semi-improved neutral grassland

- 5.9 This is the dominant habitat within the Main Development Area and was created as part of a habitat enhancement scheme around 10 years ago. The meadow is grazed by sheep and an annual hay cut is taken as part of the biodiversity enhancement measures undertaken by SHBPS (TN3, Photographs 7-10).

- 5.10 There were localised areas where the grassland was more floristically-rich, which reflected spatial variations in the application of the seed mixture and/or plant establishment at the time of the grassland creation rather than variations in substrate/soil type. Grass species included abundant red fescue (*Festuca rubra*) and locally abundant meadow fox-tail (*Alopecurus pratensis*). The presence of locally frequent marsh foxtail (*Alopecurus genticulatus*) and locally abundant common reed within localised shallow depressions are indicative of seasonally impeded drainage in these areas.
- 5.11 There was a diverse assemblage of herb species in the sward, including: frequent red clover (*Trifolium pratense*), locally frequent black medick (*Medicago lupulina*), frequent ribwort plantain (*Plantago lanceolata*), locally frequent hairy tare (*Vicia hirsuta*), locally frequent common knapweed (*Centaurea nigra* agg.), occasional daisy (*Bellis perennis*), occasional common mouse-ear (*Cerastium fontanum*), locally frequent tufted vetch (*Vicia cracca*), locally frequent ox-eye daisy (*Leucanthemum vulgare*), frequent meadow vetchling (*Lathyrus pratensis*), frequent dandelion (*Taraxacum* agg.), locally abundant yellow-rattle (*Rhinanthus minor*), locally frequent common sorrel (*Rumex acetosa*), locally frequent common vetch (*Vicia sativa* ssp. *segetalis*), abundant field horse-tail (*Equistem arvense*), occasional beaked hawk's-beard (*Crepis vesicaria*) and locally frequent cowslip (*Primula veris*). Rarer species include salad burnet (*Poterium sanguisorba*), bird's-foot trefoil (*Lotus corniculatus*), glaucous sedge (*Carex flacca*) and meadowsweet (*Filipendula ulmaria*). At the time of the survey, parts of the grassland to the south of the access track were being grazed by sheep, which were enclosed within electric fencing (Photograph 11).
- 5.12 The raised bunded area to the north of the access track supported a tussocky grass-dominated sward of abundant cock's-foot (*Dactylis glomerata*) with some red fescue (TN4). Forb species include frequent meadow vetchling and occasional curled dock (*Rumex crispus*).
- 5.13 A small area of this grassland, between Pond 2 and the access track, was used as a storage area for cut hay which is covered by a tarpaulin (TN 5, Photographs 12 & 13). This area was partially enclosed by linear blocks of planted scrub.

Ditches

- 5.14 A number of ditches were present around the perimeter of the Site. The ditch bordering South Marsh Road outside the SHBPS boundary fence was inaccessible at the time of the survey (TN6) (Ditches 3). The ditches bordering the north-eastern part of the site, located outside the SHBPS boundary fence, supported abundant submerged water-starwort (*Callitriche* sp.) and rare celery-leaved buttercup (*Ranunculus sceleratus*) (TN7 and TN8, Photographs 14 & 15) (Ditches 6 and 7). The ditches bordering the south-eastern part of the site, within the SHBPS boundary fence, supported a continuous linear stand of emergent and marginal common reed (TN9 and TN10, Photographs 16 & 17) (Ditches 1, 2 and 5).

Hedgerow

- 5.15 A species-poor hawthorn (*Crataegus monogyna*) dominated hedgerow runs parallel with South Marsh Road within the SHBPS boundary fence (TN11, Photograph 18). The hedgerow continues along the western boundary of the site (TN14, Photographs 19 & 20).

Broad-leaved Plantation Woodland

- 5.16 A stand of semi-mature broad-leaved plantation woodland is present in the north-west corner of the Wider Survey Area, on the western side of the SHBPS (TN12, Photographs 21-23). The closed canopy consisted of field maple (*Acer campestre*), crack willow (*Salix x fragilis*), hazel (*Corylus avellana*), blackthorn (*Prunus spinosa*), yew (*Taxus baccata*), hawthorn, dogwood (*Cornus sanguinea*), holly (*Ilex aquifolium*), elder (*Sambucus nigra*) and ash (*Fraxinus excelsior*). The ground flora is impoverished with patchy nettle (*Urtica dioica*), cleavers (*Galium aparine*) and rough meadow-grass (*Poa trivialis*) and localised garlic mustard (*Alliaria petiolata*). The woodland is managed and habitat/brash piles were noted.
- 5.17 An orchard has been planted to the south-east of the woodland. Tree species include apple (*Malus pumila*) and damson (*Prunus domestica*) (TN13, Photograph 24).
- 5.18 A young (approx. 5m tall) broad-leaved plantation woodland is present close to the western boundary (TN16). Species include willows (*Salix* spp.), field maple and hawthorn.

Amenity Grassland

- 5.19 The grassland within and close to the operational areas of the power station is regularly mown and is characterised by abundant perennial rye-grass and a paucity of herb species. The latter was limited to species such as ribwort plantain and lesser trefoil (*Trifolium dubium*).

Table 10C.11: Habitats present within the Main Development Area

HABITAT	APPROXIMATE EXTENT WITHIN MAIN DEVELOPMENT AREA (M ²)	APPROXIMATE PROPORTION OF THE MAIN DEVELOPMENT AREA
Semi-improved Neutral Grassland	65,625	89.9%
Hard Standing	5,353	7.3%
Amenity Grassland	449	0.6%
Ponds	1071	1.5%
Scrub	462m2	0.6%

Notable Habitats

Semi-improved Neutral Grassland

- 5.20 The semi-improved neutral grassland within the Main Development Area has developed as part of a habitat restoration scheme, and this modified habitat is therefore considered to be a poor-fit to the “Lowland Meadow” Habitat Action Plan that is included in the Lincolnshire Biodiversity Action Plan (BAP) (Lincolnshire Biodiversity Partnership, 2011) and also the “Lowland Meadow” Priority Habitat as detailed in Maddock (2011) which priorities long-standing unimproved grassland.
- 5.21 An approach for the assessment of the value of the relative nature conservation value of semi-improved neutral grassland is given in GLNP (2013). Criterion NG1 of this guidance requires a ‘neutral grassland of at least 0.1 ha in extent, or linear areas at least 50m long, with a minimum species index score of eight using Table 7’. The requirement that the grassland is at least 0.1 ha in extent is met, and the minimum

threshold for scoring species is also met (ten species present: marsh foxtail, meadow foxtail, glaucous sedge, common knapweed, meadowsweet, meadow vetchling, oxeye daisy, common bird's-foot trefoil, cowslip and yellow rattle). However, considering that the grassland is derived from a sown meadow seed mixture and that some of the aforementioned species are no more than rare components of the sward (i.e. glaucous sedge, meadowsweet & common bird's-foot trefoil), it is considered that to suggest that the neutral grassland is of LWS quality would be to over-value it. Also, species indicative of high quality lowland neutral grasslands were absent e.g. pignut (*Conopodium majus*), burnet-saxifrage (*Pimpinella saxifraga*), great burnet (*Sanguisorba officinalis*) and orchids (Orchidaceae). It is therefore evaluated that the grassland habitat is of District nature conservation value, recognising that its size and species-richness aligns with LWS selection criteria but that it is otherwise not of sufficient age or quality to justify County value.

Protected and Notable Species

- 5.22 Table 10C.12 provides a summary of potentially relevant species identified through a combination of desk study and review of the habitat data collected during the field survey. The table summarises the conservation status of each species and provides comment on the likelihood of presence. Key potential constraints associated with the site are discussed further in the text below.
- 5.23 Where species are identified in Table 10C.12 as likely or possible, they are likely to represent legal constraints or may be relevant to determination of a planning application. Further surveys will or may be required to determine presence/ likely absence. Requirements for further survey are identified in Section 6 of this report.
- 5.24 No invasive non-native plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded during the Phase 1 Habitat survey.

Great Crested Newt

- 5.25 There are two ponds within the Main Development Area: Pond 1 (TA 231 134) and Pond 2 (TA 230 133). Both were assessed using the Habitat Suitability Index (HSI) as being of 'good' suitability for GCN (see Annex 10C). The ponds were created within the nature conservation area around 10 years ago. These ponds were surveyed for GCN in May/ June 2018 (see methods) and both returned a negative result for GCN. The laboratory results confirming this are presented as Annex 10E.
- 5.26 The 1:25,000 Ordnance Survey map indicates that there is one pond within 250 m of the Main Development Area on the north side of South Marsh Road within the industrial area occupied by the Synthomer factory. The pond is located at TA 228 137 approximately 200m north of the Proposed Development. Based on examination of recent aerial photography, this pond no longer exists and is not considered further in this report.
- 5.27 The 1:25,000 Ordnance Survey map indicates that there are three further ponds to the north of the Synthomer factory (two at TA 228 713 and one at TA 229 813). The aerial photograph of the site indicates that these still exist, but they can be discounted on the basis that they are all greater than 250 m from the Proposed Development.
- 5.28 The process lagoon (at TA 235 134), 35 m west of the Proposed Development that is part of the cooling water pumping station for the existing Power Station has been discounted on the basis that it of a design and operational regime that is unsuitable for GCN.
- 5.29 Based on the above assessment no further surveys for GCN are necessary and this species requires no further consideration.

Bats

- 5.30 There are no structures or mature trees within the Proposed Development Area, and therefore there is no potential for roosting bats to be present.
- 5.31 Habitats within the Proposed Development Area are evaluated to be sub-optimal for foraging bats due to the relatively exposed and coastal nature of the site. The proximity of the site to the existing power station which, along with the other industrial areas to the north, is lit at night is also likely to deter bats from foraging within the site. Given these conditions, it is reasonable to assume that only small numbers of common species would be likely to forage in the vicinity of the site. On this basis, further surveys for bats are not considered necessary as the potential implications of the Proposed Development for bats are sufficiently understood, and further survey is not necessary or proportionate for the purposes of EclA.

Otter

- 5.32 The ditches in the Wider Survey Area are suitable for otter foraging/ passage, but lack sufficient cover to encourage otters to reside for any length of time in proximity to the Proposed Development Area. A presence/absence survey for otter should be undertaken to establish whether there are any indications that the species is present on the ditches.
- 5.33 Mitigation may be necessary to avoid disturbance to otter or disruption to foraging/ passage activity

Reptiles

- 5.34 The ditches within the Wider Survey Area, and the adjacent ponds and terrestrial habitats provide good quality habitat for grass snake (*Natrix helvetica*). There are also suitable habitats within the Proposed Development Area for refuge and egg laying.
- 5.35 It is recommended that a reptile presence/ absence survey is undertaken to determine the requirements for mitigation for this species.

Water Vole

- 5.36 A previous survey of the ditches in the Wider Survey Area at South Humber Bank Power Station in 2010 confirmed the presence of water vole on most of them, and concluded that they were all suitable for the species although usage may vary between seasons (Humber INCA, 2010). There are also desk study records indicating that this species is present in numerous drains in the Stallingborough area.
- 5.37 The ditches within the Wider Survey Area remain suitable for this species, and it is reasonable to conclude that water vole is present. An updated water vole survey should be undertaken to establish the extent of the population, and to assist with the development of an appropriate mitigation strategy should ditches supporting water voles be directly or indirectly affected by the Proposed Development.
- 5.38 Best practice survey guidelines suggest that two surveys are undertaken in early summer (May) and early autumn (September) to determine presence/ absence. However, as presence is highly likely based on the results of previous surveys, in this case it is considered that one survey in late August/ September will be sufficient to inform specification of any necessary mitigation (or Natural England licence).

Wintering Birds

- 5.39 The land parcel in which the Proposed Development Area is located was part of the Humber EDC wintering bird counts in 2010/11 (Field 37). This field, and the fields immediately to the north and south of the Proposed Development (Fields 30, 31 and

39), may be considered to be functionally linked to the Humber Estuary SPA/ Ramsar because they provide high tide feeding, roosting and loafing habitat for the qualifying wintering bird species golden plover, lapwing and curlew, as well as birds that are part of the qualifying wintering/ passage assemblage.

- 5.40 Mitigation for the loss of wintering bird habitat may be required where the habitat is considered 'functionally linked' to the SPA/ Ramsar, and to ensure that the Proposed Development is compliant with the Habitats Regulations.

Breeding Birds

- 5.41 The habitats within the Proposed Development Area provide limited opportunities for nesting birds, although ground nesting birds such as skylark (*Alauda arvensis*) and meadow pipit (*Anthus pratensis*) may be present.
- 5.42 Breeding birds noted during the course of the Phase 1 Habitat survey that are likely to be nesting in habitats within the site include sedge warbler (*Acrocephalus schoenobaenus*), reed warbler (*Acrocephalus scirpaceus*), reed bunting (*Emberiza schoeniclus*), yellow wagtail (*Motacilla flava*) and linnet (*Carduelis cannabina*). The majority of the habitats supporting these species, which is focussed on the boundary ditches, would be unaffected by the Proposed Development. It is not considered necessary to undertake a detailed suite of breeding bird surveys given the limited suitability of the site for birds, and on the basis that standard mitigation measures can be adopted to achieve legal compliance e.g. sensitive timing of vegetation clearance. Direct impacts on breeding territories would result in some displacement of breeding species, but this is unlikely to be significant given the relatively small size of the area affected when compared against the availability of similar habitats in the wider local area.
- 5.43 EP SHB (operator of South Humber Bank Power Station) has confirmed the presence of a pair of nesting peregrine on one of the towers of the power station, which is adjacent to the Proposed Development. It is assumed that this pair nests annually on the SHBPS. However, given that this species is present in the existing industrial context of the SHBPS, it is reasonable to assume that the nesting pair would not be adversely affected by the construction or operation of a development of a similar nature and scale on the adjacent plot.

Badger

- 5.44 No badger setts or other evidence of badger (*Meles meles*) activity was recorded during the Phase 1 Habitat survey. It is reasonable to conclude that this species is absent from the site, and therefore it is not considered further in this report.

Aquatic Invertebrates

- 5.45 The ditches and ponds have the potential to support rare and notable aquatic invertebrates. Because it is possible that the ditches and ponds will be directly impacted by the Proposed Development, it is recommended that an aquatic invertebrate survey be undertaken.

Terrestrial Invertebrates

- 5.46 The grassland habitat within the Proposed Development boundary does not have the potential to support a rare or notable assemblage of terrestrial invertebrates, on the basis that it is fairly homogenous in nature and does not have a range of niches suitable to support a diversity of insects. A detailed survey for terrestrial invertebrates is therefore not considered necessary to inform the EclA, and this group of species is not considered further.

Table 10C.12: Summary of Protected and notable species relevant or potentially relevant to the Proposed Development

Species	Legally Protected Species?	Species of Principal	Other Notable Species?	Present on Site or in potential ZOI?	Supporting Comments
European Protected Species					
Great crested newt	✓	✓	x	?	Desk study returned several records within 1 km. Two ponds on Site were evaluated as being suitable for GCN, but eDNA samples were negative for this species. No other potentially suitable ponds were identified within 250 m of the Proposed Development. Not considered further
Bats	✓	✓	x	x	No desk study records of bats were returned. There is no suitable roosting habitat within the Proposed Development Area. Habitats within the Proposed Development Area are considered to represent sub-optimal habitat for foraging bats. Not considered further
Otter	✓	✓	x	?	Desk study returned one record of this species from the Humber Estuary. Ditches on site are suitable for this species.
Other Species					
Reptiles	✓	✓	x	?	Desk study returned no records for reptiles. Habitats within the Proposed Development Area are potentially suitable for grass snake.
Water vole	✓	✓	x	✓	The desk study returned several records of water vole from the Stallingborough

Species	Legally Protected Species?	Species of Principal	Other Notable Species?	Present on Site or in potential ZOI?	Supporting Comments
					area. Previous survey of site in 2010 identified all ditches as being suitable for this species, and water vole field signs were recorded on most of the ditches surveyed. Likely to be present on all ditches, may be present on ponds.
Wintering birds	x	✓	x	✓	The proximity of the site to the Humber Estuary SPA/ Ramsar and the suitability of the grassland mean that it may be considered 'functionally linked' to the designated site.
Breeding birds	✓	✓	x	✓	Suitable habitat for nesting birds within the Proposed Development area, but this is limited to the open grassland areas. Higher quality ditch habitat would be unaffected by the Proposed Development. Not considered further
Badger	✓	x	x	x	No desk study records. No suitable habitat within the Proposed Development and no evidence of badger activity recorded on site during Phase 1 Habitat survey. Not considered further
Aquatic invertebrates	x	✓	✓	?	No desk study records. Ditches and ponds within the Proposed Development and Wider Survey Area may be suitable for a rare and notable assemblage of aquatic invertebrates.
Terrestrial invertebrates	x	✓	✓	?	No desk study records. Habitat is unsuitable to support a rare or notable assemblage of terrestrial

Species	Legally Protected Species?	Species of Principal	Other Notable Species?	Present on Site or in potential ZOI?	Supporting Comments
					invertebrates. Not considered further
<p>Key to symbols: ✓ = yes, x = no, ? = likely or possible, see Supporting Comments for further rationale. Species present on site are those for which recent direct observation or field signs confirmed presence. Species which are possibly present are those for which there is potentially suitable habitat based on the results of the Phase 1 Habitat survey, or this combined with desk study records.</p>					

6.0 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

Approach to the Identification of Ecological Constraints

- 6.1 The NPPF and local planning policy (summarised in Section 2 of this report) specify requirements for the protection of features of importance for biodiversity. Planning policy is a material consideration when determining planning applications.
- 6.2 Compliance with planning policy requires that the Proposed Development considers and engages the following mitigation hierarchy where there is potential for impacts on relevant ecological features:
1. Avoid features where possible;
 2. Minimise impact by design, method of working or other measures (mitigation) e.g. by enhancing existing features; and
 3. Compensate for significant residual impacts, e.g. by providing suitable habitats elsewhere (whether in the control of EP SHB Limited or otherwise legally enforceable through planning condition or Section 106 agreement).
- 6.3 This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. The rationale for the proposed mitigation and/ or compensation should be provided with planning applications, including sufficient detail to show that these measures are feasible and can be provided.
- 6.4 In pursuance of the objective within the NPPF of providing net gains in biodiversity where possible, consideration should be given to the scope for enhancement as part of the Proposed Development. This should represent biodiversity gain over and above that achieved through mitigation and compensation. Enhancement could be achieved on and/ or off-site. Where such recommendations are made in this PEA they are high level only, recognising that this report has been prepared to support the EIA.

Constraints and Requirements for Further Survey: Designations

Statutory Designations

- 6.5 The Main Development Area is located approximately 175 m west of the Humber Estuary SSSI, SAC, SPA and Ramsar. The planning application is therefore likely to require Habitat Regulations Assessment (HRA) screening to determine whether the Proposed Development would result in Likely Significant Effects (LSE) on the European site.
- 6.6 The land parcel in which the Main Development Area is located was part of the Humber EDC wintering bird counts in 2010/11 (Field 37). This field, and the field immediately to the south adjacent to Old Fleet Drain (Field 39) may be considered to be functionally linked to the Humber Estuary SPA/ Ramsar because it provides high tide feeding, roosting and loafing habitat for the qualifying wintering bird species golden plover, lapwing and curlew, as well as birds that are part of the qualifying wintering/ passage assemblage. The loss of functionally linked habitat within the footprint of the Proposed Development will require compensation, and it is likely that this can be drawn down from the South Humber Bank strategic mitigation allocation, which forms a key part of the adopted Local Development Framework (Policy 9).
- 6.7 It is considered unlikely that the construction and operation of the Proposed Development would directly impact these designations at the distance concerned; however, there is the potential for indirect impacts. The following topics should therefore be scoped into the ecological impact assessment:

- Potential indirect effects on habitats and qualifying features resulting from air emissions during construction, and from the operational power plant;
- Potential noise and visual impacts resulting from construction/ operation, and displacement/ disturbance effects on wintering and passage birds; and
- Potential surface water impacts resulting from pollution during construction and operation.

Non-Statutory Designations

- 6.8 There are five non-statutory nature conservation designations within 2 km of the Proposed Development. It is considered unlikely that the construction and operation of the Proposed Development would directly impact these designations at the distance concerned. However, potential air quality impacts may need to be assessed.
- 6.9 Given that no citations are available for two of the designations (Field West of Power Station, Stallingborough SNCI and North Moss Lane Meadow SNCI), these should be discounted from the EclA because there is no baseline data for the sites on which to base an assessment.

Constraints and Requirements for Further Survey: Habitats and Protected Species

- 6.10 Table 10C.13 sets out the recommendations for the further protected species surveys to be undertaken in spring and summer 2018 to inform the EclA. The relevant species are:
- Otter;
 - Reptiles;
 - Water vole; and
 - Aquatic invertebrates.

EIA Scoping

- 6.11 A summary of the EclA scoping exercise undertaken as part of this PEA, to set out the framework for the subsequent impact assessment in Chapter 10 of the ES Ecology, and is provided in Table 10C.13 below. This includes recommendations for further survey work for protected species as set out above. No further habitat surveys are considered necessary.
- 6.12 All habitats to be lost as a result of the Proposed Development should be quantified, along with habitat gains associated with buffer zones and soft landscaping, and presented in a habitat losses and gains table, so that the EclA can make a conclusion regarding impacts on the overall biodiversity of the Site.

Table 10C.13: Summary of EclA Scoping and Further Surveys Required

Ecology Feature	Ecological Value	Requires EclA?	Rationale	Further Surveys necessary to Support EclA?	Scope of Surveys	Timing
Statutory Designations						
Humber Estuary SAC/ SPA/ Ramsar/ SSSI	National	✓	Potential for direct impacts through loss of wintering bird SPA/ Ramsar functionally linked habitat, and indirect impacts via noise, air quality and surface water.	x		
Non-statutory Designations						
Field West of Power Station, Stallingborough SNCI	County	x	No citation available therefore no baseline for impacts to be assessed against.	x	-	-
Healing Cress Beds Stallingborough LWS	County	✓	Potential for air quality impacts	x	-	-
Sweedale Croft Drain LWS	County	✓	Potential for air quality impacts	x	-	-
North Moss Lane Meadow SNCI	County	x	No citation available therefore no baseline for impacts to be assessed against.	x	-	-
Laporte Road	County	✓	Potential for air quality	x	-	-

Ecology Feature	Ecological Value	Requires EclA?	Rationale	Further Surveys necessary to Support EclA?	Scope of Surveys	Timing
Brownfield Site LWS			impacts			
Fish Ponds to the West of Power Station, Stallingborough LWS	County	✓	Potential for air quality impacts	x	-	-
Protected & Notable Species						
GCN	N/A	x	Absence confirmed through eDNA sampling of two ponds on site.	x	-	-
Bats – roosting	N/A	x	No suitable roosting habitat present within Proposed Development boundary.	x	-	-
Bats – foraging and commuting	Site	✓	Potential for displacement/ disruption to small numbers of common species due to lighting impacts.	x	-	-
Otter	?	✓	Ditches on site may be used by foraging and passage otter	✓	Survey of all ditches within and adjacent to Proposed Development	September 2018
Reptiles	?	✓	Grassland habitats potentially suitable for grass snake.	✓	Seven presence/ absence visits spread across April/ May and September using	April/ May and Sept 2018

Ecology Feature	Ecological Value	Requires EclA?	Rationale	Further Surveys necessary to Support EclA?	Scope of Surveys	Timing
					artificial refuges deployed at a density of at least 10 per hectare of suitable habitat (Froglife, 1999), and visual observation transects. Surveys to be undertaken in appropriate weather conditions and spread across the two survey months.	
Water vole	?	✓	Ditches previously confirmed to support water vole, therefore continued presence highly likely.	✓	Survey of all lengths of ditches within Site boundary	Sept 2018
Wintering birds	?	✓	Potential for loss of functionally linked habitat to the SPA/ Ramsar; SHG mitigation strategy to be used as a way of compensating for this loss. Potential for indirect noise, visual and air quality impacts.	×	-	-
Breeding birds	Site	×			-	-
Badger	N/A	×	Not present	×		
Aquatic	?	✓	Ditches have the potential to	✓	Samples of ditches and	August/ Sept

Ecology Feature	Ecological Value	Requires EclA?	Rationale	Further Surveys necessary to Support EclA?	Scope of Surveys	Timing
invertebrates			support rare/ notable assemblage of aquatic invertebrates.		ponds within Proposed Development Area and Wider Survey Area.	2018
Terrestrial invertebrates	N/A	x	Habitats on site not suitable to support rare/ notable assemblage of terrestrial invertebrates.	x	-	-

7.0 REFERENCES

- British Standards (2013) Biodiversity — Code of practice for planning and development. BS42020: 2013
- CIEEM (2017) Guidelines for preliminary ecological appraisal Second Edition.
- https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf
- Department for Energy and Climate Change (2012) Record of Appropriate Assessment undertaken under Regulation 61 of the Conservation of Habitats and Species Act 2010 (as amended) for an Application under Section 36 of the Electricity Act 1989: Consent under S.36 to Construct and Operate a 65MW Biomass Fuelled Electricity Generating Station at Hobson Way near Stallingborough, North East Lincolnshire.
- Frost, T.M., Austin, G.E., Calbrade, N.A., Mellan, H.J., Hearn, R.D., Stroud, D.A., Wotton, S.R. & Balmer, D.E. (2018) Waterbirds in the UK 2016/17: The Annual Report of the Wetland Birds Survey. British Trust for Ornithology.
- Greater Lincolnshire Nature Partnership (2015) Nature Strategy – Lincolnshire Biodiversity Action Plan 3rd Edition 2015 – 2020. Greater Lincolnshire Nature Partnership.
- Humber INCA (2010) Ecological Assessment of Centrica South Humber Bank Power Station July 2010. Prepared on behalf of Centrica Energy Plc by Humber INCA, Barton-upon-Humber, North Lincolnshire.
- Humber INCA (2011) Centrica South Humber Bank – Biodiversity Action Plan. Prepared on behalf of Centrica Energy Plc by Humber INCA, Barton-upon-Humber, North Lincolnshire.
- Joint Nature Conservation Committee (2010) Handbook for phase 1 habitat survey – a technique for environmental audit. Joint Nature Conservation Committee, Peterborough
- Maddock, A. (2011) UK Biodiversity Action Plan Priority Habitat Descriptions. JNCC, Peterborough
- Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4) 143 – 155.
- Rodwell, J.S. (Ed.) (1992) British Plant Communities Volume 3: Grasslands and Montane Communities. Cambridge University Press, Cambridge

Annex A: Wildlife Legislation and Planning Policy

The Conservation of Habitats & Species Regulations 2017

The Habitats Regulations consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations came into force on 30th October 1994. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2017 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Under the Regulations, competent authorities i.e. any Minister, Government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats Directive.

The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I and II of the Habitats Directive respectively) to the European Commission. Once the Commission and EU Member States have agreed that the sites submitted are worthy of designation, they are identified as Sites of Community Importance (SCIs). The EU Member States must then designate these sites as Special Areas of Conservation (SACs) within six years. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs) classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites form a network termed Natura 2000.

The Regulations enable the country agencies to enter into management agreements on land within or adjacent to a European site, in order to secure its conservation. If the agency is unable to conclude such an agreement, or if an agreement is breached, it may acquire the interest in the land compulsorily. The agency may also use its powers to make byelaws to protect European sites. The Regulations also provide for the control of potentially damaging operations, whereby consent from the country agency may only be granted once it has been shown through Appropriate Assessment that the proposed operation will not adversely affect the integrity of the site. When considering potentially damaging operations, the country agencies apply the precautionary principle' i.e. consent cannot be given unless it is ascertained that there will be no adverse effect on the integrity of the site.

In instances where damage could occur, the appropriate Minister may, if necessary, make special nature conservation orders, prohibiting any person from carrying out the operation. However, an operation may proceed where it is or forms part of a plan or project with no alternative solutions, which must be carried out for reasons of overriding public interest. In such instances the Secretary of State must secure compensation to ensure the overall integrity of the Natura 2000 system. The country agencies are required to review consents previously granted under the Wildlife and Countryside Act 1981 for land within a European site, and may modify or withdraw those that are incompatible with the conservation objectives of the site.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of

licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Regulations make special provisions for the protection of European marine sites, requiring the country agencies to advise other authorities of the conservation objectives for a site, and also of the operations which may affect its integrity. The Regulations also enable the establishment of management schemes and byelaws by the relevant authorities and country agencies respectively, for the management and protection of European marine sites.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 is the major domestic legal instrument for wildlife protection in the UK, and is the primary means by which the following are implemented:

- The Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention'); and
- The Council Directive 79/409/EEC on the Conservation of Wild birds (the 'Bird Directive')

Wild Birds

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally:

- kill, injure, or take any wild bird,
- take, damage or destroy the nest of any wild bird while that nest is in use or being built (also [take, damage or destroy the nest of a wild bird included in Schedule ZA1] under the Natural Environment and Rural Communities Act 2006), or
- take or destroy an egg of any wild bird.

Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Areas of Special Protection (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

Other Animals

The Act makes it an offence (subject to exceptions) to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Flora, Fungi and Lichens

The Act makes it an offence (subject to exceptions) to intentionally pick, uproot or destroy:

- any wild plant listed in Schedule 8, or
- unless an authorised person, to intentionally uproot any wild plant not included in Schedule 8,
- to sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Non-native Species

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 in England and Wales. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

Countryside and Rights of Way (CRoW) Act 2000

The Countryside and Rights of Way Act 2000 applies to England and Wales only. Part III of the Act deals specifically with wildlife protection and nature conservation.

The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for

which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

Schedule 9 of the Act amends the SSSI provisions of the Wildlife and Countryside Act 1981, including increased powers for their protection and management of SSSIs. The provisions extend powers for entering into management agreements; place a duty on public bodies to further the conservation and enhancement of SSSIs; increase penalties on conviction where the provisions are breached; and include an offence whereby third parties can be convicted for damaging SSSIs.

Schedule 12 of the Act amends the species provisions of the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', include an offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

Natural Environment and Rural Communities (NERC) Act 2006

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act required the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list was drawn up in consultation with Natural England, as required by the Act.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the (now withdrawn) UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and subtidal sands and gravels.

There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the (now withdrawn) UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

Protection of Badgers Act 1992

Badgers and their setts (burrows) are protected under the Act. This makes it an offence to kill or take a badger, to cruelly ill-treat a badger, or to interfere with a badger sett, including disturbing a badger while it is occupying a sett.

Licences to permit otherwise prohibited actions can be granted under section 10 of the Act for various purposes. This includes licences to interfere with a badger sett for the purpose of development as defined by section 55(1) of the Town and Country Planning Act 1990.

Licences may be granted in order to close down setts, or parts of setts, prior to development or to permit activities close to a badger sett that might result in disturbance. A licence will be required if a sett is likely to be damaged or destroyed in the course of development or if the badger(s) occupying the sett will be disturbed.

Licences can be applied for at any time, but a licence for development will not normally be issued unless full planning permission has been granted. The closure of setts under licence is normally only permitted during July to November, inclusive.

Water Framework Directive 2000

The Water Framework Directive (EC Directive 2000/60/EC) came into force in 2000. At the heart of the WFD is the philosophy to “make waterbodies better” through sustainable development for the joint benefits of aquatic habitats and the human environment.

The WFD requires members states achieve “good status” for all groundwater and surface waters (rivers, lakes, transitional waters, and coastal waters). For surface water, overall status comprises two elements: “good ecological status” and “good chemical status”. Ecological status is defined by the biological condition or health of a watercourse, in combination with water quality and physical conditions that underpin biological conditions. The classification of ecological status considers biological elements (the abundance of aquatic flora and fauna), physical habitat availability (hydromorphology), and water quality factors such as the availability of nutrients, salinity, temperature and pollution by key chemical pollutants. The biological elements used as indicators of ecological quality include fish, macroinvertebrates, macrophytes and diatoms.

Any proposed developments or activities that have the potential to affect the water environment require a WFD Assessment (WFDa). Compliance with the WFD means attainment of good ecological status, prevention of deterioration in status, and prevention of failure to achieve future attainment of good status where it is not already achieved within waterbodies. However, WFD Article 4.7 provides legislation for exemption conditions that could allow implementation of schemes that cause deterioration in ecological status, for example for reasons of overriding public interest.

Annex B: Phase 1 Target Notes

TARGET NOTE	DESCRIPTION
1	An oval pond (approx. 10m x 20m) with dominant marginal common reed (<i>Phragmites australis</i>) and rare pendulous sedge (<i>Carex pendula</i>). Floating vegetation consists of rare water lily (<i>Nymphaea</i> spp.).
2	An oval pond (approx. 15m x 35m) with dominant marginal common reed, with a small stand of emergent common reed in the central part of the waterbody [TN2, Photographs 5 & 6). There is occasional marginal greater willowherb (<i>Epilobium hirsutum</i>) and rare marginal pendulous sedge, marsh marigold (<i>Caltha palustris</i>), meadowsweet (<i>Filipendula ulmaria</i>), yellow iris (<i>Iris pseudacorus</i>) and cuckooflower (<i>Cardamine pratensis</i>). There is abundant submerged water milfoil (<i>Myriophyllum</i> spp.).
3	This is an area of semi-improved neutral grassland that was created as part of a habitat restoration scheme and an annual hay cut is taken as part of the biodiversity enhancement measures undertaken by SHBPS. There are localised areas where the grassland is more floristically rich, which reflects spatial variations in the application of the seed mix rather than to variations in substrate/soil type. There is a paucity of perennial rye-grass (<i>Lolium perenne</i>) which is indicative of a lack of agricultural improvement. Grass species include abundant red fescue (<i>Festuca rubra</i> agg.) and locally abundant meadow fox-tail (<i>Alopecurus pratensis</i>). The presence of locally frequent marsh foxtail (<i>Alopecurus genticulatus</i>) and locally abundant common reed within localised shallow depressions are indicative of seasonally impeded drainage in these areas. There is a diverse assemblage of forb species in the sward, including: frequent red clover (<i>Trifolium pratense</i>), locally frequent black medick (<i>Medicago lupulina</i>), frequent ribwort plantain (<i>Plantago lanceolata</i>), locally frequent hairy tare (<i>Vicia hirsuta</i>), locally frequent common knapweed (<i>Centaurea nigra</i> agg.), occasional daisy (<i>Bellis perennis</i>), occasional common mouse-ear (<i>Cerastium fontanum</i>), locally frequent tufted vetch (<i>Vicia cracca</i>), locally frequent ox-eye daisy (<i>Leucanthemum vulgare</i>), frequent meadow vetchling (<i>Lathyrus pratensis</i>), frequent dandelion (<i>Taraxacum</i> agg.), locally abundant yellow-rattle (<i>Rhinanthus minor</i> agg.), locally frequent common sorrel (<i>Rumex acetosa</i>), locally frequent common vetch (<i>Vicia sativa</i> ssp. <i>segetalis</i>), abundant field horse-tail (<i>Equistem arvense</i>), occasional beaked hawk's-beard (<i>Crepis vesicaria</i>) and locally frequent cowslip (<i>Primula veris</i>). Rarer species include salad burnet (<i>Poterium sanguisorba</i>), bird's-foot trefoil (<i>Lotus corniculatus</i>), glaucous sedge (<i>Carex flacca</i>), common ragwort (<i>Senecio jacobaea</i>) and meadowsweet (<i>Filipendula ulmaria</i>). At the time of the survey parts of the grassland to the south of the access track were subject to grazing by rare breed (Shetland) sheep, which were enclosed within electric fencing.
4	The raised bunded area to the north of the access track supports a tussocky grass dominated sward with abundant cock's-foot (<i>Dactylis glomerata</i>) with some red fescue (Target Note 4). Forb species include frequent meadow vetchling (<i>Lathyrus pratensis</i>), occasional common and occasional curled

TARGET NOTE	DESCRIPTION
	dock (<i>Rumex crispus</i>). There is a small stand of abundant bramble next to the access track.
5	A small area of this grassland, between the northern pond and the access track, is used as a storage area for cut hay which is covered by a tarpaulin. This area is partially enclosed by linear stands of semi-improved planted scrub
6	The drain bordering South Marsh Road is outside the SHBPS boundary fence was inaccessible at the time of the survey. A grassy verge between the wet drain and the road, with marginal common reed, was visible when viewed through the boundary fencing. This habitat represents suitable habitat for water vole.
7	The drains bordering the north-eastern part of the site, located outside the SHBPS boundary fence, support abundant submerged water star-wort (<i>Callitriche</i> spp.) and rare celery-leaved buttercup (<i>Ranunculus sceleratus</i>).
8	The drains bordering the north-eastern part of the site, located outside the SHBPS boundary fence, support abundant submerged water star-wort and rare celery-leaved buttercup.
9	A wet drain supporting a continuous linear stand of emergent and marginal common reed dominated swamp vegetation
10	A wet drain supporting a continuous linear stand of emergent and marginal common reed dominated swamp vegetation
11	A hawthorn (<i>Crataegus monogyna</i>) dominated hedgerow orientated along the northern and western boundary of the SHBPS.
12	A stand of semi-mature planted broad-leaved woodland associated with landscape planting scheme is located in the north-west corner of the site (Target Note 12, Photographs 21-23). The closed canopy consists of field maple (<i>Acer campestre</i>), crack willow (<i>Salix fragilis</i>), hazel (<i>Corylus avellana</i>), blackthorn (<i>Prunus spinosa</i>), yew (<i>Taxus baccata</i>), hawthorn, dogwood (<i>Cornus sanguinea</i>), holly (<i>Ilex aquifolium</i>), elder (<i>Sambucus nigra</i>) and ash (<i>Fraxinus excelsior</i>). The field flora is impoverished with patchy nettle, cleavers (<i>Galium aparine</i>) and rough meadow-grass (<i>Poa trivialis</i>) and localised garlic mustard (<i>Alliaria petiolata</i>). The ground flora includes patches of pleurocarpous mosses and bare ground. The woodland is managed and habitat/brush piles noted.
13	An orchard has been planted to the south-east of the woodland; tree species include apple (<i>Malus</i> spp.) and damson (<i>Prunus</i> spp.).
14	A hawthorn (<i>Crataegus monogyna</i>) dominated hedgerow orientated along the western boundary of the SHBPS.
15	A stand of unmanaged grass dominated semi-improved neutral grassland with abundant common knapweed, occasional teasel (<i>Dipsacus fullonum</i>) and frequent cowslip. Localised areas where tufted hair-grass (<i>Deschampsia caespitosa</i>) is frequent suggest seasonally impeded drainage.
16	An inaccessible stand of densely planted young (approx. 5m tall) broad-leaved woodland, with willow (<i>Salix</i> spp.), field maple (<i>Acer campestre</i>),

TARGET NOTE	DESCRIPTION
	hawthorn and <i>Prunus</i> spp.