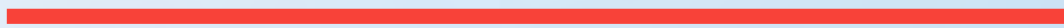


Appendix 5.5

Breeding Birds





C.GEN Killingholme Ltd

NORTH KILLINGHOLME POWER PROJECT

Breeding Bird and Waterbird Survey Report





C.GEN Killingholme Ltd

NORTH KILLINGHOLME POWER PROJECT

Breeding Bird and Waterbird Survey Report

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EXECUTIVE SUMMARY

WSP UK Limited ('WSP') was commissioned by C.GEN Killingholme Limited (hereafter referred to as C.GEN) to undertake breeding bird surveys on land in North Killingholme, North Lincolnshire (National Grid Reference: TA 16141 20137); defined as the 'Principal Project Area' and hereafter referred to as 'the Site' (see Figure 1). The purpose of the survey was to update the ecological baseline data from the Site to support an application to amend the Development Consent Order (DCO) of the North Killingholme Power Project, granted in 2014.

The project proposals included the construction and operation of a new 470 megawatt electrical (MWe) thermal generating station and associated development ('the 'Project'). The amendment includes a non-material change application to extend the lifetime of the DCO. In order to ensure the consent remains fit for purpose, other minor modifications to the Order are proposed. However, no changes are sought to the technology used, modes of operation or the Order Limits.

To support the DCO application, both breeding and wintering bird surveys were undertaken within the Site and surrounding habitat in 2010 and 2011. Survey data obtained from other surveys carried out in proximity to the Site was also used to support an assessment in the Environmental Statement (C.GEN, 2013). These surveys include Intertidal surveys undertaken for Able UK (University of Hull, 2011) and autumn and wintering surveys carried out by Nyctea Ltd for the Humber Nature Partnership (Nyctea, 2011).

During May to July of 2019, WSP undertook breeding bird surveys to confirm the current status of the Site for breeding birds. Targeted surveys to identify waterbirds (specifically important species listed on statutory designated site citations), their movements and to record the presence of passage species were undertaken during September 2019. The survey work followed a standard method based on the British Trust for Ornithology's (BTO's) Common Bird Census (CBC), methods summarised in Bird Census Techniques (2nd edition) by Bibby et al. (2000) and bird survey methods by Scottish Natural Heritage.

A total of 39 species were recorded on or over the Site during the breeding bird surveys. Of the 39 species recorded, 32 are considered to breed on the Site or to breed within habitats immediately adjacent to the Site with the Site considered integral to their breeding success. Of the 39 species recorded on or over the site, 13 are legally protected or species of conservation concern, including seven Species of Principal Importance (SPI) under the Natural Environment and Rural Communities (NERC) Act 2006, Six Birds of Conservation Concern (BoCC) red list species, seven BoCC amber list species and seven species listed on the Lincolnshire Local Biodiversity Action Plan (LBAP). Of these, 10 are considered to breed on the Site.

During the targeted waterbird survey, a total of 17 species were recorded using habitats in proximity to the Site. Of these, 14 are protected and/or notable species or species of conservation concern, including: one Species of Principal Importance (SPI) under the Natural Environment and Rural Communities (NERC) Act 2006, three Birds of Conservation Concern (BoCC) red list species and 11 BoCC amber list species. Of these, 10 are qualifying interests of one or more of the Humber Estuary Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and/or Ramsar and North Killingholme Haven Pits SSSI.

The results of the breeding bird surveys (BBS) and the waterbird survey are similar to the results documented in the ES. A similar community of breeding birds and breeding territories were recorded within the Site's during both 2010 and 2019 surveys. Most species recorded were recorded in both 2010 and 2019, with fewer than ten species only recorded in either the 2010 or 2019 surveys.

Targeted waterbird surveys undertaken in September 2019 affirm the importance of the intertidal zone for waders, waterfowl and passage birds during late summer/early autumn. The composition of bird species recorded, and the behaviour observed was of a similar nature to the numbers recorded during the intertidal surveys, specifically in late summer/early autumn. Flight patterns of waders commuting from the saline lagoons in the south to the north of the Site, along the intertidal zone were akin to the patterns presented in the intertidal surveys carried out in 2010/2011. On the basis of the desk study and survey work completed in 2019/20, there are no significant changes to the assessment made in the ES.

1. INTRODUCTION

1.1. PROJECT BACKGROUND

- 1.1.1. WSP UK Limited (hereafter referred to as 'WSP') was commissioned by C.GEN Killingholme Limited (hereafter referred to as C.GEN) to update ecological baseline data in relation to a proposed amendment to the Development Consent Order (DCO) granted for the North Killingholme Power Project in 2014. The project proposals include the construction and operation of a new 470 megawatt electrical (MWe) thermal generating station and associated development (hereafter referred to as the Proposed Scheme).
- 1.1.2. The proposed amendments to the DCO include a non-material change application to extend the lifetime of the DCO, initially granted in 2014. The Order Limits, proposed plant and generation equipment, remains the same as described in the Environmental Statement (referred to as the Principal Project Area). The Principal Project Area is centred at National Grid Reference: TA 157 198); and hereafter referred to as the 'Site' (displayed on Figure 1).

1.2. ECOLOGICAL BACKGROUND

- 1.2.1. A Preliminary Ecological Appraisal (PEA) of the Site was carried out in May 2019 (WSP, 2019). Suitable habitat for breeding birds was identified during the PEA. Suitable habitat included scattered and dense scrub, scrub and tall ruderal interfaces, waterbodies, reedbeds and earth banks. These habitats were confined to the west of the Site.
- 1.2.2. A breeding bird survey of the Site was undertaken by Landscape Science Consultancy Ltd in 2010 to support the Development Consent Order for Parsons Brinckerhoff on behalf of C.GEN (Landscape Science Consultancy, 2010). A total of 39 bird species were recorded with 59 breeding territories identified. Seventeen birds of conservation importance were recorded on Site. Of the BoCC 4¹ Red List, one species was confirmed breeding, three were probable breeders and three were possible breeders. Of Amber Listed species, nine were observed as possible or permanent breeders with two non-breeding species Three species recorded are listed as contributing species to the breeding bird assemblage as listed on the Humber Estuary Site of Special Scientific Interest (SSSI) citation. None of the species recorded breeding on site were Humber Estuary Special Protection Area (SPA) bird species.
- 1.2.3. Wintering bird surveys were also undertaken previously at the Site by Parsons Brinckerhoff (PB) in 2010 and 2011.

1.3. BRIEF AND OBJECTIVES

- 1.3.1. C.GEN commissioned WSP to complete a breeding bird survey of the Site and targeted waterbird counts of the surrounding habitat in late summer/early autumn in accordance with good practice guidance to provide:

¹ BoCC4 – the Birds of Conservation Concern list is divided into red, amber and green lists. Red list features birds with the highest conservation priority, with species needing urgent action. Amber list features birds with unfavourable conservation statuses and have experienced 20-50% decline in last 25 years. Green list features species that occur regularly in the UK.

- A list of bird species encountered during the breeding bird season and their breeding status (i.e. confirmed, probable or possible breeding, or not considered to be breeding on the Site) and an estimate of the likely number of territories/colonies of bird species breeding on or close to the Site;
- An evaluation of the value of the Site for breeding birds;
- A list of waterbird species, targeting those species listed as qualifying features of the Humber Estuary SPA, SSSI and Ramsar and North Killingholme Haven Pits SSSI. To include waders, wildfowl and passage species; encountered during the late summer/early autumn period and how they are interacting with the Site and surrounding habitat;
- An evaluation of the Site and the surrounding habitats for waterbirds in late summer/early autumn; and
- A comparison between the baseline for breeding birds / waterbirds as assessed for the 2013 DCO application and the baseline as assessed based on the update 2019 surveys.

1.3.2. The results of the above surveys are contained within this report.

2. METHODS

2.1. BREEDING BIRD SURVEY

- 2.1.1. To inform an evaluation of the on-Site habitats for breeding bird species, three breeding bird survey visits were completed between May and July 2019. The survey work followed a standard method based on the British Trust for Ornithology's (BTO's) Common Bird Census (CBC) and methods summarised in Bird Census Techniques by Bibby et al. (2000).
- 2.1.2. All survey visits to the Site were completed in the early morning, commencing at dawn or within 30 minutes after. Each of the survey visits lasted approximately three hours in duration.
- 2.1.3. During each survey visit the Site was walked slowly, approaching all suitable habitat within 50m and scanning and listening for birds. In accordance with good practice guidance (Bibby et al, 2000), the start point and direction of the route walked were varied on each survey visit; this serves to minimise bias, as birds may be active at different times of day in different areas. The locations of birds seen and heard were mapped using standard BTO two letter codes and activity symbols (See Figure 3a, b and c). Where breeding activity was observed this was recorded in accordance with the following categories (based on standard BTO criteria):
- Non-breeder – Birds observed flying over, considered to still be on migration or a summering non-breeder.
 - Possible breeding – Birds observed singing or present in suitable habitat in breeding season.
 - Probable breeding – A pair observed in suitable habitat, territorial behaviour observed in the same place on at least two separate occasions, or by many individuals simultaneously on one day, or birds observed visiting a probable nest site, showing courtship or display behaviour in suitable breeding habitat or nest building.
 - Confirmed breeding – Nest containing eggs or young seen or heard, adults observed carrying faecal sac or food, feigning injury as a distraction display or entering or leaving a nest site in circumstances indicating an occupied nest, a used nest or eggshells found or recently fledged or downy young recorded (showing evidence of dependency on adults).
- 2.1.4. Field observations from all survey visits were combined to enable identification of clear clusters of records and to provide an indication of likely territory numbers.
- 2.1.5. In addition, incidental bird records gathered during the PEA (WSP, 2019) have been incorporated within this report where these provide additional information to that gathered during the targeted breeding bird surveys. Species not recorded during the breeding bird surveys but recorded during the PEA are identified using an asterisk in Table 7.

2.2. WATERBIRD SURVEY

- 2.2.1. To accompany the results of the breeding bird survey in 2019 and the wintering bird surveys undertaken in 2019 and 2020, a targeted waterbird survey was carried out. The survey was designed to identify waterbird usage of those areas and habitats within and outside the Site. This followed a methodology based on methods summarised in Bird Census Techniques by Bibby et al. (2000) and an adaptation of bird survey methods devised by Scottish Natural Heritage (SNH, 2017).

- 2.2.2. The survey visits specifically targeted waterbird species listed as qualifying features of the Humber Estuary SPA, SSSI, Ramsar and North Killingholme Haven Pits SSSI and those listed on each citation as passage birds.
- 2.2.3. All four survey visits lasted approximately three and a half hours in duration. Start and end times of the surveys were planned to take account of the fluctuating tide times and weather conditions
- 2.2.4. Each of the four surveys were carried out at pre-defined vantage points (VP) surrounding the Site (See Figure 2 for each location) where access was permitted. Each of the vantage points were stationed in locations where suitable habitat for waterbirds existed and where activity could be observed. The vantage point surveys included two surveyors observing waterbird activity incorporating a 360° field of view. The VPs provided complete visual access to the external boundary of the Site and permitted good visual coverage of the surrounding coastal and wetland habitats. The locations of birds seen and heard were mapped using standard BTO two letter codes and activity symbols. Surveyors were equipped with a spotting scope and a pair of binoculars.
- 2.2.5. Targeted waterbird species for the VP surveys were those species listed as qualifying features on the citation lists of the Humber Estuary SPA, SSSI, Ramsar and North Killingholme Haven Pits SSSI. As well as those species listed on the citations, non-qualifying species of wader, waterfowl, other waterbirds and raptor were included as target species (where present). Regular flights lines and movements of large numbers of other species were also recorded as these could represent habitual movements of birds between the designated sites and surrounding habitat.

2.3. DATES OF SURVEY AND PERSONNEL

- 2.3.1. The breeding bird and waterbird survey visits were completed by a competent surveyor with 6 years' experience of ecological survey, including breeding bird and vantage point surveys.
- 2.3.2. Dates of survey and weather conditions are given in **Tables 1** and **2** below.

Table 1 - Dates of survey and weather conditions of breeding bird survey

Survey Visit	Date	Start Time	End Time	Weather Conditions
1	24.05.2019	05:00	08:00	14°C, Cloud 7 oktas, Wind 2:E, Rain:0, Snow:0, Frost:0,
2	19.06.19	04:45	07:45	9°C, Cloud 5/8, Wind 3:E, Rain:0, Snow:0, Frost:0,
3	09.07.19	04:55	07:45	5°C, Cloud 2/8, Wind 3:NNW, Rain:0, Snow:0, Frost:0

Table 2 - Dates of survey and weather conditions of waterbird survey

Survey Visit	Date	Start time	End Time	Sunrise/sunset*	High Tide	Low Tide	Weather Conditions
1	10.09.19	06:30	10:30	06:26	04:04	10:46	12°C, Cloud 8-4 oktas, Wind 2:E, Rain:0, Snow:0, Frost:0,
2	11.09.19	16:00	19:30	06:27	17:45	23:52	21°C, Cloud 3 oktas, Wind 3:N, Rain:0, Snow:0, Frost:0,
3	12.09.19	06:30	10:30	06:29	05:42	12:21	12°C, Cloud 7 oktas, Wind 2:E, Rain:0, Snow:0, Frost:0,
4	13.09.19	06:31	10:01	06:31	06:22	13:02	9°C, Cloud 3 oktas, Wind 1:E, Rain:0, Snow:0, Frost:0,

2.4. NOTES AND LIMITATIONS

- 2.4.1. Whilst every effort has been made to detect all species present some bird species are more difficult to detect due to their shy or secretive nature and therefore may have gone undetected by this survey. As a constraint applicable to all bird surveys this is not considered to place significant constraints upon interpretation of the results for this Site.
- 2.4.2. Access for the surveys were limited to areas within the Site, the area adjacent to Site (previously identified as Centrica Killingholme Power Station) and public rights of way. Although access to fields to the north was not permitted, good visual coverage of all areas within and around the Site was still achieved from the vantage points. It is considered that this does not pose a significant limitation to the findings of this survey report.

3. RESULTS AND EVALUATION

3.1. OVERVIEW

- 3.1.1. A total of 39 species were recorded on or over the Site during the breeding bird survey, of these 30 are considered to breed on the Site. This included 13 species which are legally protected or species of conservation concern, of which 10 are considered to breed on the Site. This total includes 8 species where nest sites themselves are located on immediately adjacent land, but the Site is used extensively for provisioning of those nests or for song posts; and therefore, these have been included as breeding species as the Site is integral to the breeding success of those birds.
- 3.1.2. The numbers of birds recorded within each category are listed below, it should be noted categories are not exclusive and a species can be listed in more than one conservation category (for example listed as both a Species of Principal Importance (SPI) in accordance with the Natural Environment and Rural Communities (NERC) Act 2006 and a UK Biodiversity Action Plan (BAP) species and as either a red or amber list Bird of Conservation Concern (BoCC)).
- Seven species listed as SPI in accordance with Section 41 of the NERC Act 2006 (also UKBAP species). Linnet *Carduelis cannabina*, dunnock *Prunella modularis*, yellowhammer *Emberiza citrinella*, song thrush *Turdus philomelos*, tree sparrow *Passer montanus*, starling *Sturnus vulgaris* and reed bunting *Emberiza Schoeniclus* were confirmed, probable or possible breeders on the Site.
 - Six Birds of Conservation Concern (BoCC) red list species. Linnet, yellowhammer, song thrush, tree sparrow, starling *Sturnus vulgaris* and skylark were confirmed, probable or possible breeders on the Site; and
 - Seven BoCC amber list species. Mute swan *Cygnus olor*, dunnock, reed bunting and bullfinch *Pyrrhula pyrrhula* were probable or possible breeders on the Site whilst shelduck *Tadorna tadorna*, swift *Apis apis* and kestrel *Falco tinnunculus* were not considered to breed on the Site.
 - Seven species were listed as LBAP species. Linnet, dunnock, song thrush, skylark, yellowhammer, reed bunting and bullfinch.
- 3.1.3. A total of 17 waterbird species were recorded using coastal and wetland habitats in proximity to the Site during the targeted waterbird survey. Of these, 10 were identified as being qualifying features or listed on citations of the Humber Estuary SPA, SSSI, Ramsar and North Killingholme Haven Pits SSSI.
- Two species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); Avocet *Recurvirostra avosetta* and black-tailed godwit *Limosa limosa*.
 - Five species listed as qualifying features of the Humber Estuary SPA. Dunlin *Calidris alpina*, redshank *Tringa totanus*, black-tailed godwit, avocet and knot *Calidris canutus* were recorded in habitat in proximity to the Site.
 - Nine species listed as features of the Humber Estuary SSSI and Killingholme Haven Pits SSSI. Dunlin, redshank, black-tailed godwit, avocet, knot, teal *Anas crecca*, turnstone *Arenaria interpres* and ringed plover *Charadrius hiaticula* were recorded in habitat in proximity to the Site.
 - Eight species listed on the designation citation of the Humber Estuary Ramsar. Wigeon *Anas penelope*, teal, knot, avocet, black-tailed godwit, redshank, dunlin and curlew *Numenius arquata* were recorded in habitat in proximity to the Site.

3.2. DESK STUDY

3.2.1. **Table 3** below summarises a list of birds identified during the desk study search which are qualifying features or listed on citations for the designation of the Humber Estuary SPA, SSSI, Ramsar and North Killinholme Haven Pits SSSI

3.2.2. A summary of relevant protected and notable waterbird species listed were obtained from Greater Lincolnshire Nature Partnership (GLNP). These species were recorded within 2km of the Site within the last 10 years.

Table 3 - Records of protected and notable waterbird species within 2km

Species Common Name	Scientific Name	Annex I of Birds Directive	Sch 1 – Wildlife and Countryside Act	BoCC List	NERC s41	SPA, SSSI, Ramsar
Avocet	Recurvirostra avosetta	✓	✓	Amber	N/A	✓
Black-tailed Godwit	Limosa limosa	- N/A	✓	Red	✓	✓
Bittern	Botaurus stellaris	✓	✓	Amber		✓
Common scoter	Melanitta nigra	N/A	✓	Red	N/A	N/A
Garganey	Anas querquedula	N/A	✓	Amber	N/A	N/A
Goldeneye	Bucephalus clangula	N/A	N/A	Amber	N/A	✓
Green sandpiper	Tringa ochropus	N/A	✓	Amber	N/A	N/A
Greenshank	Tringa nebularia	N/A	✓	Amber		✓
Greylag Goose	Anser anser	N/A		Amber	N/A	N/A
Hobby	Falco subbuteo	N/A	✓		N/A	N/A
Kingfisher	Alcedo atthis	✓	✓	Amber	N/A	N/A
Leach's petrel	Oceanodroma leucorhoa	✓	✓	Amber	N/A	N/A

Species Common Name	Scientific Name	Annex I of Birds Directive	Sch 1 – Wildlife and Countryside Act	BoCC List	NERC s41	SPA, SSSI, Ramsar
Little gull	Hydrocoloeus minutus	N/A	✓	N/A	N/A	N/A
Little ringed plover	Cheradrius dubius	N/A	✓	N/A	N/A	✓
Marsh Harrier	Circus aeruginosus	✓	✓	Amber	N/A	✓
Merlin	Falco columbarius	✓	✓	Red	N/A	✓
Osprey	Pandion haliaetus	✓	✓	Amber	N/A	N/A
Pintail	Anas acuta	N/A	N/A	Amber	N/A	N/A
Purple Sandpiper	Calidris maritima	N/A	N/A	Amber	N/A	N/A
Red-throated Diver	Gavia stellata	✓	N/A	N/A	N/A	N/A
Ruff	Philomachus pugnax	✓	N/A	Red	N/A	✓
Spoonbill	Platalea leucorodia	✓	N/A	Amber	N/A	N/A
Velvet Scoter	Melanitta fusca	N/A	✓	Red	N/A	
Whimbrel	Numenius phaeopus	N/A	✓	Red	N/A	✓
Whooper Swan	Cygnus cygnus	✓	N/A	Amber	N/A	N/A
Wood Sandpiper	Tringa glareola	N/A	✓	Amber	N/A	N/A

- 3.2.3. Wetland Bird Survey (WeBS)² data recorded in proximity to the Site was obtained from the British Trust for Ornithology (BTO). Data was requested for three sectors covering the areas immediately adjacent to the Site and including stretches of the Humber Estuary to the north and south of the Site³.
- 3.2.4. Sector I, Halton Marshes is adjacent to the Site boundary to the east, along the estuary and foreshore, and covering agricultural land, two waterbodies, reedbed, areas of scrub and rough grassland as well as an extensive area of wet grassland to the north of the Site as far as East Halton Skitter which is managed for waders and waterfowl.
- 3.2.5. Sector J, Killingholme Marshes is adjacent to the southern boundary of the Site and is dominated by the estuary foreshore, agricultural land, salt marsh and reed bed. It is bordered by an extensive area of hardstanding for the storage of imported cars, port infrastructure and buildings.
- 3.2.6. Sector JJ, North Killingholme Pits lies immediately to the south of the Site boundary and includes the location of the North Killingholme Haven Pits SSSI and Yorkshire Wildlife Trust nature reserve. This sector is dominated by four lagoons and ponds bordered with common reed *Phragmites australis* and sea club-rush *Bolboschoenus maritimus*. It is bordered to the east, south and west by Sector J, Killingholme Marshes and Sector I, Halton Marshes, to the north.
- 3.2.7. Data provided for each of the WeBS sectors was in the five-year summary format with average numbers for recorded species over the five years 2013/14 – 2017/18 as well as monthly peaks over those five years
- 3.2.8. **Tables 4 to 6** below lists peak counts of waterbirds, specifically those listed as qualifying features or features on citations of the relevant designated sites between August and October. For records of waterbirds between October and March see the North Killingholme DCO Amendments, Wintering Bird Survey Report (WSP, 2020).

Table 4 - Summary of Halton Marshes (Sector I) WeBS Data for 2013/14 – 2017/18: Peak Monthly Count (over five years) and Five Year Monthly Average

Month	August		September		October	
	Peak	Average	Peak	Average	Peak	Average
Greylag Goose (British/Irish)	155	39	90	0	0	0
Mute Swan	2	1	0	30	0	0
Shelduck	0	0	0	0	0	0
Shoveler	0	0	0	0	0	0

² WeBS data is recorded at wetland sites and are counted once per month, providing data for population and trends in abundance and distribution. The network of sites legally protected for their importance to wintering waterbirds depends fundamentally on the WeBS counts. WeBS is a partnership jointly funded by the British Trust for Ornithology, with fieldwork conducted by volunteers. in association with the Wildfowl and Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,

³ WeBS sectors can be viewed at <https://app.bto.org/websonline/sites/data/sites-data.jsp#lon=-4.5263672&lat=54.8006849&zoom=5>

Month	August		September		October	
	Peak	Average	Peak	Average	Peak	Average
Gadwall	0	0	0	0	0	0
Wigeon	0	0	0	0	0	0
Mallard	2	0	5	4	7	4
Pintail	0	0	0	0	0	0
Teal	0	0	0	0	3	2
Pochard	1	0	0	0	0	0
Tufted Duck	2	1	0	2	0	0
Little Grebe	0	0	0	0	0	0
Great Crested Grebe	2	1	2	1	3	2
Grey Heron	2	1	0	0	0	0
Little Egret	2	1	3	1	0	0
Cormorant	7	5	7	6	3	3
Moorhen	0	0	0	0	0	0
Coot	3	1	0	0	0	0
Oystercatcher	0	0	0	0	0	0
Lapwing	37	10	61	20	0	0
Ringed Plover	18	5	19	6	0	0
Curlew	4	3	28	9	4	2
Black-tailed Godwit	42	11	7	2	28	16
Turnstone	11	3	2	1	1	1
Dunlin	7	2	47	16	245	123
Common Sandpiper	1	0	0	0	0	0
Redshank	31	11	26	10	41	33

Table 5 - Summary of Killingholme Marshes (Sector J) WeBS Data for 2013/14 – 2017/18: Peak Monthly Count (over five years) and Five Year Monthly Average

Month	August		September		October	
Species	Peak	Average	Peak	Average	Peak	Average
Greylag Goose (British/Irish)	0	0	0	0	0	0
Mute Swan	0	0	0	0	0	0
Shelduck	5	2	49	25	18	18
Shoveler	0	0	0	0	0	0
Gadwall	4	1	0	0	0	0
Wigeon	0	0	0	0	0	0
Mallard	3	1	3	1	3	2
Pintail	0	0	0	1	0	0
Teal	2	1	16	9	57	57
Tufted Duck	0	0	0	0	0	0
Little Grebe	0	0	0	0	0	0
Grey Heron	1	0	0	0	0	0
Little Egret	2	1	0	0	1	1
Cormorant	1	0	0	0	0	0
Water rail	0	0	0	0	0	0
Moorhen	0	0	2	1	0	0
Coot	2	1	5	1	20	10
Oystercatcher	0	0	0	0	0	0
Avocet	0	0	0	0	0	0
Lapwing	0	0	0	0	0	0
Ringed plover	305	76	5	1	0	0
Little-ringed Plover	0	0	0	0	0	0
Curlew	35	19	53	35	28	28
Bar-tailed godwit	0	0	0	0	0	0

Month	August		September		October	
Species	Peak	Average	Peak	Average	Peak	Average
Black-tailed Godwit	1650	413	2450	613	0	0
Ruff	0	0	0	0	0	0
Dunlin	6	3	22	6	70	70
Snipe	0	0	0	0	0	0
Redshank	52	13	55	22	34	34

Table 6 - Summary of Killingholme Pits (Sector JJ) WeBS Data for 2013/14 – 2017/18: Peak Monthly Count (over five years) and Five Year Monthly Average

Month	August		September		October	
Species	Peak	Average	Peak	Average	Peak	Average
Greylag Goose (British/Irish)	11	2	55	20	91	30
Mute Swan	0	0	0	0	0	0
Shelduck	0	0	1	0	34	0
Shoveler	0	0	0	0	0	11
Mallard	5	1	9	3	0	0
Teal	2	0	5	1	10	5
Grey Heron	1	0	2	1	2	1
Little Egret	7	2	7	4	4	1
Cormorant	1	0	0	0	0	0
Water rail	1	0	0	0	0	0
Moorhen	0	0	0	0	0	0
Coot	2	0	0	0	0	0
Oystercatcher	0	0	1	0	0	0
Avocet	0	0	12	3	12	4
Lapwing	41	8	128	35	135	77
Curlew	4	1	1	1	1	0

Month	August		September		October	
Species	Peak	Average	Peak	Average	Peak	Average
Black-tailed Godwit	2650	1755	3550	1488	3810	2020
Ruff	0	0	0	0	7	2
Dunlin	4	1	160	43	180	66
Snipe	0	0	0	0	0	0
Redshank	325	105	198	78	157	66
Kingfisher	0	0	0	0	0	0

3.3. HABITATS AND CONDITIONS

- 3.3.1. The Site is largely industrial and predominantly made up of hardstanding and buildings. Areas in the west of the Site include more semi-natural habitats such as scrub, tree lines and grasslands. Standing water and reedbed habitats are also located to the west.
- 3.3.2. Habitats outside of the Site are detailed below. A mosaic of coastal saltmarsh and intertidal mudflats are located to the east of the Site. Intertidal boulders and rocks, large waterbodies, marshy and other grasslands are located to the north. A large saline lagoon is located to the south of the Site. Outside of the Site's western boundary is an area of improved grassland and hardstanding that previously sited the old Centrica power station. All habitats located within the Site and up to 30m outside are displayed on Figure 4 of the PEA (WSP, 2020).
- 3.3.3. The Site itself is an active port of the Humber Sea Terminal. The Site is subject to consistent levels of disturbance as a result of regular movements of vehicles and humans across the majority of the Site. The movements include large numbers of cars and commercial vehicles as well as goods and haulage vehicles either arriving or leaving on ships docked to the east of the Site.
- 3.3.4. Overall, habitats and conditions at the Site remain similar to those recorded in advance of submission of the 2014 DCO application.

3.4. BREEDING BIRD SURVEY

RESULTS OF BREEDING BIRD SURVEY

- 3.4.1. The species listed within Table 7 have been recorded as confirmed, probable or possible breeders during the breeding bird survey. In addition to the recorded breeding status and evidence for this, this table includes an indicative number of territories present on, or immediately adjacent to, the Site. Records from all survey visits of species which are of conservation concern are mapped on Figure 3a, b and c
- 3.4.2. Species recorded on or over the Site during the breeding bird survey but not considered to breed within the Site are listed in Table 8. This included birds flying over the Site or loafing or foraging on the Site for which suitable breeding habitat was not present within the Site or those where no

behaviour suggesting breeding was recorded, and birds which were considered to be present as passage migrants.

Table 7 - Confirmed, Probable or Possible Breeders on Site

Species							Indicative territory numbers on or immediately adjacent to the Site			
Common name	Latin name	NERC Act 2006 Section 41	BoCC Red list	BoCC Amber list	LBAP	Breeding Status on the Site	Notes	Confirmed	Probable	Possible
Blackbird	<i>Turdus merula</i>					Breeding	Blackbirds were heard singing and calling throughout the Site. A male and female pair were recorded along the tree line in the north of the Site. A male was recorded carrying food in the north.	3		
Linnet	<i>Carduelis cannabina</i>	✓	✓			Probable	Linnet song was heard in patches across the site. A linnet flock was also recorded to the south west.		2	
Blackcap	<i>Sylvia atricapilla</i>					Breeding	Black cap song was heard from almost all scrub boundaries and where vegetation was dense.		2	
Willow warbler	<i>Phylloscopus trochilus</i>					Probable	Willow warbler song was recorded near the waterbody in the north over two visits. Willow warbler song was also recorded near the reedbed in the south.		2	
Goldfinch	<i>Carduelis carduelis</i>					Probable	Goldfinch were noted in flocks throughout the transect area. Goldfinch were only noted commuting across Site in flocks.		1	
Coot	<i>Fulca atra</i>					Probable	A single coot individual was recorded over two visits inhabiting the waterbody in the north.		1	
Mute swan	<i>Cygnus olor</i>			✓		Possible	A single mute swan was recorded loafing within the watercourse located in the north of the Site. The individual was recorded during the PEA (early May) and during two survey visits (May and June).			1
Robin	<i>Erithacus rubecula</i>					Probable	Robins were recorded singing and calling within the vegetation along the northern boundary.			1
Wren	<i>Troglodytes troglodytes</i>					Breeding	Continuous wren activity was recorded in all vegetated areas of the Site. Predominantly along the northern boundary and within the scrub/treeline to the east of the waterbody. Wrens were heard singing and calling and skulking in the undergrowth.	2		
Woodpigeon	<i>Columba palumbus</i>					Possible	Numerous woodpigeons were recorded across the Site. This included individual birds 'perched' on tree limbs, to the west within the northern and southern boundaries of the Site.	1		
Reed warbler	<i>Acrocephalus scirpaceus</i>					Probable	Reed warblers were heard and seen within and around the scrub fringe of the waterbody in the north of the Site. Continuous reed warbler song was also recorded within the reedbed to the south.		2	
Great tit	<i>Parus major</i>					Probable	Great tit song was heard within the northern boundary of the Site on two occasions.		1	

Species		NERC Act 2006	BoCC		LBAP	Breeding Status on the Site	Notes	Indicative territory numbers on or immediately adjacent to the Site		
Common name	Latin name		Section 41	Red list				Amber list	Confirmed	Probable
Dunnock	<i>Prunella modlaris</i>	✓		✓	✓	Probable	Dunnock song was noted in northern and southern sections of the transect area. Two individuals were noticed perching on a building in the north.		2	
Yellowhammer	<i>Emberiza cintronella</i>	✓	✓		✓	Breeding	Yellowhammer activity was recorded throughout the area covered by the transect. Males and females were recorded together along the western boundary. Individual yellowhammers were recorded on more than one occasion singing from a building in the south west.		2	
Chaffinch	<i>Fringilla coelebs</i>					Probable	Chaffinch song was heard throughout the area covered by the transect. A male and female pair was recorded on the ground to the north of the Site during the May transect.		2	
Blue tit	<i>Cyanistes caerulea</i>					Probable	A male and female blue tit was recorded within the northern scrub boundary during the May visit. Alarm calls were also noted in this area during the surveys.		1	
Whitethroat	<i>Sylvia communis</i>					Probable	An individual whitethroat was recorded persistently singing over all three survey visits within the scrub lining the western boundary of the Site. Alarm churring was also recorded in this location. Whitethroat song was also noted in the south of the Site within the scrub and grassland areas.		2	
Song thrush	<i>Turdus philomelos</i>	✓	✓		✓	Probable	Song thrush song was noted in the south and west of the transect area. An individual song thrush was spotted on a singing post in the south of the site.		1	
Chiffchaff	<i>Phyloscopus collybita</i>					Probable	Chiffchaff males were recorded at the top of scrub lines singing. Chiffchaff were heard predominantly in the north eastern scrub boundary of the transect area and within the reedbed scrub fringe to the south.		2	
Tree sparrow	<i>Passer montanus</i>	✓	✓		✓	Breeding	A tree sparrow nest was recorded within a building to the south of the transect area. The nest was confirmed when tree sparrows were entering a hole at the top of the building with nesting material.	1		
Reed bunting	<i>Emberiza schoeniclus</i>	✓		✓	✓	Possible	Reed bunting were observed occupying the scrub boundary to the west. Reed bunting song was recorded within the south eastern scrub.		2	
Carrion crow	<i>Corvus corone</i>					Possible	A single carrion crow was recorded commuting from the north to the south in July.			
Jackdaw	<i>Corvus monedula</i>					Possible	A jackdaw individual was observed flying from south to north.			
Swallow	<i>Hirundo rustica</i>					Possible	Swallows were recorded commuting over the Site on all three survey visits.			
Sandmartin	<i>Riparia riparia</i>					Breeding	A sandmartin bank was recorded in the south west of the Site. Numerous sandmartins (adults	1		

Species		NERC Act 2006	BoCC		LBAP	Breeding Status on the Site	Notes	Indicative territory numbers on or immediately adjacent to the Site		
Common name	Latin name		Section 41	Red list				Amber list	Confirmed	Probable
							and young) were recorded emerging from the bank with 15+ individuals recorded flying above the bank over the May and June visits.			
Skylark	<i>Alauda arvensis</i>		✓		✓	Possible	Skylarks were recorded singing and displaying song flight along the western boundary of the Site.	1		
Moorhen	<i>Gallinula chloropus</i>					Possible	An individual moorhen was recorded in the waterbody to the north in June.			1
Little grebe	<i>Tachybaptus ruficollis</i>					Breeding	A female little grebe was recorded with three fledglings within the waterbody during the survey visit in July.	1		
Long-tailed tit	<i>Aegithalus caudatus</i>					Probable	Long-tailed tit song was heard within the scrub boundary int the east of the transect area.		1	
Starling*	<i>Sturnus vulgaris</i>	✓	✓			Possible	Individuals were seen flying over the Site during the PEA.			
Collared dove*	<i>Streptopelia decaocto</i>					Possible	Two individuals recorded during the PEA flying from the north of the Site.			
Bullfinch	<i>Pyrrhula pyrrhula</i>			✓	✓	Breeding	A male and female pair was recorded in the north near the building. It is likely that they were in proximity to a nest site.	1		

Table 8 - Non-breeding birds recorded on the Site

Species		WCA 1981	NERC Act 2006	BoCC			
Common name	Latin name	Schedule 1	Section 41	Red list	Amber list	UKBAP	Notes
Kestrel	<i>Falco tinnunculus</i>				✓		A single kestrel was recorded hovering above the Site in the north in July.
Sparrowhawk	<i>Accipiter nisus</i>						A single sparrow hawk was observed commuting across the Site from the south.
Shelduck	<i>Tadorna tadorna</i>				✓		A shelduck pair was recorded commuting over the Site. It is likely that they were commuting from the shoreline of the Humber Estuary to the fields surrounding the Site.
Red-legged Partridge	<i>Alectoris rufa</i>						A red legged partridge was heard in the north of the transect area, along the scrub boundary. It is likely that this individual was calling from outside the Site.
Swift*	<i>Apis apis</i>				✓		Swifts were recorded commuting and circling over the Site and singing during early May.
Pheasant	<i>Phasianus colchicus</i>						A single pheasant call was recorded in the North of the transect area. It is likely that this individual was located outside of the Site.
Little egret	<i>Egretta garzetta</i>						A single little egret was recorded commuting over the site over two visits, from west to east.

- 3.4.3. The results show that birds are widely distributed in the west of Site. Areas with the highest levels of breeding activity within the Site comprise the boundary habitats and habitats near the northern and southern boundaries. Given the cover of arable farmland and grassland adjacent to the Site, it is unsurprising that farmland birds such as skylark, linnet, yellowhammer and reed bunting were recorded.
- 3.4.4. Such widespread birds included goldfinch *Carduelis carduelis*, robin *Erithacus rubecula*, wren *Troglodytes troglodytes*, blackbird *Turdus merula*, blue tit *Cyanistes caerulea*, great tit *Parus major*, carrion crow *Corvus corone*, woodpigeon *Columba palumbus* and chaffinch *Fringilla coelebs*. These species are common and widespread species as listed in the State of UK Birds (BTO, 2016).
- 3.4.5. Widespread warblers such as blackcap (*Sylvia atricapilla*), chiffchaff (*Phylloscopus collybita*), willow warbler *Phylloscopus trochilus* and reed warbler *Acrocephalus scirpaceus* were present within the Site, with whitethroat *Sylvia communis* also recorded.
- 3.4.6. Little grebe, shelduck and mute swan are contributing species to the Humber Estuary SSSI breeding assemblage.

RESULTS OF WATERBIRD SURVEY

- 3.4.7. Results of the waterbird survey are summarised in Table 9 below. The table outlines all species recorded during the waterbird survey including information on whether they are qualifying features of the Humber Estuary SPA or whether they are listed on citations of other designated sites. The peak count for each species and number of surveys encountered on is also noted. Flight lines and an approximate number of birds in specific locations of each species are displayed on Figures 4a – J.

Table 9 - Species of importance to the Humber Estuary SPA, SSSI and Ramsar and Killingholme Haven Pits SSSI

Species		Humber Estuary SPA	Humber Estuary SSSI	Humber Estuary Ramsar	NERC Act 2006	BoCC4		Peak Count	Number of surveys present
Common name	Latin name				Section 41	Red list	Amber list		
Curlew	<i>Numenius arquata</i>		✓	✓		✓		6	3
Dunlin	<i>Calidris alpina</i>	✓	✓ (passage)	✓			✓	47	3
Redshank	<i>Tringa totanus</i>	✓	✓ (passage)	✓	✓		✓	88	3
Black-tailed godwit	<i>Limosa limosa</i>	✓	✓ (passage)	✓		✓		550	3
Avocet	<i>Recurvirostra avosetta</i>	✓	✓	✓			✓	98	2
Knot	<i>Calidris canutus</i>	✓	✓	✓			✓	26	2
Greylag goose	<i>Anser anser</i>						✓	400	2
Great Black-backed	<i>Larus marinus</i>						✓	2	1
Mallard	<i>Anas platyrhynchos</i>						✓	2	2
Teal	<i>Anas crecca</i>		✓	✓			✓	21	2
Wigeon	<i>Anas penelope</i>			✓			✓	8	2
Turnstone	<i>Arenaria interpres</i>		✓				✓	7	3
Cormorant	<i>Phalacrocorax carbo</i>							5	1
Ringed Plover	<i>Charadrius hiaticula</i>		✓ (passage)			✓		8	2

Species		Humber Estuary SPA	Humber Estuary SSSI	Humber Estuary Ramsar	NERC Act 2006	BoCC4			
Common name	Latin name				Section 41	Red list	Amber list	Peak Count	Number of surveys present
Common Sandpiper	<i>Actitis hypoleucos</i>							3	1
Little egret	<i>Ezetta garzetta</i>							2	1
Black-headed gull	<i>Chroicocephalus ridibundus</i>						✓	8	1

Curlew

- 3.4.8. Curlew were recorded during three of the four survey visits, on VP 1, 2 and 3. Individuals were recorded in small numbers using the saline lagoons in North Killingholme Haven Pits SSSI. Curlew was also recorded commuting along the intertidal zone to the east of the Site and foraging along the shoreline to the north. Of the targeted SPA/important bird species, curlew was recorded least frequently with a peak count of six individuals recorded at VP2.

Dunlin

- 3.4.9. Dunlin were recorded at a peak count of 47. Dunlin flocks were recorded using the saline lagoons to the south. Dunlin were also frequently recorded commuting along the shoreline to the east of the Site. Dunlin were recorded most frequently on VP3.

Redshank

- 3.4.10. A peak count of 88 redshank was recorded at VP3. Redshank were recorded most frequently within the saline lagoons to the south and commuting and loafing around VP1 to the north of the Site.

Black-tailed godwit

- 3.4.11. Black-tailed godwit were recorded in large numbers over the survey period with more than 400 individuals recorded loafing in the saline lagoons to the south of the Site forming a large roost colony with avocet and redshank. The black-tailed godwit was the most frequent species recorded during the survey visits. Flocks of black-tailed godwits were observed commuting out of the lagoons to the north over the Humber Sea Terminal and towards the shoreline to the east of the Site. Commuting activity was also noted near VP 1 to the north of the Site. Numerous black-tailed godwit were also recorded with coloured rings around their legs, both in the saline lagoons and near VP1. These rings indicate Icelandic studied godwits *Limosa limosa islandica*.

Avocet

- 3.4.12. Avocet were recorded predominantly loafing and feeding in the lagoons to the south of the Site. Little activity was recorded near VP1 and no activity was recorded at all other VPs.

Knot

- 3.4.13. A peak count of 26 knot was recorded during the survey visit to VP3. Knot were recorded feeding within the lagoons and commuting out towards the Humber Estuary.

Teal

- 3.4.14. Teal were recorded most frequently at VP 1 to the north of the Site. Intermittent flight was observed at this vantage point. Small numbers were also recorded within the lagoons to the south.

Wigeon

- 3.4.15. Wigeon were observed commuting along the intertidal zone of the Humber Estuary in proximity to VP 1 only. A peak count of eight birds were recorded in flight.

Turnstone

- 3.4.16. Turnstone were recorded in small numbers in proximity to VP 2. A group of seven birds were recorded commuting along the shoreline to the east of the Site.

Ringed plover

- 3.4.17. Ringed plover were observed in flight, commuting along the shoreline to the east of the Site in very small numbers. Five individuals were recorded foraging and loafing along the shoreline in proximity to VP2. These individuals were made up of two adults and three young birds. The young birds were likely resident juveniles.

Greylag goose

- 3.4.18. Large numbers of greylag geese were recorded during the waterbird survey. A peak count of 400 was recorded during the survey visit at VP3. The birds were recorded loafing in the saline lagoons before commuting intermittently in sub-skeins over the Site and to the north-west settling in an arable field.

PASSAGE BIRDS

- 3.4.19. Black-tailed godwit, dunlin, redshank and ringed plover are listed on the citation of the Humber Estuary SSSI as passage birds. These birds were all recorded during the waterbird surveys in September. Black-tailed godwits were by far the most frequently recorded wader in September. The numbers recorded during the survey and listed in the WeBS table for sectors J (peak counts in August and September of 1650 and 2450) and JJ (peak counts in August, September and October of 2650 3550 and 3810) indicate that part of the population recorded in proximity of the Site are made up of passage migrants including subspecies *islandica*. These numbers are significantly larger than the peak counts of black-tailed godwits recorded throughout the wintering periods.
- 3.4.20. This is likely the case for ringed plover given the peak count of 305 in August in WeBS sector J and the significant decrease in peak counts throughout the wintering period recorded during the 2019 surveys.
- 3.4.21. Redshank numbers were also greater than other waders (except for black-tailed godwit) recorded during the survey. WeBS sector JJ appears to show a decline in peak counts of redshank during the wintering period. WeBS Sector J however appears to show the opposite. It's likely that numbers of redshank recorded in proximity of the Site between August and October are made up of both passage and wintering visitors, with birds leaving the Humber Estuary to move further south between September and October, whilst the wintering population arrives around a similar time.

3.5. ASSESSMENT AGAINST PREVIOUS FINDINGS

BREEDING BIRDS

- 3.5.1. During the breeding bird surveys (BBS) carried out in 2010 by Landscape Science Consultancy, 39 species of breeding bird were recorded with a total of 56 breeding territories identified. All birds were recorded within the same area of survey as the BBS carried out in 2019 by WSP. Of the 56 territories identified, 32 were possible, 21 were probable and three were confirmed breeding territories.
- 3.5.2. Of all bird species identified during the 2010 surveys, six species were BoCC red listed and 11 were BoCC amber listed. Seven of the species were identified as SPI as per Section 41 of the NERC Act 2006. The majority of birds noted within the survey area were recorded using scrub boundary habitats such as those to the north, west and south, and waterbodies. The survey area was considered to be of moderate ecological value as assessed by Landscape Science Consultancy in 2010.

- 3.5.3. During the BBS in 2019, 39 species of breeding bird were recorded with 41 breeding territories. Of these species, 32 were considered to be confirmed, probable or possible breeders on Site, with seven being noted as non-breeders. Of the 39, 13 were protected and notable (as per S41 of the NERC Act, BoCC4 and LBAP). Three species recorded during the BBS in 2019 were birds listed as contributing species to the Humber Estuary SSSI breeding bird assemblage (little grebe, mute swan and shelduck). The habitats used by the breeding bird community were predominantly scrub, tree lines and waterbody habitats. The Site in its entirety was assessed as having low to moderate ecological value for breeding birds as per the results of the PEA and BBS. Moderate value was identified in the west of the Site where a greater number of semi-natural habitats were present (see Figure 2), the east was assessed as having negligible to low ecological value.
- 3.5.4. 33 of the 39 bird species recorded during the 2010 BBS were recorded during the 2019 BBS by WSP. The table below shows bird species that were only recorded during one BBS campaign.

Table 10 - List of bird species present in only one survey period (2010 or 2019)

BBS 2010	BBS 2019
Greenfinch	Sandmartin
House sparrow*	Jackdaw
Meadow pipit*	Tree sparrow*
Sedge warbler	Kestrel*
Ruddy duck	Sparrowhawk
Pochard*	Bullfinch*
Tufted duck	Chiff chaff
Lapwing*	Little egret

*protected and/or notable species

- 3.5.5. A similar number of breeding species were recorded during both surveys. Birds were encountered using the same habitats within the Site during both survey campaigns, predominantly scrub patches, scrub borders and waterbody/reedbed habitats. A similar number of breeding territories were also identified during both surveys. Of the species not recorded on both surveys, four were protected and notable in 2010 and three were protected and notable in 2019. No Schedule 1 species were recorded during either survey. It is likely that bird species recorded during 2010 but not in 2019 were using other more suitable habitats off-Site during the 2019 surveys. This is likely the same for bird species recorded in 2019 but not in 2010.
- 3.5.6. It is evident that the ecological value of the Site for breeding birds has remained at a similar level as identified in 2010, with suitable nesting habitat located primarily in the west. Although not identical, the breeding bird community of the Site is similar between 2010 and 2019 surveys, with six species differing.

- 3.5.7. Due to the similarities in bird communities and ecological value, the assessment of breeding birds in 2019 has not undergone a significant change and remains the same as reported in the ES.

WATERBIRDS

- 3.5.8. Data from intertidal surveys surrounding the Site was used to inform an assessment on waterbirds, in particular those listed as qualifying or important features of statutory designated sites during the ES. The data was obtained from the Institute of Estuarine and Coastal Studies at the University of Hull on behalf of Able UK to support the Able Marine Energy Park project (AMEP) located just south of the Project Site. The surveys which were undertaken between April 2010 and April 2011 indicated seasonal fluctuations of birds using the intertidal zone. The surveys indicated that the intertidal zone was of particular importance to dunlin, black-tail godwit, redshank, ringed plover and curlew based on activity and usage. Populations of black-tailed godwit, redshank and ringed plover are likely to be made up of passage birds. The numbers and regular feeding activity indicated that the intertidal zone was an important feeding area for black-tailed godwit, redshank and avocet.
- 3.5.9. Targeted waterbird surveys were undertaken in 2019 to record the distribution and abundance of these species in proximity to the Site during late summer/early autumn. These surveys were also undertaken to monitor the arrival of large flocks of waterbirds on the Humber Estuary including activity of possible passage migrants.
- 3.5.10. A total of 10 SPA/SSSI species were recorded during the surveys, with four of these species being identified as passage migrants (as listed as citations on North Killingholme SSSI). These species were made up of numbers likely to include early arrivals of wintering waders, a small number of resident breeders and migrants. Wintering and passage species include dunlin, redshank, black-tailed godwit, ringed plover and turnstone. These species overwinter on the Humber Estuary with some individuals stopping off during autumn before migrating to Africa.
- 3.5.11. The waterbird surveys undertaken in 2019 indicate that North Killingholme Haven Pits SSSI and the intertidal zone in this area are important habitats for roosting, feeding and commuting waterbirds, for both wintering and passage birds. Numbers and activity of important species such as black-tailed godwit, redshank and dunlin remain relatively similar to the results of the AMEP intertidal surveys, suggesting that the area has not undergone a significant change in condition and remains as important as previously assessed. Numbers of black-tailed godwit and redshank recorded during the water bird surveys in September 2019 suggest that a percentage of these birds are passage migrants, likely Icelandic birds for which the Humber Estuary is an important stopping point before migration further south. Furthermore, black-tailed godwit and redshank individuals were recorded with European colour banded rings within the saline lagoons to the south.
- 3.5.12. No SPA/SSSI species were recorded using the Site during the targeted waterbird surveys. It was also assessed as being unsuitable to support these species given the industrial nature of the Site. This assessment affirms the assessment in the ES which states that the Site is unlikely to support SPA waterbirds.

4. IMPLICATIONS FOR DEVELOPMENT

4.1. OVERVIEW

- 4.1.1. Birds were recorded displaying breeding behaviour and showing signs of territorial behaviour within the Site. Tree sparrow and sand martin nesting sites were also recorded to the south of the Site. As no Schedule 1 birds were recorded during the BBS, no specific mitigation measures are required. However, as outlined in the ES, best practice guidance should be implemented during the construction period. This includes pre-construction vegetation clearance being undertaken outside of the breeding bird period (October – February). Scrub habitats such as scrub boundaries should be retained where possible. These measures remain the same as outlined in the ES.
- 4.1.2. No SPA/SSSI species were recorded using the Site to forage or roost during late summer/early autumn. Birds were observed commuting over but not stopping within the Site. The saline lagoons located at Killingholme Haven Pits SSSI to the south of the Site contained large numbers of SPA/SSSI species some of which are identified as passage birds on the Humber Estuary SSSI citation. Two birds (avocet and black-tailed godwit) are listed as Schedule 1 birds as per the Wildlife and Countryside Act 1981 (as amended).
- 4.1.3. The stretch of the Humber Estuary between the Humber Sea Terminal and areas just to the north of the Site were regularly used as a commuting corridor by SPA/SSSI waterbirds. Some species were also recorded foraging along the shoreline. Continuous commuting of SPA birds such as redshank, black-tailed godwit and dunlin between the saline lagoons and the intertidal regions to the north of the Site was regularly observed. Similar peak counts were encountered during the WeBS of sector I, J and JJ.
- 4.1.4. As there is no significant change in composition and behaviour of birds recorded during late summer and autumn, mitigation measures outlined in the ES and secured as Requirements to the granted Order remain appropriate. A summary of the relevant (to SPA/Ramsar/SSSI birds) ecology and biodiversity Requirements/Conditions from the made DCO and Deemed Marine Licence (DML) is provided below in Table 11.

Table 11 - Relevant Requirements and Conditions

Requirement/Condition	Summary of Requirement/Condition
Requirement 7 of DCO	Requires a detailed landscaping scheme and management plan to be submitted and approved by the relevant planning authority prior to commencement.
Requirement 8 of DCO	Requires maintenance and management of landscape planting, with a five year aftercare period after vegetation has been planted
Requirement 11 of DCO	Requires a written plan for dealing with surface and foul water during construction to be submitted and approved by the relevant planning authority prior to commencement.
Requirement 12 of DCO	Requires a written plan for dealing with surface and foul water during operation to be submitted and approved by the relevant planning

Requirement/Condition	Summary of Requirement/Condition
	authority prior to commencement.
Requirement 15 of DCO	Requires a Construction Environmental Management Plan to be submitted and approved by the relevant planning authority prior to commencement. This to be substantially in accordance with the draft CEMP certified by the SoS as part of the original DCO.
Requirement 19 of DCO	Requires an acoustic design report to be submitted and approved by the relevant planning authority prior to commencement of construction of the power plant, to specify the detailed measures for the control of operational noise.
Requirement 23 of DCO	Imposes operational restrictions on noise levels at two locations on the northern edge of North Killingholme Haven Pits SSSI. A scheme for achieving this must be submitted and approved by the relevant planning authority in consultation with Natural England, prior to commencement. A programme of monitoring to ensure compliance is also proposed.
Requirement 25 of DCO	Requires a piling method statement to be produced prior to any piling operations commencing, for the purpose of protecting the North Killingholme Haven Pits SSSI and Humber Estuary SPA.
Requirement 26 of DCO	<p>Requires a strategy for mitigating effects from construction on North Killingholme Haven Pits to be submitted and approved by the relevant planning authority in consultation with Natural England in relation to works 6a and 6b (fuel conveyer system). The strategy shall include:</p> <p>Restrictions on piling to be between the months of January to March only;</p> <p>Details of screening including hoarding along the southern boundary of the works;</p> <p>Retention of existing vegetation; and</p> <p>Details of construction lighting to minimise lightspill to the North Killingholme Haven Pits.</p>
Requirement 30 of DCO	Requires a written scheme for the management and mitigation of dust emissions to be submitted and approved by the relevant planning authority prior to commencement of construction.
Requirement 31 of DCO	Requires a detailed written permanent lighting scheme to be submitted and approved by the relevant planning authority prior to commencement of construction, including details of how impacts on ecological receptors will be avoided and minimised.
Requirement 48 of DCO	Requires a written scheme describing how train speeds adjacent to North Killingholme Haven Pits will be limited to 10km/h (or other measures to achieve comparable noise attenuation) to be submitted and approved by the relevant planning authority in consultation with Natural England prior to ant deliveries of solid fuel for the Project by train. Provisions for noise monitoring shall be included within the scheme.

Requirement/Condition	Summary of Requirement/Condition
Requirement 49 of DCO	Requires details of construction acoustic hoarding along the northern and western boundaries of the operations area to be submitted and approved by the relevant planning authority prior to commencement.
Requirement 50 of DCO	Requires a written scheme of planting (combined with other measures as appropriate) for the visual attenuation of train movements adjacent to North Killingholme Haven Pits to be submitted and approved by the relevant planning authority in consultation with Natural England prior to commencement of deliveries for the Project by train.
Requirement 51 of DCO	Requires a strategy for controlling noise levels during construction of Work Nos. 6a and 6b adjacent to North Killingholme Haven Pits to be submitted and approved by the relevant planning authority in consultation with Natural England in advance of those works commencing.
Requirement 19 of DML	Requires a scheme for minimising the impacts of the cooling water intake system in the Humber Estuary on the aquatic environment to be submitted and approved in writing by the MMO prior to licensed activities commencing. This shall include measures to minimise entrainment and entrapment of fish, details of the concentrations of biocides, and a process for monitoring and gaining approval from the MMO for any remedial measures that are identified as required during monitoring.
Requirement 20 of DML	Requires a piling method statement to be submitted and approved by the MMO in consultation with the Environment Agency and Natural England prior to commencement of piling operations.
Requirement 21 of DML	Requires that no percussive piling is carried out between 7 April and 1 June inclusive in any calendar year.
Requirement 22 of DML	Requires that any piling completed in March, September, or October is not undertaken at low tide.
Requirement 23 of DML	Requires that no percussive piling is carried out before 0600 or after 2200hrs on any day.

4.2. LEGAL COMPLIANCE

CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017 (HABITATS REGULATIONS)

- 4.2.1. The Habitats Regulations Part 1 Regulation 10 (2) & (3) state that local authorities *‘must take such steps in the exercise of their functions as they consider appropriate to contribute to...the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such habitat...’*. The legislation continues to state that economic and recreation requirements must be taken into consideration in considering which measures are appropriate.

WILDLIFE AND COUNTRYSIDE ACT 1981 (AS AMENDED)

- 4.2.2. Under the Wildlife and Countryside Act 1981 (as amended) all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use.
- 4.2.3. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young.
- 4.2.4. Two birds listed on Schedule 1 were recorded during the waterbird surveys. These were avocet and black-tailed godwit however, these species were recorded off-Site outside of the breeding bird season.

NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006

- 4.2.5. The NERC Act 2006 reinforces the duty upon all public authorities, including planning authorities, to have regard for the conservation of biodiversity when discharging their duties. The Act refines the definition of biodiversity conservation, stating that it includes restoring or enhancing a population or habitat. Section 41 of the NERC Act requires the Secretary of State to list habitats and species of principal importance (HPIs and SPIs) for the conservation of biodiversity in England. The habitats and species listed in accordance with Section 41 largely replicate those listed on the UK Biodiversity Action Plan (BAP) which occur in England (however there are exceptions). Six SPI (also UKBAP species) were recorded on the Site, as listed in section 3.

4.3. OTHER CONSIDERATIONS

BIRDS OF CONSERVATION CONCERN RED AND AMBER LISTS

- 4.3.1. The UK's leading bird conservation organisations reviewed the most up to date information on the status of birds in the UK and elsewhere in their range to produce the third review of the status of birds which occur regularly in the UK. This is presented as the Birds of Conservation Concern 4 (Eaton *et al*, 2015), comprising a 'red list' of species of high conservation concern, an 'amber' list of species of moderate conservation concern, with other species that do not qualify under red or amber list criteria on the green list.
- 4.3.2. To qualify on the red list species may be listed as globally threatened by IUCN, have suffered a historical decline without substantial recent recovery, or a decline of more than 50% in breeding or non-breeding populations, or a 50% contraction in breeding range over 25 years (or the longer term).
- 4.3.3. Amber list species can be those listed as Species of European Conservation Concern, those which have suffered a historical decline but shown significant recent recovery, have shown a decline of between 25 and 50% in breeding or non-breeding populations, or a contraction in breeding range of between 25 and 50% over 25 years (or the longer term) or be rare or localised breeders in the UK, or be species for which 20% of the breeding or non-breeding population is found in the UK.
- 4.3.4. Red or amber listing does not confer additional protection under legislation or planning policy, however it provides a basis for informing evaluation of a Site and for targeting conservation effort and is a widely used resource for interpreting bird populations.

5. CONCLUSIONS

- 5.1.1. A total of 39 species were recorded on or over the Site during the breeding bird survey, of these 32 are considered to breed on or adjacent to the Site. Of these species, 13 are legally protected and/or species of conservation concern.
- 5.1.2. The numbers of birds recorded within each category are listed below, it should be noted categories are not exclusive and a species can be listed in more than one conservation category (for example listed as both SPI and LBAP and as either a red or amber list BoCC).
- Seven species listed as SPI in accordance with Section 41 of the NERC Act 2006 (also UKBAP species). Linnet *Carduelis cannabina*, dunnock *Prunella modularis*, yellowhammer *Emberiza citrinella*, song thrush *Turdus philomelos*, tree sparrow *Passer montanus*, starling *Sturnus vulgaris* and reed bunting *Emberiza Schoeniclus* were confirmed, probable or possible breeders on the Site.
 - Six Birds of Conservation Concern (BoCC) red list species. Linnet, yellowhammer, song thrush, tree sparrow, starling *Sturnus vulgaris* and skylark were confirmed, probable or possible breeders on the Site; and
 - Seven BoCC amber list species. Mute swan *Cygnus olor*, dunnock, reed bunting and bullfinch *Pyrrhula pyrrhula* were probable or possible breeders on the Site whilst shelduck *Tadorna tadorna*, swift *Apis apis* and kestrel *Falco tinnunculus* were not considered to breed on the Site.
 - Seven species were listed as LBAP species. Linnet, dunnock, song thrush, skylark, yellowhammer, reed bunting and bullfinch
- 5.1.3. Overall, the bird community is considered of moderate conservation value.
- 5.1.4. A total of 17 waterbird species were recorded using coastal and wetland habitats in proximity to the Site during the targeted waterbird survey. Of these, 10 were identified as being qualifying features or listed on designation citations of the Humber SPA, SSSI, Ramsar and associated SSSIs.
- Five species listed as qualifying features of the Humber Estuary SPA. Dunlin, redshank, black-tailed godwit, avocet and knot were recorded in habitat in proximity to the Site.
 - Nine species listed as features of the Humber Estuary SSSI and associated SSSIs (Killingholme Haven Pits). Dunlin, redshank, black-tailed godwit, avocet, knot, teal, turnstone and ringed plover were recorded in habitat in proximity to the Site.
 - Eight species listed on the designation citation of the Humber Estuary Ramsar. Wigeon, teal, knot, avocet, black-tailed godwit, redshank, dunlin and curlew were recorded in habitat in proximity to the Site
- 5.1.5. The breeding bird community recorded during the 2019 surveys is similar to that recorded in 2010 during previous surveys to support the DCO application. The habitat usage of these species is also similar with the majority of birds occupying scrub boundaries and waterbody habitats, primarily in the west of the Site. The majority of species recorded during the 2019 surveys, were also recorded during the previous 2010 survey. Fewer than 10 species were recorded during only the 2010 surveys or the 2019 surveys.
- 5.1.6. The targeted waterbird survey concluded that no SPA birds used the Site for any purpose other than to commute over. The results indicate that the intertidal zone and North Killingholme Haven Pits SSSI to the south remain important areas for commuting, feeding and roosting, as reflected in the



ES. This also reflects their importance as part of the Humber Estuary SPA, SSSI, Ramsar site and North Killingholme Haven Pits SSSI designations.

- 5.1.7. As there is no significant change in the assessment of the Site and surrounding habitats for breeding and SPA waterbirds, the assessment in the ES remains unchanged

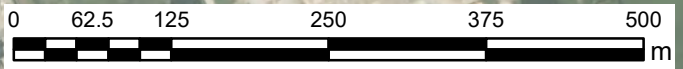
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Key
 Principal Project Area

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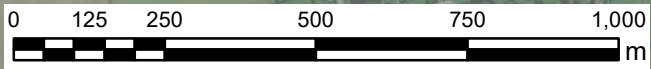
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 DCO Amendments**

TITLE:
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Key

- Principal Project Area
- Vantage Points
- Breeding Bird Transect

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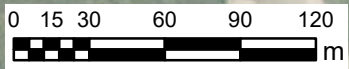
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DRAWING No: 70055743-BB-02		DATE: 05/05/2020
REV: -		

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British Trust for Ornithology Code	Species Name
RW	Reed Warbler
CH	Chaffinch
LI	Linnet
Y.	Yellowhammer
WR	Wren
SM	Sandmartin
RB	Reed bunting
BC	Black cap
CC	Chiff Chaff
BB	Blackbird
R.	Robin
TS	Tree sparrow
BT	Blue tit
GF	Goldfinch
RO	Rook
WW	Willow warbler
MS	Mute swan
CO	Coot
PH	Pheasant
WH	Whitethroat
WP	Woodpigeon
ET	Little egret
GT	Great tit
S.	Skylark

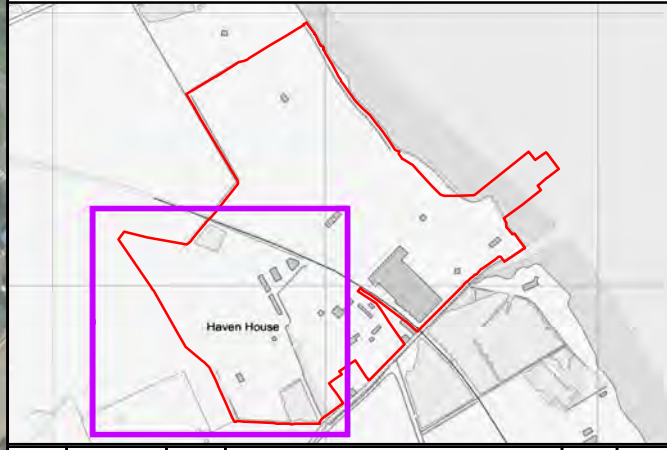


Key

- Principal Project Area
- RW BTO Code
- ← Direction of Flight
- Calling
- In Song

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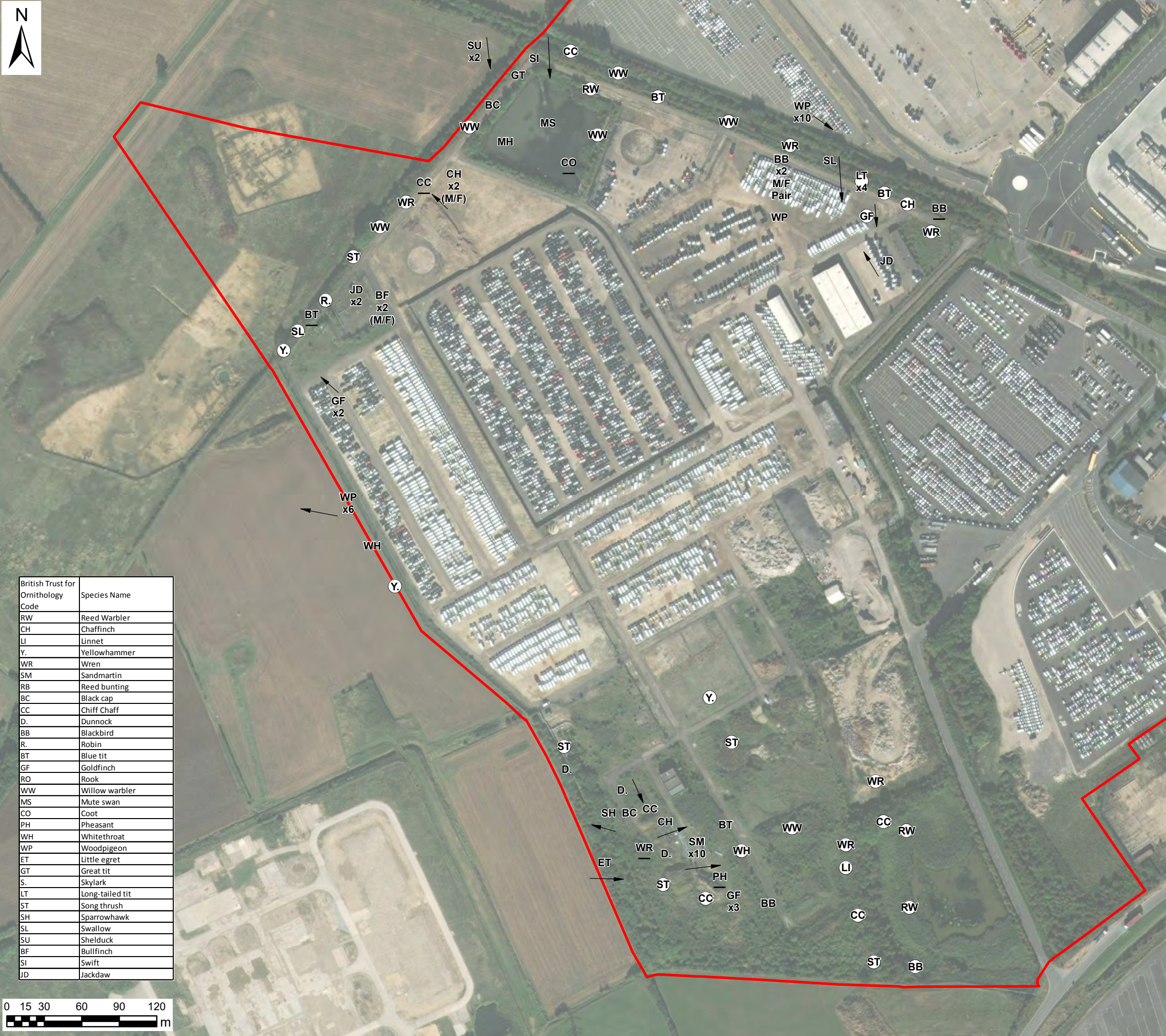
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PROJECT: **North Killingholme Power Project DCO Amendments**

TITLE: **Figure 3a Breeding Bird Survey Results - May**

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PROJECT No: 70055743	DESIGNED: JSdS	DRAWN: JSdS
DRAWING No: 70055743-BB-03a		DATE: 30/04/2020
REV: -		

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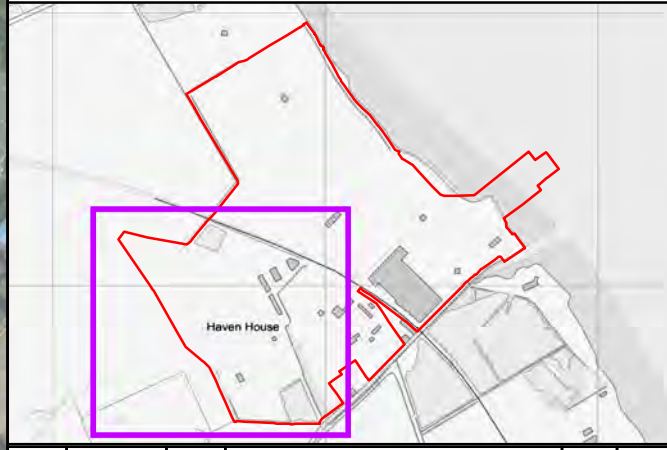
British Trust for Ornithology Code	Species Name
RW	Reed Warbler
CH	Chaffinch
LI	Linnet
Y.	Yellowhammer
WR	Wren
SM	Sandmartin
RB	Reed bunting
BC	Black cap
CC	Chiff Chaff
D.	Duncock
BB	Blackbird
R.	Robin
BT	Blue tit
GF	Goldfinch
RO	Rook
WW	Willow warbler
MS	Mute swan
CO	Coot
PH	Pheasant
WH	Whitethroat
WP	Woodpigeon
ET	Little egret
GT	Great tit
S.	Skylark
LT	Long-tailed tit
ST	Song thrush
SH	Sparrowhawk
SL	Swallow
SU	Shelduck
BF	Bullfinch
SI	Swift
JD	Jackdaw

Key

- Principal Project Area
- RW BTO Code
- ← Direction of Flight
- Calling
- In Song

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PROJECT: **North Killingholme Power Project DCO Amendments**

TITLE: **Figure 3b Breeding Bird Survey Results - June**

SCALE @ A3: 3,000 @ A3	CHECKED: LR	APPROVED: PD
PROJECT No: 70055743	DESIGNED: JSdS	DRAWN: JSdS
DRAWING No: 70055743-BB-03b		DATE: 30/04/2020
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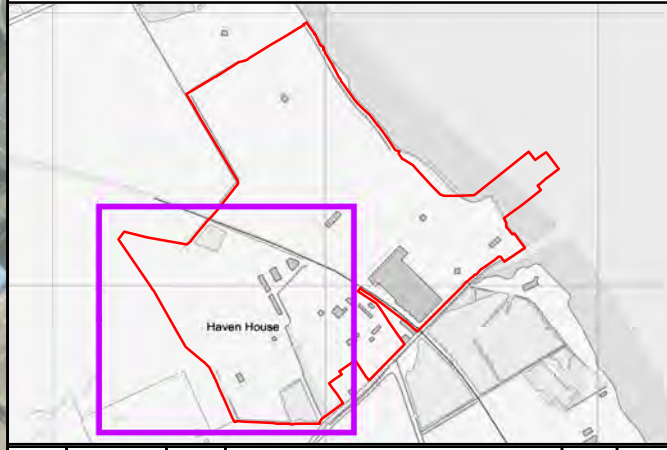


British Trust for Ornithology Code	Species Name
RW	Reed Warbler
CH	Chaffinch
LI	Linnet
Y.	Yellowhammer
WR	Wren
SM	Sandmartin
BC	Black cap
CC	Chiff Chaff
D.	Dunnock
BB	Blackbird
R.	Robin
BT	Blue tit
GF	Goldfinch
RO	Rook
WW	Willow warbler
MS	Mute swan
CO	Coot
PH	Pheasant
WH	Whitethroat
WP	Woodpigeon
C.	Carrion crow
GT	Great tit
S.	Skylark
LT	Long-tailed tit
ST	Song thrush
SH	Sparrowhawk
SL	Swallow
K.	Kestrel

Key

- Principal Project Area
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- ← Direction of Flight
- Calling
- In Song

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PROJECT: **North Killingholme Power Project DCO Amendments**

TITLE: **Figure 3c Breeding Bird Survey Results - July**

SCALE @ A3: 3,000 @ A3	CHECKED: LR	APPROVED: PD
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PROJECT No: 70055743	DESIGNED: JSdS	DRAWN: JSdS	DATE: 30/04/2020
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Key

- Principal Project Area
- Flight Lines
- AV** BTO Code

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TITLE: **Figure 4a
Waterbird Survey -
Avocet Flight Lines**

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PROJECT: North Killingholme Power Project
 DCO Amendments

TITLE: **Figure 4b
 Waterbird Survey -
 Black-Tailed Godwit Flight Lines**

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Key
 Principal Project Area
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 CU BTO Code

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TITLE:
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 Waterbird Survey -
 Curlew Flight Lines

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Key

- Principal Project Area
- ← Flight Lines
- DN** BTO Code

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CLIENT:

PROJECT: North Killingholme Power Project
DCO Amendments

TITLE: Figure 4d
Waterbird Survey -
Dunlin Flight Lines

SCALE @ A3: 10,000 @ A3	CHECKED: LR	APPROVED: PD
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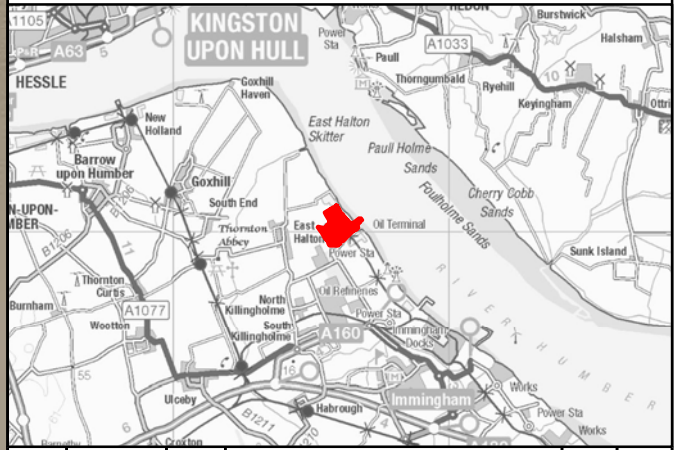
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Key

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- ← Flight Lines

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PROJECT: **North Killingholme Power Project
DCO Amendments**

TITLE: **Figure 4e
Waterbird Survey -
Knot Flight Lines**

SCALE @ A3: 10,000 @ A3	CHECKED: LR	APPROVED: PD
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Key

- Principal Project Area
- Flight Lines
- GL BTO Code

British Trust for Ornithology Code	Species Name
GL	Greylag goose
MA	Mallard
CA	Cormorant
SC	Common sandpiper
GB	Great black-backed gull
ET	Little egret
BH	Black-headed gull

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REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: **FINAL**

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CLIENT: **C.GEN**

PROJECT: North Killingholme Power Project
DCO Amendments

TITLE: Figure 4f
Waterbird Survey -
Other Waterfowl, Waders
and Waterbirds Flight Lines

SCALE @ A3: 10,000 @ A3	CHECKED: LR	APPROVED: PD
PROJECT No: 70055743	DESIGNED: CF	DRAWN: CF
DRAWING No: 70055743-BB-04f		DATE: 05/05/2020
REV: -		

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Key

- Principal Project Area
- Flight Lines
- RK** BTO Code

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CLIENT: C.GEN					
PROJECT: North Killingholme Power Project DCO Amendments					
TITLE: Figure 4g Waterbird Survey - Redshank Flight Lines					
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PROJECT No: 70055743		DESIGNED: CF	DRAWN: CF	DATE: 05/05/2020	
DRAWING No: 70055743-BB-04g					REV: -
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Key

- Principal Project Area
- Flight Lines
- RP** BTO Code

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CLIENT:

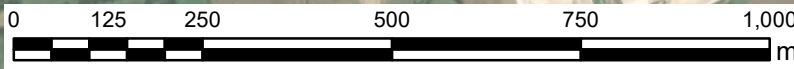
PROJECT: **North Killingholme Power Project
 DCO Amendments**

TITLE: **Figure 4h
 Waterbird Survey -
 Ringed Plover Flight Lines**

SCALE @ A3: 10,000 @ A3	CHECKED: LR	APPROVED: PD
PROJECT No: 70055743	DESIGNED: CF	DRAWN: CF
DRAWING No: 70055743-BB-04h		REV: -

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Key
 Principal Project Area
 ← Flight Lines

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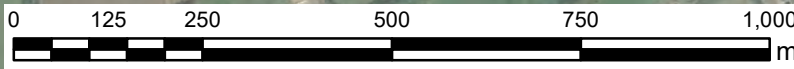
PROJECT: **North Killingholme Power Project
 DCO Amendments**

TITLE: **Figure 4i
 Waterbird Survey -
 Teal Flight Lines**

SCALE @ A3: 10,000 @ A3	CHECKED: LR	APPROVED: PD
PROJECT No: 70055743	DESIGNED: CF	DRAWN: CF
DRAWING No: 70055743-BB-04i		DATE: 05/05/2020
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Key

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 DCO Amendments**

TITLE: **Figure 4j
 Waterbird Survey -
 Turnstone Flight Lines**

SCALE @ A3: 10,000 @ A3	CHECKED: LR	APPROVED: PD
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DRAWING No: 70055743-BB-04j		REV: -

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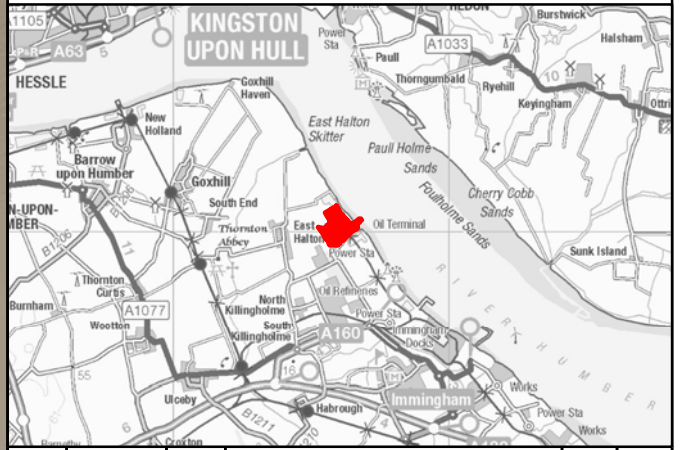


Key

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- Flight Lines

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CLIENT:

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PROJECT: **North Killingholme Power Project
DCO Amendments**

TITLE: **Figure 4k
Waterbird Survey -
Wigeon Flight Lines**

SCALE @ A3: 10,000 @ A3	CHECKED: LR	APPROVED: PD
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