



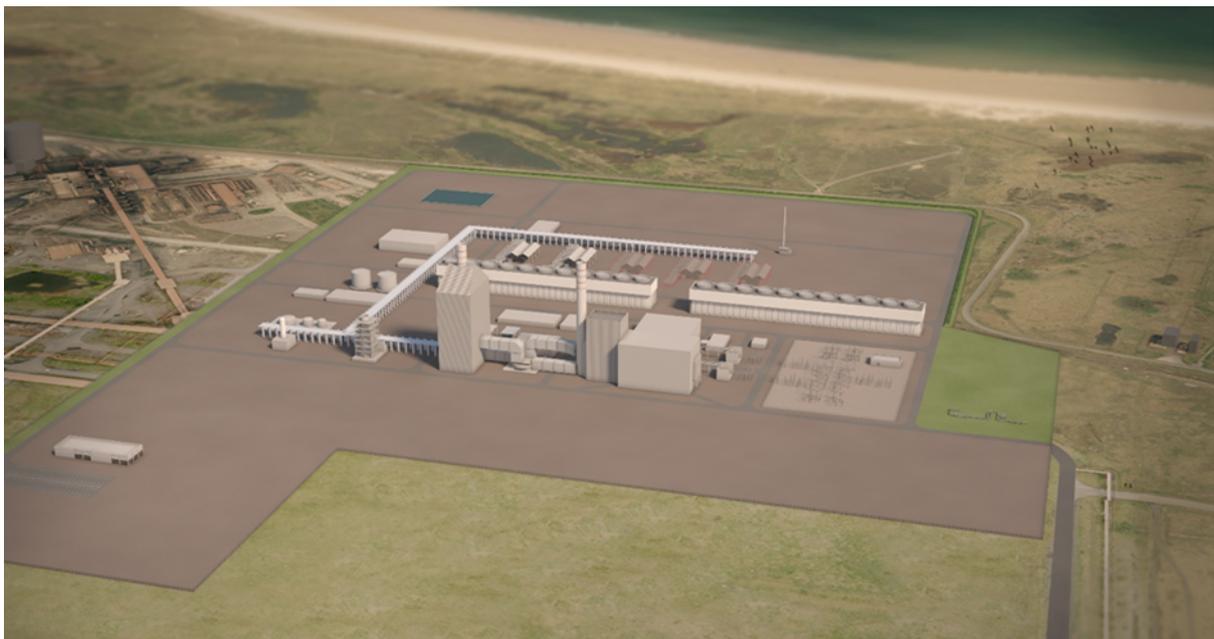
Net Zero Teesside – Environmental Statement

Planning Inspectorate Reference: EN010103

Volume III – Appendices

Appendix 15A: Baseline Ornithology Report

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)



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15A Ornithology Baseline Report

15.1 Introduction

- 15.1.1 This report describes the approach and findings of the Ornithology Surveys undertaken in support of the ecological impact assessment (EclA) of the Proposed Development. The terms of reference used to describe the Proposed Development in this report are consistent with those defined within the main chapters of the Environmental Statement (ES Volume I, Document Ref. 6.2).
- 15.1.2 The purpose of the ornithology baseline report is to define the baseline ornithological features associated with terrestrial, freshwater and (as far as is reasonable and practicable) marine environments within the potential Zone of Influence (Zol) of the Proposed Development. As such, it supports the EclAs provided as Chapter 12: Terrestrial Ecology and Nature Conservation, Chapter 13: Aquatic Ecology, Chapter 14: Marine Ecology and Nature Conservation and Chapter 15: Ornithology (ES Volume I, Document Ref. 6.2). The ornithology baseline report provides a record of the baseline studies undertaken, the findings of these studies, and clarifies which ornithological features are and are not relevant to the impact assessment of the Proposed Development.
- 15.1.3 In order to describe the ornithological baseline, a desk study and a series of baseline surveys were undertaken by appropriately experienced ecologists, to identify ornithological features within land required for construction, operation and decommissioning of the Proposed Development and its wider potential Zol. The potential Zols relevant to different ornithological features are considered and defined within the Methods section of this report when defining the desk study and field survey areas applied.
- 15.1.4 The objectives of this ornithology baseline report are to:
- identify statutory and non-statutory biodiversity and nature conservation designations with ornithological interest features within the potential Zol of the Proposed Development;
 - identify and describe the breeding and non-breeding birds and assemblages present within the Zol of the Proposed Development;
 - identify the temporal and spatial distribution and patterns of habitat use of birds recorded within the Zol of the Proposed Development;
 - identify the frequency and extent to which birds associated with designated sites occur within the Zol;
 - identify any locations or areas of ornithological sensitivity that could be impacted by the Proposed Development; and
 - provide figures showing the locations of the identified ornithological features.

- 15.1.5 An evaluation of the relative nature conservation value of the identified nature conservation designations, habitats and species in this report is provided in Chapter 15: Ornithology (ES Volume I, Document Ref. 6.2).
- 15.1.6 The following figures are provided to support this baseline report:
- Figure 15A-1 – Study Areas;
 - Figure 15A-2 – Survey Areas¹;
 - Figure 15A-3 – Statutory Designated Sites;
 - Figure 15A-4 – Non-Statutory Designated Sites;
 - Figure 15A-5 – Recorded Distribution of Little Tern in Survey Area;
 - Figure 15A-6 - Recorded Distribution of Sandwich Tern in Survey Area;
 - Figure 15A-7 - Recorded Distribution of Common Tern in Survey Area;
and
 - Figure 15A-8 - Recorded Distribution of Redshank in Survey Area.

¹ The spatial coverage of surveys in Figure 15A-2 reflects the Site Boundary at the Preliminary Environmental Information Report (PEIR) stage.

15.2 Wildlife Legislation and Planning Policy

15.2.1 A summary of potentially relevant legislation, planning policy and related guidance is provided within this section of the baseline ornithology report. A fuller account is provided as the standalone Appendix 12A: Legislation and Planning Policy Relevant to Ecology and Nature Conservation (ES Volume III, Document Ref. 6.4) and should be referred to when reading this baseline report.

Wildlife Legislation

15.2.2 The relevant wildlife legislation relating to terrestrial, freshwater and marine biodiversity and nature conservation with respect to birds in England is as follows:

- The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations);
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017;
- Wildlife and Countryside Act 1981 (as amended) (the WCA);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
- Marine and Coastal Access Act 2009;
- Animal Welfare Act 2006; and
- Environmental Protection Act 1990.

National Planning Policy

15.2.3 The Government's policy for delivery of major energy infrastructure is set out in the following relevant National Policy Statements (NPS):

- Overarching NPS for Energy (EN-1);
- Fossil Fuel Electricity Generating Infrastructure (EN-2);
- Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4); and
- Electrical Networks Infrastructure (EN-5).

15.2.4 The policies set out in the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) are also important and relevant matters. The NPPF sets out the Government's planning policies for England and how these are to be applied, and identifies overarching objectives, including environmental (such as protecting and enhancing our natural environment and improving biodiversity). It introduces additional considerations including definitions of and requirements in relation to irreplaceable habitats which must be addressed in the development design and assessment process.

15.2.5 The Marine Policy Statement (MPS) provides a framework for taking decisions affecting the marine environment. All public authorities taking

authorisation or enforcement decisions that affect or might affect the UK marine area are to do so in accordance with the MPS unless relevant considerations indicate otherwise, and applications for Nationally Significant Infrastructure Projects are required to have regard to the MPS

Local Planning Policy

15.2.6 The Proposed Development includes infrastructure located both in the Boroughs of Redcar and Cleveland, and Stockton-on-Tees. It also covers works in offshore areas covered by the draft North East Marine Plan. Therefore, the following planning policies are potentially relevant to the Proposed Development:

- Local Spatial Strategy Policy LS4 of the Redcar and Cleveland Local Plan adopted May 2018. The South Tees Spatial Strategy requires measures to protect European sites, to safeguard and improve sites of biodiversity interest particularly along the River Tees and the estuary, and to encourage integrated habitat creation and management;
- Natural Environment Policies N2 and N4 of the Redcar and Cleveland Local Plan adopted May 2018. These require the protection and enhancement of the borough's green infrastructure network and green wedges, and biodiversity and geological resources, including avoidance of adverse impacts to internationally and nationally statutory nature conservation designations;
- Sustainable Development Policies SD1 and SD4 of the Redcar and Cleveland Local Plan adopted May 2018 which set out requirements for the conservation and enhancement of the natural environment, including designations, green infrastructure, priority habitats, ecological networks, woodland and priority species;
- Economic Growth Policy EG4 of the Stockton-on-Tees Local Plan adopted January 2019, which identifies the areas available for development, including Seal Sands, and the need to recognise the importance of bird species associated with the Teesmouth and Cleveland SPA and Ramsar site when considering development proposals;
- Natural Environment Policy ENV5, ENV6 and ENV7 of the Stockton-on-Tees Local Plan adopted January 2019 which set out requirements for the protection and enhancement of biodiversity, including maximising biodiversity gains within identified Biodiversity Opportunity Areas (BOAs) in the River Tees Corridor and Teesmouth, and minimising adverse effects of ground, air, water noise and light pollution;
- Sustainable Design Policies SD5 and SD8 of the Stockton-on-Tees Local Plan adopted January 2019 which set out requirements for the conservation and enhancement of the natural environment, including designations, green infrastructure, priority habitats, ecological networks, woodland and priority species; and
- Development Principle STDC7 of the Redcar and Cleveland South Tees Area Supplementary Planning Document (SPD) adopted May 2018 sets out expectations for natural environment protection and enhancement,

including the requirement to comply with Redcar and Cleveland Local Plan Policy N4 (see above).

- 15.2.7 High level consideration has been given to these planning policies 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. For more information on the wording of each specific policy refer Appendix 12A: Legislation and Planning Policy Relevant to Ecology and Nature Conservation (ES Volume III, Document Ref 6.4) as well as the source planning policy documents.
- 15.2.8 Additional guidance of potential relevance to the Proposed Development and/ or for interpretation of the above planning policy is given in the following documents:
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services (Department for Environment, Food and Rural Affairs (Defra), 2011);
 - Planning Practice Guidance: Natural Environment (Ministry of Housing, Communities and Local Government, 2019);
 - Standing Advice issued by Natural England and Defra: Protected species: how to review planning applications (2016);
 - Supplementary Planning Document 1: Sustainable Design Guide (Stockton-on-Tees Borough Council, 2011);
 - Tees Valley Green Infrastructure Strategy (Tees Valley Joint Strategy Unit, 2008);
 - Redcar and Cleveland's Green Space Strategy 2006-2016 (Redcar and Cleveland Partnership, 2006);
 - The Tees Lowlands National Character Area (NCA) Profile (Natural England, 2013);
 - A Biodiversity Audit of the North East (Brodin, 2001); and
 - Priority Habitats and Species in the Tees Valley (Tees Valley Nature Partnership, 2012).
- 15.2.9 The UK Biodiversity Action Plan (BAP) was withdrawn in March 2011, the lists of Priority Species and Habitats being superseded by those within Section 41 of the NERC Act (2006). Local Biodiversity Action Plans (LBAPs) are no longer used as a formal expression of delivery of biodiversity targets but identify sub-regional priorities for nature conservation and propose agreed actions to conserve/maintain/enhance/increase local Priority Species and Habitats.
- 15.2.10 Tees Valley Nature Partnership (2012) identify 10 species that can be regarded as LBAP Priority Species on this basis. These are; barn owl (*Tyto alba*), ringed plover (*Charadrius hiaticula*), grey partridge (*Perdix perdix*), tree sparrow (*Passer montanus*), corn bunting (*Emberiza calandra*), shelduck (*Tadorna tadorna*), little tern (*Sternula albifrons*), bittern (*Botaurus stellaris*), swift (*Apus apus*) and yellow wagtail (*Motacilla flava*).

Glossary of terms relating to the Areas Surveyed

15.2.11 The following terminology is used throughout this report to describe distinct localities, survey areas or sub-divisions of those areas. All Study Areas and Survey Areas described below are presented on Figures 15A-1 and 15A-2:

- **PCC Site:** Power Capture and Compressor Site, located adjacent to South Gare Road, Coatham Dunes and the Teardrop (see below), centred on NGR NZ5713 2541.
- **Teardrop:** The Teardrop is an area of the former Redcar steelworks located immediately east of the PCC Site. The former steelworks infrastructure is largely dismantled and removed, leaving behind areas of modified / made ground that have been colonised to varying extents by a variety of semi-natural habitats. Parts of the Teardrop are located within potential Electricity and CO₂ Connection Corridors.
- **Steel House:** Steel House is the now disused administration building for the Redcar steelworks and is located to the south-east of the PCC Site and Teardrop Sites, centred on NGR NZ5764 2410.
- **Electrical Connection corridor:** The proposed route for the electrical connection which would run south of the PCC Site and terminate at Tod Point Substation, approximately 1.2 km to the south of the PCC Site (NGR NZ5715 2384).
- **Natural Gas Connection corridor:** The proposed route for the natural gas connection which would run south of the PCC Site as far as Tod Point Substation and West as far as Seal Sands Industrial Estate.
- **CO₂ Export Pipeline:** The corridor for the onshore section of the new pipeline required to transport conditioned and compressed CO₂ to the subsurface storage site. This runs north-east across Coatham Dunes and Coatham Sands to Mean Low Water Springs (MLWS).
- **CO₂ Gathering Network:** The proposed route for the network of pipes that will carry gaseous phase CO₂ to the PCC Site from other emitters across Teesside both to the south of the PCC Site as far as Teesport and to the west of the PCC Site as far as Billingham.
- **Water Connection Corridors:** The routes of the Water Discharge Connection corridors from the PCC Site, across Coatham Dunes and Coatham Sands, terminating at either an existing outfall or a new outfall below MLWS (two options are under consideration); and the Water Supply Connection corridors feeding into the PCC Site connecting to the Northumbria Water Ltd (NWL) mains supply south-east of the PCC Site. [The proposed Tees abstraction point is no longer an option included in the Application; water will be supplied from the existing connection to NWL mains supply]
- **Study Area:** The extent of the areas across which all baseline data (including third party data and survey data) were collected.
- **Survey Area:** The extent of the terrestrial habitats surveyed for birds (individual components of which are described below), including the plots and sub areas described above. The survey area as whole is

punctuated by a network of artificial ponds; drainage channels and other water courses; access roads and rail lines (both disused and still in use); and industrial buildings (both disused and still in use). The Survey Area is therefore a mosaic of semi-natural habitats, brownfield land and infrastructure built to service local steel and chemical industries.

- **Intertidal Count Sectors:** Arbitrary sub-divisions of the Survey Area within which through-the-tide bird counts were carried out. These are located along the coastal habitats of Coatham Sands, overlapping the area under consideration for the CO₂ Export Pipeline and the Water Discharge Connection corridors.
- **High Tide Count Sectors:** Arbitrary sub-divisions of the Survey Area within which bird counts were carried out within specific timeframes around high tides. These sectors occur inland of the intertidal count sectors, covering all parts of the PCC Site and some of the industrialised habitats containing open waters to the west and south of it; Teardrop; Coatham Marshes to the east of Teardrop; Steel House Pond to the southeast of Teardrop; and Coatham Dunes where these overlap the area under consideration for the CO₂ Export Pipeline and Water Discharge Connection corridors.
- **CBC Survey Areas:** All parts of the Survey Area in which Common Birds Census (CBC; see paragraphs 15.3.14 – 15.3.18) surveys were carried out including the PCC, Teardrop, Steel House, Coatham Sands, Saltholme Substation the electricity, natural gas and CO₂ gathering network corridors south and east of the PCC and, to inform an older design of the Proposed Development, Lackenby Substation.

15.3 Methods and Data Sources

Desk Study

- 15.3.1 A desk study was undertaken throughout 2018/2019 and updated in 2020 to identify sites designated specifically for their ornithological interest, as well as protected and notable species of potential relevance to the Proposed Development.
- 15.3.2 The desk study areas used to gather baseline data were specified to support collation of sufficient data to meet worst-case data needs for robust EclA in accordance with Rochdale Envelope principles. They were defined based on professional judgement and an understanding of the maximum distances typically considered by statutory consultees.
- 15.3.3 The worst-case desk study areas applied are in effect those specified by statutory consultees for assessment of potential operational air quality impacts. Accordingly, the desk study identified any international and national statutory nature conservation designations within 15 km of the Site boundary; other statutory and non-statutory nature conservation designations within 2 km of the Site boundary; and protected and notable species within 1 km of the Site boundary (Figure 15A-1).
- 15.3.4 Protected and notable species include those listed on Annex I of the European Wild Birds Directive, Schedule 1 of the WCA; and species and habitats of principal importance for nature conservation in England listed under Section 41 (S41) of the NERC Act. Other species have also been considered and assessed on a case by case basis, e.g. those included in national, regional or local Red Data Books and Lists but not protected by legislation.
- 15.3.5 The desk study was carried out using the data sources detailed in Table 15A-1.

Table 15A-1: Desk Study Area and Data Sources

Data Source	Accessed	Data Obtained
Multi-Agency Geographic Information for the Countryside (MAGIC) website https://magic.defra.gov.uk/	March 2018	<ul style="list-style-type: none"> International and national statutory nature conservation designations within 15km of the proposed CCGT power station (due to requirements for air quality impact assessment) or otherwise within an Impact Risk Zone (IRZ) identified by Natural England and relevant to the wider Proposed Development (i.e. within an IRZ for 'infrastructure development'); and Local statutory designations within 2km.

Data Source	Accessed	Data Obtained
Joint Nature Conservation Committee (JNCC) Website (UK Protected Sites) http://jncc.defra.gov.uk/	March 2018, December 2020	<ul style="list-style-type: none"> Citations and data sheets for international nature conservation designations (SPA and Ramsar sites).
Archived Natural England Website https://designatedsites.naturalengland.org.uk/SiteSearch.aspx	March 2018, December 2020	<ul style="list-style-type: none"> Citations for national nature conservation designations: SSSI and National Nature Reserves (NNR); and Details of Local Nature Reserves (LNRs).
Environmental Records and Information Centre (ERIC) North-East	March 2018, updated January 2021	<ul style="list-style-type: none"> Non-statutory designations within 2 km (Local Wildlife Sites, LWS); and Protected and notable species records within 1km (records for the last 10 years only);
Ordnance Survey 1:25,000 Pathfinder maps and aerial photography	Throughout EIA process	<ul style="list-style-type: none"> 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.
Industry Nature Conservation Association (INCA)	April and May 2020	Species data for the Teesside Area as far north as Hartlepool and south to Marske and all terrestrial habitats within the Hinterland of the tidal River Tees: <ul style="list-style-type: none"> Records of notable species; Roost and colonial breeding site locations for selected species; and Species monitoring reports and baseline ornithology reports.
British Trust for Ornithology Wetland Birds Survey	September 2018, updated December 2020 and January 2021	<ul style="list-style-type: none"> Core count 5-year synopsis tables for seven Core Count² Sectors (Coatham Sands North; Redcar and

² The Wetland Bird Survey (WeBS) is the long-term monitoring scheme for non-breeding waterbirds in the UK, which aims to provide the principal data for the conservation of their populations and wetland habitats. WeBS is a partnership between the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee (the last on behalf of Natural England, Natural Resources Wales, NatureScot and the Department of the Environment Northern Ireland) in association with the Wildfowl and Wetlands Trust. Core counts are synchronised monthly counts undertaken at wetlands throughout the UK.

Data Source	Accessed	Data Obtained
		<p>Coatham Sands South; Quarries and Lagoons; Bran Sands North; Bran Sands South; Coatham Marsh; and Haverton Hole North³). The data cover the count years 2012/13 – 2016/17⁴; and</p> <ul style="list-style-type: none"> • Low Tide count data for all available count sectors (21 count sectors) for the Tees Estuary counted over winter 2018-19 inclusive. Available sectors: DT001 – 010, DT016 and DT021 – 030.
Teesmouth Bird Club	April 2020	<ul style="list-style-type: none"> • Bird Reports for 2016-2018 (Joynt, 2017; Joynt, 2018; and Brown, 2019).
Tees Valley Nature Partnership Website	March 2018	<ul style="list-style-type: none"> • General information on Local Biodiversity Action Plan Priority Species.

Field Survey

15.3.6 The field surveys undertaken to support the Application included the following:

- Monthly through-the-tide counts of coastal and wetland birds within intertidal count sectors, for a period of 12 months (September 2017 – August 2018, inclusive), using a method consistent with the Bird Trust for Ornithology (BTO) WeBS survey amended to cover the entire tidal range. Counts were undertaken twice monthly except during the period April – July inclusive, when they were carried out once per month;
- Monthly high tide counts of wetland birds within high tide count sectors, using a method consistent with the WeBS Core (high tide) Count, over the same calendar period as the intertidal counts and with the same frequency; and
- Surveys of breeding terrestrial birds, using the Common Birds Census method described by Marchant (1983) and Gilbert *et al.* (1998) across all CBC survey areas, adapted for five repeat visits (in 2018) and three or four repeat visits (in 2020, details in paragraph 15.3.17-15.3.18) at approximately even intervals between April and July 2018 (inclusive) and between May and July 2020 (inclusive).

15.3.7 Prior to any surveys being carried out, a preliminary visit in 2018 was made to establish suitable count sectors and CBC survey areas based on:

³ WeBS count sectors in the Teesside area have recently changed in connection with the confirmation of the proposed extension to the SPA/Ramsar. Haverton Hole North, Cowpen Marsh, Saltholme Central and Saltholme Pools have been subdivided and renamed. However, the data acquired by AECOM remain spatially relevant.

⁴ A BTO WeBS count year runs for 12 months from July through to the following June inclusive.

- distribution of habitats and the known habitat requirements of birds within the different genera and taxonomic families likely to be encountered within the Survey Area;
- the preliminary layout or locations of proposed infrastructure, (not all of which forms part of the current application, e.g. NWL Water Abstraction Corridor is no longer required);
- availability of suitable locations from which visual coverage of each sector could be optimised;
- presence of geographical and habitat features that might provide markers by which the surveyor could judge the location of birds and to aid with navigation around the Survey Area;
- the minimisation of risks to health and safety (primarily of the surveyor); and
- availability of land access.

15.3.8 The count sectors and Survey Areas were discussed and agreed with Natural England prior to the onset of surveys. All survey areas are shown on Figure 15A-2. The spatial coverage of the survey areas reflects the Site Boundary at the PEIR stage. Only the baseline relevant to the final iteration of the Proposed Development is included in this appendix.

Through-the-Tide and High Tide Counts

15.3.9 Four intertidal count sectors (Sectors 1 – 4) were established to cover the shoreline habitats of Coatham Sands to the north of and adjacent to the Proposed Development.

15.3.10 Thirteen high tide count sectors were established covering:

- Coatham Dunes between the PCC Site and Coatham Sands (Sectors A – C);
- Coatham Marsh to the east of the SSSI and Teardrop (Sectors D and E);
- The Teardrop (Sectors F and G);
- The PCC Site and the Teesside works immediately to the south and west of the PCC Site (Sectors H – L); and
- Steel House Pond (Sector SHP1).

15.3.11 Sector A, which covers a large section of the Coatham Dunes survey area, contains a series of permanent ponds or lagoons and these were divided arbitrarily to create a set of 4 sub-sectors (A1 – A4) to provide better resolution to the baseline data. Similarly, Sectors D and E contain a chain of ponds and channels that were divided into two separate sub-sectors respectively (D1, D2, E1 and E2).

15.3.12 The combined spatial coverage of the count areas includes the PCC Site plus a radius of between approximately 1 km and 3 km around it, which is designed to include any habitats potentially associated with or functionally-linked to several key designated sites for birds. The count sectors are shown on Figure 15A-2 and the overlaps between AECOM count sectors, WeBS

count sectors and the proposed development are summarised in Table 15A-2.

Table 15A-2: Summary of the Overlapping Count Sectors in Relation to the Proposed Development Areas.

AECOM Sector¹	Overlap (partial or total) with Proposed Development	Overlap (partial or total) with BTO WeBS Sector(s)
1	Water Discharge Connection corridor	Coatham Sands North; Redcar and Coatham Sands South; DT026-028
2	Water Discharge Connection corridor, CO ₂ Export Pipeline	Redcar and Coatham Sands South; DT028
3	Water Discharge Connection corridor, CO ₂ Export Pipeline	Redcar and Coatham Sands South; DT028
4	No overlap	Redcar and Coatham Sands South; DT028
A	Water Discharge Connection corridor, CO ₂ Export Pipeline	Quarries and Lagoons
A1	Water Discharge Connection corridor, CO ₂ Export Pipeline	Quarries and Lagoons
A2	Water Discharge Connection Corridor, CO ₂ Export Pipeline	Quarries and Lagoons
A3	Water Discharge Connection corridor, CO ₂ Export Pipeline	Quarries and Lagoons
A4	Water Discharge Connection corridor, CO ₂ Export Pipeline	Quarries and Lagoons
B	Water Discharge Connection corridor, CO ₂ Export Pipeline	Quarries and Lagoons
C	No overlap	No overlap
D	No overlap	Coatham Marsh
D1	No overlap	Coatham Marsh
D2	No overlap	Coatham Marsh
E	Water Abstraction Corridor [no longer part of the Scheme]; CO ₂ Gathering Network; Natural Gas Connection corridor; Electrical Connection corridor	Coatham Marsh
E1	Water Abstraction Corridor [no longer part of the Scheme]; CO ₂ Gathering Network; Natural Gas	Coatham Marsh

AECOM Sector ¹	Overlap (partial or total) with Proposed Development	Overlap (partial or total) with BTO WeBS Sector(s)
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	Connection corridor; Electrical Connection corridor	
E2	Water Abstraction Corridor [no longer part of the Scheme]; CO ₂ Gathering Network; Natural Gas Connection corridor; Electrical Connection corridor	Coatham Marsh
F	Electrical Connection corridor; Natural Gas Connection corridor; CO ₂ Gathering Network corridor	No overlap
G	Electrical Connection corridor; Natural Gas Connection corridor; CO ₂ Gathering Network corridor	No overlap
H	Electrical Connection corridor; Natural Gas Connection Corridor; CO ₂ Gathering Network Corridor	No overlap
I	PCC Site; Electrical Connection corridor; Natural Gas Connection corridor; Water Connection corridors; CO ₂ Gathering Network corridor	No overlap
J	Natural Gas Connection corridor; Water Connection corridors; CO ₂ Gathering Network corridor	No overlap
K	PCC Site; Water Connection corridors	Quarries and Lagoons
L	PCC Site; CO ₂ Export Pipeline; Electrical Connection corridor; Natural Gas Connection corridor; Water Connection corridors; CO ₂ Gathering Network corridor	Quarries and Lagoons
SHP1	No overlap	No overlap

¹ Blue shading indicates intertidal count sectors; red shading indicates inland high tide count sectors.

15.3.13 Surveys followed the standard WeBS protocol⁵, involving the systematic counting of all water birds within each sector and sub-sector. The distribution of the birds counted was mapped using BTO species codes on suitably scaled field maps. Survey times, weather conditions, visibility and sources of disturbance were recorded for each count sector on each survey. Each survey visit was carried out over a period of one day, during which a high tide count and an intertidal count was completed. The intertidal counts were

⁵ WeBS count instructions are available at <https://www.bto.org/our-science/projects/wetland-bird-survey/taking-part/counter-resources>

split as evenly as possible between ebbing (high-ebb-low) and flowing (low-flow-high) tides so that all possible variations of tidal stage and tidal progression were covered as evenly as possible, given the restrictions imposed by the coincidence of daylight hours and tide cycles. Survey metadata are provided in Annex 1.

Common Birds Census

- 15.3.14 Breeding bird survey areas were selected to provide baseline data to inform the assessment of potential impacts on nesting birds arising from the construction and operation of the proposed infrastructure where these intersect or are adjacent to areas of suitable semi-natural habitat and that:
- were expected to support infrastructure that required new land take / the building of new infrastructure above ground (i.e. that could not utilise existing infrastructure such as overhead power lines or pipe racking);
 - could not be avoided through design of the scheme layout; and
 - could not be avoided by installing infrastructure underground using direct drilling (or similar) methods.
- 15.3.15 Areas of suitable breeding habitat were identified from aerial photographs, habitat data provided by third parties and habitat surveys carried out by AECOM to support the wider ecological assessment of the proposed development, which is presented in Chapter 12: Terrestrial Ecology and Nature Conservation (ES Volume I, Document Ref. 6.2) and appendices 12A - 12J (ES Volume III, Document Ref. 6.4) of the ES.
- 15.3.16 The survey areas are shown on Figure 15A-2 and can be defined as follows:
- Teardrop (2018): includes all parts of Teardrop and the immediately adjacent parts of Coatham Marsh. This area is broadly consistent with the area covered by Sectors F, G and the periphery of Sectors E and I;
 - Steel House Loop (2018): includes Steel House pond and the surrounding ornamental gardens. It covers all of count sector SHP1 and the land immediately around it;
 - Coatham Sands and Gare Road (2018): includes a section of the sand dune system to the north of Teesmouth and Cleveland Coast SSSI that is broadly consistent with the area covered by Sector A;
 - Saltholme Substation (2018): includes the substation and the land immediately surrounding it, approximately 7 km west of Teesmouth and Cleveland Coast SSSI;
 - Lackenby Substation (2018): includes the substation and the land immediately surrounding it, approximately 5 km south of Teesmouth and Cleveland Coast SSSI. The Proposed Development design being assessed excludes this location; therefore, no further discussion of this area is provided.
 - PCC Site and associated laydown area (2020);
 - Haverton Hill laydown and welfare (2020); and

- Natural gas connection corridors, CO₂ Gathering Network corridors and Electrical Connection corridors south of the River Tees (2020). The Proposed Development Design being assessed excludes all of these areas south of Tees Dock Road, therefore only the data relevant to the Site Boundary will be discussed in this report.
- 15.3.17 The surveys followed a standard CBC protocol (Marchant, 1983; Gilbert *et al.*, 1998), amended to 5 repeat survey visits in 2018. In 2020 four repeat visits were completed on all areas of permanent infrastructure and significant land take and three repeat visits were carried out to all other areas (broadly speaking, the connection corridors)⁶. The surveyor followed a transect through the survey area that provided access to within 50-100 m of all parts of it, access arrangements permitting. The species, distribution and activity of all birds detected were recorded on suitably scaled field maps using BTO species codes and behaviour notations.
- 15.3.18 Surveys were carried out on days with little or no wind, rain or mist in order to maximise the potential for detection of birds and to avoid the possibility of bird activity being suppressed by inclement weather conditions. Table 15A-3 provides summary metadata for the CBC surveys.

⁶ A standard CBC survey includes 10 repeat visits which enables a high consistency of results when repeating surveys from year to year for the purposes of monitoring population change over time. However, for the purposes of determining breeding numbers for an impact assessment, a smaller number of visits is usually sufficient.

Table 15A-3: CBC Survey Summary Metadata, 2018

Survey No.	Survey Date/Times (24hrs)						
	Teardrop; Steel House Loop	Coatham Sands and Gare Road	Saltholme Substation	Lackenby Substation	PCC Site	Billingham Laydown	Connection Corridors
1	17 April 07:15 – 10:00	17 April 10:15 – 12:15	17 April 12:45 – 13:15	17 April 13:40 – 14:40	22 May	21 May	21 – 22 May (2 days)
2	23 April 09:30 – 12:15	23 April 06:40 – 09:10	23 April 12:45 – 13:15	23 April 13:40 – 14:40	5 June	3 June	3 – 5 June (3 days)
3	22 May 07:00 – 09:15	22 nd May 09:15 – 11:30	22 May 12:00 – 12:30	22 May 12:55 – 14:00	16 June	15 June	15 – 17 June and 1st July (3 days)
4	12 June 07:00 – 09:15	12 June 09:15 – 11:30	12 June 12:00 – 12:30	12 June 12:55 – 14:00	1 July	1 July	N/A ¹
5	12 July 09:15 – 11:50	12 July 06:45 – 09:15	12 July 12:20 – 12:50	12 July 13:15 – 14:30	N/A ¹	N/A ¹	N/A ¹

¹N/A: Not Applicable

- 15.3.19 The number of breeding pairs or territories for each species recorded was determined from the mapped survey data to identify and isolate areas within which birds displayed consistent breeding behaviours (following Marchant, 1983; and Gilbert *et al.* 1998).
- 15.3.20 Non-breeding species are included in the data set and are referred to within this report for the benefit of quantifying the overall bird assemblage as well as the breeding assemblage.

Barn Owl Surveys

- 15.3.21 In September 2020 a number of disused industrial buildings within and adjacent to the Site boundary were subject to emergence surveys for bats. At this time, structures with potential for occupation by barn owl were identified for formal barn owl survey, which was carried out following the methods in Shawyer (2012) on 15th September 2020. The surveys were carried out by a surveyor in possession of a Natural England survey licence (CL29/00464).

Desk Study and Field Survey Limitations

- 15.3.22 There were no significant limitations to the surveys in terms of disturbance or weather conditions.
- 15.3.23 All intertidal and high tide surveys undertaken by AECOM were completed within suitable timeframes with respect to tidal cycles.
- 15.3.24 The first CBC visit was carried approximately two weeks later than the recommended start date for CBC surveys in 2018, which is mid – late-March for southern and central England. However, in northern England it is widely regarded as acceptable to extend this period into early April because of the generally later onset of spring weather in the northern half of the UK. Furthermore, in 2018 spring rainfall in the north-east of England was above average, resulting in a wet spring that was delayed following an extended winter season (Meteorological Office 2018 weather summaries website: <https://www.metoffice.gov.uk/climate/uk/summaries/2018>), which is likely to have suppressed breeding bird behaviour early in the 2018 breeding season. In 2018, the CBC surveys at each substation were carried out in the afternoon, by which time breeding bird activity levels would have been depressed and detection rates were likely to be lower. This is not considered to be a significant limitation because the substations are unlikely to be subjected to significant levels of disturbance and represent a small part of the overall proposed development area. Surveys within and adjacent to the Site Boundary were carried out between May and early July in 2020, delays to the onset of surveys in 2020 being a result of the COVID-19 pandemic. Despite these limitations, enough survey data were collected to enable an estimate of the number of breeding bird territories to be undertaken.
- 15.3.25 Access restrictions prevented CBC surveys most notably within the laydown area on the west bank of the River Tees (referred to as Navigator Terminal). It is not possible to address this data gap with respect to breeding birds and it was not possible to view the survey area from adjacent accessible land. Habitat data set out in Chapter 12: Terrestrial Ecology and Nature Conservation (ES Volume I, Document Ref. 6.2) and shown on Figure 12C-

- 1: Phase 1 Habitat Map (ES Volume II, Document Ref. 6.3) show that it supports poor semi-improved grassland. Such habitat may support a number of ground-nesting birds such as skylark (*Alauda arvensis*). This limitation is addressed adequately in the assessments presented in Chapter 15: Ornithology (ES Volume I, Document Ref. 6.2) using knowledge of the habitats present, the habitat preferences of the suite of species present across Teesside and the limitations presented to breeding birds by high baseline noise levels at this location (as set out in Chapter 15: Ornithology; ES Volume I, Document Ref. 6.2); and using survey and third party data for the wider Study Area to determine the likely use of this habitat by birds.
- 15.3.26 Access was also not gained to small sections of the connection corridors in 2020; however, it was possible for surveyors to detect birds within these areas by utilising accessible land adjacent to them and Public Rights of Way (PRoW).
- 15.3.27 The limitations of third-party data are well known. However, the ornithological features of the Teesside area as a whole are more intensively studied than most other parts of the UK, which is partly attributable to the fact that it is dominated by a heavily protected estuarine environment within which wetland birds are regularly monitored by the BTO WeBS scheme, RSPB, bird groups and casual observers. Furthermore, Teesside is perhaps unique in that it is heavily studied and monitored by INCA, whose purpose is to undertake monitoring and data gathering that informs the needs of both industry and nature conservation. Consequently, the data provided by INCA combined with those obtained from other third parties are unusually precise, detailed and contemporary, enabling a number of data gaps to be filled without the need for novel site-specific survey.
- 15.3.28 Low Tide counts carried out by WeBS counters covered much, but not all, of the Tees Estuary count area in 2018-19. Furthermore, the count area does not map accurately to the SSSI or SPA boundaries, with no counts undertaken within much of the North Tees Marshes or Saltholme areas and large stretches of the tidal River Tees omitted. The Low Tide data supplied by WeBS are therefore best regarded as a representative guide to distribution of SPA and SSSI birds within and around the Tees Estuary at low tide, rather than being a definitive representation of bird distribution and numbers. More detailed insight into the ornithological baseline that informs the impact assessment within the ES is derived from the collective data sets presented herein. Hence, Chapter 15: Ornithology (ES Volume I, Document Ref. 6.2) of the ES draws on all relevant baseline data.

15.4 Baseline

Designated Sites

- 15.4.1 Statutory designated sites notified for ornithological interest features are summarised in Table 15A-4. Figures 15A-3 and 15A-4 respectively show statutory designated sites and non-statutory designated sites.

Table 15A-4: Sites designated for ornithological interest features

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ⁷	Ecological value and status
Teesmouth and Cleveland Coast SPA	<p>Internationally important numbers of marine and shore birds, including:</p> <ul style="list-style-type: none"> • <i>Recurvirostra avosetta</i>; (Pied) avocet (Breeding) • <i>Calidris canutus</i>; (Red) knot (Non-breeding) • <i>Calidris pugnax</i>; Ruff (Non-breeding) • <i>Tringa totanus</i>; (Common) redshank (Non-breeding) • <i>Thalasseus sandvicensis</i>; Sandwich tern (Non-breeding) • <i>Sterna hirundo</i>; Common tern (Breeding) • <i>Sternula albifrons</i> Little tern (Breeding) • Waterbird assemblage of 26,014 individual waterfowl, major components of which include gadwall (<i>Mareca strepera</i>), shoveler (<i>Spatula clypeata</i>), sanderling (<i>Calidris alba</i>), wigeon (<i>Mareca penelope</i>), lapwing (<i>Vanellus vanellus</i>), herring gull (<i>Larus argentatus</i>) and black-headed gull (<i>Chroicocephalus ridibundus</i>). • In addition to breeding sites the SPA includes areas designated for marine foraging habitats for little tern (<i>Sternula albifrons</i>) and common tern (<i>Sterna hirundo</i>) that extend several kilometres out to sea and along the tidal River Tees; and terrestrial and intertidal foraging areas for avocet (<i>Recurvirostra avosetta</i>) and ruff (<i>Calidris pugnax</i>). 	The PCC Site is immediately south of the SPA. The CO ₂ Export Pipeline; Water Connection corridors; and CO ₂ Gathering Network are located within the SPA.	International, statutory protected
Teesmouth and Cleveland Coast Ramsar	<p>Internationally important numbers of marine and shore birds, including:</p> <ul style="list-style-type: none"> • Peak winter count of 9,528 waterfowl (5-year peak mean 1998/99-2002/03) 	The PCC Site is immediately south of the Ramsar. The CO ₂ Export Pipeline; Water Connection corridors; and CO ₂ Gathering Network are located within the Ramsar.	International, statutory protected

⁷ All distances in this Appendix are from an earlier iteration of the Site boundary. As the boundary has been refined and reduced in size actual distances will be slightly greater than reported.

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ⁷	Ecological value and status
	<ul style="list-style-type: none"> • Peak spring/autumn count of (common) redshank (<i>Tringa totanus</i>); 883 individuals representing an average of 0.7% of the GB population (5-year peak mean 1998/9-2002/3) • Peak winter count of red knot (<i>Calidris canutus</i>); 2,579 individuals representing an average of 0.9% of the GB population (5-year peak mean 1987-1991) <p>Other features include a broad range of freshwater, marsh, intertidal and dune habitats.</p>		
North York Moors SPA	Breeding golden plover (<i>Pluvialis apricaria</i>) and merlin (<i>Falco columbarius</i>).	Located 12 km south-east of the PCC Site.	International, statutory protected
Northumbria Coast SPA	<p>Internationally important numbers of marine and shorebirds including:</p> <ul style="list-style-type: none"> • Wintering turnstone (<i>Arenaria interpres</i>); • Wintering purple sandpiper (<i>Calidris maritima</i>); • Breeding little tern (<i>Sternula albifrons</i>); and • Breeding arctic tern (<i>Sterna paradisaea</i>). 	Located 14.5 km north-west of the PCC Site.	International, statutory protected
Teesmouth and Cleveland Coast SSSI	<p>Nationally important features supported by a mosaic of coastal and freshwater habitats:</p> <ul style="list-style-type: none"> • >20,000 Non-breeding waterbirds; • Aggregations of breeding birds – Avocet (<i>Recurvirostra avosetta</i>), common tern (<i>Sterna hirundo</i>), little tern (<i>Sterna albifrons</i>), • Aggregations of non-breeding birds – Gadwall (<i>Anas strepera</i>), knot (<i>Calidris canutus</i>), purple sandpiper (<i>Calidris maritima</i>), redshank (<i>Tringa totanus</i>), ringed plover (<i>Charadrius hiaticula</i>), ruff (<i>Calidris pugnax</i>), sanderling (<i>Calidris alba</i>), sandwich tern (<i>Thalasseus sandvicensis</i>), shelduck (<i>Tadorna tadorna</i>), shoveler (<i>Spatula clypeata</i>); and • Assemblages of breeding birds - Mixed: sand-dunes and saltmarsh, lowland open waters and their margins. 	The PCC Site is adjacent to the SSSI. The CO ₂ Export Pipeline; Natural Gas Connection corridor; Water Connection corridors; and CO ₂ Gathering Network are located within the SSSI. The designation overlaps with other internationally designated sites of the same name.	National, statutory protected

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ⁷	Ecological value and status
Durham Coast SSSI	<p>Designated for:</p> <ul style="list-style-type: none"> • Aggregations of breeding birds – cormorant, fulmar (<i>Fulmarus glacialis</i>), kittiwake (<i>Rissa tridactyla</i>), little tern (<i>Sternula albifrons</i>); and • Aggregations of non-breeding birds - purple sandpiper (<i>Calidris maritima</i>) and sanderling (<i>Calidris alba</i>). 	Located 12.7 km north-west of the PCC Site.	National, statutory protected
North York Moors SSSI	<p>Designated for:</p> <ul style="list-style-type: none"> • Aggregations of breeding birds – golden plover (<i>Pluvialis apricaria</i>) and merlin (<i>Falco columbarius</i>) 	Located 12 km south-east of the PCC Site.	National, statutory protected
Teesmouth NNR	<p>Designated for the following ornithological interest features:</p> <ul style="list-style-type: none"> • >20,000 waterbird assemblage; • BAP breeding birds; waders, grey partridge (<i>Perdix perdix</i>), skylark (<i>Alauda arvensis</i>), linnet (<i>Linaria cannabina</i>), reed bunting (<i>Emberiza schoeniclus</i>); • Non-breeding knot (<i>Calidris canutus</i>), redshank (<i>Tringa totanus</i>) and shelduck (<i>Tadorna tadorna</i>); • Breeding little tern (<i>Sternula albifrons</i>); • Ringed plover (<i>Charadrius hiaticula</i>) in spring; and • Sandwich tern (<i>Thalasseus sandvicensis</i>) (post-breeding). 	<p>Encompassed within the boundary of Teesmouth and Cleveland Coast SSSI.</p> <p>Located 700 m north of the Natural Gas Connection corridor and CO₂ Gathering Network, 750 m west of the water abstraction point [no longer part of the Proposed Development] and 2.7 km west of the PCC Site.</p>	National, statutory protected
Saltholme RSPB Reserve	<p>The site is one of the largest breeding colonies of common terns (<i>Sterna hirundo</i>) in the UK and breeding lapwing (<i>Vanellus vanellus</i>) (red list) are present, as well as being used by foraging peregrine (<i>Falco peregrinus</i>) and breeding species such as marsh harrier (<i>Circus aeruginosus</i>), Cetti's warbler (<i>Cettia cetti</i>) and little ringed plover (<i>Charadrius dubius</i>).</p> <p>Much of the reserve lies within the Teesmouth and Cleveland Coast SPA and SSSI.</p>	Located 1.15 km west of the PCC Site. The CO ₂ Gathering Network is adjacent to the reserve.	Regional, non-statutory

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ⁷	Ecological value and status
Coatham Marsh LWS	Designated for a range of wetland habitats, and of interest for a range of breeding and non-breeding birds.	Located 600 m east of the PCC Site. Adjacent to the Water Connection corridors.	County, non-statutory

15.4.2 The reasons for designation of the Teesmouth and Cleveland Coast SPA in terms of its quality and importance are reproduced in Box 1.

Box 1: Quality and Importance Criteria underpinning designation of the Teesmouth and Cleveland Coast SPA (from SPA data sheet <https://jncc.gov.uk/jncc->

ARTICLE 4.1 QUALIFICATION (2009/147/EC): During the breeding season, the site regularly supports: avocet *Recurvirostra avosetta* 1.2% of the GB population 5 year peak mean, 2010 – 2014 common tern *Sterna hirundo* 4.0% of the GB population 5 year peak mean, 2010 – 2014 little tern *Sternula albifrons* 4.3% of the GB population 5 year peak mean, 2010 – 2014. On passage the area regularly supports: sandwich tern *Thalasseus sandvicensis* (Western Europe/Western Africa) 6.8% of the GB population 5-year peak mean, 1988 – 1992 ruff *Calidris pugnax* 2.4% of the GB population 5 year peak mean, 2011/12 – 2015/16.

ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: knot *Calidris canutus* (North-eastern Canada/Greenland/Iceland/North-western Europe) 1.6% of the population 5 year peak mean for 1991/92 – 1995/96. On passage the area regularly supports: redshank *Tringa totanus* (Eastern Atlantic - wintering) 1.1% of the East Atlantic Flyway population 5 year peak mean, 1987 – 1991.

ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: 26,014 waterbirds 5 year peak mean, 2011/12 – 2015/16 Including: Eurasian wigeon *Mareca strepera*, northern shoveler *Spatula clypeata*, sanderling *Calidris alba*, gadwall *Mareca penelope*, northern lapwing *Vanellus vanellus*, herring gull *Larus argentatus* and black-headed gull *Chroicocephalus ridibundus*.

[assets/SPA-N2K/UK9006061.pdf](#) (version 2020 -12, Accessed 1 April 2021).

15.4.3 Table 15A-5 lists the individual species for which the SPA is designated.

Table 15A-5: Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species		Population in the SPA	Population unit	Type or season
Ruff	<i>Calidris pugnax</i>	601	individuals	wintering
Knot	<i>Calidris canutus</i>	5,509	individuals	wintering
Avocet	<i>Recurvirostra avosetta</i>	18	pairs	reproducing
Little tern	<i>Sternula albifrons</i>	81	pairs	reproducing
Common tern	<i>Sterna hirundo</i>	399	pairs	reproducing
Sandwich tern	<i>Thalasseus sandvicensis</i>	1,900	individuals	concentration
Redshank	<i>Tringa totanus</i>	1,648	individuals	concentration

ERIC NE Bird Records

- 15.4.4 The bird records supplied by ERIC NE included large numbers of old records (taken here to be those greater than 10 years old) and unverified records. These records are from Greatham Creek or Teesmouth National Nature Reserve (NNR) and include the following species for which the SPA and SSSI are designated individually or in wintering assemblage: teal; avocet; cormorant (which was formerly notified as an interest feature prior to classification of revised SPA boundary and interest features in 2020); and shelduck. There are no records that indicate breeding or roosting sites for any of the species listed.

WeBS Core Counts

- 15.4.5 Five-year synopsis data were received from WeBS for all count sectors requested (one data set per sector).
- 15.4.6 In order to rationalise the volume of data presented within the narrative of this report, the tables in Annex 2 summarise, by sector, the highest count for each month over five years for all of the notified features of Teesmouth and Cleveland Coast Ramsar, SPA and SSSI.
- 15.4.7 Detailed discussion of the spatial and temporal occurrence of each species is not required to support the assessments made in the ES, however the data are used to support the description of ornithologically sensitive areas in paragraphs 15.4.49-15.4.57 and the species accounts in paragraphs 15.4.59-15.4.104. Some general observations can be made, however:
- Species occurring within intertidal habitats (Coatham Sands North; Redcar and Coatham Sands South; Bran Sands North; and Bran Sands South) and their immediate surroundings only;
 - Species occurring only within non-tidal habitats (represented by Quarries and Lagoons; and Coatham Marsh) include lapwing, redshank and ruff. Shoveler, teal, cormorant, shelduck, and common tern occurred to varying extents in coastal and inland count sectors; and
 - Species occurring at Haverton Hole North were represented by a range of waders and ducks, with teal and shoveler being especially numerous here on a year-round basis.

WeBS Low Tide Counts

- 15.4.8 BTO provided all available Low Tide count data for the Tees Estuary. The most recent estuary-wide count was carried out monthly from November 2018 to February 2019, inclusive.
- 15.4.9 The Low Tide count data are summarised in Table 15A-6 and the count sectors are shown on Figure 15A-2. Selected count data for those sectors that overlap or are close to the Site Boundary are reproduced in Table 15A-6. Data were available for Sectors DT001–010, DT016, DT021–030, covering most of the Tees Estuary count area and all parts of the estuary that coincide with the Site Boundary. Those sectors that overlap or are immediately adjacent to the Site Boundary include: DT021, DT022, DT026, DT027 and DT028. Sectors DT023, DT024 and DT029 cover Bran Sands just to the north and west of the Site Boundary. The key areas for which data

are available that overlap or are close to the Site Boundary include Coatham Sands to South Gare; and Southwards along the southern bank of the River Tees between Bran Sands and Dabholme Gut.

- 15.4.10 In terms of the SPA and SSSI species, purple sandpiper, ruff and shoveler are notably absent from all of the sectors listed above. Sector DT021 is clearly favoured by dabbling ducks, including gadwall, shelduck and teal, but these species are largely absent from the other sectors surrounding the Site Boundary. The distribution of most of the SSSI and SPA waders (including knot, ringed plover and sanderling) is biased towards sectors flanking the shores of the estuary mouth (Bran Sands to Coatham Sands; sectors DT023, DT024, DT027 and DT028). Other species, particularly redshank, curlew (*Numenius arquata*), oystercatcher (*Haematopus ostralegus*), herring gull and lapwing are more widely distributed, occurring in the majority or all of the sectors in Table 15A-6. Comparing the peak count for each sector with that for the whole estuary in winter 2018-19, the sectors overlapping and adjacent to the Site Boundary held a large proportion of the total (whole estuary) counts of some of the SPA and SSSI species, notably knot, redshank, ringed plover, sanderling, shelduck and teal.
- 15.4.11 The data are used to support the description of ornithologically sensitive areas in paragraphs 15.4.49-15.4.57 and the species accounts in paragraphs 15.4.59-15.4.104.

Table 15A-6: WeBS Low Tide Counts (2018-19) of species notified as Ramsar, SPA and SSSI interest features for selected count sectors within the Tees Estuary Count Area (shaded columns indicate sectors that overlap the Site Boundary)

Sector Species (see footnotes)	DT021		DT022		DT023		DT024		DT026		DT027		DT028		DT029		Winter max. for whole count area
	Peak	Mean															
Black-headed Gull ¹ <i>Chroicocephalus ridibundus</i>	80	60	3	1	82	28	16	6	48	17	89	62	280	99	18	5	628
Cormorant ³ <i>Phalacrocorax carbo</i>	11	3	4	2	0	0	0	0	12	8	1	0	12	6	0	0	55
Curlew <i>Numenius arquata</i>	8	7	5	3	3	1	6	4	5	3	1	0	8	5	3	2	63
Dunlin <i>Calidris alpina</i>	0	0	0	0	2	1	2	1	0	0	1	0	0	0	0	0	10
Gadwall ² <i>Mareca strepera</i>	43	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
Herring Gull ¹ <i>Larus argentatus</i>	61	31	100	44	27	11	109	38	77	55	59	37	240	120	138	41	1607
Knot ^{1,2} <i>Calidris canutus</i>	0	0	1	0	0	0	1	0	0	0	0	0	115	29	0	0	115
Lapwing ¹ <i>Vanellus vanellus</i>	548	227	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1952

Sector Species (see footnotes)	DT021		DT022		DT023		DT024		DT026		DT027		DT028		DT029		Winter max. for whole count area
	Peak	Mean															
Purple Sandpiper ² <i>Calidris maritima</i>	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	7
Redshank ^{1,2} <i>Tringa totanus</i>	134	86	17	8	5	3	8	6	3	1	26	13	11	9	10	6	491
Ringed Plover ² <i>Charadrius hiaticula</i>	0	0	0	0	0	0	3	1	0	0	9	2	0	0	0	0	26
Ruff ^{1,2} <i>Calidris pugnax</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sanderling ^{1,2} <i>Calidris alba</i>	0	0	0	0	0	0	0	0	0	0	15	6	120	55	0	0	135
Shelduck ^{2,3} <i>Tadorna tadorna</i>	138	129	0	0	0	0	0	0	0	0	0	0	0	0	3	1	156
Shoveler ^{2,3} <i>Spatula clypeata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Teal ³ <i>Anas crecca</i>	848	677	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1020
Wigeon ¹ <i>Mareca penelope</i>	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	303

¹ SPA/Ramsar notified feature, individually or as part of wintering assemblage

² SSSI notified feature

³ former SPA/Ramsar notified feature.

INCA Species Records

- 15.4.12 Industry Nature Conservation Association provided extensive ecological records that included:
- Results of various breeding bird surveys carried out by INCA between 2017 and 2019 to inform assessments for a number of proposed developments;
 - Known colonial breeding locations for a number of species for which the SPA and SSSI are designated;
 - Copies of the Little Tern Project reports for 2019 (Bell and Leakey, 2019) and 2020 (Anon, 2020); and
 - Known high tide roost locations for a number of wetland bird species, some of which are qualifying interest features of the SPA and SSSI designations.
- 15.4.13 Detailed records of colonial nesting sites of species for which the Teesmouth and Cleveland Coast Ramsar, SPA and SSSI are treated as sensitive. As such these are included only in Appendix 15B: Confidential Ornithology Baseline Report. Ringed plover has been recorded nesting (at least four pairs in 2019) and roosting at Seaton Carew with dunlin, turnstone and sanderling using the same area in July and August (Bell and Leakey, 2019; Anon, 2020).
- 15.4.14 High tide wetland bird roost sites are tabulated and cross referenced to maps in Annex 3. Regular high tide roosts north of the River Tees are concentrated around the margins of Seal Sands bay (predominantly for waders, with some including shelduck), the eastern stretches of Greatham Creek (waders), Seaton Snook (waders) and North Gare (waders). Outlying roosts are also located on the upstream sections of the Tidal River Tees for redshank and for several species of wader at Hartlepool coastal locations. South of the River Tees there are regular roosts at Bran Sands Island (waders and cormorant), South Gare/German Charlies (waders), Coatham Sands (waders and occasionally up to 10 sandwich terns) and a redshank roost at Coatham Boating Lake, which was reported to hold up to 250 redshank in 2018 (Brown, 2019).
- 15.4.15 None of the known roosts are within the Site Boundary. North of the Tees the closest roost to the Site Boundary (Seal Sands Peninsula), supporting redshank and shelduck, is approximately 750 m north of the Site Boundary. South of the Tees the closest roosts are Bran Sands Island (450 m north of the Site Boundary, supporting cormorant and oystercatcher, and Coatham Sands (250 m east of the Site Boundary). The Coatham Sands roost supports 200-300 oystercatcher and is subject to significant disturbance from recreational visitors to the coast, with birds moving off to the South Gare roost at times.
- 15.4.16 Records of barn owl provided by INCA confirmed breeding at two locations within the Study Area, further details of which are included in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref 6.4).

Royal Society for the Protection of Birds

- 15.4.17 The RSPB supplied almost 3,000 species records, the majority of them birds, for the period 2015 to 2019. A large number of these are records of species that are common and widespread and/or lack details (such as location, evidence of breeding, roosting or regular habitat use) that could be used for the purposes of an impact assessment. However, records relating to some of the species for which the SPA and SSSI are designated, plus records of breeding for a number of species afforded elevated levels of protection under the Wildlife and Countryside Act 1981 (as amended) were included in the data set. Further narrative on these is provided below, however the records are not shown on a figure as there is a low degree of precision in the locational information provided for them.
- 15.4.18 Common tern bred consistently north of the River Tees. RSPB also provided some records of breeding little tern locations. Further details are included in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).
- 15.4.19 Little tern breeding records suggested evidence of breeding at two locations, though these are not additional to the locations identified by INCA. Discussion of these records is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).
- 15.4.20 Avocet have bred or attempted to breed consistently at several locations north of the River Tees. Discussion of these records is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).
- 15.4.21 Redshank, lapwing, shoveler, shelduck, gadwall, garganey (*Spatula querquedula*), mallard (*Anas platyrhynchos*), teal and a range of other breeding species associated with lowland open waters and marginal wetland habitats were included in the data set as possible, probable and confirmed breeding species within Saltholme RSPB Reserve. Teal was recorded as present but not breeding.
- 15.4.22 Additional records of notable species provided by RSPB include barn owl, Cetti's warbler, garganey, little ringed plover, marsh harrier and peregrine. Further discussion regarding their breeding status and locations is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).

Teesmouth Bird Club

- 15.4.23 Records extracted from bird reports provided by TBC (Joynt, 2017; Joynt, 2018; and Brown, 2019) have been included as supplementary information to support the data presented above. There were no further records from these sources that could be used to support the impact assessment.

Through the Tide Counts

- 15.4.24 Annex 4 includes summary tables of peak counts, monthly total and annual counts of individual species recorded during the surveys for which Teesmouth and Cleveland Coast Ramsar and SPA notified features (redshank, sandwich tern, common tern and little tern, shoveler, teal and

sanderling). These tables should be viewed alongside Figures 15A-5 to 15A-8, which provide a visual summary of the count data for individual species for which the SPA is notified.

15.4.25 Assemblage and SSSI species are not tabulated, but narrative is provided for them below. Some patterns of spatial and temporal distribution can be observed from the baseline data:

- Little tern (Figure 15A-5) was recorded in small numbers over a single intertidal survey in July and was exclusively associated with the intertidal habitats at the western end of the Survey Area, though the small number of sightings is not sufficient to determine a strong pattern of habitat use. Similarly, Sandwich and common terns were recorded during summer and only within intertidal habitats but in much larger numbers, especially in the late part of the breeding season and post-breeding dispersal / migration periods when numbers were swollen by the presence of recently fledged juveniles;
- Sandwich tern (Figure 15A-6) was present on only two of the surveys (in May and July), when groups of birds were recorded loafing⁸, roosting and preening on the intertidal habitats of Coatham Sands. July's surveys contributed the most significant records of this species, with peak counts overall of 172 birds;
- Common tern (Figure 15A-7) was recorded during September and July only within the intertidal habitats of Coatham Sands. The peak count of 21 occurred in September;
- Redshank (Figure 15A-8) was recorded in November only almost exclusively within intertidal habitats and one of the lagoons immediately north of the SSSI, with only two individuals recorded elsewhere (Coatham Marsh);
- Sanderling was recorded in all months except October, December, February, May and June, in modest numbers (the peak monthly total was 63 individuals) exclusively within intertidal habitats with a distribution bias towards the western end of the Survey Area;
- There was no obvious pattern of shoveler presence, with one individual on the Steel House Pond in August. There were no wintering records for this species;
- Teal was present within the Survey Area in all months except May, June and August. Occasional presence was recorded at one of the lagoon ponds within the Coatham dunes and the River Fleet. However regular presence in small numbers was recorded on the Steel House Pond, where peak numbers were recorded over the autumn and winter months (October – January);
- Cormorant was recorded exclusively in November and December, during which a peak count of five individuals was recorded for the entire Survey Area. It was distributed exclusively within inland count sectors

⁸ Loafing is defined as behaviour not connected with feeding or breeding. It is a form of resting behaviour, other than roosting. It can be observed as birds appearing to stand around idly and may enable them to digest food while minimising energy expenditure.

and favoured the Steel House Pond, though it was occasionally present also within channels and water bodies within Coatham Marsh, Teardrop and at the southern end of the Teesside Works;

- Lapwing was recorded in all months except December, January and April and exclusively within inland sectors. The majority of records were within one of the lagoons directly to the north of the SSSI and terrestrial habitats at the southern end of Teardrop;
- Ringed plover was recorded twice only, in September and June, feeding in small numbers on the intertidal habitats of Coatham Sands;
- Shelduck was recorded exclusively between April and June within Teardrop, where displaying adults were recorded, and to the west of SSSI on a channel within the Teesside Works. The results of the breeding bird surveys confirmed breeding for this species within Teardrop. There were no wintering records for this species;
- Maximum peak counts of herring gull and black-headed gull were 671 and 137 respectively. Both species were regularly present in largest numbers within coastal count sectors (i.e. on coastal sands and intertidal habitats). Herring gull was present in spring and summer in small numbers regularly within count sectors close to the PCC Site;
- A peak count of 128 gadwall at Steel House Pond in October represents the key observation of this species. Elsewhere it was occasionally counted in small numbers; and
- Wigeon was recorded on Steel House Pond (peak count 26) and Coatham Marsh (peak count four) in September only.

Common Bird Census Surveys

15.4.26 Annex 5 contains tables summarising the number of breeding “units”⁹ of each species, the number of non-breeding species and conservation status of each species recorded during the CBC surveys in 2018 and 2020.

Results of CBC surveys in 2018

15.4.27 Forty-one breeding species were recorded, of which seven are Red Listed, eight are Amber Listed and 14 are of local priority for the preparation of action plans in the Tees Valley (equivalent to LBAP status) and/or is listed on Section 41 of the NERC Act. There were no breeding Annex 1 or Schedule 1 species recorded. Birds were distributed throughout the semi-natural habitats within Teardrop, Steel House Loop, Coatham Sands and both substation survey areas.

15.4.28 Twenty-five non-breeding species were also recorded, the majority of which were either present but showed no signs of breeding or were recorded only in flight across the Survey Area. Among these are three Schedule 1 species (barn owl, marsh harrier, whimbrel); and three birds included on Annex 1 and/or the Rare Breeding Birds Panel (RBBP) breeding lists (little egret *Egretta garzetta*), marsh harrier and whimbrel *Numenius phaeopus*); and 10 species that are otherwise threatened, declining or vulnerable as per their

⁹ Population units i.e. breeding territories or pairs are the standard units used by Musgrove *et al.* (2013)

inclusion on one or more of the RSPB Red and Amber Lists, the LBAP and Section 41 of the NERC Act. Skylark, linnets and reed bunting – all of which bred within the SSSI/ Teardrop and Coatham Sands survey areas – are listed as interest features of Teesside NNR, however none of the other species recorded during the CBC surveys are listed as qualifying / notified features of any of the statutory designated sites identified in Table 15A-4.

- 15.4.29 There are few identifiable patterns to the outcome of the breeding bird surveys. Breeding birds were generally distributed as would be expected according to their habitat preferences, and larger numbers of breeding birds were identified in areas with larger expanses and / or diversity of semi-natural habitats. Wetland birds were almost exclusively identified within Survey Areas containing coastal or other wetland habitats (SSSI/ Teardrop, Steel House Loop and Coatham Sands). Breeding skylark was particularly numerous within Coatham Sands, which contains large expanses of relatively undisturbed open habitat that are potentially attractive to ground-nesting birds.
- 15.4.30 Barn owl was recorded within the Survey Area. Further discussion of this species is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).

Results of CBC Surveys in 2020

- 15.4.31 Updates to the design of the Proposed Development since completion of the surveys negated the need for any of the data to the west, south and east of the Wilton industrial complex to be considered further, consequently these data are not presented.
- 15.4.32 The area within the Site Boundary as a whole supported modest numbers of largely common and widespread breeding species. Fifty-four species were recorded in total, 29 of which were recorded as breeding. Of the breeding species recorded, 10 are included on one or more lists of conservation priority or concern¹⁰:
- Six are Red List Species;
 - Six are Amber List Species;
 - One is listed on Schedule 1 of the WCA and is a regular breeding species listed by the Rare Breeding Birds Panel;
 - Nine are priority species listed on Section 41 of the NERC Act; and
 - One is listed on Annex 1 of the European Union (EU) Wild Birds Directive 2009.
- 15.4.33 Two schedule 1 species (barn owl and little ringed plover) were recorded breeding within the Survey Area. Further discussion of these records is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).

¹⁰ Detailed information regarding wildlife legislation, planning policy and guidance relevant to birds is provided in Appendix 12A (ES Volume III, Document Ref. 6.4) of the ES.

PCC Site

- 15.4.34 The PCC Site supported 24 species, of which 16 were recorded as breeding. There were 35 territories present in total, including the following species of conservation concern or priority:
- lapwing (2 territories); skylark (3 territories) and meadow pipit (*Anthus pratensis*) (4 territories) are ground-nesting species and were recorded on open grassland, bare and disturbed ground;
 - Herring gull (1 territory) was recorded nesting on a building rooftop;
 - Song thrush (*Turdus philomelos*) (1 territory) was recorded in trees and scrub; and
 - Linnet (3 territories) was recorded in gorse scrub.
- 15.4.35 Other than the species above, the breeding bird assemblage included a range of common warblers (of which whitethroat (*Curruca communis*) was the most numerous), thrushes, tits, pigeons/doves, corvids and finches breeding in the mosaic of trees, scrub, buildings and open habitats.
- 15.4.36 Species of conservation concern for which no evidence of breeding was recorded were typically present opportunistically feeding or resting within the survey area. These included curlew and black-headed gull on open habitat; willow warbler (*Phylloscopus trochilus*), house sparrow (*Passer domesticus*) and dunnock (*Prunella modularis*) in wooded and scrub habitats; and reed bunting among scrub/hedgerow habitat within the north-western boundary of the survey area.

Haverton Hill Laydown Area

- 15.4.37 The laydown area supported 32 species of which nine were recorded as breeding. There were fifteen territories recorded in total (one of which was a rookery with three nests), including the following species of conservation concern or priority:
- Mallard (1 territory) within a ditch along the northern edge of the laydown area; and
 - Dunnock (1 territory) within scrub and hedgerow close to the northern edge of the laydown area.
- 15.4.38 All other breeding and non-breeding species in this area were represented by a range of common warblers (blackcap (*Sylvia atricapilla*), whitethroat, chiffchaff (*Phylloscopus collybita*), reed warbler (*Acrocephalus scirpaceus*) and sedge warbler (*Acrocephalus schoenobaenus*), wren (*Troglodytes troglodytes*), goldfinch (*Carduelis carduelis*), moorhen (*Gallinula chloropus*), tits (blue tit (*Cyanistes caeruleus*), great tit (*Parus major*), long-tailed tit (*Aegithalos caudatus*)), robin (*Erithacus rubecula*), corvids and great-spotted woodpecker (*Dendrocopos major*) present within the woodland, scrub, open grassland and marginal ditches and reedbeds. Non-breeding species of conservation concern included little egret, oystercatcher, greylag goose (*Anser anser*), black-headed gull, gadwall, skylark and song thrush, the majority of which were either observed or presumed to be foraging opportunistically within the survey area. An additional observation of a single

peregrine flying high over the survey area was made, providing further evidence that this species may breed in the wider area.

Connection Corridor South of the River Tees

- 15.4.39 The connection corridor supported 38 species, of which 14 were recorded as breeding. There were 45 territories present in total, including the following species of conservation concern or priority:
- Willow warbler (1 territory) within trees and scrub;
 - Meadow pipit (4 territories) within open grassland habitat;
 - Linnet (1 territory) within hedgerow and scrub habitat; and
 - Reed bunting (4 territories) within reedbed habitat alongside/within ditches.
- 15.4.40 The breeding bird assemblage in this part of the Site Boundary was therefore predominantly represented by a range of common species including: finches (goldfinch, chaffinch (*Fringilla coelebs*)), tits (long-tailed tit), magpie (*Pica pica*), wood pigeon (*Columba palumbus*), wren and warblers (chiffchaff, sedge warbler, whitethroat). This assemblage was recorded within the range of grassland, scrub and wooded habitats that exist largely as scattered stands interrupted by extensive industrial, transport and services infrastructure including buildings, roads, rail, hardstanding, pipework, electrical infrastructure and water treatment works. Tufted duck (*Aythya fuligula*) was recorded breeding on a pond immediately south of Tees Dock Road.
- 15.4.41 Non-breeding species present, feeding or using the available habitat opportunistically, included a number of species of conservation concern including shelduck, mallard, oystercatcher, lapwing, black-headed gull, herring gull, kestrel (*Falco tinnunculus*), song thrush, mistle thrush (*Turdus viscivorus*), starling (*Sturnus vulgaris*) and dunnock. The gulls, oystercatcher, lapwing, mallard and shelduck were all recorded on Dabholme Gut on at least two of the three survey visits and these observations significantly boosted the species count for this part of the survey area.

Barn Owl Surveys

- 15.4.42 Breeding and roosting sites for barn owl were recorded within the Survey Area. Discussion of these records is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).

Summary and Evaluation Relevant of Ornithological Receptors

- 15.4.43 It is not necessary in the assessment to address all habitats and species with potential to occur in the Study Area, and instead the focus should be on those that are 'relevant'. CIEEM (2019) makes clear that there is no need to "carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and would remain viable and sustainable". The Tees estuary and its environs support a large and varied avifauna, however it is not practicable or necessary to evaluate and assess

impacts of the Proposed Development on all of them; a large proportion of them occur on a transitory, occasional or irregular basis within the Study Area and as such could not reasonably be defined as 'relevant'.

15.4.44 The key ornithology receptors are set out in detail within Section 15-5 of Chapter 15: Ornithology of the ES (ES Volume I, Document Ref 6.2). In summary, these are:

- All ornithological interest features of Teesmouth and Cleveland Coast Special Protection Area (SPA);
- All ornithological interest features of Teesmouth and Cleveland Coast Ramsar;
- All ornithological interest features of Teesmouth and Cleveland Coast Site of Special Scientific Interest (SSSI);
- The ornithological interest features for which any sites are designated at a local statutory or non-statutory level (known respectively as Local Nature Reserves, LNR; and Local Wildlife Sites, LWS); and
- Breeding and non-breeding birds that do not contribute to the functioning of the above designated sites (i.e. birds occurring more broadly within the wider countryside surrounding and within the Site Boundary).

15.4.45 Species identified as receptors include those that are reasons for the designation of sites such as SPAs and SSSIs and those that are entirely separate from and do not contribute to any designation. However, some species contribute both to the interest features of designated sites and also occur in an individual capacity not related to those designations. For example, ringed plover is part of the non-breeding assemblage feature of the Teesmouth and Cleveland Coast SSSI, however it is also present in the wider area as a breeding species and its importance for conservation at local scale is also considered in the assessment. Species that contribute to the interest features of a designated site are therefore valued at the level of the designation. However, they have also been valued separately so that occurrences of such species can be assessed where this does not contribute to the interest features of a designated site and the scale of importance of the population for nature conservation in the study area is less than national or regional scale.

15.4.46 All other species are valued as part of broader assemblages except where individual species are identified that meet one or more of the following criteria, in which case they are valued separately from the assemblage in which they were recorded:

- Contribute disproportionately to the nature conservation value of an assemblage; or
- Are afforded elevated levels of protection under the WCA (Schedule 1 species) and can be identified as occurring at a specific location.

15.4.47 Values have been assigned to species receptors occurring within the Study Area have been assigned based on the geographic scale at which that

population is important. In doing so, consideration has been given to the perceived importance, rarity of vulnerability of the species with reference to:

- Inclusion on the RSPB Red and Amber Lists of Conservation Concern;
- Inclusion on the Priority Species List for Teesside (Tees Valley Nature Partnership, 2012);
- The known abundance of the species within the Teesmouth Bird Club reporting area, which includes the Boroughs of Redcar and Cleveland, Stockton-on-Tees and Hartlepool (Joynt, 2017; Joynt, 2018; and Brown, 2019);
- The known abundance of the species stated in the relevant County avifaunas for Durham (Bowey and Newsome, 2012) and Yorkshire (Dobbs, 2020);
- Inclusion as a notified feature of a designated site;
- Inclusion on the lists of nationally rare or scarce species in Brown (2019); and
- Rare breeding species monitored by the Rare Breeding Birds Panel (RBBP: <https://rbbp.org.uk/list-of-species-currently-reported-on-by-rbbp/>, accessed January 2021).

15.4.48 The relevant ornithological receptors are summarised in Table 15A-7. Summary accounts are provided for each species receptor in paragraphs 15.4.59–15.4.104 and a summary of key/sensitive locations for ornithological receptors is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).

Table 15A-7: Summary of Relevant Ornithological Features Within the Study Area

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
Teesmouth and Cleveland Coast SPA	<p>Internationally important numbers of marine and shore birds, including:</p> <ul style="list-style-type: none"> • (Pied) avocet (<i>Recurvirostra avosetta</i>) (Breeding) • (Red) knot (<i>Calidris canutus</i>) (Non-breeding) • Ruff (<i>Calidris pugnax</i>) (Non-breeding) • (Common) redshank (<i>Tringa totanus</i>) (Non-breeding) • Sandwich tern (<i>Thalasseus sandvicensis</i>) (Non-breeding) • Common tern (<i>Sterna hirundo</i>) (Breeding) • Little tern (<i>Sterna albifrons</i>) (Breeding) • Waterbird assemblage of 26,014 individual waterfowl including sanderling (<i>Calidris alba</i>), knot (<i>Calidris canutus</i>), shelduck (<i>Tadorna tadorna</i>), cormorant (<i>Phalacrocorax carbo</i>), shoveler (<i>Spatula clypeata</i>) and teal (<i>Anas crecca</i>). Other major components of the assemblage feature include Eurasian wigeon (<i>Mareca penelope</i>), northern lapwing (<i>Vanellus vanellus</i>), herring gull (<i>Larus argentatus</i>) and black-headed gull (<i>Chroicocephalus ridibundus</i>). • In addition to breeding sites the SPA includes areas designated for marine foraging habitats for little tern (<i>Sterna albifrons</i>) and common tern (<i>Sterna hirundo</i>) that extend several kilometres out to sea and along the tidal River Tees; and terrestrial and intertidal foraging areas for avocet (<i>Recurvirostra avosetta</i>) and ruff (<i>Calidris pugnax</i>). 	The PCC Site is immediately south of the SPA. The CO ₂ Export Pipeline; Water Discharge Connection corridor; and CO ₂ Gathering Network are located within the SPA.	International, statutory protected

¹¹ All distances in this Appendix are from an earlier iteration of the Site boundary. As the boundary has been refined and reduced in size actual distances will be slightly greater than reported.

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
Teesmouth and Cleveland Coast Ramsar	<p>Internationally important numbers of marine and shore birds, including:</p> <ul style="list-style-type: none"> • Peak winter count of 9,528 waterfowl (5-year peak mean 1998/99-2002/03) • Peak spring/autumn count of (common) redshank (<i>Tringa totanus</i>); 883 individuals representing an average of 0.7% of the GB population (5-year peak mean 1998/9-2002/3) • Peak winter count of red knot (<i>Calidris canutus</i>); 2,579 individuals representing an average of 0.9% of the GB population (5-year peak mean 1987-1991) <p>Other features include a broad range of freshwater, marsh, intertidal and dune habitats.</p>	The PCC Site is immediately south of the Ramsar. The CO ₂ Export Pipeline; Water Discharge corridor; and CO ₂ Gathering Network are located within the Ramsar.	International, statutory protected
North York Moors SPA	Breeding golden plover (<i>Pluvialis apricaria</i>) and merlin (<i>Falco columbarius</i>).	Located 12 km south -east of the PCC Site.	International, statutory protected
Northumbria Coast SPA	<p>Internationally important numbers of marine and shorebirds including:</p> <ul style="list-style-type: none"> • Wintering turnstone (<i>Arenaria interpres</i>); • Wintering purple sandpiper (<i>Calidris maritima</i>); • Breeding little tern (<i>Sternula albifrons</i>); and • Breeding arctic tern (<i>Sterna paradisaea</i>). 	Located 14.5 km north-west of the PCC Site.	International, statutory protected
Teesmouth and Cleveland Coast SSSI	<p>Nationally important features supported by a mosaic of coastal and freshwater habitats:</p> <ul style="list-style-type: none"> • >20,000 Non-breeding waterbirds; • Aggregations of breeding birds – Avocet (<i>Recurvirostra avosetta</i>), common tern (<i>Sterna hirundo</i>), little tern (<i>Sterna albifrons</i>); 	The PCC Site is adjacent to the SSSI. The CO ₂ Export Pipeline; Natural Gas Connection Corridor; Water Discharge Connection Corridor; and CO ₂ Gathering Network are located within the SSSI. The designation overlaps with other internationally designated sites of the same name.	National, statutory protected

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
	<ul style="list-style-type: none"> • Aggregations of non-breeding birds – Gadwall (<i>Mareca strepera</i>), knot (<i>Calidris canutus</i>), purple sandpiper (<i>Calidris maritima</i>), redshank (<i>Tringa totanus</i>), ringed plover (<i>Charadrius hiaticula</i>), ruff (<i>Calidris pugnax</i>), sanderling (<i>Calidris alba</i>), sandwich tern (<i>Thalasseus sandvicensis</i>), shelduck (<i>Tadorna tadorna</i>), shoveler (<i>Spatula clypeata</i>); and • Assemblages of breeding birds - Mixed: sand-dunes and saltmarsh, lowland open waters and their margins. 		
Durham Coast SSSI	<p>Designated for:</p> <ul style="list-style-type: none"> • Aggregations of breeding birds – cormorant (<i>Phalacrocorax carbo</i>), fulmar (<i>Fulmaris glacialis</i>), kittiwake (<i>Rissa tridactlya</i>), little tern (<i>Sternula albifrons</i>); and • Aggregations of non-breeding birds - purple sandpiper (<i>Calidris maritima</i>), sanderling (<i>Calidris alba</i>). 	Located 12.7 km north-west of the PCC Site.	National, statutory protected
North York Moors SSSI	<p>Designated for:</p> <ul style="list-style-type: none"> • Aggregations of breeding birds – golden plover (<i>Pluvialis apricaria</i>) and merlin (<i>Falco columbaria</i>) 	Located 12 km south-east of the PCC Site.	National, statutory protected
Teesmouth NNR	<p>Designated for the following ornithological interest features:</p> <ul style="list-style-type: none"> • >20,000 waterbird assemblage; • BAP breeding birds; waders, grey partridge (<i>Perdix perdix</i>), skylark (<i>Alauda arvensis</i>), linnet (<i>Linaria cannabina</i>), reed bunting (<i>Emberiza schoeniclus</i>); • Non-breeding knot (<i>Calidris canutus</i>), redshank (<i>Tringa totanus</i>) and shelduck (<i>Tadorna tadorna</i>); • Breeding little tern (<i>Sternula albifrons</i>); • Ringed plover (<i>Charadrius hiaticula</i>) in spring; and 	<p>Encompassed within the boundary of Teesmouth and Cleveland Coast SSSI.</p> <p>Located 700 m north of the Natural Gas Connection Corridor and CO₂ Gathering Network and 2.7 km west of the PCC Site</p>	National, statutory protected

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
	<ul style="list-style-type: none"> Sandwich tern (<i>Thalasseus sandvicensis</i>) (post-breeding). 		
Saltholme RSPB Reserve	<p>The site is one of the largest breeding colonies of common terns (<i>Sternula albifrons</i>) in the UK and breeding lapwing (<i>Vanellus vanellus</i>) (red list) are present, as well as being used by foraging peregrine (<i>Falco peregrinus</i>) and breeding species such as marsh harrier (<i>Circus aeruginosus</i>), Cetti's warbler (<i>Cettia cetti</i>) and little ringed plover (<i>Charadrius dubius</i>).</p> <p>Much of the reserve lies within the Teesmouth and Cleveland Coast SPA and SSSI, within the counties of both Durham and North Yorkshire.</p>	Located 1.15 km west of the PCC Site. The CO ₂ Gathering Network is adjacent to the reserve at Bran Sands.	County, non-statutory
Coatham Marsh LWS	Designated for a range of wetland habitats, and of interest for a range of breeding and non-breeding birds.	Located 600 m east of the PCC Site. Adjacent to the Water Connection Corridor	County, non-statutory
Little tern (<i>Sternula albifrons</i>) ¹	<p>Breeding and foraging species</p> <p>WBD Annex 1</p> <p>WCA Schedule 1</p> <p>RBBP less scarce</p> <p>Amber List</p> <p>LBAP</p>	<p>Two breeding colonies respectively within 13.5 km and 5.3 km of the PCC Site, and 4.5 km from the closest part of the Proposed Development.</p> <p>Forages in coastal near-shore waters and occasionally adjacent to Coatham Sands.</p>	National
Common tern (<i>Sterna hirundo</i>) ¹	<p>Breeding and foraging species</p> <p>WBD Annex 1</p> <p>Amber List</p>	<p>Two breeding colonies within 7 km of the PCC Site and within 1 km of the Connection Corridors.</p> <p>Regular foraging along Tidal River Tees and coastline adjacent to Water Connection Corridors and CO₂ Export Pipeline.</p>	Borough
Avocet (<i>Recurvirostra avosetta</i>) ¹	<p>Breeding and foraging species</p> <p>WBD Annex 1</p> <p>WCA Schedule 1</p>	Four breeding colonies within approximately 7 km of the PCC Site and between 0.5 km and 2 km of the Connection Corridors.	National

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
	RBBP less scarce Amber List	Regular foraging areas north of the River Tees.	
Knot (<i>Calidris canutus</i>)	Non-breeding species Amber List	Two roosts within 4 km of PCC Site. Closest is 1.1 km from Water Discharge Corridor Forages on Coatham Sands within and adjacent to the Water Connection corridor and CO ₂ Export Pipeline.	Local
Ruff (<i>Calidris pugnax</i>)	Non-breeding species WBD Annex 1 WCA Schedule 1 Red List	Not recorded during surveys. Known distribution is almost exclusively at Saltholme RSPB Reserve and North Tees Marshes more than 5 km west of the PCC Site and a minimum of a few hundred metres from the CO ₂ Gathering Network.	Borough
Redshank (<i>Tringa totanus</i>)	Non-breeding species Amber List	At least 10 regularly used roosts in Study Area. Closest is 2.4 km east of the PCC Site and 1.2 km south-east of the Water Discharge Connection corridor. Recorded in dunes and dune ponds immediately north of the PCC Site and adjacent to the Water Connection Corridors. Regular occurrence in dunes and dune ponds immediately north of the PCC Site and adjacent to the Water Supply and Discharge Connection corridors. Also Dabholm Gut and Bran Sands Lagoon.	Local
Sandwich tern (<i>Thalasseus sandvicensis</i>)	Non-breeding (migratory) species WBD Annex 1 Amber List	At least four roosts in Study Area including adjacent to Proposed Development.	Local

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
Sanderling (<i>Calidris alba</i>)	Non-breeding species Amber List	Two roosts, including adjacent to Water Discharge Corridor. Forages on coastal sands along most of Teesside Coast including within the Water Connection and CO ₂ Export Pipeline corridors and 0.5 km north of the PCC Site.	Local
Shelduck (<i>Tadorna tadorna</i>)	Breeding and non-breeding species Amber List LBAP	Year-round presence at Dabholme Gut and Bran Sands Lagoon (adjacent to the CO ₂ Gathering Network and 1.3 km south of the PCC Site). Occasionally at Bran Sands. Regular presence at sites north of the River Tees within 1 km of CO ₂ Gathering Network and Natural Gas Connection corridor.	Up to Borough
Cormorant (<i>Phalacrocorax carbo</i>)	Non-breeding species Green List	Regular roost at Bran Sands Island 2.1 km west of the PCC Site. Widespread and thinly distributed across Teesside. Small numbers at ponds 0.6 km and 1 km south of the PCC Site.	Local
Shoveler (<i>Spatula clypeata</i>)	Non-breeding species Amber List	Mostly at Saltholme wetlands, Greatham Creek and the North Tees Marshes on fresh and brackish waters. Occasional elsewhere including Steel House Pond adjacent to the CO ₂ Gathering Network.	Local
Teal (<i>Anas crecca</i>)	Non-breeding species Amber List	Regular presence at Dabholme Gut and Bran Sands Lagoon from autumn to spring. Recorded at Steel House Pond, the Fleet and a pond within Coatham Dunes.	Local

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
Wigeon (<i>Mareca penelope</i>)	Non-breeding species Amber List	Small numbers at Coatham Marsh approximately 0.8 km east of the Water Supply Connection Corridor and 1.7 km east of the PCC Site. Recorded once at Steel House Pond.	Local
Lapwing (<i>Vanellus vanellus</i>)	Breeding and non-breeding species Red List NERC S41	Roosts 5.5 km west of the PCC Site and 1.3 km north of the Natural Gas Connection Corridor. Breeds on North Tees Marshes including Saltholme RSPB Reserve. Other occurrences: <ul style="list-style-type: none"> • Coatham Dunes adjacent to the Water Connection Corridors and immediately north of the PCC Site; • Grasslands immediately east of the Electrical Connection corridors and south of the PCC Site; and • Breeding pair recorded within the PCC Site. 	Local
Herring gull (<i>Larus argentatus</i>)	Breeding and non-breeding species Red List NERC S41	Widespread across Teesside. At least one pair recorded breeding on industrial building within the PCC Site. Recorded regularly in industrial land immediately south and west of the PCC Site between Dabholme Gut and Coatham Sands.	Local
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	Non-breeding species Amber List	Widespread across Teesside coast and estuary. Roosts and feeds at Coatham Sands adjacent to the Water Connection Corridors and immediately north of the PCC Site.	Local

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
Gadwall (<i>Mareca strepera</i>)	Non-breeding species Amber List	Closest key locations are: <ul style="list-style-type: none"> Dabholme Gut and Bran Sands Lagoon adjacent to the CO₂ Gathering Network and 1.3 km south of the PCC Site; Steel House Pond; sand Coatham Marsh approximately 0.8 km east of the Freshwater Connection Corridor and 1.7 km east of the PCC Site. 	Local
Purple sandpiper (<i>Calidris maritima</i>)	Non-breeding species. WCA Schedule 1 Amber List	Roosts and other occurrences within Study Area are distant from Proposed Development. Roosts at Hartlepool West Harbour 8.5 km northwest of the PCC Site and 7.1 km northwest of the Water Discharge Corridor. Mostly occurs within Hartlepool Bay area >13 km northwest of the PCC Site.	Local
Ringed plover (<i>Charadrius hiaticula</i>)	Breeding and Non-breeding species. Red List	Breeds and roosts at Seaton Carew little tern colony 5.3 km north-west of the PCC Site. Forages on intertidal habitats of Coatham Sands (adjacent to Water Connection Corridors and immediately north of PCC Site).	Borough
BAP ground-nesting birds; waders, grey partridge (<i>Perdix perdix</i>), skylark (<i>Alauda arvensis</i>), linnets (<i>Linaria cannabina</i>), reed bunting (<i>Emberiza schoeniclus</i>)	Breeding ground nesting bird assemblage: NERC S41 Red List Tees BAP	As per Teesmouth NNR.	National within the NNR
Barn owl (<i>Tyto alba</i>) ¹	Breeding, roosting and foraging species WCA Schedule 1 Green List	Five locations including roosts and breeding sites within the Study Area. Forages over Coatham Dunes, adjacent grasslands and Coatham Marsh.	Up to Borough

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
	Tees BAP		
Little ringed plover (<i>Charadrius dubius</i>) ¹	Breeding species. WCA Schedule 1 NERC S41 RBBP scarce Green List	One breeding pair within the Site Boundary. Several other breeding locations north and south of the River Tees within the Study Area.	County
Marsh harrier (<i>Circus aeruginosus</i>) ¹	Breeding species WCA Schedule 1 RBBP Scarce Amber List	Confirmed breeding at one location within the Study Area in 2019. Forages over North Tees Marshes.	National
Cetti's Warbler (<i>Cettia cetti</i>) ¹	Breeding species. WCA Schedule 1 Green List	Confirmed breeding at a location within the Study Area in 2019.	Borough
Breeding bird assemblage (PCC and Teesworks Laydown)	Sixteen species including 5 Red List, 1 Amber List and 5 NERC S41 species. This feature is assessed exclusive of any individual species named above.	Within the PCC Site.	Local
Breeding bird assemblage within Coatham Dunes	Twenty breeding species including three Red List, six Amber List and one Tees BAP and NERC S41 species. Includes 17 pairs of skylark (<i>Alauda arvensis</i>) and a range of dabbling ducks and passerines. This feature is assessed exclusive of any individual species named above.	Adjacent to the PCC Site. Within and adjacent to Water Connection Corridors and CO ₂ Export Pipeline.	Borough
Breeding bird assemblage immediately east of the PCC (including "Teardrop and "Steel House Loop" survey areas).	Thirty-five breeding species (four Red List, eight Amber List and one Tees BAP and NERC S41 species). Includes several species of dabbling duck and a variety of passerines.	Immediately east and south-east of the PCC Site. Immediately to the east of the Natural Gas, Electrical and CO ₂ Gathering Network corridors.	Local

Relevant ecological feature	Description of feature	Relationship to the Proposed Development ¹¹	Ecological value and status
	This feature is assessed exclusive of any individual species named above.		
Breeding Bird Assemblage (Saltholme Laydown and Access)	Eight breeding species recorded (one Red List). This feature is assessed exclusive of any individual species named above.	Partially within Laydown/Access and CO ₂ gathering networks corridor.	Local
Breeding bird assemblage (Haverton Hill Laydown and Access)	Birds nesting on ground, in trees/scrub and in wet ditches. Nine breeding species including two Amber List species	Within laydown area and immediately south of CO ₂ Gathering Network corridor.	Local
Breeding Bird Assemblage (connection corridor between Tod Point Substation and A1053/A1058 south of Teesside Works Lackenby)	Includes 14 breeding species (one Red List, three Amber List, and two NERC S41 species). This feature is assessed exclusive of any individual species named above.	Within corridor retained for site access along A1053 Tees Dock Road.	Local

¹¹Detailed locational information for this species, especially breeding locations, is restricted to Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4 and associated figures).

Summary of Key Locations for Birds

- 15.4.49 The close association of offshore marine, intertidal, non-tidal coastal, onshore wetlands and terrestrial habitats within the Teesside area are attractive to a wide range of birds. Many of these occur in a regular capacity, while many more occur in an irregular or transient way. While the presence of sites designated for ornithological interest features is aligned with the occurrence of such species, and the detailed baseline is presented in Paragraphs 15.4.1–15.4.48 of this baseline appendix, it is contextually important for the assessment of the Proposed Development to understand the key locations for birds more specifically within and close to the footprint of the Proposed Development, and within the wider Study Area.
- 15.4.50 Within and adjacent to the Proposed Development south of the River Tees, brownfield land characterised by low growing semi-natural grasslands and ephemeral/short perennial habitats between Steel House and the PCC Site (including land within the PCC Site) support assemblages of breeding birds of local value that include a number of ground-nesting species such as skylark, linnet, meadow pipit and small numbers of wading birds such as lapwing, which breeds within the PCC Site. Small areas of open habitat west and north of Steel House are used on high tides over winter by roosting and feeding lapwing, with peak numbers recorded at 176.
- 15.4.51 Coastal habitats adjacent to the PCC Site, water discharge corridors and CO₂ Export Pipeline (Coatham Dunes and Coatham Sands) support a range of breeding, feeding and roosting species. The dune grasslands, open habitats and dune scrub, punctuated by small open waters and ponds that have succeeded to swamp habitats support a breeding assemblage of mostly ground-nesting species (principally skylark, linnet, reed bunting, meadow pipit), warblers and a small number of breeding ducks (shelduck, gadwall and mallard) within the Dune System. Barn owls forage over the dune grasslands and Coatham Marsh LWS. The open habitats around the dune ponds are used by feeding and roosting waders (lapwing and redshank) in winter.
- 15.4.52 Coatham Sands is used more broadly during the non-breeding season by feeding waders (ringed plover, knot, dunlin, sanderling), although there is little to separate this section of intertidal coastline with the rest of this habitat type across Teesside in terms of the occurrence of such species. Loafing, feeding and roosting sandwich tern and common tern occur on the intertidal habitats here and these species also forage offshore. Little tern occurs less commonly here due to the effect of distance from known nest sites. A high tide roost for oystercatcher, sandwich tern and several other waders occurs above mean high water between the water discharge corridors.
- 15.4.53 South of the River Tees but further from the footprint of the Proposed Development, oystercatcher and cormorant regularly roost at Bran Sands Island, although the habitats within Bran Sands are of interest generally for foraging waders, gulls, common tern and Sandwich tern. Little tern has also been recorded close to this location. The mouth of the River Tees and the tidal extent of the River Tees channel are important for foraging common tern. The intertidal muds of Dabholme Gut and Bran Sands Lagoon are

important foraging areas for a range of SPA and SSSI species including redshank, lapwing, common tern and shelduck.

- 15.4.54 North of the River Tees, key areas of ornithological interest include Saltholme RSPB Reserve and the North Tees Marshes and Seal Sands Bay. The mudflats, saltmarsh, brackish pools and freshwater pools and coastal grasslands here collectively support a large and diverse range of breeding, roosting and feeding birds that contribute to the interest features of the SSSI and SPA, including breeding common tern, breeding avocet, wintering ruff and large numbers of wintering and breeding waterfowl and waders including redshank, lapwing, wigeon, teal and shelduck across a wide area. RSPB Saltholme Reserve, Seal Sands Bay and the North Tees Marshes broadly account for this ornithological interest, and the periphery of Seal Sands Bay is important for roosting waders (redshank, curlew, oystercatcher) and shelduck. However, there are other specific locations for breeding species that are restricted to Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).
- 15.4.55 The Coastal Sands north of the River Tees support scattered breeding colonies of species such as ringed plover; and high tide roosts for ringed plover and other waders including oystercatcher, knot and grey plover (*Pluvialis squatarola*), however these are distant (generally between 1 and 13 km) from the Proposed Development.
- 15.4.56 In terms of ornithological constraints to the Proposed Development, the following areas (in order of distance from the Proposed Development) can be considered important because they regularly support one or more relevant ornithological features:
- The brownfield habitats, including semi-improved neutral grassland, ephemeral/short perennial and bare ground intersected by small standing and flowing freshwaters (ponds, streams, ditches and rivers/streams) and ditches within the PCC Site and between the PCC Site and Steel House support a locally important breeding bird assemblage and small numbers of breeding and roosting species that are of greater than local importance;
 - Coatham Dunes adjacent to the Water Discharge Corridors and CO₂ Export Pipeline support a locally important assemblage of breeding birds and provide a foraging resource for barn owl;
 - Coatham Sands and Bran Sands are important for feeding, roosting and loafing waders, gulls and terns;
 - The mouth and channel of the River Tees are important for foraging common tern;
 - The north Tees Marshes up to and including Seal Sands Bay and Saltholme RSPB reserve are important for breeding and wintering birds. Saltholme RSPB Reserve supports a large assemblage and breeding birds; and
 - Scattered locations along the coastal sands north of the River Tees are important for breeding SPA and SSSI species and roosting coastal birds.

- 15.4.57 Further summary information for each species taken forward for assessment (see Table 15A-7) is included in paragraphs 15.4.59–15.4.104 of this report, with specific information regarding the breeding locations of sensitive species restricted to Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).

Species distribution

- 15.4.58 The following paragraphs provide short accounts of distribution and occurrence for the species identified as receptors in Table 15A-7, based on the detailed survey data and third-party records presented in paragraphs 15.4.1-15.4.48 of this baseline appendix. Short accounts are also provided for bird assemblages recorded during AECOM surveys. Locations and summary details of high tide roosts are provided in Annex 3.

Little tern

- 15.4.59 Little terns nest within the Study Area, further details of which are provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).
- 15.4.60 Little terns forage along the coast fairly close to shore and also out to sea. The core foraging range along the coast has been defined as a mean maximum of 3.9 km from the colony (maximum 7 km; Natural England, 2018), beyond which the occurrence of this species would be very infrequent. Within the areas surveyed by AECOM, this species occurred in small numbers feeding and loafing on Coatham Sands close to the Water Discharge Connection corridor in July, according with WeBS core count data that showed them to be present almost exclusively in this area in July.

Common tern

- 15.4.61 Common terns nest at several sites north of the River Tees, further details of which are provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4). Common terns forage over open water offshore, along the tidal River Tees and closer to the shore along the coast, their core foraging range along the coast encompassing the entirety of the tidal River Tees and most of the coastal shore within the SPA, including all of that south of the River Tees (Natural England, 2018).
- 15.4.62 WeBS data include regular occurrences of common tern between May and September along the coast at Coatham Sands adjacent to the Water Discharge and CO₂ Export Pipeline and Bran Sands, with much smaller numbers and infrequent occurrence at Coatham Marsh. AECOM surveys detected common terns exclusively on the intertidal habitats of Coatham Sands. Away from breeding colonies common terns forage over a large area but the majority of records of this species are between Bran Sands and Coatham Sands adjacent to the Water Discharge Connection corridor and CO₂ Export Pipeline.

Avocet

- 15.4.63 This species breeds in small colonies at regular locations north of the River Tees, further information on which is provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4). Avocet

feed across the North Tees Marshes. This species was not recorded during AECOM surveys.

Knot

- 15.4.64 This species was not recorded during AECOM surveys, however third-party data provide a relatively detailed picture of its distribution.
- 15.4.65 South of the river Tees knot are almost exclusively found on Coatham Sands. They are absent from most of the rest of the Tees Estuary Low Tide count area covered by WeBS, being distributed mainly within low tide count sectors flanking the mouth of the River Tees, almost entirely within and adjacent to the Water Connection corridors and CO₂ Export Pipeline. Habitat preferences would restrict it to intertidal habitat mostly in excess of 500 m from the PCC Site. Core count data provided by WeBS show a similar pattern of winter high tide habitat use and distribution south of the Tees, across Coatham Sands and Bran Sands.
- 15.4.66 There are regular knot roosts at three locations across the Study Area from Hartlepool in the north as far south as North Gare and Seaton Snook North of the River Tees.

Ruff

- 15.4.67 Absent from WeBS data south of the Tees and not recorded during surveys, this species occurs more widely across the North Tees Marshes (Smith, 2011) in autumn as indicated by WeBS Core Count data. It has occurred occasionally at Coatham Marsh South of the River Tees and is known to occur regularly at Saltholme RSPB and across the North Tees marshes including Cowpen Marsh northwards to Greenabella and Greatham Creek (Natural England, 2018).
- 15.4.68 This distribution would put the species largely within habitats in excess of 5 km west of the PCC Site but within potentially a few hundred metres from the CO₂ Gathering Network.

Redshank

- 15.4.69 WeBS data shown that wintering redshank occurs in large numbers at Dabholme Gut and is widespread elsewhere north and south of the River Tees, especially Greenabella Marsh/Greatham Creek. It also occurs within the dunes and dune ponds immediately north of the PCC Site and within all sectors along the shore south of the River Tees with peak numbers in spring, autumn and winter.
- 15.4.70 AECOM surveys recorded redshank on the intertidal habitats of Coatham Sands and at a Dune Pond immediately north of the PCC Site in November, where a maximum count of five birds was recorded.
- 15.4.71 There are at least 10 regularly used redshank roosts within the Study Area, from Hartlepool North Sands southwards to Redcar (Annex 3). The evidence suggests that Coatham Dunes plays a minor role as a roost site in the context of the wider distribution of roosts across Teesside; for instance at Coatham Boating Lake there is a regular roost where up to 250 redshank have been recorded (Annex 3).

15.4.72 The species occurs regularly adjacent to and within the Water Connection corridors, the CO₂ Export Pipeline and adjacent to the PCC Site.

15.4.73 Redshank breed on the North Tees Marshes and at Saltholme RSPB Reserve (Smith, 2011).

Sandwich tern

15.4.74 On Teesside this species occurs only across the lower Tees Estuary between spring and autumn. AECOM surveys recorded it roosting and loafing on Coatham Sands both within and adjacent to the Water Connection Corridors and the CO₂ Export Pipeline, in May and July. WeBS data include counts exceed 100 birds on Coatham Sands and Bran Sands. Key areas include roosts at Coatham Sands, Seal Sands, North Gare Sands/Seaton Snook and Bran Sands. They feed in shallow inshore waters in and around the estuary mouth (Natural England, 2018).

15.4.75 Sandwich tern has been recorded adjacent to the Water connection corridors and CO₂ Export Pipeline, although its recorded occurrence has not been within 500 m of the PCC Site and it is most likely to occur close to or on intertidal habitats.

Sanderling

15.4.76 Both Low Tide and Core Count data show sanderling to follow very similar patterns of distribution to those of Knot, with the intertidal habitats of Bran Sands and Coatham Sands being used almost exclusively. This was confirmed by AECOM surveys. Foraging sanderling therefore occur adjacent to and within the Water Connection Corridors and CO₂ Export Pipeline, though their habitat preferences for the use of intertidal foraging habitat would put them typically 500 m or more from the PCC Site.

15.4.77 Sanderling roosts occur at Coatham Sands and Seaton Carew, the former being adjacent to the Water Connection corridor.

Shelduck

15.4.78 South of the River Tees this species overwinters almost exclusively within and adjacent to Dabholme Gut according to low tide data and also sometimes at Bran Sands (Smith, 2011), however Core Count data show this species to be present in winter around the Saltholme Area (Haverton Hole) as well. North of the River Tees third party records indicated good numbers occurring regularly at Greatham Creek and within Teesmouth NNR, the mudflats of Seal Sands being an important feeding and roosting resource (Natural England, 2018).

15.4.79 Shelduck are widespread during the breeding period and this accounts for all shelduck records from AECOM surveys. Breeding was recorded within the wet grasslands immediately east of the electricity, natural gas and CO₂ Gathering Network corridors east of the PCC Site.

15.4.80 The closest regular occurrences of wintering shelduck are at Dabholme Gut, approximately 1.3 km south of the PCC Site and within the Natural Gas Connection and CO₂ Gathering Network corridors.

Cormorant

- 15.4.81 Cormorant is widespread and thinly distributed across Teesside. In winter key areas for this species are Dabholme Gut, with lesser numbers on Coatham Sands, mostly over open waters. below MLWS. There is a regular cormorant roost at Bran Sands Island 450 m north of the water abstraction point [no longer part of the application] and 2.1 km west of the PCC Site.
- 15.4.82 Single cormorants were recorded roosting and feeding by AECOM at two high tide count locations only: Steel House Pond immediately adjacent to the CO₂ Gathering Network and Natural Gas Connection corridor and almost 1 km south of the PCC Site; and on a pond within the industrial land 610 m south-west of the PCC Site and 180 m south of the Natural Gas Connection corridor.

Shoveler

- 15.4.83 This species is absent from the WeBS Low Tide count data. Core count data identify the presence of shoveler at Bran Sands, Coatham Marsh and Haverton Hole but they are most commonly found on fresh and brackish waters especially within the Saltholme wetlands, Greatham Creek and the North Tees Marshes.
- 15.4.84 Shoveler occurred once during surveys on Steel House pond in August.

Teal

- 15.4.85 Key locations for this species are the saltmarshes and pools predominantly north of the River Tees across the North Tees Marshes, Greatham Creek and Teesmouth NNR. However south of the Tees it occurs at Dabholme Gut and the adjacent River Tees Channel, Coatham Sands and Bran Sands.
- 15.4.86 AECOM surveys recorded regular occurrence of teal in winter on Steel House pond in small numbers (singles and pairs) and occasional occurrence on a lagoon pond in the dunes immediately north of the PCC Site.

Gadwall

- 15.4.87 The distribution of Gadwall mirrors that of Teal but it is present in much lesser numbers and South of R Tees only. It is absent from the core count data set supporting this baseline appendix and the ES chapter, but the latest annual WeBS report (Frost *et al.*, 2020¹²) for the whole estuary show its presence over the last 5 years in numbers consistently exceeding 700, therefore this species core areas are mostly north of the River Tees, with Dabholme Gut as an important location for this species south of the River Tees (Smith, 2011). Elsewhere, the species is known to occur in very small numbers across Coatham Marsh.
- 15.4.88 In October 2018, 128 gadwall were recorded at Steel House pond adjacent to the natural gas and electricity connection corridors and approximately 1 km south of the PCC Site. There were no other occurrences of this species within the Survey Area.

¹² Numbers by species and site are available using the WeBS report online, available at <https://app.bto.org/webs-reporting/numbers.jsp>

Wigeon

- 15.4.89 During the winter, wigeon are found in greatest numbers on the brackish and freshwater pools and adjacent saltmarsh and grasslands around Saltholme, Seaton Common and Greatham Creek (Natural England, 2018). Low Tide data show that they also congregate at low tide in near-shore open waters and intertidal habitats close to Hartlepool Harbour (Frost *et al.*, 2020). They rarely occur south of the River Tees, however AECOM surveys detected up to 26 non-breeding wigeon at Steel House pond and small numbers on the wet grasslands of Coatham Marsh in September 2018.

Lapwing

- 15.4.90 During the winter, large flocks of roosting and foraging lapwing occur at Saltholme, Cowpen Marsh, Greatham Creek and Seaton Common (Natural England, 2018). WeBS Low Tide data include a large peak count and regular occurrence of lapwing on the intertidal habitat adjacent to Dabholme Gut.
- 15.4.91 South of the River Tees this species was present consistently. AECOM surveys recorded this species both during the breeding and non-breeding periods consistently within Coatham Dunes, the wet grasslands immediately east of the electricity connection corridor and around Steel House. Breeding was confirmed for this species (one pair) within the PCC Site. Maximum numbers roosting at a pool within Coatham Dunes were 48 in November 2017.

Black-headed gull

- 15.4.92 Black-headed gull is found across most of Teesside's Coastal and estuarine habitats over winter, when it is found in greatest numbers on the intertidal habitats and near-shore waters of Bran Sands, Hartlepool Bay, the open coast north of Hartlepool, and the freshwater pools at Saltholme (Natural England, 2018). This species occurs regularly on the near-shore waters and intertidal habitats at Coatham Sands. It also roosts at Coatham Sands (Annex 3).

Herring gull

- 15.4.93 Herring gull is more or less ubiquitous along the Teesside coast, occupying all coastal WeBS low tide sectors. During the winter herring gulls occur in large numbers on the intertidal and near-shore waters of Hartlepool Bay and on the open coast north of Hartlepool (Natural England, 2018). The intertidal habitats and near-shore coastal waters adjacent to Coatham Sands are also important for this species
- 15.4.94 A pair of herring gull bred on the roof of an existing industrial building within the PCC Site. High tide bird counts carried out by AECOM recorded this species regularly the industrial land within and immediately to the south and west of the PCC Site, between Dabholme Gut and Coatham Dunes.

Purple sandpiper

- 15.4.95 This species is absent from WeBS Low Tide Counts south of the River Tees and was not recorded during surveys by AECOM. Core Count data include winter occurrence at Coatham Sands in small numbers.

15.4.96 It is known to occur in greatest numbers regularly at Hartlepool Bay, where there is a roost at Heugh Pier (Annex 3). Here a count of 85 birds was made in 2018 (Brown, 2019) and the species occurs most frequently in the Hartlepool Bay area, over 13 km north of the PCC Site. Occasional occurrence has been recorded in the South Gare and Redcar Areas (Brown, 2019), however this species feeds almost exclusively on rocky shores (Smith, 2011), which are absent from the proposed development area and its environs.

Ringed plover

15.4.97 This species both breeds and roosts alongside the little tern colony at Seaton Carew. A regular roost is also present at Newburn Bridge, Hartlepool. All roosts are greater than 5 km from the PCC Site and in excess of 3.5 km from the closest part of the Proposed Development (Annex 3).

15.4.98 WeBS data show distribution of ringed plover across coastal intertidal habitats including North Coatham Sands, Bran Sands and several locations north of the River Tees including the intertidal habitats north of Greatham Creek. It is present consistently in May and Autumn at Coatham Sands and Bran Sands. AECOM surveys recorded ringed plovers in June and September at Coatham Sands within the water discharge corridor and CO₂ Export Pipeline and at least 700 m north-east of the PCC Site.

Barn owl

15.4.99 Barn owl has been recorded nesting and roosting at several locations within the Study Area. Further details are provided in Appendix 15B: Confidential Baseline Ornithology Report (ES Volume III, Document Ref. 6.4).

15.4.100 Barn owl is known to forage within Coatham Marsh and was observed foraging across the coastal dunes north of the PCC Site during breeding bird surveys in 2018.

Little ringed plover

15.4.101 One pair of little ringed plover was recorded breeding within the Survey Area in 2020. This species was also recorded foraging in 2018 at a location close to where it was recorded breeding, indicating presence during the breeding season in 2018 as well. From this it can be inferred that breeding nearby, possibly at the same location, may have occurred in 2019 and is likely to be an annual occurrence.

15.4.102 This species breeds widely at several other locations across the Study Area (Joynt, 2017; Joynt, 2018; and Brown, 2019).

Marsh Harrier

15.4.103 Data supplied by the RSPB identified a breeding location for this species within the Study Area. It is known to forage across the North Tees Marshes (Joynt, 2017; Joynt, 2018; and Brown, 2019) and was recorded overflying during a survey close to the North Tees Marshes

Cetti's Warbler

- 15.4.104 Cetti's warbler bred at Saltholme RSPB Reserve in 2019. Further information on this record is provided in Appendix 15B: Confidential Baseline Report (ES Volume III, Document Ref. 6.4).

15.5 References

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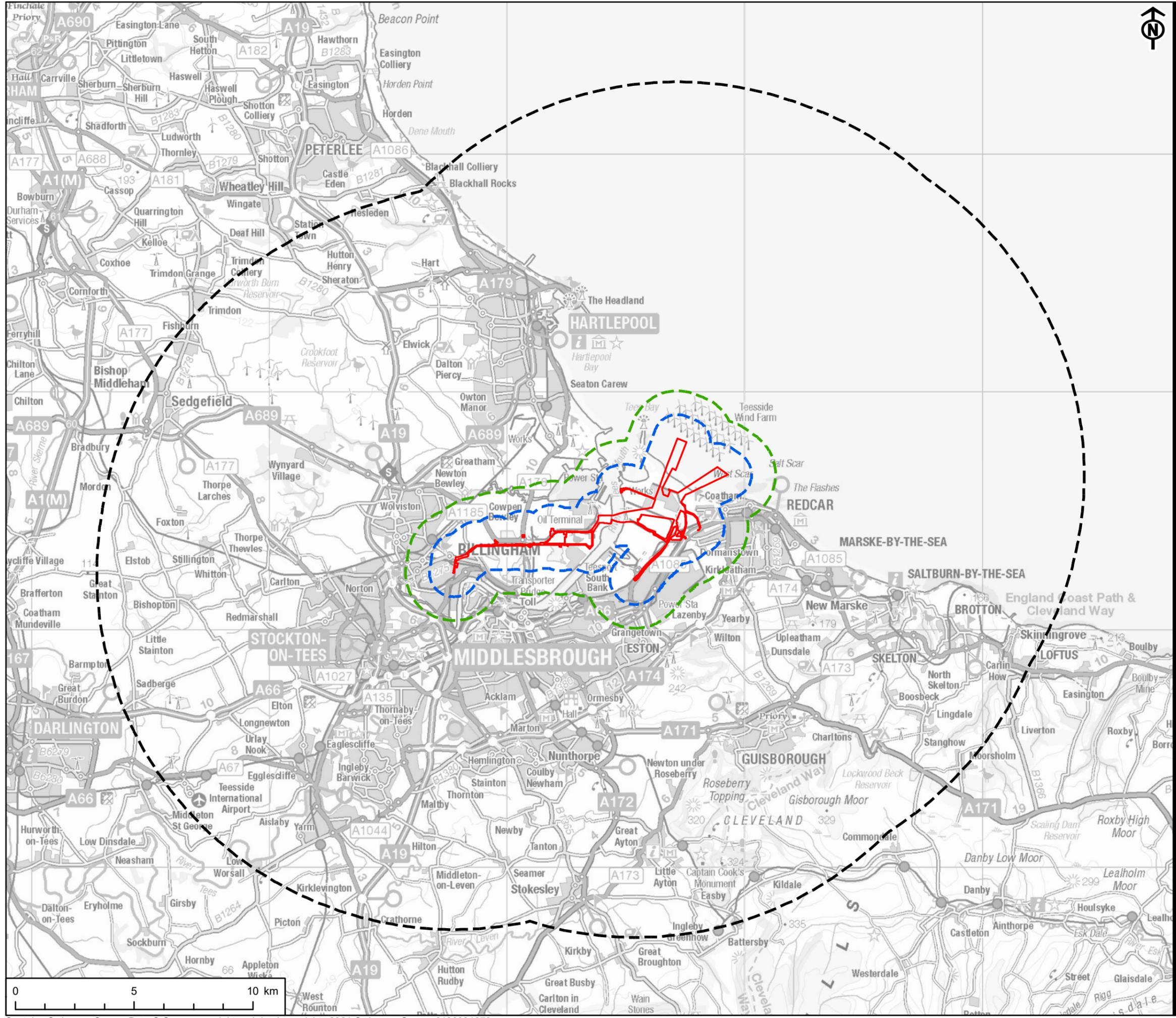
Figures

Figure 15A-1: Site Boundary, Scheme Design and Survey Areas

Project Management Initials: RL Designer: LC Checked: AR Approved: RW



- KEY
-  Site Boundary
 -  15km Study Area - International and National Statutory Nature Conservation Designations
 -  2km Study Area - Local Statutory and Non-Statutory Nature Conservation Designations
 -  1km Study Area - Protected and Notable Species



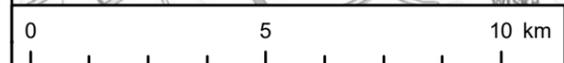
TITLE
FIGURE 15-A1
STUDY AREAS

REFERENCE
NZE_210511_OB_15A-1_v2

SHEET NUMBER
1 of 1

DATE
11/05/21

Scale @ A3 1:150,000



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