The Great Grid Upgrade

Sea Link

Sea Link

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Suffolk Wintering Bird Survey Report

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1. Suffolk Wintering Bird Survey Report

1.1 Introduction

Background

1.1.1 The Sea Link Project (hereafter referred to as the 'Proposed Project') is a proposal by National Grid Electricity Transmission plc (hereafter referred to as National Grid) to reinforce the transmission network in the southeast and East Anglia. The Proposed Project is required to accommodate additional power flows generated from renewable and low carbon generation, as well as accommodating additional new interconnection with mainland Europe. This would be achieved by reinforcing the network with a High Voltage Direct Current (HVDC) Link between the proposed Friston substation in the Sizewell area of Suffolk and the existing Richborough to Canterbury 400 kV overhead line close to Richborough in Kent.

1.1.2 The purpose of this document is to:

- detail the results of the wintering bird surveys conducted in 2022, 2023 and 2024; and
- inform the need for any further surveys required and identify potential ecological constraints associated with wintering birds for incorporation into the **Application Document 6.2.2.2 Part 2 Suffolk Chapter 2 Ecology and Biodiversity** for the Suffolk Onshore Scheme and the associated **Application Document 6.6 Habitats Regulations Assessment Report**.

1.1.3 Details of avoidance, mitigation, compensation and enhancement measures relating to wintering birds are not included in this report and are instead reported within **Application Document 6.2.2.2. Part 2 Suffolk Chapter 2 Ecology & Biodiversity**.

1.1.4 This appendix should be read in conjunction with the following figures:

- **Application Document 6.4.2.2.B Suffolk Wintering Bird Report**.

Scope

1.1.5 The survey areas are shown in **Application Document 6.4.2.2.H.1 Suffolk Phase 1 Survey Results**. This report aims to confirm the presence of wintering bird territories within the Suffolk Onshore Scheme Order Limits through transect surveys conducted along the routes indicated in **Application Document 6.4.2.2.B.1 Suffolk Wintering Bird Transect Routes**. The findings of wintering bird survey work within the Suffolk Onshore Scheme Order Limits have informed ecological best practice and mitigation as required, in order to ensure that development of the Proposed Project does not adversely affect breeding and wintering birds.

1.2 Bird Legislation, Policy and Guidance

1.2.1 The legislation, policy and guidance detailed within this section has been used to define the 'notable' bird species which are the focus of this report due to their inclusion in relevant legislation, policy or guidance.

Legislation

Conservation of Habitats and Species Regulations 2017/Directive of the Conservation of Wild Birds 2009

1.2.2 A number of bird species recorded in the United Kingdom (UK) (including those that are resident, overwintering and migratory) are protected at a European level under the European Commission (EC) Directive of the Conservation of Wild Birds 2009 (2009/147/EC) (Birds Directive). The Birds Directive applies to 193 bird species or sub-species which are:

- in danger of extinction;
- rare, or have restricted local distribution;
- vulnerable to specific changes in their habitat; or
- in need of particular attention for reasons of the specific nature of their habitat.

1.2.3 These species are afforded enhanced legal protection and European Union (EU) member states have a responsibility to maintain the populations of these species at a level that corresponds to their ecological, scientific and cultural requirements (Article 2). The Birds Directive was transposed into English law through the Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017).

1.2.4 Species listed on Annex 1 of the Birds Directive are those for which the UK Government is required to take special conservation measures including the designation of land as SPAs. These sites are automatically included within the Emerald network under the Bern Convention (formerly the Natura 2000 network within the UK); a network of core breeding and resting sites that are protected for rare and threatened species.

1.2.5 While the UK is no longer a member of the EU, the legislation which applied directly or indirectly to the UK before 11:00 pm on 31 December 2020 has been retained in UK law as a form of domestic legislation known as ‘retained EU legislation’.

1.2.6 The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the 2017 Regulations so that they operate effectively. Most of these changes involve transferring functions from the EC to the appropriate authorities in England. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

Wildlife and Countryside Act 1981 (as amended)

1.2.7 All active bird nests, eggs and young are protected by the Wildlife and Countryside Act 1981 (as amended) (WCA) (HM Government, 1981) from intentional and reckless destruction.

1.2.8 The WCA prohibits the intentional killing, injuring or taking of wild birds and, during the breeding season, the taking, damaging or destroying of eggs or nests (whether the nest is in use or being built). In addition to this general protection, certain rare, endangered,

declining or vulnerable species are afforded special protection under Schedule 1 of the WCA.

1.2.9 Bird species listed on Schedule 1 of the WCA are additionally protected against disturbance while nesting. This means that it is also an offence to disturb any Schedule 1 nesting birds or their young during the breeding season whilst they are occupying a nest site. This includes causing the parent birds or fledglings apparent stress and any other action which may lead to the parents abandoning their nests or young.

Natural Environment and Rural Communities Act 2006 (as amended)

1.2.10 In addition to the above legislation, 49 bird species are listed as being Species of Principal Importance (SPI) for conservation in England under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006 as amended (HM Government, 2006) (and further amended by the Environment Act (HM Government, 2021)). These species are of material consideration during the planning process.

1.2.11 The list of 49 SPI comprises those identified as requiring action under the UK Biodiversity Action Plan (UKBAP), which continue to be species of conservation priority under the UK Biodiversity Framework 2024 (Joint Nature Conservation Committee, 2024) (which succeeded the Post-2010 UKBAP in May 2024).

Regional/Local Planning and Guidance

Birds of Conservation Concern

1.2.12 The Birds of Conservation Concern (BoCC) Red, Amber and Green lists (Stanbury, et al., 2021) assigns UK species to those categories in accordance with criteria of their population status and stability. Where these species are present at a site, their conservation status should be considered in determining the likely impacts of a proposed development.

1.2.13 Red status species are those species of highest conservation concern and green status species are those of low or no conservation concern. Amber status species are those species of some conservation concern.

1.2.14 The BoCC assigns bird species Red and Amber status based on a set of criteria that are summarised in Table 1.1.

Table 1.1 BoCC Red and Amber list criteria

Criteria	BoCC Status Code	Description
Red list	HD	Historical decline in breeding population.
	BDp[1]/BDp[2]	Severe breeding population decline over 25 years/longer term.
	BDr[1]/BDr[2]	Severe breeding range decline over 25 years/longer term.
	WDp[1]/WDp[2]	Severe non-breeding population decline over 25 years/longer term.
	WDr[1]	Severe non-breeding range decline over 25 years.

Criteria	BoCC Status Code	Description
	IUCN	Globally threatened – CR (critically endangered), EN (endangered) or VU (vulnerable).
Amber list	BDMp[1]/BDMp[2]	Moderate breeding population decline over 25 years/longer term.
	WDMp[1]/WDMp[2]	Moderate non-breeding population decline over 25 years/longer term.
	BDMr[1]/BDMr[2]	Moderate breeding range decline over 25 years/longer term.
	WDMr[1]	Moderate non-breeding range decline over 25 years.
	ERLOB	Threatened in Europe – CR (critically endangered), EN (endangered) or VU (vulnerable).
	HDrec	Historical decline in breeding population in recovery.
	BR/WR	Breeding rarity/non-breeding rarity.
	BL/WL	Breeding localisation/non-breeding localisation.
	BI/WI	Breeding bird of international importance/non-breeding bird of international importance.
Green	N/A	Green list species are not of conservation concern and include all other commonly occurring birds in the UK.
Other	N/A	Non-native species (e.g. Canada goose (*Branta canadensis*), feral pigeon (*Columba livia domestica*)) are not afforded Red, Amber or Green list status.

1.2.15 Although it does not offer any legal protection, BoCC 5 (Stanbury, et al., 2021) provides guidance on the conservation status of UK bird species. Thus, it can be used to assess the ecological importance of bird populations and the habitats that they rely on, particularly at a local level. They are also useful when assessing the significance of predicted impacts and determining the level of mitigation that may be required when birds are to be affected by development.

Suffolk Local Wildlife Site selection criteria

1.2.16 In Suffolk, Local Wildlife Sites (LWS) and County Wildlife Sites (CWS) are selected based on certain selection criteria. The CWS panel is made up of representatives from Suffolk County Council, Suffolk Wildlife trust and Natural England and criteria is summarised below based on information from Suffolk Biodiversity Information Service (Suffolk Biodiversity Information Centre, 2024).

1.2.17 The selection criteria are based on Radcliffe's habitat attributes that evaluate sites on the basis of their biological interest being of substantive nature conservation value. Meeting just one of the Habitat Primary Criteria can be sufficient to warrant designation as a CWS. These primary criteria are:

- Size – the importance and value of a site usually increases with size. Larger sites are more able to resist change and therefore remain as a viable unit. While a site's

size may affect its sustainability this does not preclude selection of small sites of high quality.

- Diversity – sites that have a variety of habitats are often of high wildlife value, particularly where they include a range of successional stages and/or ecological gradients. Individually, none of the habitats may meet the selection criteria for CWS status, but their combined value may be high enough for selection.
- Naturalness – it is generally considered that the more natural a site is, the higher its value. However, in Suffolk, as with most of the UK, very few sites with the exception of dynamic coastal habitats are truly natural and the most important habitats are either semi-natural e.g. hay meadows and ancient woods, or even man-made e.g. urban sites. In many cases, this attribute therefore relates to a site's state under traditional management.
- Rarity – all habitats that are nationally/internationally rare should be considered. Suffolk is a stronghold for some habitats e.g. vegetated shingle, and these habitats may be locally frequent, but their wider importance should not be overlooked. Other habitats may be rare in Suffolk e.g. chalk grassland and should be considered in the context of their local significance.
- Fragility – some sites may be very susceptible to damage by interference e.g. urban sites where development of surrounding land may isolate or encroach on the site. Other sites may be fragile due to rapid succession e.g. waste ground that rapidly scrubs up. The first is really an assessment of threat and would not be used as a sole selection criterion. The second suggests that the value of a site may be short lived. While both factors may affect selection, sites should be generally be designated according to their current wildlife value.
- Typicalness – some habitats are intrinsically species-poor but are locally distinctive e.g. windblown coastal scrub, nutrient rich flushes associated with red crag and dry grassland associated with sands and gravels. These habitats are characteristic of the county's natural areas and are therefore included in the CWS system.

1.2.18 Secondary criteria are only considered once the primary criteria have been applied. They can provide additional information on the value of sites but will not be used for selection in their own right. These comprise:

- Recorded history – the value of a site can be more accurately assessed if there has been a history of biological recording and evidence of site continuity.
- Position in ecological unit – sites that are linked to or near other wildlife areas are generally more valuable and can play an important role in creating wildlife corridors and buffers.
- Potential value – the use of potential value as a criterion for site selection can cause problems, as it can be argued that with appropriate management any site potentially has high wildlife value. However, in some cases it may be useful, especially where there is an opportunity to enhance existing semi-natural habitats.
- Intrinsic appeal – some sites may have high-perceived intrinsic appeal and/or recreational value. In addition, sites may have a high education value. While the importance of these values should not be under-estimated they should always be considered as supplementary to the site's nature conservation value.

1.2.19 Following assessment of sites against primary and secondary habitat criteria, sites are considered against appropriate specific habitat criteria. Qualifying sites will have at least one of the attributes.

1.3 Methodology

Zone of Influence

1.3.1 The potential impact(s) of a development are not always limited to the boundaries of the site concerned. A development may also have the potential to result in impacts upon ecologically important sites, habitats or species that are located beyond the site boundaries.

1.3.2 The area over which a development may impact ecologically important features is known as the Zone of Influence (ZOI). The ZOI is determined by the source/type of impact, the potential pathway(s) for that impact and the location and sensitivity of the ecologically important feature(s) beyond the boundary.

Survey and Study Areas

1.3.3 The ZOI was used to establish the required extents of the wintering bird Survey and Study Area.

1.3.4 The Survey Area included all suitable on-site habitat and relevant adjacent off-site habitats (e.g. boundary scrub, treelines and hedgerows) up to 1 km from the Order Limits.

1.3.5 The Study Area included the Order Limits, protected species records within 2 km of the Order Limits, protected sites within 10 km of the Order Limits and RSPB records within 500 m of the Order Limits.

Desk Study

1.3.6 A biological records data search was requested from the Suffolk Biodiversity Information Service for protected species within the defined Study Area in 2022 and updated in 2024. Only records up to ten years old were considered within the assessment, as any records older than ten years are unlikely to be representative of breeding and wintering bird populations in the local area.

1.3.7 In addition to this, a protected bird species data search of RSPB records within 500 m of the Suffolk Onshore Scheme Order Limits was undertaken in 2022.

1.3.8 A desk top search using the Multi-Agency Geographic Information for the Countryside (MAGIC) website (Department for Environment, Food and Rural Affairs, 2024) was also conducted for any statutory areas designated for birds within 10 km of the Order Limits. This was used to review designated site citations for any bird species of particular relevance to the Order Limits (i.e. where functional linkage to designated sites could occur).

1.3.9 An online search of the Bird Guides app (Bird Guides, 2024) was conducted to identify records of European white-fronted goose (*Anser albifrons*) in the vicinity of the North Warren RSPB reserve.

1.3.10 Recent Suffolk bird reports from the Suffolk Naturalist' Society (SNS) were used to inform local status and distribution data of breeding and wintering birds (SNS, 2022).

1.3.11 Wetland Bird Survey data were obtained from the British Trust for Ornithology (BTO). The data covered the Alde and Ore Estuary SPA/SAC, Minsmere to Walberswick Marshes SPA/SAC including Sizewell Levels, and North Warren RSPB-Thorpeness Mere.

1.3.12 The desk study data was screened to omit common widespread species that are unlikely to be significantly impacted by the Suffolk Onshore Scheme e.g. wood pigeon (*Columba palumbus*) and wren (*Troglodytes troglodytes*).

Field Survey Method

1.3.13 This section details the two field survey methods which were used during the wintering bird surveys, undertaken in the winters of 2021/22, 2022/23 and 2023/24. The field methods used were:

- Monthly high and low tide counts of the landfall/beach area (east of the North Warren RSBP reserve, between Thorpeness to Aldeburgh) and the wetland area of the North Warren RSPB reserve were carried out from December 2021 to March 2022.
- Wintering bird transects of the landfall/beach area (east of the North Warren RSBP reserve, between Thorpeness and Aldeburgh) and the accessible farmland along the proposed inland cable route (to the west side of the North Warren RSPB reserve to Saxmundham) were carried out between October 2022 and March 2023. Further wintering bird surveys were carried out between October 2023 to March 2024. This survey covered parts of the proposed cable route and the North Warren RSPB.

1.3.14 The survey dates and weather conditions are reported in **Annex 2.B.1 Survey Dates Weather and Tide Heights**.

High and low tide counts (Winter 2021/2022)

1.3.15 High and low tide counts were commissioned by National Grid to inform the Proposed Project in December 2021. Although the method was optimal for the Kent section of the Proposed Project, this method was not fully appropriate for the Suffolk section as there were no intertidal habitats at the Suffolk landfall/beach area. Instead, the Suffolk landfall/beach area comprised a narrow shingle beach with a very small littoral zone of mobile shingle, approximately 10 m wide between high tide and low tide. This area was therefore deemed as not important for birds.

1.3.16 The habitats inland of the landfall/beach area (i.e. the North Warren RSPB reserve) comprised grazing marshes with embedded freshwater wetlands, including lagoons and reed beds which are all bisected by several ditches. It was established on the first visit that the survey should cover this area in the counts, so walked transects were used to accommodate this. This method also had the benefit of recording important passerine species such as woodlark and Dartford warbler (*Sylvia undata*), for which suitable habitat was present adjacent to the landfall/beach area within and along the periphery of the North Warren RSPB reserve. The transect route for this area is shown in **Application Document 6.4.2.2.B.8 Suffolk Wintering Bird Transect Routes 2023-24** and **Application Document 6.4.2.2.B.1 Suffolk Wintering Bird Transect Routes 2022-23** encompassing the North Warren RSPB reserve (areas both within and within

500 m of the Suffolk Onshore Scheme Order Limits) and the landfall/beach area to the east where the Suffolk Onshore Scheme landfall is planned.

1.3.17 This transect route was walked at high and low tides, in line with high and low tide count methodology, by suitably qualified ecologists (one of which was a highly experienced ornithologist). Counts were conducted during the day within two hours either side of high tide or low tide. It was unknown whether the tide would have any influence on the bird numbers (results are presented in Table 1.5 and discussed in Section 1.4). i.e. whether bird numbers would fluctuate due to birds moving into the area primarily from the Alde and Ore Estuary SPA, SAC and Ramsar. The primary objective was to record wetland bird species, birds of prey and any passerine species relevant to the Suffolk Onshore Scheme (target species).

1.3.18 The counts were conducted from various vantage points along the pre-planned transect route. The vantage points varied due to the prevailing weather, light conditions and the location of bird concentrations on the day.

1.3.19 During the surveys, all species either seen or heard were recorded and any signs of early breeding activity were noted. Birds were recorded using the standardised BTO species codes (see **Annex 2.B.4 BTO Bird Codes**) and standardised behaviour codes (Bibby et al., 2000).

1.3.20 Survey visits commenced with one visit in December 2021, followed by three visits in January 2022, two visits in February and March 2022 and one visit in April 2022, totaling nine survey visits. The survey routes are shown in **Application Document 6.4.2.2.B.1 Suffolk Wintering Bird Transect Routes 2022-23**.

Winter bird transect survey methodology winter 2022/23 and 2023/24

1.3.21 Overwintering survey in 2022/23 did not include RSPB land. The survey in winter 2023/24 included publicly accessible parts of the North Warren RSPB reserve and the inland cable route. Some areas were surveyed from PRoW and some areas had full access.

1.3.22 Six monthly survey visits were conducted from October 2022 to March 2023 and October 2023 to March 2024 inclusive. Each monthly survey took approximately five days to complete. During each of these visits, two suitably qualified ecologists (one of which was a highly experienced ornithologist) walked a pre-determined transect route along PRoW through the Suffolk Onshore Scheme Order Limits (see **Application Document 6.4.2.2.A.1 Suffolk Phase 1 Survey Results**). Where possible a 500 m buffer was covered although lack of access and topographic features restricted this in some areas.

1.3.23 All bird species seen or heard during the survey were recorded and signs of activity and behaviour were noted. Birds were recorded using the standardised BTO species codes (see **Annex 2.B.3**) and standardised behaviour codes (Bibby, Burgess, Hill, & Mustoe, 2000).

1.3.24 Although all bird species seen during the survey were recorded, the survey effort was focussed on ‘target species’, primarily wetland birds associated with the statutory designated sites (e.g. SPA, SAC and Ramsar). Wetland birds were also a feature of the North Warren RSPB reserve, which makes up part of the Leiston-Aldeburgh SSSI. Additional species were raptors, SPI, BoCC Red and Amber status species (Stanbury, et al., 2021) and Schedule 1 species (WCA).

1.3.25 Survey routes were alternated on each visit to ensure that all parts were covered at various time of the day across the duration of the surveys, to represent a range of daylight hours, different ride cycles and times between sunrise and sunset.

Assessment and Evaluation

Assessment criteria

1.3.26 The assessment of the ornithological importance of the Survey Area during the wintering bird season was made by evaluating any species afforded special statutory protection or those included on one or more of the lists of species of conservation interest, as detailed in in Table 1.1. The species of primary focus are:

- species which are a qualifying feature of potentially functionally linked internationally designated sites.

1.3.27 The species of secondary focus that are still considered of high importance are as follows:

- species listed on Annex 1 of the Birds Directive;
- species listed on Schedule 1 of the WCA;
- priority bird species in the UK, including farmland bird assemblage;
- species listed as priority species or additional species of interest within Suffolk;
- species included in the BoCC Red and Amber Lists (Stanbury, et al., 2021); and
- rare breeding birds in the UK (species considered by the Rare Breeding Birds Panel (RBBP)).

1.3.28 A comparison between population sizes present within the Survey Area with the national and county wintering and breeding population estimates for certain species was also considered. The estimates for populations at a national level were taken from the following sources:

- the BTO bird facts website (British Trust for Ornithology, 2024);
- the '*Population estimates of birds in Great Britain and the United Kingdom*' (Woodward, et al., 2020); and
- the BTO Bird Atlas 2007-2011 (Balmer, et al., 2013) (the BTO website is used as it is the most current data source available).

1.3.29 Information on the population status of wintering and breeding bird species at a county level was sourced from the latest available issues of the Suffolk Bird Reports (The Suffolk Naturalists' Society, 2017-2022).

1.3.30 Information on populations of nationally rare species was sourced from the most recently published paper by the RBBP (Eaton, M & Rare Breeding Bird Panel, 2022).

Importance of bird populations (Valuation)

1.3.31 To inform assessment of the importance of the bird populations, their biodiversity values have been defined with reference to the geographical level based on the values presented in the Chartered Institute of Ecology and Environmental Management (CIEEM) '*Guidelines for Ecological Impact Assessment (EcIA) in the United Kingdom*

and Ireland' (The Chartered Institute of Ecology and Environmental Management, 2018) as well as professional judgement.

1.3.32 These assessment criteria (set out in Table 1.2) have been used in conjunction with an assessment of bird species status, abundance and species richness to assess the importance of the bird populations recorded during the surveys.

Table 1.2 Biodiversity valuation of ornithological features

Biodiversity Valuation	Description and Examples of Criteria
International or European	Resident or regularly occurring populations of species which may be considered of value at an international or European level (1) where: • the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; • the population forms a critical part (2) of a wider population at this scale; or • the species is at a critical phase (3) of its life cycle at this scale.
UK or National	Areas of habitats with priority species identified in the UK Post-2010 Biodiversity Framework i.e. UKBAP, including those published in accordance with S41 of the NERC Act (2006) and those considered to be of principal importance for the conservation of biodiversity. Resident or regularly occurring populations of species which may be considered of value at a UK or a national level (4) where: • the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; • the population forms a critical part of a wider population at this scale; or • the species is at a critical phase of its life cycle at this scale.
Regional	Populations of species of value at a regional level (i.e. south-east England). Resident or regularly occurring populations of species which may be considered of value at a regional level (5) where: • the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; • the population forms a critical part of a wider population at this scale; or

Biodiversity Valuation	Description and Examples of Criteria
	• the species is at a critical phase of its life cycle at this scale.
County	Populations of species of value at a County (i.e. Suffolk) level or District (e.g. East Suffolk). Resident or regularly occurring populations of species which may be considered of value at a County (or District) (6) level where: • the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; • the population forms a critical part of a wider population at this scale; or • the species is at a critical phase of its life cycle at this scale.
Local	Species populations of value in a local (i.e. within ~ 2 km of the site) context. Populations and, or communities of species considered to appreciably enrich the habitat resource within the local context (such as veteran trees), including features of value for migration, dispersal or genetic exchange.
Negligible (Order Limits)	Habitats and associated species that is of value in the context of the site only. Populations of common and widespread species.

1 Such species include those listed within the Birds Directive or animal or plant species listed within Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (Habitats Directive).

2 Such populations include sub-populations that are essential to maintenance of metapopulation dynamics, e.g. critical emigration and, or immigration links between otherwise discrete populations.

3 Seasonal activity or behaviour upon which survival or reproduction depends.

4 Species which may be considered at the UK or national level mean: birds, other animals and plants which receive legal protection on the basis of their conservation interest (those listed within Schedule 1, 5 and 8 on the WCA); SPI in accordance with S41 of the NERC Act 2006, priority species listed within the UK Post 2010 Biodiversity Framework, or species listed within the Red Data Book.

5 Such species include those listed in the appropriate Natural Character Area description.

6 Such species include those at county level (i.e. Suffolk) including unitary authority area i.e. District level (i.e. South-east England); as listed on the LBAPs; and listed as a county designated site.

*As well as assigning importance there is also a need to identify all legally protected species that could be affected by the proposed scheme in order that measures can be taken to ensure that adherence to the relevant legislation is observed. This may include the adoption of mitigation and appropriate licensing which are acceptable to Natural England.

1.3.33 Only ecological features within the Suffolk Onshore Scheme Order Limits and/or ZOI valued at a local level or above have been taken forward for future assessment within the EcIA presented in **Application Document 6.2.2.2 Part 2 Suffolk Chapter 2 Ecology & Biodiversity**. Those valued at below this level of importance, for example at the ZOI level, have been scoped out of the assessment process.

1.3.34 A summary of the potential impacts of the Proposed Project upon important bird species is discussed in detail within **Application Document 6.2.2.2. Part 2 Suffolk Chapter 2 Ecology & Biodiversity**.

Survey Limitations

Desk study

1.3.35 The aim of a desk study is to help characterise the baseline context of the Order Limits and provide valuable background information that would not be captured by a single site survey alone. Information obtained during a desk study was dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitat or species does not necessarily mean that the habitats or species do not occur in the Study Area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Suffolk Onshore Scheme Order Limits.

Field survey

1.3.36 An ecological survey represents a 'snapshot' in time of the ecological condition of a site. The extent and quality of habitats present, and their suitability for protected and priority species, can change substantially throughout both the course of a year and between years. However, any seasonal limitations to the appraisal are clearly identified in this report, and the lifespan of this appraisal section of this report at least partially addresses the potential for changes between years. Therefore, this standard limitation is addressed as far as is reasonably possible.

1.3.37 Due to the large survey area, the habitat types (including large open fields) and the lack of granted access, the majority of the Survey Area could only be scanned from a distance. Therefore, detailed coverage of all boundaries and woodland parcels was not possible for all species such as small passerines. The surveys are believed to be fully comprehensive for all of the agricultural land along the proposed inland cable route due to the high visibility of bird species, including all wetland/shorebirds such as golden plover (*Pluvialis apricaria*) and lapwing (*Vanellus vanellus*). Birds of prey also fall into this category due to their relatively high visibility at long distance and flight behaviour. In contrast small passerine and cryptic species are less visible within, for example, woodland and for these species, the dataset should be considered at a sample level.

1.3.38 Access for surveys was only available from PRoW for the counts within the North Warren RSPB reserve and these are not considered comprehensive due to physical barriers such as trees and reeds obscuring bird visibility. However, the data provided is believed to be valid, especially when used in conjunction with RSPB website and desk study data (Suffolk 2021 bird report). It represents an appropriate balance between surveying to gather sufficient data to understand the value of the reserve and the risk of causing significant habitat damage and bird disturbance by choosing to use more intrusive surveys. The data obtained during the surveys are finer grained than the RSPB overall wintering and breeding bird data, as it concentrates on the part of the reserve the cable route will be situated within, rather than the whole of the North Warren RSPB reserve.

1.3.39 Recorded bird numbers on a single survey visit are the sum of bird registrations including estimations of flocks. As such, counts do not always represent exact 'to the

nearest bird' figures due to the inherent issues with estimating large bird numbers. They instead provide a representation of the magnitude of bird numbers present, which can be used to review overall trends through peaks and means.

1.3.40 Any potential effects of 'double counting' within the sum of bird registrations have been addressed as far as reasonably possible, both by surveyor professional judgement in the field and when analysing count data.

Lifespan of the appraisal

1.3.41 It should be noted that ecosystems are dynamic and constantly changing and therefore species may move, or new species may be recorded in subsequent years. For this reason and in accordance with current guidance, the field survey data detailed in this report are valid for two years from the date of survey (The Chartered Institute of Ecology and Environmental Management, 2019). After this date, update surveys may be required and advice should be sought from an appropriately qualified ornithologist to determine survey scope and methods.

1.4 Results

Desk Study

Statutory sites

1.4.1 Sixteen statutory sites designated for nature conservation have been identified within the Study Area (10 km for international and 5 km for national sites).

1.4.2 Table 1.3 summarises the statutory designated sites situated within the Study Area. Where designated sites are situated outside of the Order Limits, the distance and direction are given at the closest point of the designated site from the Order Limits.

Table 1.3 Biodiversity valuation of ornithological features

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme Order Limits
Leiston-Aldeburgh SSSI (535 ha)	Leiston-Aldeburgh is designated for a rich mosaic of habitats including acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle. A diverse and abundant community of breeding and overwintering birds, a high number of dragonfly species and many scarce plants.	Within Suffolk Onshore Scheme Order Limits.
The Haven, Aldeburgh Local Nature Reserve (LNR)	The site is designated for an area of lagoons and reedbeds.	Within Suffolk Onshore Scheme Order Limits.

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme Order Limits
(20 ha)		
Sandlings SPA (3,391 ha)	The site qualifies under Article 4.1 of the Directive (79/409/EEC) as it is used regularly by 1 % or more of the Great Britain populations of the following species listed in Annex I in any season: • nightjar; and • woodlark.	Adjacent to the Suffolk Onshore Scheme Order Limits.
Southern North Sea SAC (3,695,100 ha)	The Southern North Sea site is located in the North Sea and has been recognised as an area with predicted persistent high densities of harbour.	Adjacent to the Suffolk Onshore Scheme Order Limits.
Alde-Ore and Butley Estuaries SAC (1,633 ha)	The site is designated as an SAC for its coastal lagoons, perennial and annual shingle vegetation features. The SAC boundary includes Orfordness and Shingle Street. See below for ornithological features.	Approximately 600 m south of the Suffolk Onshore Scheme Order Limits.
Alde-Ore and Butley Estuary Ramsar (1,633 ha)	The site is designated as a Ramsar site for its nationally-scarce plant species, assemblages of breeding and wintering wetland birds, and internationally important numbers of breeding lesser black-backed gull (*Larus fuscus*), avocet (*Recurvirostra avosetta*) and common redshank (*Tringa totanus*). See below for ornithological features.	Approximately 600 m south of the Suffolk Onshore Scheme Order Limits.
Alde-Ore and Butley Estuary SPA (1,633 ha)	The site qualifies as an SPA under Article 4.1 and 4.2 of the Directive (79/409/EEC) as it is used regularly by 1 % or more of the Great Britain populations of the following species listed in Annex I in any season: • shelduck (*Tadorna tadorna*) (non-breeding);	Approximately 600 m south of the Suffolk Onshore Scheme Order Limits.

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme Order Limits
	• wigeon (*Anas Penelope*) (non-breeding); • teal (*Anas crecca*) (non-breeding); • black-tailed godwit (*Limosa limosa*) (non-breeding); • gadwall (*Anas strepera*) (breeding); • shoveler (*Anas clypeata*) (breeding); • herring gull (*Larus argentatus*) (breeding); • lesser black-backed gull; (breeding) Article 2; and • common redshank (non-breeding) Article 2.	
Alde-Ore Estuary SSSI (2,534 ha)	The site also contains a number of coastal formations and estuarine features including mudflats, saltmarsh, vegetated shingle and coastal lagoons which are of special botanical and ornithological value.	Approximately 700 m south of the Suffolk Onshore Scheme Order Limits.
Gromford Meadow SSSI (1.6 ha)	Gromford Meadow is a good example of an unimproved base-rich marsh on an alluvial soil with a high organic content. It borders the River Alde and is fed by springs. It is species-rich and contains a variety of characteristic fen meadow and marshland plants.	Approximately 1.12 km southwest of the Suffolk Onshore Scheme Order Limits.
Snape Warren SSSI (47.2 ha)	The site is a fine example of the lowland heathland of eastern England, which has been subject to considerable loss in the last 40 years. The vegetation is characterised by extensive areas of *Calluna* heath interspersed with acid grass-land dominated by common bent (*Agrostis capillaris*).	Approximately 2 km south of the Suffolk Onshore Scheme Order Limits.

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme Order Limits
Orfordness-Havergate National Nature Reserve (NNR) (909 ha)	The site is a large shingle spit separated from the mainland by the River Alde. The shingle supports a number of rare and scarce invertebrates, particularly beetles and spiders. and the site is also an important breeding place for many bird species.	Approximately 2.3 km south of Suffolk Onshore Scheme Order Limits.
Sandlings Forest SSSI (2,486 ha)	This site is notified for its coniferous woodland which supports internationally important populations of woodlark and nightjar.	Approximately 4.5 km south of Suffolk Onshore Scheme Order Limits.
Sizewell Marshes SSSI (104 ha)	Sizewell Marshes are important for their large area of lowland, unimproved wet meadows which support outstanding assemblages of invertebrates and breeding birds.	Approximately 4.5 km north of the Suffolk Onshore Scheme Order Limits.
Minsmere to Walberswick Heaths and Marshes SAC (1,256.57 ha)	The site is designated are (European dry) heathland and vegetated annual and perennial shingle habitats. See below for ornithological features.	6 km northeast of the Suffolk Onshore Scheme Order Limits.
Minsmere to Walberswick Heaths and Marshes Ramsar site (12,56.57 ha)	The site contains a mosaic of marine, freshwater, marshland and associated habitats, complete with transition areas in between. It contains the largest continuous stand of reedbeds in England and Wales and rare transition in grazing marsh ditch plants from brackish to fresh water. This site supports nine nationally scarce plants and at least 26 red data book invertebrates. It supports a population of the mollusc *Vertigo angustior*, recently discovered on the Blyth estuary river walls.	Approximately 6 km northeast of the Suffolk Onshore Scheme Order Limits.

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme Order Limits
	An important assemblage of rare breeding birds associated with marshland and reedbeds is present including bittern, gadwall, teal, shoveler, marsh harrier, avocet, bearded tit (*Panurus biarmicus*). See below for ornithological features.	
Minsmere to Walberswick Heaths and Marshes SPA (1,256.57 ha)	The site qualifies as an SPA under Article 4.1 of the Directive (79/409/EEC) as it is used regularly by 1 % or more of the Great Britain populations of the following species listed in Annex I in any season: • bittern (breeding); • gadwall (non-breeding); • gadwall (breeding); • teal (breeding); • shoveler (breeding); • shoveler (non-breeding); • marsh harrier (breeding); • hen harrier (*Circus cyaneus*) (non-breeding); • avocet (breeding); • little tern (*Sterna albifrons*) (breeding); • nightjar (breeding); and • European white-fronted goose (*Anser albifrons*) (non-breeding).	Approximately 6 km northeast of the Suffolk Onshore Scheme.

Non-statutory Sites

1.4.3 Nine non-statutory sites designated for nature conservation have been identified within 2 km of the Order Limits. Table 1.4 summarises the non-statutory designated sites situated within the Study Area. Where designated sites are situated outside of the Suffolk Onshore Scheme Order Limits, the distance and direction are given at the closest point of the designated site from the Order Limits.

Table 1.4 Non-statutory designated sites

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme
Disused Railway Line (Aldringham–Aldeburgh) CWS (1.8 ha)	This section of disused railway line which serves as a public footpath supports a species-diverse flora both on the line of the old track and on the gently sloping embankments.	Within Suffolk Onshore Scheme Order Limits.
Knodishall Whin CWS (1.6 ha)	The Whin consists of a mosaic of heathland habitats including acid grassland, lichen heath and gorse/bramble scrub. A linear strip of scrub lies at the south-western end of the site, providing habitat opportunities for invertebrates and birds.	Within of the Suffolk Onshore Scheme Order Limits.
Suffolk Shingle Beaches CWS (39 ha)	The stretches of shingle beach along the Suffolk coast are of a national conservation importance for the range of shingle plants that grow there. All of the shingle beaches are of high conservation value and most are already covered as SSSIs the remaining areas have been designated as CWS.	Within Suffolk Onshore Scheme Order Limits.
Great Wood CWS (5.9 ha)	Great Wood is included in the Inventory of Ancient Woodland compiled by English Nature.	Adjacent to the Suffolk Onshore Scheme Order Limits.
Knodishall Common CWS (11 ha)	The Common supports a mosaic of valuable of lowland heathland habitat including areas of birch (*Betula sp.*) and sycamore (*Acer pseudoplatanus*) woodland, gorse (*Ulex europaeus*) scrub, bracken (*Pteridium aquilinum*) open acid grassland, heather (*Calluna sp.*), lichen heath and bare ground. The woodland and areas of dense gorse scrub provide opportunities for a range of both common and migratory bird species, as well as	Approximately 300 m northeast of the Suffolk Onshore Scheme Order Limits.

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme
	notable species including linnet (*Linaria cannabina*) and turtle dove (*Streptopelia turtur*) and nightingale (*Luscinia megarhynchos*).	
Grove Wood CWS (10 ha)	Grove Wood can be divided into two parts. To the east and west of a minor road is a hazel (*Corylus avellana*), ash (*Fraxinus excelsior*), field maple (*Acer campestre*) and elm (*Ulmus sp.*) coppice wood with oak (*Quercus robur*) and ash standards. The northern boundary is formed by a very good example of an ancient ditch and bank with a large mixed hedge. There is a diversity of ground flora on this hedge bank including abundant primrose (*Primula vulgaris*). This site is classified as Ancient Replanted Woodland.	Approximately 360 m south of the Suffolk Onshore Scheme Order Limits.
Benhall Green Meadows CWS (8.8 ha)	This series of meadows forms one of the largest remaining areas of flower-rich marsh in the Alde catchment. They contain a wide range of notable wet meadow plants.	Approximately 700 m south of the Suffolk Onshore Scheme Order Limits.
Church Common CWS (2.2 ha)	This site includes an area of remnant heathland, a large area of short-grazed acid grassland. A number of nationally rare species have been recorded on this site and is also noted for its unusual population of white harebells (*Campanula rotundifolia*).	Approximately 1.3 km southwest of the Suffolk Onshore Scheme Order Limits.
Buckleswood CWS (4.6 ha)	Buckle's Wood has a good coppice with standard structure and several rides. The coppice stools are old, mainly hazel, with ash, field maple and hornbeam (*Carpinus sp.*) also present.	Approximately 2 km northeast of the Suffolk Onshore Scheme Order Limits.

Designated Site	Reason for Designation	Distance from Suffolk Onshore Scheme
	The standards are oak and even aged. There is a good ditch and bank boundary with a mixed species hedge, which together with the old coppice stools, indicates a woodland of some considerable age.	

Bird Records Including Protected Species

Biological records search

1.4.4 Given the proximity of the Order Limits to numerous heavily visited nature reserves, it is not surprising the desk study yielded a high number of bird records totaling 5,996 records in the previous 10 years from within 2 km of the Suffolk Onshore Scheme Order Limits. In general, there were no records of any stand-out interest for wintering birds over and above data collected in the field, or those collected from other sources e.g. WeBS counts. Overall, counts of wintering water birds were similar to those or comprised lower numbers than those recorded during surveys or supplied WeBS data. The raw data contained many restricted and sensitive records and therefore the data is not supplied in this report.

1.4.5 Suffolk Bird Reports records (2021 and 2022) were reviewed in conjunction with the field data to validate bird numbers for the evaluation (see Section 1.5).

RSPB records search

1.4.6 The RSPB data search found 1,826 bird records from the last ten years within the Study Area. Similar to the biological records search, there were no records of any stand-out interest for wintering birds over and above data collected in the field or those collected from other sources e.g. WeBS counts. The raw data contained many restricted and sensitive records and therefore the data is not supplied in this report.

WeBS data summaries

1.4.7 The most recent five years WeBS core count summary data[1] was reviewed and the relevant data was used in conjunction with the field data to validate bird numbers for the evaluation (see Section 1.5).

1.4.8 The relevant sites are as follows:

- Alde-Ode Estuary (SPA, SAC and Ramsar);
- Minsmere to Walberswick Heaths and Marshes (SPA, SAC and Ramsar); and
- North Warren RSPB Reserve and Thorpeness Mere.

[1] Contains Wetland Bird Survey (WeBS) data from Waterbirds in the UK 2019/20 © copyright and database right 2021. WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, in association with WWT, with fieldwork conducted by volunteers.

1.4.9 The species counts that were recorded within the last five years and that are potentially relevant to the Suffolk Onshore Scheme are provided in more detail within **Annex 2.B.2**.

Birdguides search of European White-fronted Goose records

1.4.10 Using the Birdguides App, a flock of European white-fronted geese were found. This flock was regularly feeding on an Autumn sown cereal in a roadside field (Grid Ref: TM 452 608) between Aldringham and Thorpeness. They were recorded daily between the 1 and 16 February 2022 and had a peak count of 167 individuals.

1.4.11 European white-fronted geese were also recorded at the nearby Alde-Ore Estuary (SPA, SAC and Ramsar) over the Winter of 2023 to 2023, with a peak count of 120 individuals.

1.4.12 European white fronted geese were present at the North Warren RSPB reserve, with birds reported from 31 October 2022 to 4 April 2023. Numbers reach three figures during December 2022 to February 2023, with a peak count of 198 individuals on 8 February 2023.

Field Survey

1.4.13 The results for the surveys are described below, both in the context of the combined results for all surveys and then in the context of the individual survey types.

Combined results: High and low tide counts (Winter 2021/22) and winter bird transect survey methodology (Winter 2022/23 and 2023/24)

1.4.14 A total of 119 species were recorded (confirmed or potentially breeding) within the Survey Area during the 2022, 2023 and 2024 wintering bird surveys.

1.4.15 It should be noted that no one year included surveys of the entire route. For example, the 2023 survey covered the inland cable route west of the B1122 as far as the proposed Saxmundham Converter Station and did not include the proposed permanent access road part of the route. This area was surveyed in 2024, when surveys were focused on any previously omitted areas due to changes in the Suffolk Onshore Scheme Order Limits and land access.

1.4.16 Distribution maps of the estimated territory centres are provided in:

- **Application Document 6.4.2.2.B.2 Suffolk Winter Bird Survey Results October 2022**;
- **Application Document 6.4.2.2.B.3 Suffolk Winter Bird Survey Results November 2022**;
- **Application Document 6.4.2.2.B.4 Suffolk Winter Bird Survey Results December 2022**;
- **Application Document 6.4.2.2.B.5 Suffolk Winter Bird Survey Results January 2023**;
- **Application Document 6.4.2.2.B.6 Suffolk Winter Bird Survey Results February 2023**;
- **Application Document 6.4.2.2.B.7 Suffolk Winter Bird Survey Results March 2023**;

- **Application Document 6.4.2.2.B.9 Suffolk Winter Bird Survey Results October 2023**;
- **Application Document 6.4.2.2.B.10 Suffolk Winter Bird Survey Results November 2023**;
- **Application Document 6.4.2.2.B.11 Suffolk Winter Bird Survey Results December 2023**;
- **Application Document 6.4.2.2.B.12 Suffolk Winter Bird Survey Results January 2024**;
- **Application Document 6.4.2.2.B.13 Suffolk Winter Bird Survey Results February 2024**; and
- **Application Document 6.4.2.2.B.14 Suffolk Winter Bird Survey Results March 2024**.

1.4.17 Table 1.5 summarises the survey results and is spilt into two categories:

- species of primary focus – these are the species included in the statutory site designations SSSI, SPA, SAC and Ramsar; and
- species of secondary focus – these are species such as BoCC Red and Amber List species, Schedule 1 (WCA) species and other species of particular conservation interest e.g. rare, scarce or declining species.

1.4.18 The tables follow the BoCC Red, Amber and Green List hierarchy and Schedule 1 species are indicated in bold. Within each group, species are shown in alphabetic order (rather than taxonomic) to assist consistency when manipulating results within a database and to aid the target audience.

1.4.19 All of the species of primary focus are shown in Table 1.5, Table 1.6 and Table 1.7, whether they were recorded or not during the surveys. All other species are shown only if they were recorded during the surveys.

High and low tide counts (Winter 2021/22)

General observations

1.4.20 A total of 68 species were recorded within the Survey Area during the 2021/22 Winter high and low tide counts.

1.4.21 There was no evidence that birds were carrying out regular or irregular movements associated with the tide movements onto the Survey Area from the nearby statutory sites e.g. the Alde-Ore Estuary SPA, SAC and Ramsar). The majority of bird flights were a result of disturbance by hunting marsh harriers. These temporary disturbance events invariably resulted in birds settling back onto the marsh within a few minutes.

1.4.22 The coastal strip/beach is subject to year-round disturbance as there is a popular walk along the beach between Thorpeness and Aldeburgh. There is also a raised footpath between the beach and the western side of the marshes within the proposed route of the Suffolk Onshore Scheme (central causeway). Another public path, the ‘Sandlings Trail’, follows the western edge of the grazing marshes/wetlands.

1.4.23 Bird counts generally peaked in the mid-winter period, with much lower numbers of water birds present in the final April count (see Table 1.5).

1.4.24 The distribution of birds on the marsh was generally dictated by the presence of standing water, although geese and wigeon tended to be found grazing on short grass areas of the marsh, especially just north of the central causeway.

Species of primary focus:

1.4.25 Eleven species fell into this category with their numbers summarised below (see Table 1.5 also):

- Bittern (Schedule 1) – there was one record of this cryptic species which was feeding in a ditch at the North Warren RSPB reserve on the 19 January 2022. Due to this species being difficult to locate, it is likely that it is an under-recorded species and may be resident on the marsh during all Winter months.
- European white-fronted goose – this species was recorded during seven of the nine surveys. Four of the counts reached over 100 individuals in the winter period, with the peak count being 190.
- Common redshank – only two individuals were recorded in March 2022.
- Gadwall – the peak count was 16 individuals in January 2022.
- Herring gull – the peak count was 40 individuals. This species was mostly associated with the beach, especially the area adjacent to Aldeburgh seafront. They were occasionally loafing on standing water on the North Warren RSPB reserve.
- Lesser black-backed gull – the peak count was seven individuals. Similar to herring gull, this species was recorded mostly on the beach, especially in the area adjacent to Aldeburgh seafront. They were occasionally loafing on standing water on the North Warren RSPB reserve.
- Marsh harrier – one to two individuals were recorded on most days hunting over the North Warren RSPB reserve.
- Shelduck – the peak count was two over the Winter period, with an increase to 12 individuals in April suggesting a pre-breeding gathering.
- Shoveler – the peak count was 160 individuals with a low of 36 birds. The remaining counts were higher than 60 individuals.
- Teal – the maximum count was 1,885 during February 2022, with 352 in January 2022 being the next highest count.
- Wigeon – the peak count was 2,306 birds with a count of 14 to 2,267 individuals during the remainder of the mid-winter counts.

Species of secondary focus:

1.4.26 Thirty-two species fell into this category, the majority of which are common and widespread species such as wood pigeon and wren and are unlikely to be impacted by the Suffolk Onshore Scheme. Rare and more vulnerable species which could potentially be impacted are summarised below (see Table 1.5 also):

- Curlew (*Numensis arquarta*) – two birds were recorded on the adjoining part of the North Warren RSPB during the Winter period.

- Lapwing – the peak count was 350 with a regular presence on the adjoining part of the North Warren RSPB of ten to 200 during the remaining mid-winter counts.
- Pintail (*Anser albifrons*) – there was a peak count on the adjoining part of the North Warren RSPB of 491 in February 2022, with a regular presence of 24 to 400 during the other mid-winter counts.
- Cetti's warbler (*Cettia cetti*) (Schedule 1) – the peak count on the adjoining part of the North Warren RSPB was three. This is a skulking species so a count of three birds is likely to be an underestimate of the true number present. This species breeds on the North Warren RSPB reserve in large numbers.

Table 1.5 Counts of species recorded during high and low counts in December 2021 to April 2022 (including RSPB land)

Common Name (BoCC List colour highlighted)	Scientific Name	10-12-21 HT	14-01-22 LT	19-01-22 HT	26-01-22 LT	16-02-22 LT	17-02-22 HT	09-03-22 LT	21-03-22 HT	11-04-22 HT
Species Included in Statutory Site Designations for SPAs, SACs and Ramsar										
European white-fronted goose	*Answer albifrons*	153	1	63	58	190	120	105	0	0
Herring gull*	*Larus argentatus*	3	40	8	10	0	0	1	40	10
Bittern+*	*Botaurus stellaris*	0	0	1	0	0	0	0	0	0
Common Redshank	*Tringa totanus*	0	0	0	0	0	0	0	2	0
Gadwall	*Anas strepera*	0	0	16	10	0	7	9	2	0
Lesser black-backed gull	*Larus fuscus*	0	5	0	0	0	0	1	1	7
Marsh harrier+	*Circus aeruginosus*	2	0	2	2	1	1	0	2	0
Shelduck	*Tadorna tadorna*	0	0	0	0	2	0	0	2	12
Shoveler	*Anas clypeata*	75	126	36	136	80	160	106	115	60
Teal	*Anas crecca*	77	354	239	292	1,885	155	118	145	63
Wigeon	*Mareca Penelope*	72	1,575	2,227	2,267	2,306	1,795	897	221	14
Additional Red List Species										
Corn bunting	*Emberiza calandra*	1	0	0	0	0	0	0	0	0

Common Name (BoCC List colour highlighted)	Scientific Name	10-12-21 HT	14-01-22 LT	19-01-22 HT	26-01-22 LT	16-02-22 LT	17-02-22 HT	09-03-22 LT	21-03-22 HT	11-04-22 HT
Curlew*	*Numenius arquata*	0	2	0	0	0	0	0	0	0
Fieldfare	*Turdus pilaris*	0	0	0	0	0	18	0	0	0
Greenfinch	*Carduelis chloris*	0	0	0	0	2	0	0	1	0
House sparrow*	*Passer domesticus*	0	10	50	3	0	0	0	15	0
Lapwing *	*Vanellus vanellus*	67	202	85	109	350	10	52	10	18
Linnet*	*Carduelis cannabina*	0	0	0	2	0	1	0	2	8
Skylark*	*Alauda arvensis*	0	1	3	3	3	4	6	8	0
Song thrush*	*Turdus philomelos*	0	1	1	0	0	0	0	0	0
Starling*	*Sturnus vulgaris*	0	0	0	0	2	2	172	22	11
Additional Amber List Species										
Barnacle goose	*Branta leucopsis*	175	207	255	250	155	0	150	0	0
Black-headed gull*	*Chroicocephalus ridibundus*	1	14	25	10	0	0	16	19	0
Bullfinch*	*Pyrrhula pyrrhula*	0	2	0	0	0	0	0	0	0
Common gull	*Larus canus*	1	16	0	0	0	0	0	0	0
Dunnock*	*Prunella modularis*	0	2	4	1	0	0	6	5	8
Great black-backed gull	*Larus marinus*	0	2	0	1	40	0	0	3	0
Greylag goose	*Anser anser*	0	200	292	185	0	0	155	30	28
Kestrel	*Falco tinnunculus*	1	1	1	0	0	0	0	0	1

Common Name (BoCC List colour highlighted)	Scientific Name	10-12-21 HT	14-01-22 LT	19-01-22 HT	26-01-22 LT	16-02-22 LT	17-02-22 HT	09-03-22 LT	21-03-22 HT	11-04-22 HT
Mallard	*Anas platyrhynchos*	0	15	50	52	30	17	15	13	12
Meadow pipit	*Anthus pratensis*	0	20	2	0	1	0	2	0	1
Pintail	*Anas acuta*	24	410	267	320	491	117	83	0	0
Reed bunting*	*Emberiza schoeniclus*	1	0	2	0	1	0	0	1	1
Rook	*Corvus frugilegus*	400	15	6	305	250	0	15	7	0
Sedge warbler	*Acrocephalus schoenobaenus*	0	0	0	0	0	0	0	0	1
Snipe	*Gallinago gallinago*	1	0	0	4	15	2	1	2	0
Stock dove	*Columba oenas*	1	0	0	0	0	0	0	0	0
Wood pigeon	*Columba palumbus*	1	25	31	35	0	0	45	3	60
Wren	*Troglodytes troglodytes*	0	1	1	1	0	0	0	2	0
Additional Green List Species										
Blackbird	*Turdus merula*	1	1	0	1	0	0	2	0	0
Blue tit	*Cyanistes caeruleus*	0	0	0	3	2	0	1	0	0
Carrion crow	*Corvus corone*	6	2	2	0	0	0	1	6	2
Cetti's warbler	*Cettia cetti*	0	1	0	0	0	0	3	3	3
Chaffinch	*Fringilla coelebs*	1	2	0	1	0	0	1	7	9
Chiffchaff	*Phylloscopus collybita*	0	0	0	0	0	0	0	2	5

Common Name (BoCC List colour highlighted)	Scientific Name	10-12-21 HT	14-01-22 LT	19-01-22 HT	26-01-22 LT	16-02-22 LT	17-02-22 HT	09-03-22 LT	21-03-22 HT	11-04-22 HT
Coal tit	*Periparus ater*	0	1	1	0	0	0	0	0	0
Common buzzard	*Buteo buteo*	0	1	0	0	0	0	0	0	0
Coot	*Fulica atra*	0	0	0	0	0	0	0	2	1
Cormorant	*Phalacrocorax carbo*	0	10	0	0	0	0	8	0	1
Goldcrest	*Regulus regulus*	0	1	0	0	0	0	0	0	0
Goldfinch	*Carduelis carduelis*	0	0	0	7	2	0	5	0	6
Goosander	*Mergus merganser*	0	0	0	0	0	0	1	0	0
Great tit	*Parus major*	0	1	0	2	1	2	1	1	1
Great white egret+	*Ardea alba*	0	0	0	0	1	1	0	1	0
Green woodpecker	*Picus viridis*	0	0	0	0	0	0	1	0	0
Grey heron	*Ardea cinerea*	0	0	0	0	0	0	3	5	1
Jackdaw	*Corvus monedula*	155	0	0	15	50	2	8	7	6
Jacksnipe	*Lymnocryptes minimus*	0	0	0	1	0	0	0	0	0
Little egret+	*Egretta garzetta*	1	0	3	3	5	4	9	4	13
Long-tailed tit	*Aegithalos caudatus*	0	0	0	0	0	0	2	0	2
Magpie	*Pica pica*	1	0	0	0	0	0	3	1	3
Moorhen	*Gallinula chloropus*	0	1	0	0	0	0	0	0	0
Mute swan	*Cygnus olor*	1	0	4	2	2	3	7	4	1

Common Name (BoCC List colour highlighted)	Scientific Name	10-12-21 HT	14-01-22 LT	19-01-22 HT	26-01-22 LT	16-02-22 LT	17-02-22 HT	09-03-22 LT	21-03-22 HT	11-04-22 HT
Pied wagtail	*Motacilla alba*	0	0	1	0	0	0	0	0	1
Red-throated diver+	*Gavia stellata*	0	3	2	0	0	0	0	0	0
Robin	*Erithacus rubecula*	1	4	0	3	4	2	2	3	3
Stonechat	*Saxicola rubicola*	0	0	0	4	0	0	0	0	0
Tufted duck	*Aythya fuligula*	0	0	1	1	0	0	0	0	0

Bold indicates Schedule 1.

+Indicates Annex 1 of Birds Directive.

*Indicates NERC Act.

Winter bird transect survey methodology Winter 2022/23 and 2023/24 – (Winter 2022/23 did not Include RSPB Land)

General observations

1.4.27 A total of 115 species were recorded within the Survey Area during the 2022/23 and 2023/24 wintering bird surveys.

1.4.28 The surveys were restricted to PRoW, therefore the small passerine species recorded should be taken at a sample level, whereas the large species such as plovers and birds of prey are considered to have been surveyed comprehensively.

1.4.29 The proposed inland cable route section of the Suffolk Onshore Scheme is relatively undisturbed except for general farming activity. The area appeared infrequently used by members of the public due to the fact that footpaths are generally inaccessible, frequently starting or terminating along busy narrow roads with no parking close-by.

1.4.30 In agricultural areas there were regular concentrations of curlew, which are believed to originate from the Alde-Ore Estuary (SPA, SAC and Ramsar). This site lies approximately 700 m from the Suffolk Onshore Scheme Order Limits. However, this species is not a qualifying feature of that SPA.

1.4.31 Lapwing concentrations were widely distributed on the farmland parts of the Suffolk Onshore Scheme but were not believed to be linked by regular movements to the Alde-Ore Estuary (SPA, SAC and Ramsar).

1.4.32 A regular group of golden plovers were repeatedly recorded on large open fields just east of Saxmundham in 2022/23 but were completely absent in 2023/24. This was likely due to disturbance from archaeological investigations and trenching which were ongoing throughout the entire 2023/2024 wintering period, meaning the area was not suitable for this species during that winter.

1.4.33 Farmland bird assemblage, species such as skylark, chaffinch, linnet and yellowhammer (*Emberiza cintrinella*) were present in large numbers in Winter 2022/23 with much smaller numbers in Winter 2023/24. The drop in numbers is likely to be a result of cropping patterns. In Winter 2022/23, there were several game-cover strips which attracted large numbers of finches and buntings, one of which attracted a flock of over 1,000 chaffinches and other farmland species. In Winter 2023/24 no such game-cover strips were present in the survey area that might have attracted large numbers of buntings or finches.

1.4.34 Species of primary focus:

- Seven species fell into this category with their numbers summarised below (see Table 1.6 and Table 1.7 also).
- European white-fronted goose – this species was recorded during the December count when 24 birds briefly flew over the landfall/beach area by the North Warren RSPB reserve. This species was observed to be present on the North Warren RSPB reserve in large numbers (up to 198 individuals) during the Winter period of 2022/23 but was not formally counted as this area was not surveyed during this period. In 2023/24 this species was recorded in November to February (inclusive), with the highest number being 125 individuals in the February count.
- Herring gull – in 2022/23, herring gull were present in all months, with the peak count being 57 during the December count. This species was mostly associated with

the shoreline, especially adjacent to Aldeburgh seafront, and was occasionally loafing on standing water on the North Warren RSPB reserve. In 2023/24 numbers varied between 44 and 216 individuals. Birds were recorded on waterbodies on the North Warren RSPB as well as the beach area.

- Lesser black-backed gull – in 2022/23, the peak count was 21 individuals with the only other record being two individuals recorded during the November count. Similarly low numbers were recorded during the 2023/24 surveys with a maximum count of nine birds made during the March survey. Birds were recorded loafing on waterbodies of the North Warren RSPB reserve and the beach area.
- Marsh harrier – one to three individuals were recorded regularly hunting over the North Warren RSPB reserve and occasionally on inland agricultural areas in both Winter 2022/23 and Winter 2023/24.
- Shelduck – only two were recorded on the inland cable route in in March 2023. In Winter 2023/24, which included the North Warren RSPB land, eight were recorded in January, three were recorded in February and 29 were recorded during the March count.
- Teal – three were recorded on a small pond in arable fields in the inland cable route in March 2023. The survey of the North Warren RSPB reserve in Winter 2023/24 recorded birds in all survey months, fluctuating between 123 individuals in November to 430 individuals recorded during the December count.
- Woodlark – in 2022/23, two were recorded on arable fields in the inland cable route, one in February and one in March. During the 2023/24 surveys, a group of seven individuals were recorded on arable land during the February survey.

Species of secondary focus

1.4.35 Forty-two species fell into this category, the majority of which are common widespread species such as wood pigeon and wren and are unlikely to be impacted by the Suffolk Onshore Scheme. Rare and more vulnerable species which could potentially be impacted, and their occurrence and numbers, are summarised below (see Table 1.6 and Table 1.7 also):

- Cetti's warbler (Schedule 1) – in 2022/23, one was recorded during the November survey on the beach side of the North Warren RSPB reserve. In 2023/24, birds were heard in song in five of the six Winter survey visits to the North Warren RSPB reserve, with a maximum count of three individuals recorded during the March survey.
- Chaffinch – in 2022/23, an exceptionally large flock of 1,050 individuals feeding in a game-cover field on the inland cable route boosted the peak count to 1,061 birds in December. Only small numbers were recorded in Winter 2023/24, with monthly counts between 12 and 31 individuals.
- Curlew – the peak count was 78 in October 2022, with the other counts ranging from two to 51 over the winter period between 2022 and 2023. These birds were found primarily at two locations which were both immediately adjacent to the Alde-Ore Estuary (SPA, SAC and Ramsar). In Winter 2023/24, curlew numbers were slightly lower than in 2022/23 but were recorded on all six Winter surveys, with peak counts being 39 in November and 29 in December. This species is not a qualifying feature of that SPA but does form part of the SPA bird assemblage.

- Dartford warbler (Schedule 1) – one was recorded on the beach just south of the landfall/beach area on two occasions during the 2022/23 wintering surveys. This may have been the same individual and it may have been present throughout Winter period. No Dartford warblers were recorded in Winter 2023/24.
- Golden plover – in 2022/23, a wintering group of approximately 490 birds were recorded on fields east of Saxmundham from November to March. This species was not recorded during the Winter 2023/24 surveys. This was likely due to high level disturbance caused by archaeological trenching and geotechnical surveys. During all monthly AECOM 2023/24 Winter surveys, geotechnical investigation personnel or machinery were observed on all wintering bird survey visits in the fields previously favoured by the golden plover. It was considered that the ongoing disturbance would be at a level that would have excluded the birds from the area.
- Lapwing – in 2022/23, this species was recorded regularly on arable fields in the inland cable route, with a peak count of 199 birds during the December survey. In Winter 2023/24, numbers peaked at 654 in January with the highest number of birds being recorded on the North Warren RSPB reserve. On the inland cable route, a peak of 385 birds were recorded in January.
- Linnet – in Winter 2022/23, several very large flocks were recorded on the inland cable route during the surveys. A large flock of 150 birds during the October surveys contributed to a total count of 251 for the entire inland cable route for that month. In March, a flock of 350 birds boosted the monthly count to 364 individuals. During the remaining months, it seems likely that similar numbers may have been present but were not recorded due low visibility from PRoW. In Winter 2023/24, all of the monthly counts were of 25 or less.
- Mediterranean gull (*Larus melanocephalus*) – in 2022/23, one was noted by the boundary of the North Warren RSPB reserve during the October survey and in March 2024, one was recorded in the North Warren RSPB reserve. This species breeds in varying numbers at the Minsmere RSPB reserve (The Suffolk Naturalists' Society, 2022).
- Merlin (*Falco columbarius*) (Schedule 1) – this species was only recorded in the January and November 2023 surveys. This species does not breed locally.
- Peregrine (*Falco peregrinus*) (Schedule1) – one was recorded close to a communications tower over agricultural land during the March 2023 survey. No peregrines have been recorded at this location since (see **Application Document 6.4.2.2.B.7 Suffolk Winter Bird Survey Results March 2023**).
- Pintail – in winter 2022/23, birds were present in all months, with counts exceeding 100 from December onwards when the maximum count of 333 birds was made.
- Raven (*Corvus corax*) – this is a rare species with less than five breeding pairs in Suffolk (The Suffolk Naturalists' Society, 2022). In Winter 2022/23, one was recorded during the February survey followed by a sighting of a pair during the March survey. In Winter 2023/24, there were two records of a single bird in February followed by a pair in March.
- Red kite (*Milvus milvus*) (Schedule1) – in Winter 2022/23, one was recorded circling just southeast of Saxmundham during the December survey. There was one sighted over the North Warren RSPB reserve in October 2023 and a second record in December 2023 in the Saxmundham area.

- Skylark – in Winter 2022/23, the peak count was 89 birds during the October survey. In Winter 2023/24, birds were recorded in double figures in all months, with a peak count of 75 individuals during the October count.
- Spoonbill (*Platalea leucorodia*) (Schedule 1) – during the 2022/23 surveys, one was recorded flying around the beach and North Warren RSPB reserve boundary during the March survey. This species breeds locally at RSPB Halvergate Island, with 13 pairs being recorded in 2021 (The Suffolk Naturalists' Society, 2022).
- Yellowhammer – in Winter 2022/23, the peak count was 26 during the February survey. In winter 2023/24, birds were recorded in all months with a peak count of 28 during the October survey.

Table 1.6 Peak counts recorded during the wintering bird transect surveys in October 2022 to March 2023 (not including RSPB land)

Common Name	Scientific Name	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Species Included in Statutory Site Designations for SPAs, SACs and Ramsar							
European white-fronted goose	*Answer albifrons*	0	0	24	0	0	0
Herring gull*	*Larus argentatus*	5	14	57	36	5	4
Woodlark+*	*Lullula arborea*	0	0	0	0	1	1
Lesser black-backed gull	*Larus fuscus*	21	2	0	0	0	0
Marsh harrier+	*Circus aeruginosus*	0	0	3	1	1	1
Shelduck	*Tadorna tadorna*	0	0	0	0	0	2
Teal	*Anas crecca*	0	0	0	0	0	3
Additional Red List Species							
Corn bunting	*Emberiza calandra*	0	0	0	0	0	1
Curlew*	*Numenius arquata*	78	51	27	15	16	2
Fieldfare	*Turdus pilaris*	35	65	227	565	106	791
Greenfinch	*Carduelis chloris*	14	55	110	6	3	1
Grey partridge*	*Perdix perdix*	0	0	0	0	2	0
Grey wagtail	*Motacilla cinerea*	0	0	0	1	0	0
House sparrow*	*Passer domesticus*	30	50	60	45	39	37

Common Name	Scientific Name	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Lapwing*	*Vanellus vanellus*	20	63	199	139	121	0
Linnet*	*Carduelis cannabina*	251	123	1	12	58	364
Merlin+	*Falco columbarius*	0	0	0	1	0	0
Mistle thrush	*Turdus viscivorus*	0	2	0	4	0	2
Skylark*	*Alauda arvensis*	89	67	40	125	29	55
Song thrush*	*Turdus philomelos*	0	0	2	0	8	2
Starling*	*Sturnus vulgaris*	96	71	35	41	2	0
Woodcock	*Scolopax rusticola*	0	0	1	0	0	0
Yellowhammer*	*Emberiza citrinella*	2	7	1	2	26	5
Additional Amber List Species							
Black-headed gull*	*Chroicocephalus ridibundus*	28	82	63	73	36	264
Bullfinch*	*Pyrrhula pyrrhula*	0	2	0	0	0	0
Common gull	*Larus canus*	0	4	74	172	250	2
Dartford warbler+	*Sylvia undata*	1	0	1	0	0	0
Dunnock*	*Prunella modularis*	7	7	11	10	10	7
Great black-backed gull	*Larus marinus*	2	0	0	0	0	0
Green sandpiper	*Tringa ochropus*	0	0	1	0	0	0
Greylag goose	*Anser anser*	0	0	10	0	0	0
Kestrel	*Falco tinnunculus*	6	0	1	1	2	4

Common Name	Scientific Name	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Lapland bunting	*Calcarius lapponicus*	1	0	0	0	0	0
Mallard	*Anas platyrhynchos*	0	0	15	0	0	5
Meadow pipit	*Anthus pratensis*	18	13	10	1	4	31
Mediterranean gull+	*Larus melanocephalus*	1	0	0	0	0	0
Redwing	*Turdus iliacus*	4	0	28	118	68	43
Reed bunting*	*Emberiza schoeniclus*	0	0	12	0	0	0
Rook	*Corvus frugilegus*	127	263	26	121	494	177
Snipe	*Gallinago gallinago*	0	0	3	0	0	0
Snow bunting	*Plectrophenax nivalis*	1	0	0	0	0	0
Spoonbill+	*Platalea leucorodia*	0	0	0	0	0	1
Stock dove	*Columba oenas*	0	0	1	2	57	5
Turnstone	*Arenaria interpres*	0	0	4	0	0	0
Water pipit	*Anthus spinoletta*	1	0	0	0	0	0
Wheatear	*Oenanthe oenanthe*	1	0	0	0	0	0
Wood pigeon	*Columba palumbus*	67	51	249	69	257	412
Wren	*Troglodytes troglodytes*	4	5	8	1	24	6
Yellow-legged gull	*Larus michahellis*	1	0	0	0	0	0

Additional Green List Species

Common Name	Scientific Name	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Blackbird	*Turdus merula*	11	8	34	44	30	24
Blue tit	*Cyanistes caeruleus*	7	8	18	7	13	0
Brambling	*Fringilla montifringilla*	0	0	30	0	0	0
Carrion crow	*Corvus corone*	33	9	16	36	19	52
Cetti's warbler	*Cettia cetti*	0	1	0	0	0	0
Chaffinch	*Fringilla coelebs*	68	455	1,061	11	34	14
Chiffchaff	*Phylloscopus collybita*	0	0	0	0	0	1
Coal tit	*Periparus ater*	0	0	0	0	2	0
Common buzzard	*Buteo buteo*	5	4	6	4	6	11
Coot	*Fulica atra*	0	0	1	0	1	0
Cormorant	*Phalacrocorax carbo*	0	8	0	0	0	1
Goldcrest	*Regulus regulus*	3	4	2	0	3	1
Golden plover+*	*Pluvialis apricaria*	0	490	120	115	78	45
Goldfinch	*Carduelis carduelis*	1	3	66	53	29	14
Great crested grebe	*Podiceps cristatus*	0	0	0	0	2	0
Great spotted woodpecker	*Dendrocopos major*	0	3	2	3	3	1
Great tit	*Parus major*	1	2	1	4	17	13
Great white egret+	*Ardea alba*	0	0	1	0	0	0

Common Name	Scientific Name	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Green woodpecker	*Picus viridis*	2	1	0	0	2	0
Jackdaw	*Corvus monedula*	40	64	6	0	71	15
Jay	*Garrulus glandarius*	1	5	2	1	0	1
Little egret+	*Egretta garzetta*	0	0	0	0	1	0
Long-tailed tit	*Aegithalos caudatus*	21	10	25	25	2	7
Magpie	*Pica pica*	1	2	0	0	0	2
Moorhen	*Gallinula chloropus*	0	0	0	0	1	1
Pheasant (not assessed)	*Phasianus colchicus*	0	0	0	1	1	1
Pied wagtail	*Motacilla alba*	2	1	0	12	1	1
Raven	*Corvus corax*	0	0	0	0	1	2
Red kite+	*Milvus milvus*	0	0	1	0	0	0
Robin	*Erithacus rubecula*	6	8	11	20	52	21
Siskin	*Carduelis spinus*	0	1	0	0	0	0
Sparrowhawk	*Accipiter nisus*	3	1	1	1	1	1
Stonechat	*Saxicola rubicola*	0	2	0	0	1	2
Treecreeper	*Certhia familiaris*	0	1	0	0	2	0

Bold indicates Schedule 1.

+Indicates Annex 1 of Birds Directive.

*Indicates NERC Act.

Table 1.7 Peak counts recorded during the wintering bird transect surveys in October 2023 to March 2024 (including RSPB land)

Common Name	Scientific Name	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024
Species Included in Statutory Site Designations for SPAs, SACs and Ramsar							
European white-fronted goose	*Answer albifrons*	0	35	20	95	125	0
Herring gull*	*Larus argentatus*	50	104	44	58	216	132
Woodlark+*	*Lullula arborea*	0	0	0	0	7	0
Common redshank	*Tringa tetanus*	0	7	8	5	0	0
Gadwall	*Mareca strepera*	11	6	2	6	0	6
Lesser black-backed gull	*Larus fuscus*	0	1	0	6	1	9
Marsh harrier+	*Circus aeruginosus*	0	1	0	0	3	2
Shelduck	*Tadorna tadorna*	0	0	0	8	3	29
Shoveler	*Anas clypeata*	0	19	128	85	96	171
Teal	*Anas crecca*	214	123	430	319	172	345
Wigeon	*Anas penelope*	150	143	656	1,302	973	990
Additional Red List Species							
Curlew*	*Numenius arquata*	18	39	29	11	4	10
Dunlin+	*Calidris alpina*	11	0	0	48	25	

Common Name	Scientific Name	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024
Fieldfare	*Turdus pilaris*	1	27	0	0	170	17
Greenfinch	*Carduelis chloris*	4	2	0	0	0	2
Grey partridge*	*Perdix perdix*	0	0	0	11	0	0
House sparrow*	*Passer domesticus*	0	10	10	15	25	40
Lapwing*	*Vanellus vanellus*	4	106	183	654	415	213
Linnet*	*Carduelis cannabina*	20	25	2	25	13	18
Marsh tit*	*Poecile palustris*	1	0	0	0	0	0
Merlin+	*Falco columbarius*	0	1	0	0	0	0
Mistle thrush	*Turdus viscivorus*	2	3	2	3	0	3
Pochard	*Aythya ferina*	0	6	21	0	0	0
Ring ouzel*	*Turdus torquatus*	1	0	0	0	0	0
Ringed plover	*Charadrius hiaticula*	2	0	0	0	2	0
Skylark*	*Alauda arvensis*	75	29	13	22	44	59
Song thrush*	*Turdus philomelos*	4	4	6	4	6	13
Starling*	*Sturnus vulgaris*	21	10	76	331	0	615
Woodcock	*Scolopax rusticola*	0	1	0	1	2	1
Yellowhammer*	*Emberiza citrinella*	28	11	6	4	2	2
			Additional Amber List Species				
Barnacle goose	*Branta leucopsis*	0	25	200	0	1	30
Black-headed gull*	*Chroicocephalus ridibundus*	246	370	1,008	555	282	276

Common Name	Scientific Name	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024
Brent goose	*Brenta bernicla*	56	6	0	0	0	0
Bullfinch*	*Pyrrhula pyrrhula*	0	0	5	3	43	7
Cattle egret	*Bubulcus ibis*	1	0	0	0	0	0
Common gull	*Larus canus*	1	75	216	393	153	58
Dunnock*	*Prunella modularis*	15	33	13	13	12	25
Great black-backed gull	*Larus marinus*	1	6	3	4	2	0
Greylag goose	*Anser anser*	71	190	460	26	25	21
Kestrel	*Falco tinnunculus*	10	10	2	4	7	7
Mallard	*Anas platyrhynchos*	29	64	47	114	42	24
Meadow pipit	*Anthus pratensis*	24	4	3	7	96	5
Mediterranean gull+	*Larus melanocephalus*	0	0	0	0	0	1
Pintail	*Anas acuta*	30	75	333	143	210	155
Redwing	*Turdus iliacus*	1	0	1	92	44	244
Reed bunting*	*Emberiza schoeniclus*	0	0	1	0	0	1
Rook	*Corvus frugilegus*	248	333	484	257	228	150
Snipe	*Gallinago gallinago*	0	0	0	5	0	1
Snow bunting	*Plectrophenax nivalis*	0	0	2	0	0	0
Spoonbill+	*Platalea leucorodia*	0	0	0	0	0	4

Common Name	Scientific Name	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024
Stock dove	*Columba oenas*	0	0	1	3	19	3
Tawny owl	*Stris aluco*	0	0	1	0	0	0
Wheatear	*Oenanthe oenanthe*	3	1	0	0	0	0
Wood pigeon	*Columba palumbus*	151	923	817	357	1,645	737
Wren	*Troglodytes troglodytes*	20	21	11	12	16	37
			Additional Green List Species				
Blackbird	*Turdus merula*	15	43	49	43	38	34
Blue tit	*Cyanistes caeruleus*	21	27	42	209	52	41
Canada goose	*Branta canadensis*	0	0	30	0	25	0
Carrion crow	*Corvus corone*	16	28	31	62	45	29
Cetti's warbler	*Cettia cetti*	1	3	1	0	1	3
Chaffinch	*Fringilla coelebs*	27	15	31	20	12	20
Chiffchaff	*Phylloscopus collybita*	7	0	0	0	0	2
Coal tit	*Periparus ater*	3	2	1	3	2	0
Collard dove	*Streptopelia decaocto*	0	0	0	2	0	0
Common buzzard	*Buteo buteo*	10	13	15	8	10	17
Coot	*Fulica atra*	0	20	10	30	45	2
Cormorant	*Phalacrocorax carbo*	0	0	0	1	3	0

Common Name	Scientific Name	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024
Egyptian goose	*Alopochen aegyptiaca*	0	0	0	0	2	0
Firecrest	*Regulus ignicapilla*	0	0	0	0	0	1
Goldcrest	*Regulus regulus*	10	2	11	2	2	1
Goldfinch	*Carduelis carduelis*	10	34	12	22	19	0
Goosander	*Mergus merganser*	0	0	0	0	0	1
Great crested grebe	*Podiceps cristatus*	0	0	0	0	0	2
Great spotted woodpecker	*Dendrocopos major*	3	2	1	3	1	5
Great tit	*Parus major*	23	4	15	28	16	12
Great white egret+	*Ardea alba*	0	0	0	0	3	1
Green woodpecker	*Picus viridis*	5	1	1	1	1	1
Grey Heron	*Ardea cinerea*	1	2	1	2	1	5
Jackdaw	*Corvus monedula*	61	4	66	48	45	27
Jay	*Garrulus glandarius*	12	4	9	0	5	0
Lesser whitethroat	*Curruca curruca*	1	0	0	0	0	0
Little egret+	*Egretta garzetta*	1	0	0	4	3	9
Little grebe	*Tachybaptus Ruficollis*	0	18	4	18	18	15
Long-tailed tit	*Aegithalos caudatus*	30	39	15	10	13	3
Magpie	*Pica pica*	7	6	8	9	3	1

Common Name	Scientific Name	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024
Moorhen	*Gallinula chloropus*	0	1	1	1	3	0
Mute swan	*Cygnus olor*	1	8	3	5	3	1
Nuthatch	*Sitta europaea*	1	0	1	0	0	0
Pheasant	*Phasianus colchicus*	15	6	4	1	5	3
Pied wagtail	*Motacilla alba*	17	6	2	7	0	15
Raven	*Corvus corax*	0	0	0	0	1	0
Red kite+	*Milvus milvus*	1	0	1	0	0	0
Red-legged partridge	*Alectoris rufa*	0	0	7	10	0	0
Ring-necked duck	*Aythya collaris*	0	0	0	0	0	1
Robin	*Erithacus rubecula*	41	24	1	39	43	62
Rock pipit	*Anthus petrosus*	0	1	1	0	0	0
Siskin	*Carduelis spinus*	0	0	0	0	2	0
Sparrowhawk	*Accipiter nisus*	0	1	0	0	0	2
Stonechat	*Saxicola rubicola*	3	2	0	1	0	1
Swallow	*Hirundo rustica*	1	0	0	0	0	0
Tufted duck	*Aythya fuligula*	0	35	35	20	18	4
White stork+	*Ciconia ciconia*	0	0	0	0	0	1
Water rail	*Rallus aquaticus*	1	2	0	1	0	1
Waxwing	*Bombycilla garrulus*	0	0	10	0	0	0

Bold indicates Schedule 1.

+Indicates Annex 1 of Birds Directive.

*Indicates NERC Act

Cryptic species

1.4.36 Cryptic species are species that are unusually difficult to locate and count due to skulking behaviour, camouflage or nocturnal habits. Therefore, species such as bittern, snipe and owls are likely to be under recorded. Of these, bittern is the only species that might be significant. The single record on the grazing marshes on the North Warren RSPB reserve may well indicate this species is likely to be regular feature of this area during the winter. Further evidence for the importance of this area for feeding bitterns is that this species was observed making regular feeding flights from the ditches on this area to the reedbed approximately 1 km further north in both Summer 2022, 2023 and 2024 (**Application Document 6.3.2.2.C Appendix 2.2.C Suffolk Breeding Bird Report**). This shows this area is an important feeding area for breeding bittern and there is no reason to believe this area would not be important year-round.

1.5 Discussion

Conservation Status

1.5.1 A total of 120 bird species were recorded within the Survey Area. Of these, 68 are notable species as described in Table 1.5.

1.5.2 Note that where a species falls under multiple conservation status criteria, it is addressed in the first tier only.

1.5.3 Figures illustrating the distributions of these species within the Survey Area during the wintering bird surveys are provided in:

- **Application Document 6.4.2.2.B.2 Suffolk Winter Bird Survey Results October 2022**;
- **Application Document 6.4.2.2.B.3 Suffolk Winter Bird Survey Results November 2022**;
- **Application Document 6.4.2.2.B.4 Suffolk Winter Bird Survey Results December 2022**;
- **Application Document 6.4.2.2.B.5 Suffolk Winter Bird Survey Results January 2023**;
- **Application Document 6.4.2.2.B.6 Suffolk Winter Bird Survey Results February 2023**;
- **Application Document 6.4.2.2.B.7 Suffolk Winter Bird Survey Results March 2023**;
- **Application Document 6.4.2.2.B.9 Suffolk Winter Bird Survey Results October 2023**;
- **Application Document 6.4.2.2.B.10 Suffolk Winter Bird Survey Results November 2023**;
- **Application Document 6.4.2.2.B.11 Suffolk Winter Bird Survey Results December 2023**;
- **Application Document 6.4.2.2.B.12 Suffolk Winter Bird Survey Results January 2024**;

- **Application Document 6.4.2.2.B.13 Suffolk Winter Bird Survey Results February 2024**; and
- **Application Document 6.4.2.2.B.14 Suffolk Winter Bird Survey Results March 2024**.

Species Abundance/Designated Sites Context

Overall comparison between survey peak counts and designated site data

1.5.4 The peak counts for species where large numbers have been recorded in comparison to designated site data have been reviewed in further detail within Table 1.8.

1.5.5 The overall survey peak counts are shown as a proportion of the 5-year mean peak of the designated sites.

1.5.6 Peak counts are also assessed as a proportion of the 1 % threshold criteria (Austin, et al., 2023) for wintering waterbirds (as a wetland in Britain is considered of National importance if it regularly supports 1 % of the total numbers in Britain).

1.5.7 Caution is required when interpreting the counts because there is often significant movement of birds between sites. Birds may be concentrated on different sites at different times of the year and/or at different times of the day. For example, lagoons at Minsmere might support large numbers of duck in the early Autumn when the North Warren RSPB reserve has low water levels. Following winter rain, the North Warren RSPB reserve is likely to be more attractive to certain duck species dictating seasonal movements and distribution. Similarly, bird numbers may vary due to tidal influences at the Alde-Ore Estuary.

1.5.8 Further discussion is provided below in respect of the landfall/beach area and the proposed inland cable route areas, given the separation of the two areas in terms of location, geography and designated site context.

1.5.9 Note that the data in the third to sixth column of this table is WeBS data and does not mean the species in question is a qualifying feature of the designated site. Peak counts are from the North Warren RSPB Reserve or intertidal area unless noted otherwise.

Table 1.8 Maximum counts for species found during winter surveys (2022/23 and 2023/24) in relation to designated site data and National thresholds.

Common Name (Scientific Name)	Maximum count during survey (Winter 2022/23 and 2023/24)	Alde-Ore and Butley Estuaries SPA, and Ramsar, WeBS 5 year mean Peak count	Minsmere to Walberswick Heaths and Marshes SPA and Ramsar, WeBS 5 year mean Peak count	Sandlings SPA	Leiston to Aldeburgh SSSI includes North Warren RSPB Reserve and Sandlings SPA	Great Britain 1 % Threshold	Over or approaches 1 % of Great Britain Threshold?
Bittern (*Botaurus stellaris*)[2]	1	N/A	8 pairs including North Warren RSPB reserve	N/A	8 including Minsmere and Walberswick	8	No, but given the rarity of this species 8 birds is likely significant.
Common Redshank (*Tringa tetanus*)[3]	8	1,634	277	N/A	1	940	No
European white-fronted goose (*Anser albifrons*)[4]	190	62	3		141	21	Yes
Curlew	78	762	39	N/A	2	1,200	No

[2] Qualifying feature of Minsmere-Walberswick SPA during breeding season

[3] Qualifying feature of the Alde-Ore Estuary SPA during the non-breeding season

[4] Qualifying feature of Alde-Ore Estuary SPA and Leiston-Aldeburgh SSSI during the non-breeding season

Common Name (Scientific Name)	Maximum count during survey (Winter 2022/23 and 2023/24)	Alde-Ore and Butley Estuaries SPA, and Ramsar, WeBS 5 year mean Peak count	Minsmere to Walberswick Heaths and Marshes SPA and Ramsar, WeBS 5 year mean Peak count	Sandlings SPA	Leiston to Aldeburgh SSSI includes North Warren RSPB Reserve and Sandlings SPA	Great Britain 1 % Threshold	Over or approaches 1 % of Great Britain Threshold?
(*Numenius arquata*)	(inland cable route)						
Gadwall (*Anas strepera*)[5]	11	233	389	N/A	61	310	No
Golden plover (*Pluvialis apricaria*)	490 (inland cable route)	1,073	17	N/A	0	4,000	No
Herring gull (*Larus argentatus*)	216	1,269	147	N/A	39	7,300	No
Lesser-black backed gull (*Larus fuscus*)	9	230	22	N/A	8	1,200	No
Lapwing (*Vanellus vanellus*)	654	2,259	789	N/A	98	6,200	No
Marsh harrier	3	N/A	6	N/A	8	UK 590 pairs (BTO) ∴ 5 pairs	No

[5] Qualifying feature of Minsmere-Walberswick SPA and Leiston-Aldeburgh SSSI during breeding and non-breeding season

Common Name (Scientific Name)	Maximum count during survey (Winter 2022/23 and 2023/24)	Alde-Ore and Butley Estuaries SPA, and Ramsar, WeBS 5 year mean Peak count	Minsmere to Walberswick Heaths and Marshes SPA and Ramsar, WeBS 5 year mean Peak count	Sandlings SPA	Leiston to Aldeburgh SSSI includes North Warren RSPB Reserve and Sandlings SPA	Great Britain 1 % Threshold	Over or approaches 1 % of Great Britain Threshold?
(*Circus aeruginosus*)[6]							
Pintail (*Anas acuta*)	491	128	72	N/A	248	200	Yes
Shelduck (*Tadorna tadorna*)	29	854	241	N/A	6	470	No
Shoveler (*Anas clypeata*)[7]	171	4,335	225	N/A	206	310	No (c.0.5 %)
Teal (*Anas crecca*)[8]	1,885	2,875	1,610	N/A	420	4,300	No (c.0.5 %
Wigeon (*Anas penelope*)	2,306	4,295	1,269	N/A	N/A	4,500	No (0.5 %)

[6] Qualifying feature of Alde-Ore Estuary SPA, Minsmere-Walberswick SPA and Leiston-Aldeburgh SSSI during the breeding season

[7] Qualifying feature of the Alde-Ore Estuary SPA during the breeding and non-breeding seasons and Leiston-Aldeburgh SSSI during the non-breeding season

[8] Qualifying feature of Alde-Ore Estuary SPA during the breeding season

Common Name (Scientific Name)	Maximum count during survey (Winter 2022/23 and 2023/24)	Alde-Ore and Butley Estuaries SPA, and Ramsar, WeBS 5 year mean Peak count	Minsmere to Walberswick Heaths and Marshes SPA and Ramsar, WeBS 5 year mean Peak count	Sandlings SPA	Leiston to Aldeburgh SSSI includes North Warren RSPB Reserve and Sandlings SPA	Great Britain 1 % Threshold	Over or approaches 1 % of Great Britain Threshold?
Woodlark (*Lullula arborea*)[9]	7	N/A	N/A	c.8 pairs	2-3 pairs included in Sandlings SPA	UK 2300 pairs, ∴ 23 pairs	No

[9] Qualifying feature of Sandlings SPA and Leiston-Aldeburgh SSSI during the breeding season

North Warren RSPB Reserve

1.5.10 Counts of European white-fronted geese at the North Warren RSPB reserve reached the threshold of National importance during surveys from December 2021 to February 2022. No counts were made prior to December 2021 or after April 2022 on the reserve. It is known that similar numbers were present in 2021 to 2022 from the Birdguides App (pers. Obs. and Birdguides app).

1.5.11 Pintail counts at the North Warren RSPB reserve are of National importance, with the threshold of 200 individuals being surpassed on four surveys in December 2021 to February 2022. WeBS peak mean counts for the site also exceed the threshold for National importance (Woodward, et al., 2024). Large numbers of water birds were present during the overwintering period, including two species that qualify for the surrounding designated sites. These were:

- teal – 1,885 individuals (qualifying feature of both Alde-Ore Estuary SPA, SAC and Ramsar, Minsmere to Walberswick Heaths and Marshes SPA, SAC and Ramsar); and
- shoveler – 160 individuals (qualifying feature of both Alde-Ore Estuary SPA, SAC and Ramsar, Minsmere to Walberswick Heaths and Marshes SPA, SAC and Ramsar).

1.5.12 Some smaller numbers of species recorded also qualified for the surrounding designated sites including bittern, gadwall, marsh harrier, common redshank, shelduck and wigeon.

1.5.13 An additional wetland/shorebird species recorded in significant numbers was lapwing, with a peak count of 350. A regular flock of several hundred individuals of this species is likely to be of County importance.

1.5.14 A number of species of secondary importance are not included in Table 1.8 above due to the fact they would not reach higher than local importance. However, they are still considered in the assessment of the North Warren RSPB area as they are a rare breeding species, a Schedule 1 species and/or part of the farmland bird assemblage.

Inland cable route counts (Winter 2022/23 and 2023/24)

1.5.15 Woodlarks (a feature of the Sandlings SPA) were recorded during the wintering bird transects in both Winter surveys (max count seven). This species can be difficult to detect in Winter as it quietly feeds in low vegetation and is normally only detected when it is accidently flushed close to the surveyor. Given this, it is likely that larger numbers of this species may overwinter within the Suffolk Onshore Scheme Order Limits.

1.5.16 Relatively large numbers of golden plover, curlew and lapwing were recorded within the Order Limits. None of these are qualifying species for any of the designated sites but they do qualify as part of the bird assemblage.

1.5.17 Golden plovers are known to show a high level of site fidelity with a propensity to overwinter at traditional sites. The number recorded in surveys is more than 1 % of the SPA population (Table 1.8). See (Fuller & Youngman, 1979) for details of lapwing site fidelity. It should be noted that this species was not recorded during Winter 2023/24 at the same site and it is likely this was due to disturbance from archaeological investigations.

1.5.18 No European white-fronted geese were recorded in the inland cable route fields during any of the winter surveys. However, it is known that up to 167 were recorded feeding on an Autumn sown cereal crop from at least the 1 to 16 February 2021, between Aldringham and Thorpeness (grid Ref. TM 452 608). Therefore, it is reasonable to assume that this species could occur on inland cable route fields within or close to the Order Limits.

Species Richness

North Warren RSPB Reserve

1.5.19 The diverse assemblage of species recorded during the WeBS counts reflects the designated status of Leiston to Aldeburgh SSSI/North Warren RSPB reserve and primarily comprised a range of waterbirds and heathland/woodland species, including the recording of occasional migrant species.

Inland cable route

1.5.20 The inland cable route areas recorded a reasonably diverse range of species. Limitations in coverage mean that several cryptic species may not have been fully recorded e.g. species such as red kite and woodlark.

Habitat/Distribution

North Warren RSPB Reserve

1.5.21 Water birds tended to be found within or just south of the Order Limits. This is largely due to the fact the flooded areas tend to attract the majority of birds. However, grazing species such as European white-fronted geese tended to be found to the north of the public footpath that runs east to west through the North Warren RSPB reserve. Despite moderate disturbance from walkers, birds are surprisingly tolerant and often feed relatively close to the footpath.

1.5.22 The beach area east of the Thorpeness to Aldeburgh road is of relatively low interest for birds, with occasional skylark and linnet being the only birds regularly present.

Inland cable route

1.5.23 Overall, the inland cable route held a typical farmland bird assemblage. The Survey Area is split between two soil types, which is reflected in the bird assemblage. Not all bird species are influenced by the soil type but species such as woodlark are only found on the sandy eastern part of the Survey Area.

1.5.24 The most interesting species are moderate numbers of shorebirds, notably curlew, golden plover and lapwing. The large open fields directly east of Saxmundham held a large group of lapwing and golden plover during the survey in winter 2022/23 and may be a traditional wintering location for this species. This fact was not established in 2023/24 due to disturbance.

1.5.25 No European white-fronted geese were found during any of the surveys on the inland cable route but the desk study highlighted a regular flock feeding inland nearby in 2021. Therefore, it is possible that this species could be found foraging within the Order Limits in future winters.

Functionally Linked Land – Designated Site Context

1.5.26 Areas that are functionally linked to European designated sites are considered when they may be affected by plans and projects. For the purposes of this assessment, land is considered 'linked' to a European site if it serves an important ecological function in maintaining or restoring the population of qualifying species at favourable conservation status (Natural England, 2006).

1.5.27 The North Warren RSPB reserve supports several thousand overwintering waterbirds of the same species for which the nearby designated sites are important (Alde-ore Estuary SPA, SAC and Ramsar and Minsmere to Walberswick Heaths and Marshes SPA, SAC and Ramsar). Fluctuating bird numbers at these sites confirms that there is considerable movement between sites and that the North Warren RSPB reserve is functionally linked to the nearby designated sites.

1.5.28 Based on recent counts at the North Warren RSPB reserve, it appears to be the favoured wintering site for Nationally important numbers of European white-fronted geese, with higher numbers than those at the Alde-Ore Estuary (SPA, SAC and Ramsar), which is designated for this species.

1.5.29 Creation of wetland bird habitat at the North Warren RSPB reserve is likely to have increased numbers of wintering waterbirds, including those species using the designated sites, which in effect links the sites together as functionally linked land for wintering bird populations.

1.5.30 The presence of overwintering woodlark on arable land confirms that there is a functional link between the Sandlings SPA and the Order Limits.

1.5.31 Curlews were regularly recorded feeding on arable land within the Order Limits. These birds are undoubtably overwintering at the nearby designated Alde-Ore Estuary (SPA, SAC and Ramsar). These birds are not a qualifying feature of the SPA but are considered part of the bird assemblage of the Alde-Ore Estuary SPA and represent more than 1 % of the SPA population of the species.

1.5.32 The inland cable route is also known to support woodlark which are a feature of the Sandlings SAC.

Overall Importance of Wintering Bird Populations

North Warren RSPB Reserve

1.5.33 The North Warren RSPB reserve supports several thousand wintering waterbirds, including Nationally important numbers of pintail and European white-fronted goose. The North Warren RSBP reserve also supports other bird species which are likely to be shared with the nearby designated sites (Alde-Ore Estuary SPA, SAC and Ramsar and the Minsmere to Walberswick Heaths and Marshes SPA, SAC and Ramsar). Other species which are features of the designated sites are also found in large numbers, for example, both the teal and shoveler counts reached approximately 50% of the threshold for National importance.

1.5.34 The North Warren RSPB reserve is also known to support woodlark ((SNS, 2022) and which is a feature of the Sandlings SAC.

1.5.35 The North Warren RSPB reserve supports overwintering bittern that fish in ditches within the Order Limits. Breeding and wintering bittern are likely to be part of the local

population centred on the Minsmere to Walberswick heaths and Marshes (SPA, SAC and Ramsar).

Inland cable route

1.5.36 A small number of woodlark were recorded during the wintering bird surveys. Given the survey was at a sample level and this species is not visible at long distances due to its small size, more significant numbers may have been present.

1.5.37 Up to 78 curlew were recorded feeding on arable fields adjacent to the Alde-Ore Estuary SPA, SAC and Ramsar but within the Order Limits. It is likely that are higher numbers of curlew than the counts suggest as they would have recorded different birds on different occasions. These birds are not a qualifying feature of the designated site mentioned above but are part of the bird assemblage and represent at least 1 % of the SPA population.

1.5.38 Farmland bird assemblage species such as lapwing, skylark and linnet (all BoCC Red List species) were recorded in moderately high numbers along the inland cable route. These are species which may be of Regional (County of Suffolk) or District importance.

1.5.39 A regular flock of up to 490 golden plover were recorded on arable fields east of Saxmundham during the 2022/23 surveys, not present in Winter 2023/24 most likely due to disturbance. This site/wintering population may be of Regional (County of Suffolk) importance. This species is known to have traditional wintering grounds so it could be assumed they would winter here during future wintering bird surveys. However, survey observations during Winter 2023/24 found no golden plovers at this location. This may be explained that during Winter 2023/24, this area was subject to high-level disturbance due to works (mostly geotechnical investigation as part of NGV's LionLink scheme). Machinery and workers were present on the fields during bird surveys in the period November to March inclusive on all six wintering bird survey visits. The level of disturbance during these months was judged to be of a level that would have excluded this species from this area.

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Annex 2.B.1 Survey Dates, Weather and Tide Heights

Table A.1 Survey dates, weather conditions and tide heights for the 2021/22, 2022/23 and 2023/24 wintering surveys

Date	Tide time	Tide height (m)	Start time	End time	Weather conditions
High and Low Tide Counts 2021 to 2022					
10-12-21	16.09 (High)	2.56	12 am	5 pm	Start: 7 ^{0}C, 20 % cloud, wind 15 mph northwest, dry. End: 5 ^{0}C, 15 % cloud, wind 10 mph northwest, dry.
14-01-22	14.26 (Low)	0.94	12 am	5 pm	Start: 0 ^{0}C, 1 % cloud, wind 0 mph, dry. End: 2 ^{0}C, 1 % cloud, wind 0 mph, dry.
19-01-22	12:04 (High)	2.59	10 am	3 pm	Start: 7 ^{0}C, 50 % cloud, wind 10 mph southwest, dry. End: 8 ^{0}C, 50 % cloud, wind 10 mph southwest, dry.
26-01-22	10:38 (Low)	0.65	8:30 am	2 pm	Start: 6 ^{0}C, 100 % cloud, wind 10 mph west, dry. End: 7 ^{0}C, 100 % cloud, wind 10 mph west, dry.
16-02-22	16:40 (Low)	0.82	12 am	5 pm	Start: 12 ^{0}C, 80 % cloud, wind 25-25 mph south, dry End: 11 ^{0}C, 80 % cloud, wind 20-25 mph southwest, dry.
09-03-22	08:54 (Low)	0.8	7:30 am	1 pm	Start: 9 ^{0}C, 50 % cloud, wind 10 mph south, dry End: 13 ^{0}C, 40 % cloud, wind 10 mph south, dry.
21-03-22	12:59 (High)	2.71	10 am	3 pm	Start: 5 ^{0}C, 0 % cloud, wind 2 mph east, dry. End: 12 ^{0}C, 0 % cloud, wind 1 mph east, dry.
11-04-22	08:19 (High)	2.24	7 am	1 pm	Start: 2 ^{0}C, 50 % cloud, wind 15 mph southwest, dry.

Date	Tide time	Tide height (m)	Start time	End time	Weather conditions
					End: 3 ^{0}C, 60 % cloud, wind 15 mph southwest, dry.
			Winter Bird Transects 2022 to 2023		
26-10-22	-	-	8am	5pm	Start: 14 ^{0}C, 20 % cloud, wind 10 mph south, dry. End: 17 ^{0}C, 30 % cloud, wind 12 mph south, dry.
27-10-22	-	-	8am	5pm	Start: 10 ^{0}C, 10 % cloud, wind 5 mph south, dry. End: 18 ^{0}C, 20 % cloud, wind 5 mph south, dry.
31-10-22	-	-	8am	5pm	Start: 12 ^{0}C, 50 % cloud, wind 8 mph south, dry. End: 16 ^{0}C, 50 % cloud, wind 10 mph south, dry.
08-11-22	-	-	8am	5pm	Start: 12 ^{0}C, 50 % cloud, wind 15 mph southwest, dry. End: 13 ^{0}C, 50 % cloud, wind 15 mph southwest, dry.
10-11-22	-	-	8am	5pm	Start: 12 ^{0}C, 80 % cloud, wind 15 mph southwest, dry. End: 14 ^{0}C, 80 % cloud, wind 10 mph southwest, dry.
11-11-22	-	-	8am	5pm	Start: 7 ^{0}C, 100 % cloud, wind 12 mph south, dry. End: 10 ^{0}C, 100 % cloud, wind 10 mph south, rain.
05-12-22	-	-	8am	5pm	Start: 5 ^{0}C, 95 % cloud, wind 12 mph northeast, dry. End: 6 ^{0}C, 100 % cloud, wind 10 mph northeast, rain.
19-12-22	-	-	8am	5pm	Start: 10 ^{0}C, 100 % cloud, wind 12 mph southwest, dry. End: 12 ^{0}C, 100 % cloud, wind 10 mph southwest, rain.
20-12-22	-	-	8am	5pm	Start: 10 ^{0}C, 10 % cloud, wind 5 mph south, dry. End: 13 ^{0}C, 10 % cloud, wind 10 mph south, dry.

Date	Tide time	Tide height (m)	Start time	End time	Weather conditions
21-12-22	-	-	8am	5pm	Start: 10 ^{0}C, 100 % cloud, wind 2 mph southwest, dry. End: 11 ^{0}C, 100 % cloud, wind 5 mph southwest, dry.
19-01-23	-	-	8am	5pm	Start: 0 ^{0}C, 80 % cloud, wind 0 mph, dry. End: 1 ^{0}C, 90 % cloud, 0 mph, dry.
24-01-23	-	-	8am	5pm	Start: 2 ^{0}C, 90 % cloud, wind 2 mph southwest, dry. End: 6 ^{0}C, 90 % cloud, wind 2 mph southwest, dry.
25-01-223	-	-	8 am	5 pm	Start: 2 ^{0}C, 50 % cloud, wind 5 mph northwest, dry. End: 6 ^{0}C, 50 % cloud, wind 10 mph northwest, dry.
26-01-23	-	-	8am	5pm	Start: 2 ^{0}C, 50 % cloud, wind 5 mph north, dry. End: 7 ^{0}C, 50 % cloud, wind 10 mph north, dry.
21-02-23	-	-	8am	5pm	Start: 0 ^{0}C, 1 % cloud, wind 5 mph southwest, dry. End: 1 ^{0}C, 1 % cloud, wind 5 mph southwest, dry.
22-02-23	-	-	8am	5pm	Start: 5 ^{0}C, 75 % cloud, wind 5 mph southwest, dry. End: 8 ^{0}C, 80 % cloud, wind 7 mph southwest, dry.
23-02-23	-		8am	5pm	Start: 5 ^{0}C, 100 % cloud, wind 15 mph north, dry. End: 6 ^{0}C, 100 % cloud, wind 15 mph north, dry.
24-02-23	-	-	8am	5pm	Start: 5 ^{0}C, 50 % cloud, wind 15 mph northwest, dry. End: 8 ^{0}C, 60 % cloud, wind 12 mph northwest, dry.
01-02-23	-	-	8am	5pm	Start: 6 ^{0}C, 20 % cloud, wind 15 mph northeast, dry. End: 9 ^{0}C, 25 % cloud, wind 12 mph northeast, dry.

Date	Tide time	Tide height (m)	Start time	End time	Weather conditions
02-03-23	-	-	8am	5pm	Start: 6 ^{0}C, 10 % cloud, wind 10 mph north, dry. End: 8 ^{0}C, 10 % cloud, Wind 12 mph north, dry.
03-03-23	-	-	8am	5pm	Start: 6 ^{0}C, 10 % cloud, wind 10 mph north, dry. End: 9 ^{0}C, 10 % cloud, Wind 10 mph north, dry
Winter Bird Transects 2023 to 2024					
05-10-23	-	-	8am	5pm	12 ^{0}C, 80 % cloud, wind 4-6 mph south, dry.
18-10-23	-	-	8am	5pm	10-15 ^{0}C, 90 % cloud, wind 25 mph southeast, dry.
19-10-23	-	-	8am	5pm	12-16 ^{0}C, 100 % cloud, wind 10 mph southeast, dry.
30-10-23	-	-	8am	5pm	10-15 ^{0}C, 80 % cloud, wind 20 mph S, dry
20-11-23	-	-	8am	5pm	12-14 ^{0}C, 80 % cloud, wind 15 mph southwest, dry
21-11-23	-	-	8am	5pm	12-16 ^{0}C, 100 % cloud, wind 10 mph west, dry.
23-11-23	-	-	8am	5pm	12 ^{0}C, 80 % cloud, wind 10 mph southwest, dry
25-11-23	-	-	8am	5pm	12-14 ^{0}C, 80 % cloud, wind 15 mph southwest, dry.
04-12-23	-	-	8am	5pm	6 ^{0}C, 100 % cloud, wind 10 mph southeast, dry.
05-12-23	-	-	8am	5pm	6 ^{0}C, 100 % cloud, wind 10 mph southeast, dry.
07-12-23	-	-	8am	5pm	6 ^{0}C, 80 % cloud, wind 15 mph southeast, dry.
08-12-23	-	-	8am	5pm	10 ^{0}C, 1 % cloud, wind 10 mph south, dry.
22-01-24	-	-	8am	5pm	10 ^{0}C, 10 % cloud, wind 30 mph southwest, dry.
23-01-24	-	-	8am	5pm	13 ^{0}C, 100 % cloud, wind 10 mph southwest, rain.

Date	Tide time	Tide height (m)	Start time	End time	Weather conditions
24-01-24	-	-	8am	5pm	11 ^{0}C, 80 % cloud, wind 20 mph southwest, dry.
25-01-24	-	-	8am	5pm	11 ^{0}C, 100 % cloud, wind 5 mph southwest, dry.
05-02-24	-	-	8am	5pm	10 ^{0}C, 10 % cloud, wind 15-20 mph southwest, dry.
06-02-24	-	-	8am	5pm	11 ^{0}C, 95 % cloud, wind 25-30 mph southwest, dry.
07-02-24	-	-	8am	5pm	6-10 ^{0}C, 80 % cloud, wind 5 mph northeast, dry.
08-02-24	-	-	8am	5pm	5 ^{0}C, 100 % cloud, wind 15 mph northeast, rain.
04-03-24	-	-	8am	5pm	9-12 ^{0}C, 80 % cloud, wind 10 mph south, dry.
05-03-24	-	-	8am	5pm	9 ^{0}C, 80 % cloud, wind 5 mph north, dry.
06-03-24	-	-	8am	5pm	6-10 ^{0}C, 50 % cloud, wind 5 mph east, dry.
07-03-24	-	-	8am	5pm	9-12 ^{0}C, 100 % cloud, wind 10 mph east, dry.

Annex 2.B.2 Desk Study Summaries

Table A.2 Summary of local WeBS sector counts for selected target species recorded or most relevant to the Survey Area

Species	Latest WeBS counts for Alde and Ore SPA 17/18-22 five-year mean peak	Latest WeBS counts for Minsmere-Walberswick SPA 17/18-22 five-year mean peak	Latest WeBS counts for North Warten and Thorpeness Mere 17/18-22 five-year peak mean
Avocet (*Recurvirostra avosetta*)	1552	485	2
Barnacle Goose (*Branta leucopsis*)	17	148	365
Bar-tailed Godwit (*Limosa lapponica*)	170	5	-
Bewick's Swan (*Columbianus bewickii*)	-	7	-
Bittern (*Botaurus stellaris*)	-	4	-
Black-tailed Godwit (*Limosa limosa*)	1017	239	206
Brent Goose (*Branta bernicla*)	183	6	1
Common Sandpiper	1	10	-

Species	Latest WeBS counts for Alde and Ore SPA 17/18-22 five-year mean peak	Latest WeBS counts for Minsmere-Walberswick SPA 17/18-22 five-year mean peak	Latest WeBS counts for North Warten and Thorpeness Mere 17/18-22 five-year peak mean
(*Actitis hypoleucos*)			
Common Scoter (*Melanitta nigra*)	-	416	-
Common Tern (*Sterna hirundo*)	-	290	-
Coot (*Fulica atra*)	84	32	28
Cormorant (*Phalacrocorax carbo*)	1483	250	4
Curlew (*Numenius Arquata*)	723	79	2
Curlew Sandpiper (*Calidris Ferrunginea*)	-	1	-
Dunlin (*Calidris alpina*)	3822	1491	10
European White-fronted Goose (*Anser albifrons*)	67	2	152
Gadwall (*Anas strepera*)	190	455	69
Garganey (*Anas querquedula*)	-	2	-
Glossy Ibis	-	2	-

Species	Latest WeBS counts for Alde and Ore SPA 17/18-22 five-year mean peak	Latest WeBS counts for Minsmere-Walberswick SPA 17/18-22 five-year mean peak	Latest WeBS counts for North Warten and Thorpeness Mere 17/18-22 five-year peak mean
(*Plegadis falcinellus*)			
Golden Plover (*Pluvialis apricaria*)	860	19	-
Goldeneye (*Bucephala clangula*)	7	1	-
Goosander (*Mergus merganser*)	2	10	7
Great Crested Grebe (*Podiceps cristatus*)	8	12	-
Great White Egret (*Ardea alba*)	2	4	2
Green Sandpiper (*Tringa ochropus*)	2	10	-
Grey Heron (*Ardea cinerea*)	21	9	3
Grey Plover (*Pluvialis squatarola*)	133	18	-
Greylag Goose (*Anser answer*)	1228	382	390
Herring Gull (*Larus argentatus*)	1269	230	49
Jack Snipe	2	-	-

Species	Latest WeBS counts for Alde and Ore SPA 17/18-22 five-year mean peak	Latest WeBS counts for Minsmere-Walberswick SPA 17/18-22 five-year mean peak	Latest WeBS counts for North Warten and Thorpeness Mere 17/18-22 five-year peak mean
(*Lymnocryptes minimus*)			
Knot (*Calidris canutus*)	173	81	-
Lapwing (*Vanellus vanellus*)	2353	1196	113
Little Egret (*Egretta garzetta*)	60	18	6
Little Grebe (*Tachybaptus Ruficollis*)	45	11	3
Little Ringed Plover (*Charadrius dubius*)	-	3	-
Little Stint (*Calidris minuta*)	-	3	-
Little Tern (*Sternula albifrons*)	-	14	-
Mallard (*Anas platyrhynchos*)	620	592	126
Mediterranean Gull (*Larus melanocephalus*)	-	57	-
Moorhen (*Gallinula chloropus*)	15	27	8
Mute Swan	179	28	40

Species	Latest WeBS counts for Alde and Ore SPA 17/18-22 five-year mean peak	Latest WeBS counts for Minsmere-Walberswick SPA 17/18-22 five-year mean peak	Latest WeBS counts for North Warten and Thorpeness Mere 17/18-22 five-year peak mean
(*Cygnus olor*)			
Oystercatcher (*Haematopus ostralegus*)	160	66	-
Pink-footed Goose (*Anser brachyrhynchus*)	7	-	-
Pintail (*Anas acuta*)	128	106	272
Pochard (*Aythya farina*)	28	1	-
Redshank (*Tringa tetanus*)	2134	581	2
Red-throated Diver (*Gavia stellata*)	-	7	-
Ringed Plover (*Charadrius hiaticula*)	32	33	-
Ruff (*Calidris pugnax*)	2	9	-
Sanderling (*Calidris alba*)	1	1	-
Sandwich Tern (*Sterna sandviensis*)	-	85	-
Shelduck	1124	305	7

Species	Latest WeBS counts for Alde and Ore SPA 17/18-22 five-year mean peak	Latest WeBS counts for Minsmere-Walberswick SPA 17/18-22 five-year mean peak	Latest WeBS counts for North Warten and Thorpeness Mere 17/18-22 five-year peak mean
(*Tadorna tadorna*)			
Shoveler (*Anas clypeata*)	323	246	201
Smew (*Mergus albellus*)	-	2	-
Snipe (*Gallinago gallinago*)	17	26	6
Spoonbill (*Platalea leucorodia*)	1	1	-
Spotted Redshank (*Tringa erythropus*)	3	15	-
Teal (*Anas crecca*)	3163	1709	447
Tufted Duck (*Aythya fuligula*)	73	21	1
Turnstone (*Arenaria interpres*)	35	9	-
Water Rail (*Rallus aquaticus*)	2	3	-
Whimbrel (*Numenius phaeopus*)	-	2	-
Whooper Swan	1	7	-

Species	Latest WeBS counts for Alde and Ore SPA 17/18-22 five-year mean peak	Latest WeBS counts for Minsmere-Walberswick SPA 17/18-22 five-year mean peak	Latest WeBS counts for North Warten and Thorpeness Mere 17/18-22 five-year peak mean
(*Cygnus cygnus*)			
Wigeon (*Anas penelope*)	4566	1635	1225
Wood Sandpiper	-	2	-

Annex 2.B.3 BTO Bird Codes

Table A.3 BTO bird codes used in Application Documents 6.4.2.2.B.2 to 6.4.2.2.B.14

BTO SPECIES CODES

AC	Arctic Skua	GA	Gadwall	LE	Long-eared Owl	SM	Sand Martin
AE	Arctic Tern	GX	Gannet	LT	Long-tailed Tit	SS	Sanderling
AV	Avocet	GW	Garden Warbler	MG	Magpie	TE	Sandwich Tern
BO	Barn Owl	GY	Garganey	MA	Mallard	VI	Savi's Warbler
BY	Barnacle Goose	GC	Goldcrest	MN	Mandarin Duck	SQ	Scarlet Rosefinch
BA	Bar-tailed Godwit	EA	Golden Eagle	MX	Manx Shearwater	SP	Scaup
BR	Bearded Tit	OL	Golden Oriole	MR	Marsh Harrier	CY	Scottish Crossbill
BS	Berwick's Swan	GF	Golden Pheasant	MT	Marsh Tit	SW	Sedge Warbler
BI	Bittern	GP	Golden Plover	MW	Marsh Warbler	NS	Serin
BK	Black Grouse	GN	Goldeneye	MP	Meadow Pipit	SA	Shag
TY	Black Guillemot	GO	Goldfinch	MU	Mediterranean Gull	SU	Shelduck
BX	Black Redstart	GD	Goosander	ML	Merlin	SX	Shorelark
BJ	Black Tern	GI	Goshawk	M.	Mistle Thrush	SE	Short-eared Owl
B.	Blackbird	GH	Grasshopper Warbler	MO	Montagu's Harrier	SV	Shoveler
BC	Blackcap	GB	Great Black-backed Gull	MH	Moorhen	SK	Siskin
BH	Black-headed Gull	GG	Great Crested Grebe	MS	Mute Swan	S.	Skylark
BN	Black-necked Grebe	ND	Great Northern Diver	N.	Nightingale	SZ	Slavonian Grebe
BW	Black-tailed Godwit	NX	Great Skua	NJ	Nightjar	SN	Snipe
BV	Black-throated Diver	GS	Great Spotted Woodpecker	NH	Nuthatch	SB	Snow Bunting
BT	Blue Tit	GT	Great Tit	OP	Osprey	ST	Song Thrush
BU	Bluethroat	GE	Green Sandpiper	OC	Oystercatcher	SH	Sparrowhawk
BL	Brambling	G.	Green Woodpecker	PX	Peafowl/Peacock	AK	Spotted Crake
BG	Brent Goose	GR	Greenfinch	PE	Peregrine	SF	Spotted Flycatcher
BF	Bullfinch	GK	Greenshank	PH	Pheasant	DR	Spotted Redshank
BZ	Buzzard	H.	Grey Heron	PF	Pied Flycatcher	SG	Starling
CG	Canada Goose	P.	Grey Partridge	PW	Pied Wagtail	SD	Stock Dove
CP	Capercaillie	GV	Grey Plover	PG	Pink-footed Goose	SC	Stonechat
C.	Carrion Crow	GL	Grey Wagtail	PT	Pintail	TN	Stone-curlew
CW	Cetti's Warbler	GJ	Greylag Goose	PO	Pochard	TM	Storm Petrel
CH	Chaffinch	GU	Guillemot	PM	Ptarmigan	SL	Swallow
CC	Chiffchaff	FW	Guineafowl (Helmeted)	PU	Puffin	SI	Swift
CF	Chough	HF	Hawfinch	PS	Purple Sandpiper	TO	Tawny Owl
CL	Cirl Bunting	HH	Hen Harrier	Q.	Quail	T.	Teal
CT	Coal Tit	HG	Herring Gull	RN	Raven	TK	Temminck's Stint
CD	Collared Dove	HY	Hobby	RA	Razorbill	TP	Tree Pipit
CM	Common Gull	HZ	Honey Buzzard	RG	Red Grouse	TS	Tree Sparrow
CS	Common Sandpiper	HC	Hooded Crow	KT	Red Kite	TC	Treecreeper
CX	Common Scoter	HP	Hoopoe	ED	Red-backed Shrike	TU	Tufted Duck
CN	Common Tern	HM	House Martin	RM	Red-breasted Merganser	TT	Turnstone
CO	Coot	HS	House Sparrow	RQ	Red-crested Pochard	TD	Turtle Dove
CA	Cormorant	JD	Jackdaw	FV	Red-footed Falcon	TW	Twite
CB	Corn Bunting	J.	Jay	RL	Red-legged Partridge	WA	Water Rail
CE	Corncrake	K.	Kestrel	NK	Red-necked Phalarope	W.	Wheatear
CI	Crested Tit	KF	Kingfisher	LR	Redpoll (Lesser)	WM	Whimbrel
CR	Crossbill (Common)	KI	Kittiwake	RK	Redshank	WC	Whinchat
CK	Cuckoo	KN	Knot	RT	Redstart	WG	White-fronted Goose
CU	Curlew	LM	Lady Amherst's Pheasant	RH	Red-throated Diver	WH	Whitethroat
DW	Dartford Warbler	LA	Lapland Bunting	RE	Redwing	WS	Whooper Swan
DI	Dipper	L.	Lapwing	RB	Reed Bunting	WN	Wigeon
DO	Dotterel	TL	Leach's Petrel	RW	Reed Warbler	WT	Willow Tit
DN	Dunlin	LB	Lesser Black-backed Gull	RZ	Ring Ouzel	WW	Willow Warbler
D.	Dunnock	LS	Lesser Spotted Woodpecker	RP	Ringed Plover	OD	Wood Sandpiper
EG	Egyptian Goose	LW	Lesser Whitethroat	RI	Ring-necked Parakeet	WO	Wood Warbler
E.	Eider	LI	Linnet	R.	Robin	WK	Woodcock
FP	Feral Pigeon	ET	Little Egret	DV	Rock Dove (not feral)	WL	Woodlark
ZL	Feral/hybrid goose	LG	Little Grebe	RC	Rock Pipit	WP	Woodpigeon
ZF	Feral/hybrid mallard type	LU	Little Gull	RO	Rook	WR	Wren
FF	Fieldfare	LO	Little Owl	RS	Roseate Tern	WY	Wryneck
FC	Firecrest	LP	Little Ringed Plover	RY	Ruddy Duck	YW	Yellow Wagtail
F.	Fulmar	AF	Little Tern	RU	Ruff	Y.	Yellowhammer

If you are not submitting your data electronically using BBS-Online, please return your Field Recording Sheets to your Regional Organiser with your other BBS forms. If you would like to submit your results on BBS-Online, please inform your RO, then visit www.bto.org/bbs.

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