

GridLink Interconnector

Ecology Report Volume 4 – Breeding Bird Survey Report

GridLink Interconnector Limited

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Quality Information

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The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken between March and July 2020 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances. AECOM disclaims any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

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Executive Summary

AECOM has been commissioned by GridLink Interconnector Ltd (the Applicant) to prepare an outline planning application and environmental reports including a breeding bird survey of land at Kingsnorth Power Station (the Site) for the construction and operation of a converter station and associated underground electricity cables at Kingsnorth in Kent (hereafter referred to as the 'Proposed Development'). The Proposed Development comprises the converter station building(s), outdoor equipment, internal roads, car parking and associated landscaping, and underground HVDC cable from the converter station to Mean High Water Springs (installed by Horizontal Directional Drilling). The submarine HVDC cable below Mean High Water Springs is subject to a Marine Licence granted by the Marine Management Organisation (MMO), therefore it is not included in the Proposed Development. In addition, the underground HVAC cable that will link the converter station to the National Grid Kingsnorth substation is considered to be permitted development and, therefore, it does not form part of the Proposed Development.

The Site is located immediately north of the Medway Estuary in Kent (grid reference TQ 81711 72312), within the former Kingsnorth coal-fired power station site (now demolished). The wider landscape includes arable land, coastal grassland and intertidal mudflats. The Site lies immediately north of the Medway Estuary and Marshes Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI), which is designated for its internationally important bird populations including populations of birds during the breeding season. An extended Phase 1 habitat survey undertaken by AECOM in June 2019 identified habitats within and adjacent to the Site of potential value for breeding birds, including habitats suitable for species contributing to the designation of the Medway Estuary and Marshes SPA and Ramsar.

The objective of the breeding bird survey was to record the species, numbers and distributions of birds breeding within and adjacent to the Site, with particular emphasis on locating the territories of any protected or priority species (including those contributing to the designation of the Medway Estuary and Marshes SPA and Ramsar). The survey comprised a series of five visits undertaken monthly between March and July 2020.

The breeding bird survey recorded a total of 65 species, 35 of which were found to be breeding or potentially breeding within the Survey Area. These included species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006, the Birds of Conservation Concern (BoCC) Red and Amber lists, and species included within the Kent Red Data Book. Considering the number of species recorded, the breeding bird assemblage recorded within the Survey Area in 2020 is deemed to be of 'Local' importance. One species was recorded possibly breeding in numbers of national and county significance: black redstart (*Phoenicurus phoenicurus*), with one possible territory at the jetty within the south of the Survey Area (approximately 600m west of the Site). Habitats of particular value to breeding birds comprised grassland in the west of the Survey Area ('Hoo Marshes'), sparsely-vegetated stony ground towards the centre of the Survey Area, grassland in the east of the Survey Area (within the 'former lagoons'), and dense vegetation within scrub and ditches throughout the Survey Area.

Of these 35 breeding or potentially breeding species recorded during the 2020 breeding bird survey, 14 were found to be breeding or potentially breeding within the Site. Such species of particular significance with respect to their legal protection and/or conservation significance were Cetti's warbler (*Cettia cetti*) (included on Schedule 1 of the Wildlife Countryside Act 1981 (as amended)) and skylark (*Alauda arvensis*) and linnet (*Linaria cannabina*) (both included on S41 of the NERC Act 2006 and the BoCC Red list). Considering the number of species recorded, the breeding bird assemblage recorded within the Site in 2020 is deemed to be of 'Site' importance. Habitats within the Site comprising bramble scrub, sparsely-vegetated stony ground and marginal vegetation were of greatest value to breeding birds, and habitat in close proximity to the Site (notably the ditch approximately 10m east of the Site) was also used by a range of protected and priority species.

No species listed on the citations for the designation of the Medway Estuary and Marshes SPA and Ramsar were recorded breeding within the Survey Area in significant numbers (i.e. numbers comprising >1% of the citation breeding populations), with the two focal species (avocet *Recurvirostra avosetta* and little tern *Sternula albifrons*) not recorded during the 2020 breeding bird survey.

1. Introduction

Project Background

- 1.1 AECOM has been commissioned by GridLink Interconnector Ltd (the Applicant) to prepare an outline planning application and environmental reports including a breeding bird survey of land at Kingsnorth Power Station (the Site) for the construction and operation of a converter station and associated underground electricity cables at Kingsnorth in Kent (hereafter referred to as the 'Proposed Development').
- 1.2 The Proposed Development comprises the converter station building(s), outdoor equipment, internal roads, car parking and associated landscaping, and underground HVDC cable from the converter station to Mean High Water Springs (installed by Horizontal Directional Drilling). The submarine HVDC cable below Mean High Water Springs is subject to a Marine Licence granted by the Marine Management Organisation (MMO), therefore it is not included in the Proposed Development. In addition, the underground HVAC cable that will link the converter station to the National Grid Kingsnorth substation is considered to be permitted development and, therefore, it does not form part of the Proposed Development.
- 1.3 The Site is located immediately north of the Medway Estuary in Kent (grid reference TQ 81711 72312), within the former Kingsnorth coal-fired power station site (now demolished). The landscape comprises industrial developments associated with the former power station, such as the National Grid substation, as well as Kingsnorth industrial estate, London Medway Commercial Park and Damhead Creek gas-fired power station. The wider landscape includes arable land, coastal grassland and intertidal mudflats. The Site lies immediately north of the Medway Estuary and Marshes Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI), which is designated for its internationally important bird populations (see Section 2).
- 1.4 The Site covers approximately 6.2ha of brownfield land at the former Kingsnorth Power Station site (as shown in Figure V4.1, Appendix A), within which the new converter station (4.95ha) and access road (1.25ha) will be constructed. A temporary construction laydown area (1.6ha) will also be located next to the converter site during the construction phase.
- 1.5 The redline boundary for the Site includes the existing road within the former Kingsnorth Power Station site that extends from the Site to the main gate on Eschol Road. This has been included within the application boundary in order to identify the access route to be used during the construction and operation of the Proposed Development. Further reference to 'the Site' within this report therefore relates to the 4.94ha rectangular area of land towards the east of the Survey Area only.
- 1.6 The Site and adjacent land have been subject to previous breeding bird surveys, including surveys by RPS between April and June 2019 inclusive. These identified use of the Site and adjacent habitat by a range of breeding species including specially protected and priority species (RPS, 2019).

Survey Scope

- 1.7 A desk study and extended Phase 1 habitat survey undertaken by AECOM in June 2019 identified habitats within and adjacent to the Site (e.g. coastal grassland, scrub and artificial structures) which could potentially support a range of breeding bird species, including specially protected species such as those contributing to the designation of the Medway Estuary and Marshes SPA and Ramsar.
- 1.8 The purpose of the 2020 breeding bird survey was to record the species, numbers and distributions of breeding birds within and adjacent to the Site, with emphasis on locating any territories of specially protected and priority species ; particularly those of species contributing to the designation of the Medway Estuary and Marshes SPA and Ramsar . The presence of such species within and/or adjacent to the Site may potentially constrain or influence the design and/or implementation of the Proposed Development.
- 1.9 The Survey Area included the Site and adjacent areas (as shown in Figure V4.1, Appendix A).
- 1.10 This report relates the findings of the breeding bird survey undertaken between March and July 2020, inclusive and serves to inform the Ecological Impact Assessment (EIA) undertaken by AECOM.
- 1.11 AECOM was also commissioned to undertake a wintering bird survey between October 2019 and March 2020 inclusive, which is reported separately (AECOM, 2020).

Relevant Legislation, Policy and Guidance

Legislation

- 1.12 A number of bird species recorded within the 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). The Directive applies to 193 bird species or sub-species which are:
- in danger of extinction;
 - are rare, or have restricted local distribution;
 - are vulnerable to specific changes in their habitat; or
 - require particular attention for reasons of the specific nature of habitat.
- 1.13 These species are afforded enhanced legal protection and 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). This Directive is transposed into English law through the Conservation of Habitats and Species Regulations 2017 (as amended)¹. Species listed on Annex 1 of the Directive are those for which the UK Government is required to take special conservation measures including the designation of land as Special Protection Areas (SPAs) to ensure the survival and reproduction of these species throughout their distributions. These sites are automatically included within the Natura 2000; a network of core breeding and resting sites that are protected for rare and threatened species.
- 1.14 The legislative provisions for the protection of wild birds in the UK are contained primarily in Sections 1-7 of the Wildlife and Countryside Act (WCA) 1981 (as amended). The Act 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 Act. For these species there are additional penalties for disturbing the bird while it is at the nest or building a nest, or disturbing the dependent young. Species afforded special protection under Schedule 1 of the Act that are of potential relevance to the Proposed Development include avocet (*Recurvirostra avosetta*), Cetti's warbler (*Cettia cetti*) and black redstart (*Phoenicurus ochruros*).
- 1.15 In addition to the above legislation, 49 bird species are listed as being Species of Principal Importance for conservation in England under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006. These species are of material consideration during the planning process. S41 of the NERC Act 2006 requires the Secretary of State to publish a list of habitats and species which are of Principal Importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act. The S41 list is used to guide decision-makers such as public bodies (including local and regional authorities) in implementing their duty under Section 40 of the NERC Act; to have regard to the conservation of biodiversity in England when carrying out their normal functions. The list of 49 'priority species' comprises those identified as requiring action under the UK Biodiversity Action Plan (UKBAP), which continue to be regarded as species of conservation priority under the UK Post-2010 Biodiversity Framework (succeeded the UKBAP in July 2012).

Policy

National Planning Policy Framework

- 1.16 The National Planning Policy Framework (NPPF) (2018) was originally published on 27th March 2012 and detailed the Government's planning policies for England and how these are expected to be applied. The NPPF was revised on 24th July 2018 and 19th February 2019. The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.
- 1.17 It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected and priority habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if

¹ As such, the requirements of the EC Birds Directive (2009/147/EC) are still applicable despite the UK no longer being a member state of the European Union.

development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

- 1.18 The NPPF is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

Kent Biodiversity Action Plan

- 1.19 The 1997 Kent Biodiversity Action Plan (Kent Biodiversity Action Plan Steering Group, 1997) aims to enable the conservation and enhancement of biodiversity in the county. It includes Habitat Action Plans for scrub, neutral and marshy grassland, grazing marsh, reedbeds, standing water and intertidal mud and sand. It also includes Species Action Plans for certain species identified as being of particular conservation significance within the county; these include one bird species, nightingale (*Luscinia megarhynchos*).

Species of Conservation Concern

- 1.20 UK bird species are categorised according to their level of conservation concern as indicated by their population status and stability, which is published in the Birds of Conservation Concern (BoCC) Red, Amber and Green lists (Eaton *et al.*, 2015). Where these species are present within a site, their conservation status should be taken into account in determining the likely impacts of proposed plan or project.
- 1.21 Red list species are those that have declined in numbers by at least 50% over the last 25 years, those that have shown a historical population decline between 1800 and 1995 and those that are of global conservation concern. The species on the Red list are of the most urgent conservation concern. Red list species are:
- those that are 'Globally Threatened' according to IUCN (International Union for Conservation of Nature and Natural Resources) criteria;
 - those whose population or range has declined rapidly in recent years; and
 - those that have declined historically and not shown a substantial recent recovery.
- 1.22 Amber list species include those that have shown a moderate decline in numbers (25%-50%) over the last 25 years. Also included are those species which represent a significant proportion (greater than 20%) of the European breeding or wintering population, those for which at least 50% of the British population is limited to ten sites or fewer. Amber list species are:
- those with an unfavourable conservation status in Europe;
 - those whose population or range has declined moderately in recent years;
 - those whose population has declined historically but made a substantial recent recovery;
 - those with limited populations and low breeding rates; and
 - those with internationally important or localised populations.
- 1.23 Green list species are not of conservation concern and include all other commonly occurring birds in the UK. These lists confer no legal status. However, they are 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 plans or projects.

Kent Red Data Book

- 1.24 The Kent Red Data Book (KRDB) (Waite, 1999) provides information on Kent's rarest and most threatened flora and fauna. In relation to breeding birds, the Kent Red Data Book includes species which meet one or more of the following criteria:
- species for which Kent holds >15% of the British population;
 - species that breed in 20 or fewer 2km tetrads in Kent;
 - county rare species (25 or fewer breeding pairs in Kent);
 - nationally rare species (<1000 breeding pairs in Britain);
 - nationally localised species (breeding in <15% of hectads (10km x 10km squares) in Britain; and
 - BoCC Red list species and BTO high alert species (Crick, 1998).

- 1.25 Bird species included within the KRDB are categorised as:
- KRDB1: breeding species with 25 pairs or fewer in Kent;
 - KRDB2: breeding species with more than 25 pairs in Kent but included on the BoCC Red list due to declining breeding numbers; and
 - KRDB3: other notable bird species (e.g. 'high alert' species).

2. Statutory Designations

- 2.1 A small part of the ntertidal habitat within the Medway Estuary and Marshes SPA, Ramsar and Site of Special Scientific Interest (SSSI) is present within the Survey Area.
- 2.2 Of the other international designations of ornithological interest within 10km of the Site, the nearest (Thames Estuary and Marshes and SPA and Ramsar) is approximately 4km north-east of the Site. Considering this distance, and the scope of potential impacts from the Proposed Development, no international designations of ornithological interest other than the Medway Estuary SPA and Ramsar have been examined in detail in relation to the Proposed Development. Measures taken to protect the interest features of the Medway Estuary SPA and Ramsar (e.g. disturbance mitigation) will also provide protection to other ornithological European sites in North Kent that are used by the same birds.
- 2.3 The legal list of qualifying species for which an SPA is selected and managed is given on the relevant SPA citation. A review of the UK network of SPAs was co-ordinated by Joint Nature Conservation Committee (JNCC) in the late 1990s, with the results published in 2001 following formal agreement by relevant Ministers. It has taken time to revise all the relevant SPA citations in light of this review. Therefore, where there is a discrepancy between species listed in extant citations and those species listed in the 2001 review for a particular designated site, there has been confusion as to the correct list of qualifying species to be used at any site for purposes of management, assessment and development control. At sites where there remain differences between species listed in the 2001 review and the extant site citation, the original citations for the relevant sites have been used as the primary source within the evaluation undertaken in this report.

Medway Estuary and Marshes SPA

- 2.4 The Medway Estuary feeds into and lies on the south side of the outer Thames Estuary in Kent, forming a single tidal system with the Swale and joining the Thames Estuary between the Isle of Grain and Sheerness. It has a complex arrangement of tidal channels which drain around large islands of saltmarsh and peninsulas of grazing marsh. The mudflats are rich in invertebrates and also support beds of the macro-alga *Enteromorpha flexuosa* and eelgrasses (*Zostera* species). Small shell beaches also occur (particularly in the outer part of the estuary).
- 2.5 Qualifying features for the SPA are detailed in the original SPA citation report (SJP, 1993).
- 2.6 The site qualifies under Article 4.1 of the EC Birds Directive 2009 by supporting populations of the following species during the breeding season:
- avocet: 28 pairs; and
 - little tern (*Sternula albifrons*): 24 pairs.
- 2.7 The site also qualifies under Article 4.2 of the EC Birds Directive 2009 as a wetland of international importance by regularly supporting, in summer, a diverse breeding waterfowl assemblage including:
- shelduck (*Tadorna tadorna*);
 - oystercatcher (*Haematopus ostralegus*);
 - shoveler (*Spatula clypeata*);
 - lapwing (*Vanellus vanellus*);
 - mallard (*Anas platyrhynchos*);
 - ringed plover (*Charadrius hiaticula*);
 - teal (*Anas crecca*);
 - redshank (*Tringa totanus*); and
 - pochard (*Aythya ferina*);
 - common tern (*Sterna hirundo*).
- 2.8 The JNCC SPA review (JNCC, 2015), although having no legal standing, also includes information on the Medway Estuary and Marshes SPA, listing the qualifying features as (under Article 4.2) a diverse breeding

waterfowl assemblage) including 77 pairs of common tern, and (under Article 4.1) populations of the following species during the breeding season:

- avocet: 28 pairs; and
- little tern: 28 pairs.

2.9 The Conservation Objectives for the SPA were revised and published by Natural England on 21st February 2019 and are as follows:

“With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the ‘Qualifying Features’ listed below), and subject to natural change:

- *Ensure that the integrity of the site is maintained or restored as appropriate and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;*
 - o *the extent and distribution of the habitats of the qualifying features;*
 - o *the structure and function of the habitats of the qualifying features;*
 - o *the supporting processes on which the habitats of the qualifying features rely;*
 - o *the population of each of the qualifying features; and*
 - o *the distribution of the qualifying features within the site.”*

Medway Estuary and Marshes Ramsar

2.10 According to the original Ramsar citation (SJP, 1993) and the JNCC Ramsar Information Sheet (2008), Medway Estuary and Marshes Ramsar is notable for its internationally important breeding populations of:

- avocet: 28 pairs;
- black-headed gull (*Chroicocephalus ridibundus*): 7,050 apparently occupied nests;
- Mediterranean gull (*Ichthyaetus melanocephalus*): 10 apparently occupied nests;
- Sandwich tern (*Thalasseus sandvicensis*): 333 apparently occupied nests;
- little tern: 24 pairs; and
- common tern (*Sterna hirundo*): 228 apparently occupied nests.

Medway Estuary and Marshes Site of Special Scientific Interest

2.11 The Survey Area includes a small part of the Medway Estuary and Marshes Site of Special Scientific Interest (SSSI). The notification for the Medway Estuary and Marshes Site of Special Scientific Interest (SSSI) (Natural England, undated) states that:

“The Medway Estuary and Marshes form the largest area of intertidal habitats which have been identified as of value for nature conservation in Kent and are representative of the estuarine habitats found on the North Kent coast. A complex of mudflats and saltmarsh is present with in places grazing marsh behind the sea walls which is intersected by dykes and fleets. The area holds internationally important populations of wintering and passage birds and is also of importance for its breeding birds.

*The Chetney Peninsula is among the most important wildfowl breeding areas in Kent. Breeding species include avocet, shelduck, shoveler, pochard *Aythya ferina*, mute swan *Cygnus olor*, tufted duck *Aythya fuligula*, teal *Anas crecca* and gadwall *Anas strepera*. The saltmarsh, in addition to serving as a roosting area for waders at high tide, and supporting breeding birds such as redshank *Tringa totanus*, blackheaded gull *Larus ridibundus* and common tern *Sterna hirundo*, also has an interesting flora.”*

3. Methods

Desk Study

- 3.1 A desk study was undertaken using data obtained from Kent and Medway Biological Records Centre (KMBRC). This identified records of protected and priority species within a 2km radius of the Site boundary. Only records up to ten years old were requested through KMBRC, as any records older than ten years are unlikely to be still representative of breeding bird usage of the local area.

Field Survey

- 3.2 The breeding bird survey was undertaken based on a standard territory mapping methodology for surveying breeding birds as detailed in Gilbert *et al.* (1998) and Bibby *et al.* (2000).

Survey Area

- 3.3 In order to record the species, numbers and distributions of birds breeding within and adjacent to the Site, a Survey Area was devised (see Figure V4.1, Appendix A). This included the entirety of the Site and land (including intertidal habitat within the Medway Estuary) within 100m of the Site, as well as additional areas of habitat that were highly suitable for use by breeding birds. Such areas included coastal marshy grassland approximately 1km west of the Site (known locally as 'Hoo Marshes'), sparsely-vegetated stony ground within the facilities of the former Kingsnorth Power Station, and grassland within the 'former lagoons' approximately 50m east of the Site.
- 3.4 A series of five breeding bird survey visits were undertaken monthly between March and July 2020 inclusive. Survey visits covered a period of at least four hours, during which two suitably qualified ornithologists walked a route that allowed observation of the entirety of the Site and suitable breeding bird habitat within the Survey Area. Visual counts of all bird species encountered were made, with birds that could not be located visually, identification through calls or songs was used. The walked route was interspersed with stops at viewing points from which the Survey Area was scanned using suitable optical equipment. The species present and their behaviours were recorded on field maps using standard British Trust for Ornithology (BTO) species codes and behaviour notation (Marchant, 1983; Gilbert *et al.* 1998).
- 3.5 Surveys were undertaken in suitable weather conditions, avoiding heavy rain, fog or heavy snow (when bird behaviour may be atypical and/or surveying may be impractical). Survey timings and conditions are shown in Table 1 below.

Table 1 Breeding bird survey conditions

Survey date	Timing	Temperature (°C)	Weather conditions
30/03/20	07:30-11:30	4-7	Dry, overcast to sunny (50-100% cloud), fairly light breeze (BF2)
30/04/20	07:10-11:40	7-12	Largely dry (light rain from 09:00-09:30), intermittent sun (60-100% cloud), moderate breeze (BF2-4)
21/05/20	07:15-11:45	18-26	Dry, sunny (5-50% cloud), light to moderate breeze (BF1-3)
19/06/20	07:00-11:00	13-17	Largely dry with brief showers, intermittent sun (70-100% cloud), moderate breeze (BF3)
03/07/20	07:00-11:00	12-16	Dry, sunny (5-10% cloud), moderate breeze (BF2-4)

- 3.6 The number of breeding pairs or territories for each species recorded was determined from the mapped survey data to identify and isolate areas within which birds displayed consistent breeding behaviours (following Gilbert *et al.* 1998). The territory mapping method is based on the observation that many species are territorial during the breeding season. This is most marked in passerines (songbirds), where territories are often determined by conspicuous song, display and territorial disputes with neighbouring individuals. The expected outcome of this technique is that mapped registrations from repeat surveys of the same area fall into clusters, approximately coinciding with territories.

Breeding by a particular species can be said to be 'confirmed' if:

- a territory was positively identified as a result of the number of registrations recorded;
 - a nest or used nest was found, or nest building was observed;
 - a nest with young was seen or heard;
 - recently fledged young were located;
 - adults were seen entering or leaving a nest site, or an adult was seen incubating; or
 - an adult was seen carrying faecal sacs or food for young.
- 3.7 Breeding by a particular species can be said to be 'probable' if:
- a pair was seen in suitable nesting habitat during the breeding season;
 - a male was heard singing at the same place on two or more occasions;
 - courtship and/or display were seen;
 - a bird was seen visiting a probable nest site on a single occasion; or
 - birds exhibited agitated behaviour or gave alarm calls.
- 3.8 Breeding is by a particular species can be said to be 'possible' if:
- birds were seen in the breeding season;
 - birds were seen in possible nesting habitat during the breeding season; or
 - a singing male was heard once during the breeding season.
- 3.9 Species are said to be 'non-breeding' if no behavioural signs indicative of breeding were observed.

Assessment of Ornithological Importance

- 3.10 To support a focussed assessment of the importance of the breeding bird populations within the Survey Area, their biodiversity values have been defined with reference to the geographical level at which they matter. The frames of reference used were based on the values presented in the Chartered Institute of Ecology and Environmental Management *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland* (CIEEM, 2018) and professional judgement.
- 3.11 The evaluation uses a framework, linked to a geographical scale at which the ecological feature has been valued (international, national, regional, county, local or site), in accordance with best practice guidance. These assessment criteria (set out in Table 2 below) have been used in conjunction with the aforementioned categorisation of conservation status to assess the biodiversity importance of the wintering bird populations recorded survey.

Table 2 Importance of ornithological features

Importance ¹ of ornithological features	Descriptors and examples of criteria	How ornithological features criteria relate to Ecological Impact Assessment criteria
International or European (Very high)	Resident or regularly occurring populations of species which may be considered of value at an international or European level ¹ where: <ul style="list-style-type: none"> - the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; or - the population forms a critical part² of a wider population at this scale; or the species is at a critical phase³ of its life cycle at this scale. 	An internationally important site, e.g. Special Protection Area (SPA), Special Area of Conservation (SAC) or Ramsar; a regularly occurring population of an internationally important species (listed on Annex IV of the Habitats Directive).
National (High)	Areas of key or priority species identified in the UK Post-2010 Biodiversity Framework, i.e. UKBAP, including those published in	A nationally designated site, e.g. SSSI, or a site considered worthy of such designation; a large regularly occurring

	<p>accordance with Section 41 of the NERC Act 2006 and those considered to be of principal importance for the conservation of biodiversity.</p> <p>Resident or regularly occurring populations of species which may be considered of value at a UK or a national level⁴ where:</p> <ul style="list-style-type: none"> - 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 phase⁴ of its life cycle at this scale. 	<p>population of a nationally important species.</p>
Regional (Medium)	<p>Resident or regularly occurring populations of species which may be considered of value at a regional level⁵ where:</p> <ul style="list-style-type: none"> - 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. 	<p>An ecological feature identified in the local BAP. A smaller area of local BAP habitat which are essential to maintain the viability of a larger whole; non-statutory designated sites; a regularly occurring, locally significant number of a nationally important species. An ecological feature identified as of priority within Section 41 of the NERC Act 2006.</p>
Borough (Low)	<p>Populations of species of importance at a Borough level.</p> <p>Resident or regularly occurring populations of species which may be considered of value at a level⁶ where:</p> <ul style="list-style-type: none"> - 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. 	<p>Ecological features that are scarce within the district or borough or which appreciably enrich the district or borough habitat resource.</p>
Local (Very Low)	<p>Species populations of importance in a local (i.e. within ~5km of the site) context.</p> <p>Populations and/or communities of species considered to appreciably enrich the habitat resource within the local context, including features of value for migration, dispersal or genetic exchange.</p>	<p>A good example of a common or widespread ecological feature in the local area.</p>
Negligible	No or very limited ecological value	No or very limited ecological value.

1. Such species include those listed within the Directive 2009/147/EC on the Conservation of Wild Birds (*i.e.* EC Birds Directive) (codified version of Council Directive 79/409/EEC as amended).
2. Such populations include sub-populations that are essential to maintenance of meta-population 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: species which receive legal protection on the basis of their conservation interest (those listed within Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)); species listed for their principal importance for biodiversity (in accordance with the NERC Act 2006 Section 41), priority species listed within the UK Post 2010 Biodiversity Framework (*i.e.* UKBAP), or species listed within the BoCC.
5. Such species include those listed in the appropriate Natural Character Area description.
6. Such species include those at county level (e.g. Kent) including unitary authority area (*i.e.* Borough level) as listed on any LBAPs; and those contributing to the listing of county designated sites.

*As well as assigning importance there is also a need to identify all legally protected species that could be affected by the project 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.

Species Rarity

3.12 The assessment of the ornithological importance of the Survey Area during the breeding season was informed 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 Section 2 of this report. These include:

- species listed on Annex 1 of the EC Birds Directive 2009;
- species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended);
- UK Biodiversity Action Plan (BAP) priority bird species;
- NERC Species of Principal Importance;
- Kent BAP species;
- species included in the Birds of Conservation Concern (BoCC) Red and Amber lists; and
- Kent Red Data Book species.

Species Abundance

3.13 In addition to evaluating a Survey Area based on its populations of breeding birds in relation to legal protection and conservation status, consideration has to be given to the value of the Survey Area for the populations of the individual species that it supports. This can be done by comparing the populations present within the Survey Area with the national and county populations for a given species (with national estimates presented in Woodward *et al.* (2020)).

Importance of the Breeding Assemblage

3.14 The importance of the breeding bird assemblage present in a given survey area can also be evaluated based on the level of species diversity, in accordance with the criteria described by Fuller (1980), as summarised in Table 3 below.

Table 3 Breeding bird assemblage importance criteria (from Fuller, 1980)

Importance of the breeding assemblage	Number of breeding bird species
National	85+
Regional	70-84
County	50-69
Local	25-49

Constraints

- 3.15 Due to logistical issues associated with the 2020 covid-19 pandemic, survey visits did not commence until 07:00 and therefore did not finish until after 11:00 (when activity by birds - particularly behaviour indicative of breeding such as singing - may be reduced) on three of the five survey visits. However, the Site and habitats near to the Site (i.e. within 100m of the Site) were always surveyed between 07:00 and 10:00, which is within the recommended period for surveying breeding birds. Habitat surveyed after 11:00 was typically grassland approximately 1km west of the Site (within Hoo Marshes). This is therefore not a constraint to the findings for the Site and immediately adjacent habitat, although it could have potentially resulted in the under-recording of breeding birds at Hoo Marshes; this is considered when interpreting the breeding status of bird species recorded within this area of the Survey Area.
- 3.16 Whilst light rain and windy conditions (up to BF4) were present during several survey visits, these periods of unfavourable weather were relatively brief, with the majority of surveying undertaken in favourable weather conditions. This is not therefore considered to significantly constrain the results of the breeding bird survey.

Quality Assurance

- 3.17 All AECOM Ecologists involved with the surveys at the Site and producing this report are members, at the appropriate level, of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct when undertaking ecological work.

4. Results

Desk Study

- 4.1 The data search obtained from KMBRC returned records of 84 protected and/or priority bird species from within 2km of the Site within the last ten years (KMBRC, 2020). These are detailed in full in Appendix B.
- 4.2 These included species contributing to the designation of the Medway Estuary and Marshes SPA and Ramsar, as well as various other protected and/or priority species including species listed on Annex 1 of the EC Birds Directive 2009, Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), S41 of the NERC Act 2006 and the BoCC Red and Amber lists.

Field Survey

- 4.3 The results of the 2020 breeding bird survey are provided in full in Appendix C. Maps of bird territories recorded during the 2020 breeding bird survey are provided in Figures V4.2-V4.8, Appendix A. Where a species is subject to multiple protection/conservation status categories, its territories are indicated on the figure for the highest level of legal protection/conservation status to which the species is subject.
- 4.4 During the five breeding bird survey visits undertaken, a total of 65 species were recorded within the Survey Area. Species recorded breeding or potentially breeding within the Site and wider Survey Area are detailed in Table 4 below.

Table 4 Summary of species recorded breeding or potentially breeding within the Site and wider Survey Area during the 2020 breeding bird survey

Species	Breeding status (number of territories)		Description	Conservation status
	Site	Survey Area (including those within the Site)		
Red-legged partridge (<i>Alectoris rufa</i>)	-	Confirmed (1-2)	One confirmed territory in vegetated stony ground ~70m west of the Site, and a possible territory in grassland within the former lagoons (at least 40m east of the Site).	None
Pheasant (<i>Phasianus colchicus</i>)	Possible (1)	Possible (1)	One possible territory overlapping with the Site and extending into grassland within the former lagoons to the east of the Site.	None
Canada goose (<i>Branta canadensis</i>)	-	Possible (?)	Possibly breeding within Hoo Marshes (~1.3km west of the Site).	None
Greylag goose (<i>Anser anser</i>)	-	Confirmed (at least 1)	At least one territory in Hoo Marshes (~1.2km west of the Site). Regularly recorded foraging within Hoo Marshes (peak count: 25).	BoCC Amber
Shelduck (<i>Tadorna tadorna</i>)	Possible (1)	Probable (1-2)	One possible territory in sparsely-vegetated stony ground overlapping with the Site. Also, one probable territory in vegetated stony ground ~200m west of the Site. Frequently recorded foraging in Hoo Marshes and intertidal habitat in the west and south of the Survey Area (peak count: 49).	BoCC Amber
Gadwall (<i>Mareca strepera</i>)	-	Possible (1)	Possibly breeding within Hoo Marshes and a pond surrounded by dense vegetation immediately south of the main sub-station (at least 800m west of the Site).	BoCC Amber KRDB3

Species	Breeding status (number of territories)		Description	Conservation status
	Site	Survey Area (including those within the Site)		
			Recorded foraging and resting in Hoo Marshes (peak count:8).	
Mallard (<i>Anas platyrhynchos</i>)	-	Confirmed (1-2)	One confirmed territory in the vicinity of the ditch immediately east of Hoo Marshes (~1km west of the Site). A possible second territory in Hoo Marshes (~1.2km west of the Site).	BoCC Amber
Cuckoo (<i>Cuculus canorus</i>)	Possible (1)	Confirmed (1)	One confirmed territory including the Site and extending at least 1km east of the Site, with the male recorded singing on the eastern boundary of the Site. The Site and adjacent habitat contained territories of suitable host species (e.g. reed warbler).	NERCS41 BoCC Red KRDB2
Woodpigeon (<i>Columba palumbus</i>)	-	Probable (?)	Probably breeding in trees adjacent to the eastern boundary of the Site and wider grassland within the former lagoons in the east of the Survey Area. Present in relatively low numbers throughout the Survey Area (peak count: 54)	BoCC Green
Moorhen (<i>Gallinula chloropus</i>)	-	Confirmed (1)	One confirmed territory in the ditch immediately east of Hoo Marshes (~1km west of the Site).	BoCC Green
Coot (<i>Fulica atra</i>)	-	Possible (?)	Possible territories in Hoo Marshes (~1.3km west of the Site).	BoCC Green
Great crested grebe (<i>Podiceps cristatus</i>)	-	Possible (1)	One possible territory in Hoo Marshes (~1.3km west of the Site).	BoCC Green
Oystercatcher (<i>Haematopus ostralegus</i>)	-	Probable (1)	One probable territory in bare and sparsely-vegetated stony ground at least 150m west of the Site. Also recorded foraging on intertidal mudflats and roosting around the jetty in the south of the Survey Area (peak count: 103).	BoCC Amber
Lapwing (<i>Vanellus vanellus</i>)	-	Possible (2)	One possible territory in sparsely-vegetated stony ground ~160m west of the Site, and a second possible territory in Hoo Marshes (~1.3km west of the Site). Recorded resting and foraging towards the centre of the Survey Area and within Hoo Marshes (peak count: 12).	NERCS41 BoCC Red KRDB2
Ringed plover (<i>Charadrius hiaticula</i>)	-	Probable (1)	One probable territory in vegetated stony ground towards the north of the Survey Area (~220m west of the Site), based on a pair flushed from suitable nesting habitat on 30 th March 2020 but not recorded during any subsequent visits.	BoCC Red
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	-	Possible (?)	Possible territories in sparsely-vegetated stony ground west of the Survey Area, with low numbers (i.e. five or less) frequently recorded in these areas. Frequently recorded flying over the Survey Area and resting and foraging within	BoCC Amber

Species	Breeding status (number of territories)		Description	Conservation status
	Site	Survey Area (including those within the Site)		
			intertidal mudflats in the south of the Survey Area (peak count: 190).	
Kestrel (<i>Falco tinnunculus</i>)	-	Probable (1)	Lots of foraging activity observed within grassland and stony ground within the Survey Area including such habitat within the Site (peak count: 4, including a juvenile), indicating that this was a principal hunting ground within at least one kestrel territory, although little suitable nesting habitat was present within the Survey Area.	BoCC Amber
Magpie (<i>Pica pica</i>)	-	Possible (?)	Possibly breeding within the former lagoons in the east of the Survey Area.	BoCC Green
Great tit (<i>Parus major</i>)	-	Confirmed (1)	One confirmed territory in bramble scrub near Damhead Creek (~10m north-east of the Site).	BoCC Green
Skylark (<i>Alauda arvensis</i>)	Confirmed (1)	Confirmed (12-16)	One confirmed territory within the Site, and various confirmed territories in grassland and vegetated stony ground throughout the Survey Area (particularly within the former lagoons in the east of the Survey Area).	NERCS41 BoCC Red KRDB2
House martin (<i>Delichon urbicum</i>)	-	Confirmed (3-4)	Small nesting colony towards the northern end of the western aspect of the bridge crossing Damhead Creek (~100m north of the Site). Frequently recorded foraging over the Site and Survey Area (peak count: 13).	BoCC Amber
Cetti's warbler (<i>Cettia cetti</i>)	Confirmed (2)	Confirmed (3)	Two confirmed territories in bramble scrub and marginal vegetation overlapping with the Site; one in the north-west corner, one on the eastern boundary. Potentially nesting in bramble scrub within the Site. A third confirmed territory in the ditch immediately east of Hoo Marshes (~1km west of the Site).	W&CA BoCC Green KRDB3
Sedge warbler (<i>Acrocephalus arundinaceus</i>)	Probable (1)	Probable (1-2)	One probable territory overlapping with marginal vegetation within the Site, and a possible territory in bramble scrub and marginal vegetation ~300m south-west of the Site	BoCC Green
Reed warbler (<i>Acrocephalus scirpaceus</i>)	Possible (1)	Confirmed (2-3)	One possible territory overlapping with marginal vegetation within the Site. One confirmed territory in the ditch immediately east of (within 5m of) the Site, and a second confirmed territory in the ditch immediately east of Hoo Marshes (~1km west of the Site).	BoCC Green KRDB3
Lesser whitethroat (<i>Sylvia curruca</i>)	Possible (1)	Possible (2)	One possible territory in bramble scrub overlapping with the eastern boundary of the Site, with a second possible territory in bramble scrub ~300m south-west of the Site.	BoCC Green

Species	Breeding status (number of territories)		Description	Conservation status
	Site	Survey Area (including those within the Site)		
Whitethroat (<i>Sylvia communis</i>)	Confirmed (3-4)	Confirmed (12-17)	Three confirmed territories within or overlapping with dense bramble scrub in the Site, with an additional possible territory in the north of the Site. Various other confirmed territories in dense vegetation throughout the Survey Area.	BoCC Green
Wren (<i>Troglodytes troglodytes</i>)	Possible (1)	Confirmed (6-9)	One possible territory in dense bramble scrub overlapping with the south of the Site, with various confirmed and possible territories in dense vegetation throughout the Survey Area.	BoCC Green
Blackbird (<i>Turdus merula</i>)	Probable (1)	Confirmed (1-3)	One confirmed territory in conifers (~100m west of the Site). One probable territory in bramble scrub overlapping with the eastern boundary of the Site, and another probable territory in bramble scrub (~120m south-west of the Site).	BoCC Green
Robin (<i>Erithacus rubecula</i>)	Possible (1)	Possible (2)	One possible territory in bramble scrub overlapping with the south-east corner of the Site, and a second possible territory in bramble scrub in the east of the Survey Area.	BoCC Green
Black redstart (<i>Phoenicurus ochruros</i>)	-	Possible (1)	One possible territory at the jetty ~600m west of the Site (~25m south of the Onshore Cable Route), based on one male recorded singing on 30 th March but not recorded during any subsequent visits.	W&CA BoCC Red KRDB1
Dunnock (<i>Prunella modularis</i>)	Possible (1)	Possible (2)	One possible territory overlapping with the north of the Site, and a second possible territory ~170m south-west of the Site. Low levels of foraging and sheltering activity within the Site and wider Survey Area (peak count: 6).	NERCS41 BoCC Amber
Meadow pipit (<i>Anthus pratensis</i>)	-	Possible (?)	Possibly breeding in grassland within the former lagoons in the east of the Survey Area in relatively low numbers (peak count: 9).	BoCC Amber
Chaffinch (<i>Fringilla coelebs</i>)	-	Confirmed (1)	One confirmed territory in conifers approximately 120m west of the Site.	BoCC Green
Linnet (<i>Linaria cannabina</i>)	Confirmed (2-3)	Confirmed (4-7)	One confirmed territory in bramble scrub in the south-west corner of the Site, with a second confirmed territory overlapping bramble scrub in the north-east corner of the Site, and a probable territory overlapping with the south-east corner of the Site. Additional confirmed and probable territories in bramble scrub west and east of the Site boundary. Lots of foraging activity around the Site and wider Survey Area (peak count: 52).	NERCS41 BoCC Red KRDB2
Goldfinch (<i>Carduelis carduelis</i>)	-	Possible (1)	One possible territory in bramble scrub ~10m north-east of the Site.	BoCC Green

Species	Breeding status (number of territories)		Description	Conservation status
	Site	Survey Area (including those within the Site)		
Reed bunting (<i>Emberiza schoeniclus</i>)	-	Possible (2)	One possible territory in the ditch immediately east of Hoo Marshes (~1km west of the Site), and a second possible territory at the eastern end of the Survey Area.	BoCC Amber

4.5 In addition, to the above species recorded breeding or potentially breeding in the Survey Area, the following protected and/or priority non-breeding species were recorded (where species are subject to multiple protection/conservation status categories they are described in relation to the first category only):

EC Directive on the Conservation of Wild Birds 2009 (2009/147/EC) Annex 1

- **great egret** (*Ardea alba*): one individual recorded resting and foraging in marginal vegetation in Hoo Marshes in the west of the Survey Area on 21st May;
- **little egret** (*Egretta gazetta*): occasionally recorded foraging in and flying over the Survey Area (peak count: 2); and
- **marsh harrier** (*Circus aeruginosus*): one juvenile recorded hunting over the Site and adjacent land on 3rd July 2020, and one adult female recorded hunting over grassland in the east of the Survey Area on 30th March 2020.

Wildlife and Countryside Act 1981 (as amended) Schedule 1

- **peregrine** (*Falco peregrinus*): one individual recorded flying high over the Survey Area on 30th March, and heard territorially calling distantly (i.e. at an unidentified location outside of the Survey Area) on 21st May. Potentially breeding outside of the Survey Area within the wider landscape (e.g. on nearby power station buildings).

NERC Act 2006 Section 41

- **dark-bellied brent goose**: recorded in large numbers (peak count: 263) foraging within intertidal habitat in the south-west and south-east of the Survey Area (within the Medway Estuary); these individuals formed part of the wintering population recorded during the 2019-2020 wintering bird survey, and declined in numbers through the breeding season;
- **curlew** (*Numenius arquata*): frequently recorded foraging on intertidal mudflats in the south of the Survey Area (peak count: 12);
- **snipe** (*Gallinago gallinago*): four individuals recorded sheltering in marginal vegetation within the Site on 30th March but not recorded during any subsequent visits;
- **herring gull** (*Larus argentatus*): frequently recorded throughout the Survey Area (particularly within the Medway Estuary) (peak count: 72), and potentially breeding on the jetty outside the southern boundary of the Survey Area;
- **starling** (*Sturnus vulgaris*): foraging flocks occasionally recorded towards the west of the Survey Area, including a flock of 300 within Hoo Marshes on 3rd July 2020;
- **song thrush** (*Turdus philomelos*): six individuals recorded foraging within/in close proximity to the Site on 30th March 2020; and
- **house sparrow** (*Passer domesticus*): two recorded calling from vegetation approximately 30m north of the Site on 3rd March 2020.

BoCC Amber list

- **mute swan** (*Cygnus olor*): one individual recorded in grassland in Hoo Marshes in the west of the Survey Area on 30th April; and

- **lesser black-backed gull** (*Larus fuscus*): occasionally recorded around ephemeral pools and flying over the Survey Area (peak count: 3).

Kent Red Data Book (KRDB3)

- **grey heron** (*Ardea cinerea*) (KRDB3): occasionally recorded foraging within or flying over the Survey Area (peak count: 2).

4.6 The remaining species recorded were non-breeding species included on the BoCC Green list or non-native species (which are not included on the BoCC Red, Amber or Green lists).

5. Evaluation

Importance of the Survey Area in the context of the Medway Estuary and Marshes SPA and Ramsar

- 5.1 The Medway Estuary and Marshes SPA and Ramsar qualifies under Article 4.1 of the EC Birds Directive 2009 by supporting breeding populations of avocet and little tern (see Section 2 for details). Neither of these species were recorded within the Site or wider Survey area during the 2020 breeding bird survey.
- 5.2 The Medway Estuary and Marshes Ramsar has also been identified as supporting nationally important breeding populations of black-headed gull, Mediterranean gull, sandwich tern and common tern. Of these species, only black-headed gull was recorded during the 2020 breeding bird survey but and was only recorded as possibly breeding within the Survey Area outside of the Site. This species was not recorded as confirmed breeding or possibly breeding in significant numbers with respect to the Medway Estuary and Marshes Ramsar.
- 5.3 The site also qualifies under Article 4.2 by regularly supporting, in summer, a diverse breeding waterfowl assemblage. Species recorded breeding or potentially breeding within the Survey Area that are listed on the SPA citation as forming part of this assemblage are summarised below:
- shelduck (peak count: 49) – one probable territory and one possible territory;
 - mallard (peak count: 8) – one confirmed territory and one possible territory;
 - oystercatcher (peak count: 103) – one probable territory;
 - lapwing (peak count: 12) – two possible territories;
 - ringed plover (peak count: 2) – one probable territory and
 - redshank (peak count: 11) – the Survey Area contains suitable nesting habitat but no breeding was recorded.
- 5.4 Considering the numbers of these species recorded breeding or potentially breeding within the Survey Area, the Survey Area did not support significant breeding bird populations in the context of the Medway Estuary and Marshes SPA and Ramsar.

Assessment of Species Rarity

- 5.5 Specially protected and priority bird species recorded breeding within the Site and wider Survey Area are summarised in Table 5 below.

Table 5 Summary of specially protected and priority species recorded breeding or potentially breeding within the Site and wider Survey Area during the 2020 breeding bird survey

Species	Site			Survey Area (including those within the Site)		
	Confirmed	Probable	Possible	Confirmed	Probable	Possible
Wildlife and Countryside Act 1981 (as amended) Schedule 1						
Cetti's warbler	2	-	-	3	-	-
Black redstart	-	-	-	-	-	1
NERC Act 2006 Section 41						
Cuckoo	-	-	1	1	-	-
Lapwing	-	-	-	-	-	2
Skylark	1	-	-	12	-	4
Duncock	-	-	1	-	-	2

Linnet	2	1	-	4	3	-
BoCC Red list						
Ringed plover	-	-	-	-	1	-
BoCC Amber list						
Greylag goose	-	-	-	At least 1	-	-
Shelduck	-	-	1	-	1	1
Mallard	-	-	-	1	-	1
Gadwall	-	-	-	-	-	1
Oystercatcher	-	-	-	-	1	-
Black-headed gull	-	-	-	-	-	1-3
Kestrel	-	-	-	-	1	-
House martin	-	-	-	3-4	-	-
Meadow pipit	-	-	-	-	-	1-3
Reed bunting	-	-	-	-	-	2
Kent Red Data Book (KRDB3)						
Reed warbler	-	-	1	2	-	1

Where species are subject to multiple protection/conservation status categories they are described in relation to the first category only. Cuckoo, lapwing, skylark, black redstart and linnet are also included on the BoCC Red list. Dunnock is also included on the BoCC Amber list. Gadwall, cuckoo, lapwing, black redstart, skylark, Cetti's warbler and linnet are also included within the Kent Red Data Book (KRDB).

Assessment of Species Abundance

- 5.6 The breeding bird populations recorded within the Survey Area were assessed against the national population estimates within Woodward *et al.* (2020) and the county population estimates within the Kent Breeding Bird Atlas (Kent Ornithological Society, 2015) and current Rare Breeding Bird Panel (RBBP) (Holling *et al.* 2019) data in order to determine whether any populations were of national or county significance (i.e. comprising 1% or more of the national or county populations).
- 5.7 One species was potentially recorded in numbers of national significance: black redstart, with one possible territory within the Survey Area. Woodward *et al.* cites the national breeding black redstart population as 58 pairs, whilst Holling *et al.* (2019) cites the county breeding population as a maximum of eight pairs. The possible breeding population of black redstart would therefore be of both national and county significance.
- 5.8 Whilst the Cetti's warbler population recorded within the Survey Area was not of national significance, the Kent Breeding Bird Atlas cites the population estimate for the county as 500-1000 singing males. A peak count of five singing males was recorded within the Survey Area, equating to between 0.5% and 1% of the county population, but only three males established territories, equating to between 0.3% and 0.6% of the county population. Considering this, and the fact that Cetti's warbler numbers in Britain are generally increasing², the breeding Cetti's warbler population within the Survey Area is not deemed to be of county significance. This species is listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

² As published with the BTO's 'BirdTrends' (<https://app.bto.org/birdtrends/species.jsp?year=2019&s=cetwa>).

This legislation prohibits the disturbance of Cetti's warblers while at the nest or building a nest or disturbing the dependent young.

- 5.9 No other species were recorded breeding within the Survey Area in numbers of national or county significance.

Assessment of Species Diversity

- 5.10 The Survey Area (including the Site) contained territories occupied by up to 35 bird species: 15 of which were confirmed to be breeding, seven of which were probably breeding and 13 of which were possibly breeding. Based on the criteria set out by Fuller (1980) (as detailed in Table 3), the breeding assemblage within the Survey Area is therefore considered to be of 'Local' importance. Of these 35 species, 14 were recorded breeding or potentially breeding within the Site. The breeding assemblage within the Site is therefore considered to be of 'Site' importance. Relating this to the Ecological Impact Assessment criteria (Table 2) the Site would be of no more than local (very low) importance for breeding birds.

6. Conclusions

- 6.1 A total of 65 bird species were recorded within the Survey Area during the 2020 breeding bird survey, of which 35 species were recorded breeding or potentially breeding within the Survey Area. These included protected and priority species specified by:
- Schedule 1 of the Wildlife and Countryside Act 1981 (as amended): Cetti's warbler and black redstart;
 - S41 of the NERC Act 2006: cuckoo, lapwing, skylark, dunnock and linnet;
 - the BoCC Red list: cuckoo, lapwing, ringed plover, black redstart, skylark and linnet;
 - the BoCC Amber list: notably shelduck, oystercatcher, dunnock and house martin; and
 - the Kent Red Data Book: notably cuckoo, black redstart, skylark, Cetti's warbler and reed warbler.
- 6.2 Based on the species recorded breeding or potentially breeding within the Survey Area, the breeding bird assemblage recorded within the Survey Area in 2020 is deemed to be of 'Local' importance. Black redstart was recorded possibly breeding at the jetty in the south of the Survey Area; any breeding by this species would be of national and county significance. No other species were recorded breeding in numbers of national or county significance, or in significant numbers with respect to the designation of the Medway Estuary and Marshes SPA and Ramsar (with the two focal breeding species for these designations, avocet and little tern, not recorded during the 2020 breeding bird survey).
- 6.3 The following areas of the Survey Area were identified as being of particular value to breeding birds:
- grassland in Hoo Marshes within the west of the Survey Area (Appendix D, Plate 1): used by various breeding waterbirds and other protected and priority species, and providing suitable sheltering and foraging habitat for a wide range of species. This habitat starts approximately 1km west of the Site and is approximately 170m west of the Onshore Cable Route;
 - sparsely-vegetated stony ground towards the centre of the Survey Area (Appendix D, Plate 2): used by various breeding birds, with particular suitability for breeding waterbirds (e.g. shelduck, oystercatcher, plovers);
 - grassland within the east of the Survey Area (the 'former lagoons') (Appendix D, Plate 3): used by various breeding birds, notably skylark (nine territories), and comprising a large area of suitable sheltering and foraging habitat for a range of species;
 - bramble scrub throughout the Survey Area and the Site (Appendix D, Plate 4); used by various breeding species including Cetti's warbler and linnet;
 - ditches with dense marginal vegetation (Appendix D, Plate 5); particularly the ditch immediately east of Hoo Marshes and the ditch approximately 5m east of the Site. Used by various breeding species including Cetti's warbler and reed warbler; and
 - the jetty in the south of the Survey Area (Appendix D, Plate 6): providing suitable nesting habitat for black redstart and possibly used for breeding in 2020 which, if confirmed, would be of national and county significance.
- 6.4 Considering the number of species recorded breeding or potentially breeding within the Site, the breeding bird assemblage within the Site is deemed to be of local (very low) importance in accordance with the criteria for the Ecological Impact Assessment. Bramble scrub around the perimeter of the Site was of the greatest value to breeding birds, containing breeding Cetti's warbler, linnet and whitethroat. As a species included on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), the presence of breeding Cetti's warblers is of particular significance to the Proposed Development. This legislation prohibits the disturbance of Cetti's warblers while at the nest or building a nest or disturbing the dependent young. Marginal vegetation and sparsely-vegetated stony ground were also of value to breeding birds, containing a skylark territory and potentially breeding shelduck and reed warbler. Nesting songbirds within these habitats are also potentially used as hosts by cuckoo, with one cuckoo territory encompassing the Site. In addition, songbirds use the ditches approximately 10m east and north of the Site, and a house martin colony is located approximately 100m north of the Site.

7. References

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