

FIVE ESTUARIES OFFSHORE WIND FARM

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Breeding Bird Survey Report

Five Estuaries
Offshore Wind
Farm Ltd

October 2022





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EXECUTIVE SUMMARY

Ecology Resources Limited was commissioned by Royal HaskoningDHV on behalf of Five Estuaries Offshore Wind Farm Limited (VE OWFL) to undertake a breeding bird survey during the 2022 breeding bird season in line with the methodologies stipulated in the SLR Preliminary Ecological Appraisal (SLR Consulting. 2022).

A total of four, three-day survey visits were undertaken during May and June, comprising twenty-six transect walks overall, covering the length of the proposed scheme.

Further targeted surveys were carried out in August to try and determine evidence of breeding in four priority notable species, (barn owl *Tyto alba*, turtle dove *Streptopelia turtur*, corn bunting *Miliaria calandra* and hobby *Falco subbuteo*) if previous presence had been detected onsite.

A total of 70 species were recorded, including three of the four target species and a further 38 'notable' species included on the Birds of Conservation Concern 5, S41 NERC Act and/or WCA Schedule 1 species lists.



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1. INTRODUCTION

The following report was prepared by Ecology Resources Ltd on behalf Royal Haskoning DHV on behalf of Five Estuaries Offshore Wind Farm Limited (VE OWFL). It provides results of breeding bird surveys undertaken in 2022 of the Five Estuaries Offshore Wind Farm (VE) onshore project area plus a 100m buffer, hereafter known as 'the site'.

1.1 Project Background

VE is a proposed extension to the operational Galloper Offshore Wind Farm (OWF) which consists of 56 wind turbine generators (WTGs). The 5 Estuaries will comprise up to 79 WTGs situated within two array areas to the east of the operational Galloper OWF. The array areas will be located approximately 30km off the coast of Suffolk, England.

Cables will connect the turbines to the offshore substation platforms and then export the power generated to shore. It is expected that there will be a number of inter-array cables, up to four export cables and up to two offshore substations platforms.

A landfall area has been identified between Holland-on Sea and Frinton-on-Sea on the Essex coast. The landfall point is yet to be determined but will be located within this area of coastline. A new VE onshore substation will be needed and will be constructed in an area north of the A120.

The VE cables will be installed underground between the landfall and the grid connection point north of the A120. A preferred corridor has not yet been determined with several corridors still under consideration at the time of writing. Potential substation land parcels and associated corridor options north of the A120 also remain under review at the time of writing.

A more detailed description of the project, several elements of which have yet to be finalised at this time, will be provided in the Preliminary Environmental Impact Report (PEIR) and Environmental Statement (ES) in due course.

1.2 Survey Objective

To identify the presence and distribution of birds on the site in the breeding season, playing particular attention to the four target species highlighted in the SLR Preliminary Ecology Appraisal 2022: barn owl, hobby, corn bunting and turtle dove.

The target species were highlighted either due to their status as a Schedule 1 species (Wildlife & Countryside Act, 1981 as amended (hobby and barn owl), their presence on the BoCC5¹ red list (turtle dove and corn bunting) and their current population trends in the area (all four species).

1.3 Legislation

THE WILDLIFE AND COUNTRYSIDE ACT 1981

The Wildlife and Countryside Act 1981 (as amended) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions to recklessly or intentionally:

Kill, injure or take any wild bird.

¹ Stanbury, A. Eaton, M. Aebischer, N. Balmer, D. Brown, A. Douse, A. Lindley, P. McCullough, N. Noble, D. Win, I. (2021). The fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds *114*, pp723-74.



- Take, damage or destroy the nest of any wild bird while in use or being built.
- Take or destroy the egg of any wild bird.

Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are specially protected at all times.

NATURAL ENVIRONMENT AND RURAL COMMUNITIES (NERC) ACT 2006

A number of birds feature on the Natural Environment and Rural Communities (NERC) Act 2006, Section 41 (S41) as those which are of principal importance for the conservation of biodiversity in England. 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. NERC species are those found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.

STATUS

In addition to statutory protection, some bird species are classified according to their conservation status, such as their inclusion on the Red, Amber or Green BoCC5 lists in the UK:

- Red list (high conservation concern) species are those that are Globally Threatened according
 to IUCN criteria; those whose population has declined rapidly (50% or more) in recent years;
 and those that have declined historically and not shown a substantial recent recovery.
- Amber list (medium conservation concern) species are those with an unfavourable conservation status in Europe; whose population or range has declined moderately (between 25% and 49%) in recent years; whose population has declined historically but have since made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
- Green list (low conservation concern) species fulfil none of the above criteria.



2. METHODOLOGY

2.1 Field Survey

The survey methodology followed the 2022 published Bird Survey Guidelines (Bird survey and assessment steering group, 2022). British Trust for Ornithology (BTO) species codes and symbols for bird activities were used to identify birds and denote activity, sex, and age where appropriate. The criteria used in the assessment of breeding birds has been adapted from the standard criteria proposed by the European Ornithological Atlas Committee and are grouped into four categories, each with their own survey codes (Table 1).

Table 1: BTO breeding status codes

Confi	rmed breeding species – evidence accumulated confirms species is breeding onsite				
DD	distraction display or injury feigning				
UN	used nest or eggshells found from this season				
FL	recently fledged young or downy young				
ON	adults entering or leaving nest-site in circumstances indicating occupied nest				
FF	adult carrying faecal sac or food for young				
NE	nest containing eggs				
NY	nest with young seen or heard				
Prob	able breeding species – likely to be breeding onsite				
Р	pair in suitable nesting habitat				
Т	permanent territory (defended over at least two survey occasions)				
D	courtship and display				
N	visiting probable nest site				
Α	agitated behaviour				
_	brood patch of incubating bird (from bird in hand)				
В	nest building or excavating nest-hole				
Possi	ble breeding species - may be breeding onsite				
Н	observed in suitable nesting habitat				
S	singing male				
Non-	Non-breeding species - not using the site for breeding purposes				
F	flying over				
М	migrant				
U	summering non-breeder				
UH	observed in unsuitable nesting habitat				



The SLR 2022 PEA also prescribed a methodology that had to be adhered to as part of the breeding bird survey for barn owl, hobby, corn bunting and turtle dove:

- Survey visits will be designed to meet specific requirements for the target species, where
 appropriate, so in the case of turtle dove, at least two visits to areas of suitable habitat will take
 place between sunrise and 0900 to listen for purring males which are most often detected in
 the first two hours after sunrise, as per the methodology used for the 2021 national turtle dove
 survey.
- In areas of suitable habitat for late breeding species (hobby and corn bunting) an additional visit will be undertaken in August.
- As part of the survey, all potentially suitable trees and potentially suitable structures within the Survey Area (where accessible) were inspected at least once for evidence of the presence of barn owl following standard methods, i.e. searches for droppings, pellets, and feathers as well as observations and following up anecdotal evidence from landowners and surveyors undertaking bat surveys.
- All inspections of potential barn owl nest sites will only be undertaken by an ornithologist holding a Schedule 1 barn owl licence.
- Hobby, also protected from disturbance under WCA Schedule 1, typically nests high in a tree
 canopy, often overtaking an old crow nest, so close inspection is not feasible. All observations
 of any suspected or confirmed hobby nests will be from a suitable distance with binoculars to
 prevent disturbance.

Prior to arriving on onsite a predetermined route was identified via desk studies to ensure capture of all potential suitable habitats across the scheme. Please see Appendix A for figures 1 (sightings) and figure 2 (site layout and transects walked during the walkover survey). The same transect route was walked each visit observing birds, using binoculars as required. Species were also identified using knowledge of songs and calls.

To provide a reasonable level of accuracy for determining the population status of the breeding birds on the site, four surveys were undertaken in the main bird breeding season (April-July) in 2022 between 05.00 and 11.00hrs. Due to the size of the site, each survey effort was conducted across three days by two surveyors

Further targeted surveys were undertaken between the 8th and 16th August 2022 to assess the breeding status of corn bunting, hobby, and barn owl onsite.

Table 2: Breeding bird survey dates and weather conditions

Date	Cloud (OKTAS)	Rain*	Wind (Beaufort Scale)	Wind Direction	Visibility
12.05.22	0	0	1	N/NE	>2km – good visibility
13.05.22	5	0	4	W	>2km – good visibility
19.05.22	5	2	1	N	1-2km – moderate visibility
24.05.22	3	0	2	NW	>2km – good visibility
25.05.22	3	0	2	NW	>2km – good visibility



Date	Cloud (OKTAS)	Rain*	Wind (Beaufort Scale)	Wind Direction	Visibility
26.05.22	4	0	1	W	>2km – good visibility
07.06.22	1	0	2	W	>2km – good visibility
08.06.22	4	0	5	W	>2km – good visibility
09.06.22	0	0	1	W	>2km – good visibility
21.06.22	1	0	2	W	>2km – good visibility
22.06.22	0	0	5	N	>2km – good visibility
23.06.22	5	0	3	NE	>2km – good visibility
08.08.22	1	0	3	NW	>2km – good visibility
09.08.22	1	0	2	NW	>2km – good visibility
10.08.22	0	0	1	NW	>2km – good visibility
10.08.22 (PM – barn owl)	0	0	0	N	>2km – good visibility
11.08.22	0	0	1	N	>2km – good visibility
11.08.22 (PM – barn owl)	0	0	0	N	>2km – good visibility
16.08.22	3	0	2	NW	>2km – good visibility

^{*}Rain was measured on an arbitrary scale of 0-5: 0 - no rain; 1 - drizzle/mist; 2 - light showers; 3 - heavy showers; 4 - light rain and; 5 - heavy rain.

A route was mapped out prior to the surveys being undertaken, paying particular attention to any potential nest sites. All bird sightings and suspected territories were recorded. Territories were determined by repeated records in the same location over two or more surveys, particularly if these were singing males. Bird surveys were not undertaken in unfavourable conditions such as heavy rain or strong wind, which may negatively affect the results.

2.2 Assessment

In addition to the priority species outlined by the client, particular attention has been given to bird species that are either WCA Schedule 1, NERC S41 and / or BoCC Red or Amber list species, as they are likely to be most impacted in relation to further decline. Such species are referred to herein as 'notable' species.

2.3 Survey Personnel

Surveys were led by ecologist Mark Lovell who has over 30 years' experience conducting bird surveys, supported by assistant ecologist Ben Turner, with 7 years' bird survey experience.

2.4 Limitations

Notification to commence survey efforts was not received until May 2022 and the breeding bird survey guidance published by the BTO, RSPB and JNCC (BTO, 2018) states that early breeding bird survey visits should commence between mid-April and mid-May therefore start dates of the surveys are line with the published guidance 12th, 13th, and 19th May 2022.

Commencing breeding bird surveys at this time did not affect the survey findings. Any early breeding birds were recorded at this time since these birds typically have multiple broods



throughout the breeding season. Therefore, breeding season, even the earliest breeding birds would still be recorded as undertaking active breeding behaviour from mid-May onwards.

The weather during survey efforts did not significantly impact findings. Rain was only recorded in one survey, and this was a light shower and as such would not impact the behaviour or distribution of birds recorded. Furthermore, visibility was sufficient on all surveys to see >1km – meaning that all birds present on site would be detectable even at distance. No winds higher than 5 on the Beaufort scale (fresh breeze) were recorded – as such wind conditions did not affect the results of the surveys.

The survey extent was revised in August which resulted in a small area of the onshore cabling route not being surveyed, this can be found in Appendix A Figures 2c and 2d.

Most of the land on the site was accessible by surveyors except for some small field parcels. Areas where access was not possible were surveyed from viewpoints on neighbouring land or from public footpaths and bridleways using a standard point count method. Where possible, two or more opposing viewpoints were used to allow for increased coverage of each inaccessible parcel.

Land parcels where access was not possible are detailed in table 3 below. Due to the possibility of surveying inaccessible land parcels effectively from neighbouring land and public rights of way, access constraints have no significant impact on the results of the surveys.

Table 3: Details of land access constraints

Land Parcel	Dates of refused	Central	Reason for	Solution
Reference	access	Grid	access	
		Reference	constraints	
1324	12.5.22 - 24.6.22	TM203202	Landowner refused	Land surveyed by point count
				from neighbouring land parcels
				(90, 101) and adjacent road
				(Pork Lane)
343	12.5.22 - 24.6.22	TM173236	Landowner refused	Land surveyed by point count
				from neighbouring land parcels
				(365, 318)
337	12.5.22 - 24.6.22	TM173233	Landowner refused	Land surveyed by point count
				from neighbouring land parcels
				(365, 318) and public footpath
				on land parcel boundary linking
				to Tendring Road (B1305)
1077	24.5.22 - 27.5.22	TM140266	Landowner refused	Land surveyed by point count
				from neighbouring land parcel
				(1110) and adjacent road
				(Stones Green Road)

Bird territories varied in detectability between species due to the variation of breeding behaviours and habitat preference. Most bird nests are often well concealed by vegetation and as such, witnessing evidential behaviour which confirms breeding is uncommon. As most species recorded could only be listed as probable breeders .



3. RESULTS

3.1 Field Survey

A total of 70 bird species were recorded, 3 of which were target species, a further 38 of which meet notable species criteria. Locations of sighting and flight lines can be found in Figure 1 - Appendix A, and full list of survey meta data can be found in Appendix B.

A total of 125 individual territories were mapped. These were predominantly singing male skylark holding territory in arable fields but also included species associated with hedgerows and marginal vegetation – corn bunting, Cetti's warbler, dunnock, garden warbler, herring gull, house sparrow, lesser whitethroat, reed bunting, reed warbler, song thrush, whitethroat, wren and yellowhammer.

The area within the southern section of the site - covering Holland Haven Marshes, Frinton Golf Club and the farmland adjoining immediately to the north/northwest - yielded the highest species diversity, likely due to the range of habitats available. Throughout the rest of the site, hedgerows, woodlands and watercourses were found to support higher species diversity than the arable field compartments. Although the arable fields typically had lower species diversity, they did support high numbers of skylark, yellowhammer and woodpigeon as well as provide foraging habitat for two of the recorded target species - corn bunting and barn owl.

Two notable species - redshank *Tringa nebularia* and herring gull *Larus argentatus* - were confirmed to be breeding on site; a further 48 were probably breeding on site with the remaining seventeen species categorised as either possible breeders (15) or not breeding on site (2) (Table 4).

Table 4: Onsite Breeding Bird Assessment

Breeding Type	Species
Confirmed	Redshank <i>Tringa nebularia</i>
	Herring gull Larus argentatus
Probable	Barn owl <i>Tyto alba</i>
	Blackbird <i>Turdus merula</i>
	Blackcap Sylvia atricapilla
	Blue tit Cyanistes caeruleus
	Carrion crow Corvus corone
	Cetti's warbler <i>Cettia cetti</i>
	Chaffinch Fringilla coelebs
	Chiffchaff Phylloscopus collybita
	Collared dove Streptopelia decaoto
	Common buzzard <i>Buteo buteo</i>
	Common cuckoo Cuculus canorus
	• Common pheasant <i>Phasianus colchicus</i>
	Common whitethroat Sylvia communis
	Corn bunting Miliaria calandra
	European robin Erithacus rubecula
	Dunnock Prunella modularis
	Goldfinch Carduelis carduelis
	Great tit Parus major
	Great-spotted woodpecker <i>Dendrocopos major</i>
	Green woodpecker Picus viridis
	Grey heron Ardea cinerea



	• Crov wagtail Matacilla cincria
	Grey wagtail Motacilla cineria Hayan anarray Brassa demonstrate
	House sparrow Passer domesticus Lackday Carryon and delay
	Jackdaw Corvus monedula
	Kestrel Falco tinnunculus
	Lapwing Vanellus vanellus
	Lesser whitethroat Sylvia curruca
	Linnet Carduelis cannabina
	Long-tailed tit Aegithalos caudatus
	Magpie Pica pica
	Mallard Anas platyrhynchos
	Meadow pipit Anthus pratensis
	Moorhen Gallinula chloropus
	Oystercatcher Haematopus ostralegus
	Pied wagtail Motacilla alba
	Red-legged partridge Alectoris rufa
	Reed bunting Emberiza schoeniclus
	Reed warbler Acrocephalus scirpaceus
	Sedge warbler Acrocephalus schoenobaenus
	Shelduck <i>Tadorna tadorna</i>
	Skylark Alauda arvensis
	Song thrush <i>Turdus philomelos</i>
	Starling Sturnus vulgaris
	Stock dove Columba oenas
	Woodpigeon Columba palumbus
	Wren Troglodytes troglodytes
	Yellowhammer Emberiza citrinella
Possible	Avocet Recurvirostra avosetta
	Black-headed gull Chroicocephalus ridibundus
	Cormorant Phalacrocorax carbo
	Curlew Numenius arquata
	Greenfinch Chloris chloris
	Greylag goose Anser answer
	Hobby Falco subbuteo
	House martin <i>Delichon urbicum</i>
	Little Egret Egretta garzetta
	Mistle Thrush <i>Turdus viscivorus</i>
	Red Kite <i>Milvus milvus</i>
	Swallow Hirundo rustica
	Swift Apus apus
	Willow Warbler trochilus
	Yellow Wagtail <i>Motacilla flava</i>
Non-Breeders	Lesser-black backed gull <i>Larus fuscus</i>
	Rook Corvus frugilegus

TARGET SPECIES

Three of the four target species were observed during the survey season:



- **Barn owl;** locally resident, primarily in low lying coastal areas². Barn owls typically breed in farmland, particularly where scattered copses and small areas of woodland are present. The only evidence of breeding an adult owl with two recently fledged juveniles close by was recorded outside of the redline boundary although, as it is known that birds will forage up to a kilometre from the nest sight dependent on habitat quality, land inside the boundary will likely be important for foraging. Furthermore, anecdotal sightings and reports from landowners suggest barn owls using the site regularly.
- Hobby; uncommon breeder in the UK, fairly common passage migrant. Hobby breeds in a
 variety of habitats, particularly farmland with lakes and woods. One individual adult was
 recorded hunting north of Thorpe Road. No evidence of breeding was found however and the
 bird may have been on passage to another breeding site, although it should be noted that
 there is suitable hobby breeding habitat on site.
- Corn bunting; declining resident in UK and Essex. Corn bunting breed in extensive and open farmland, particularly in large scale cereal, fodder, or legume crops. No evidence of breeding was found although several singing males were recorded holding territory across the site indicating they are probably breeding on site. Corn bunting were predominantly recorded in the far south of the site with four birds recorded in the northernmost extent of the site and occasional sightings elsewhere within the site boundary.

No turtle doves were recorded onsite in 2022, but for information the species is a rapidly declining summer resident and passage migrant throughout the UK. Turtle doves breed in open lowland woodland and copses with thick undergrowth mainly in agricultural areas.

OTHER NOTABLE SPECIES

A total of 38 other notable species were recorded. Table 5 outlines their breeding requirements, survey account and breeding status in Essex according to the 2020 Essex Bird Report.

² According to 2020 Essex Bird Report (Summer, 2020)



Table 5: Notable species accounts and breeding status

Species Conservation Status	Breeding Habitat Requirements (Svensson, Et Al. 2023)	Species Account On Site Including Breeding Status Codes (See Table 1)	Status In Essex (2020 Essex Bird Report)
Avocet Amber, Sched 1	Breeds on flat, open seashores or shallow lagoons with brackish or salt water.	Possible breeder – (H) One adult recorded in Holland Haven Marshes.	Increasing summer visitor and passage migrant.
Black-Headed Gull Amber	Breeds in colonies on lakesides, large reedbeds or marshy areas. Also, on ponds near coasts.	Possible breeder – (H) Frequently recorded flying over site, feeding in arable fields and in suitable nesting habitat towards south of the site.	Abundant resident, passage migrant and winter visitor.
Cetti's Warbler Sched 1	Breeds in dense, tall vegetation. Preferably near but not in water e.g., tall dry reeds with some scrub.	Probable breeder – (T) Frequently recorded singing males holding territory in scrub and reedbeds particularly in the south of the site.	Locally common and increasing breeding resident.
Common Cuckoo Red, NERC	Often seen in breeding season in woodland, heath, farmland and reedbeds. Parasitises host species nests (typically dunnock, meadow pipit, pied wagtail and reed warbler) rather than builds its' own.	Probable breeder – (T) Individuals recorded occasionally throughout survey season. One individual holding territory on northwest edge of the golf course in the south of the site. Common host species for cuckoo were regularly recorded on site.	Declining summer resident and passage migrant.
Common Whitethroat Amber	Breeds in scrub, farmland with hedgerows and woodland edge.	Probable breeder – (P,T,N) Frequently recorded pairs and singing males holding territory in scrub and hedgerows across the site.	Summer visitor and passage migrant.
Curlew Red	Breeds on open bogs, wet pastoral fields, meadows and open moorland.	Possible breeder – (H) One individual heard calling from suitable breeding habitat.	Declining resident, common passage migrant and winter visitor.
Dunnock Amber, NERC	Breeds in parks, gardens, open woodland, heaths, commons and hedges.	Probable breeder – (P, T) Frequently recorded pairs and singing males holding territory in scrub and hedgerows across the site.	Abundant and widespread resident.
Greenfinch Red	Breeds at woodland edge in wooded pasture and copses, in bushy areas and in parks and gardens. Common in villages and towns.	Possible breeder – (U, H) Individual males recorded singing occasionally in suitable nesting habitat.	Common but recently declined resident and passage migrant.
Grey Wagtail Amber	Breeds in scattered pairs on small, fast-flowing watercourses with exposed rocks. Will also	Probable breeder – (P)	Increasing resident breeder and passage migrant.



Species Conservation Status	Breeding Habitat Requirements (Svensson, Et Al. 2023)	Species Account On Site Including Breeding Status Codes (See Table 1)	Status In Essex (2020 Essex Bird Report)
	breed on lakesides and slower moving watercourses, but this is less common.	Pair recorded foraging on golf course in south of site close to stream.	
Greylag Goose Amber	Breeds mostly in wetlands but also on heather and rocky slopes.	Possible breeder – (H) Recorded in small groups feeding on grassland and arable fields and flying over site. Particularly on golf course in the south of site and further north near Great Holland.	Common, naturalised resident
Herring Gull Red, NERC	Nests in both colonies and as single pairs on islands, cliffs, lakesides and on top of buildings.	Confirmed breeder – (ON) Frequently recorded throughout season flying over and/or foraging in open fields. One pair seen on a nest at Holland Haven Marshes in the south of site.	Present all year, breeds in small numbers. Passage migrant and winter visitor
House Sparrow Red, NERC	Breeds in proximity to humans in both rural and urban areas. Often nests in hedges and trees near houses and artificial structures such as under roof tiles.	Probable breeder – (P, T) Multiple house sparrow colonies were recorded close to farm buildings and residential areas. Also recorded foraging on farmland near suitable breeding habitat.	Abundant resident
House Martin Red	Breeds in colonies in villages, farms, towns and open country. In less developed areas, house martins breed on cliff faces.	Possible breeder – (H) Seen foraging in small numbers over arable fields. Often close to farm buildings and residential areas.	Common but declining summer visitor and passage migrant.
Kestrel Amber	Often found in open country particularly near arable fields. Typically nests in trees, or holes/niches in buildings.	Possible breeder – (H) Male and female birds recorded hunting near suitable nesting habitat across the site.	Fairly common resident, passage migrant and winter visitor.
Lapwing Red, NERC	Breeds in a variety of habitat both inland and coastal. Typically, arable fields and pasture lands but also coastal meadows.	Possible breeder – (H) Individuals recorded in suitable nesting habitat on two occasions.	Uncommon resident, common passage migrant and winter visitor.
Lesser Black-Backed Gull Amber	Breeds in colonies along coasts and near lakes.	Non-breeder – (F, UH) Flying over site and occasionally foraging in arable fields.	Present all year and increasing in numbers.
Linnet Red, NERC	Breeds in areas with thick bushes, in gardens and coastal heaths.	Probable breeder – (P, T) Individuals often recorded foraging in arable fields with pairs holding territory in scrub and boundary hedgerows.	Common but declined resident and passage migrant.



Species Conservation Status	Breeding Habitat Requirements (Svensson, Et Al. 2023)	Species Account On Site Including Breeding Status Codes (See Table 1)	Status In Essex (2020 Essex Bird Report)
Mallard <i>Amber</i>	Breeds in parks, by canals in towns, on lakes, woodland marshes. Will also breed near small watercourses such as ponds and ditches.	Probable breeder – (P, D) Pairs frequently seen in suitable nesting habitat with some courtship behaviour seen.	Common and widespread resident, passage migrant and winter visitor.
Meadow Pipit Amber	Breeds in open country, on heaths and moors, coastal meadows, pastures and bogs.	Probable breeder – (P) Abundant on site. Often recorded foraging and in suitable nesting habitat. Pairs often seen together.	Common resident and passage migrant.
Mistle Thrush Red	Breeds in open woodland, parks, orchards, gardens and scrub.	Possible breeder – (H) Single bird recorded in suitable nesting habitat - scrub - near Holland Haven marshes.	Locally common resident and partial migrant.
Moorhen <i>Amber</i>	Commonly breeds on small lakes, ponds, pools and watercourses with dense vegetation cover.	Probable breeder – (P) Individuals recorded near ponds across site with one pair recorded in suitable nesting habitat at a pond in Holland Haven Marshes.	Very common resident, passage migrant and winter visitor.
Oystercatcher Amber	Breeds on open, flat coasts, commonly feeds on tidal flats or fields and other open ground (rarely more than 20km from the sea).	Probable breeder – (P) Occasionally recorded, particularly in the south of the site. Pairs recorded in suitable habitat.	Resident, passage migrant and winter visitor.
Redshank Amber	Breeds on inland and coastal marshes, wet meadows and moorland.	Confirmed breeder – (FL) Recorded at Holland Haven Marshes, second record was of a pair with recently fledged young.	Locally common resident declining in some areas, common passage migrant and winter visitor.
Red Kite Sched 1	Breeds in forests near lakes, interspersed with open fields. Nests in tall trees.	Possible breeder – (H) Individual birds recorded on two surveys foraging in suitable breeding habitat north of Thorpe-le-Soken. Possibly the same individual holding territory.	Increasing passage migrant. Recent re-colonist.
Reed Bunting Amber	Breeds in reedbeds, tall rushes and shrubbery on wet ground. Also found on drier sites such as young conifer plantations and oilseed rape fields.	Probable breeder – (P, T) Pairs frequently recorded holding territory in reeds, arable crops (particularly oilseed rape), and tall ruderal vegetation across the site. There was a higher abundance further south, near to Holland Haven Marshes.	Much declined resident, passage migrant and visitor.



Species Conservation Status	Breeding Habitat Requirements (Svensson, Et Al. 2023)	Species Account On Site Including Breeding Status Codes (See Table 1)	Status In Essex (2020 Essex Bird Report)
Rook Amber	Breeds in rookeries in tall trees near agricultural areas.	Non-breeding – (F, UH) Recorded flying over site and foraging in arable fields in large numbers (up to c.90 individuals). No rookeries recorded on site suggesting the species breeds off-site and travels onto the site to feed.	Common resident, passage migrant and winter visitor.
Sedge Warbler Amber	Breeds in dense vegetation in marshy areas. Typically, in reeds (preferably with some drier bushes), riverside willows and along ditches with lush herbage.	Probable breeder – (P, T) Frequently recorded singing males holding territory in reedbeds and hedgerows adjacent to ditches, particularly in the south of the site.	Common but declining summer resident and passage migrant.
Shelduck Amber	Breeds along seashores, and at larger lakes and rivers. Prefers open, unvegetated areas.	Probable breeder – (P) Pairs and small groups recorded in suitable breeding habitat at Holland Haven Marshes and on the golf course in the south of the site. Also recorded once in arable field just north of golf course.	Locally common resident, passage migrant and winter visitor.
Skylark Red, NERC	Common breeder in open, cultivated land as well as heaths and meadows.	Probable breeder – (P, T, D, A) Abundant species on site. It is very probable that skylark are breeding on site. Most arable field compartments contained multiple singing male skylark with courtship display and pairs of birds observed across the site.	Common resident, passage migrant and winter visitor.
Song Thrush Amber, NERC	Breeds in lush woodland, parks, open scrub and well vegetated gardens.	Probable breeder – (P, T) Recorded holding territories across multiple surveys and observed in pairs. This was mostly in dense scrub and woodland edge, including an area of woodland east of Thorpe-le-Soken and woodland around Tendring Brook.	Common and largely resident.
Starling Red, NERC	Breeds in farmland, suburban areas and woodland. Builds nests in mature trees, particularly oaks.	Probable breeder – (P) Flocks of varying sizes (up to c.250) were recorded foraging in arable fields and flying over site. Pairs were recorded foraging together on and near trees offering suitable nesting habitat in multiple locations across the site.	Abundant but declining resident, passage migrant and winter visitor.



Species Conservation Status	Breeding Habitat Requirements (Svensson, Et Al. 2023)	Species Account On Site Including Breeding Status Codes (See Table 1)	Status In Essex (2020 Essex Bird Report)
Stock Dove Amber	Breeds in woodland areas, forest edge and larger undisturbed parks with mature oaks and deciduous trees. Also, can be found nesting on rocky coasts, or on buildings.	Probable breeder – (P) Low numbers recorded on site. One pair recorded in suitable nesting habitat near boundary vegetation south of Great Holland.	Fairly common resident and passage migrant.
Swift Red	Breeds in towns and villages and rarely in deserted wooded areas or cliffs.	Possible breeder – (S) Small numbers seen foraging in groups over arable field. One 'screaming party' of five swifts recorded south of Great Holland indicating a potential roost or nest nearby. Houses and farm buildings on site would offer suitable nesting habitat.	Common summer resident and passage migrant.
Willow Warbler Amber	Common breeder wherever a few trees or taller bushes exist. Found in all types of woodland, copses, parks and gardens.	Possible breeder – (S) Singing males recorded in small areas of woodland around Tendring Brook and east of Thorpe-le-Soken.	Common but declining summer resident.
Woodpigeon Amber	Breeds in woods especially in arable landscapes, parks, gardens and city centres.	Probable breeder – (P) Very probable breeder. Recorded in high abundance across site both in pairs and large foraging groups. Typically recorded on woodland edge and foraging in arable fields.	Abundant resident, passage migrant and winter visitor.
Wren Amber	Breeds in woodland with dense undergrowth, overgrown clearings and scrub.	Probable breeder – (P, T, A) Males frequently recorded holding territory in boundary vegetation and scrub across the site. Occasionally, pairs were recorded and agitated calls were heard.	Abundant and widespread resident.
Yellow Wagtail Red, NERC	Breeds in lowland areas on marshy pastures, waterlogged meadows, beside lakes and at sewage-farms.	Possible breeder – (H) Individuals recorded foraging in farmland habitat close to ditches and streams.	Declining summer visitor.
Yellowhammer Red, NERC	Breeds commonly in farmland, in bushy areas, woodland edge and wooded pasture. Also in glades, clearings, heaths and coastal meadows.	Probable breeder – (P, T) Recorded foraging in arable fields and in boundary scrub and hedgerows across the site. Pairs frequently seen and recorded across multiple surveys.	Common but declining resident.



4. CONCLUSION

Over the course of the four surveys a total of 15 red listed species, 22 Amber listed, and 33 Green listed species were observed. Four of the species recorded are listed on the Wildlife and Countryside Act Schedule 1 (as amended). A further additional late survey did not confirm breeding of any of the four target species on site. Table 6 provides a full species list of the site categorised by conservation status.

Table 6: Recorded species in order of their Red, Amber & Green-listed status

^{*} Denotes species that are designated under the Wildlife & Countryside Act 1981 (as amended) as Schedule 1 species.

[†] Denotes species that are listed under NERC Section 41



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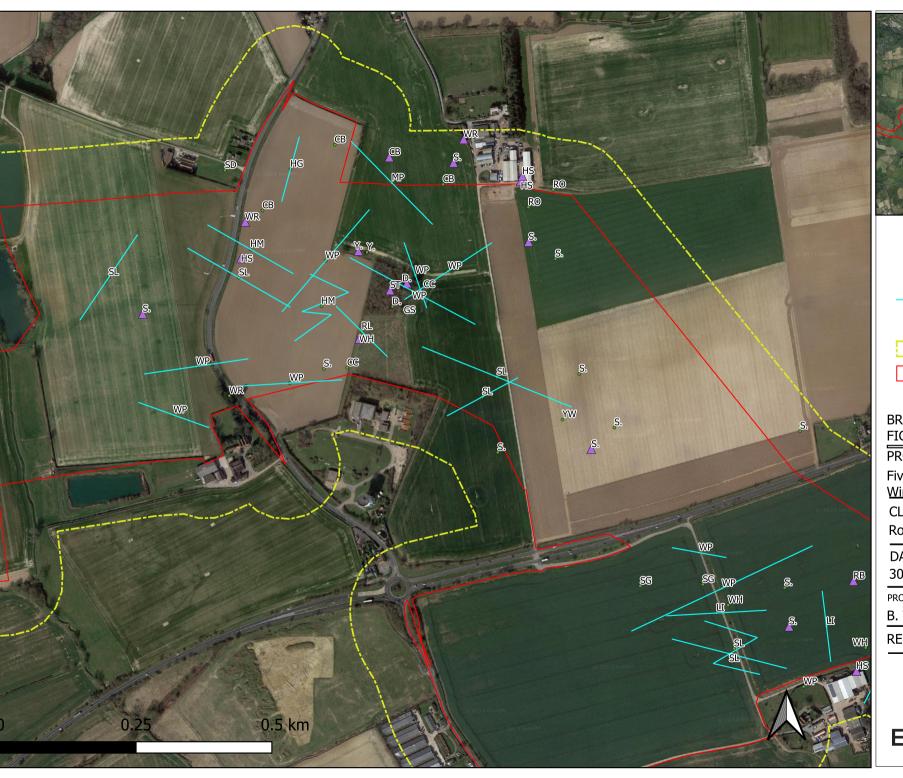
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APPENDIX A: Breeding Birds Survey Location Plan Figures 1A-1O, Transect Route Figures 2A-2G





Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1a

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

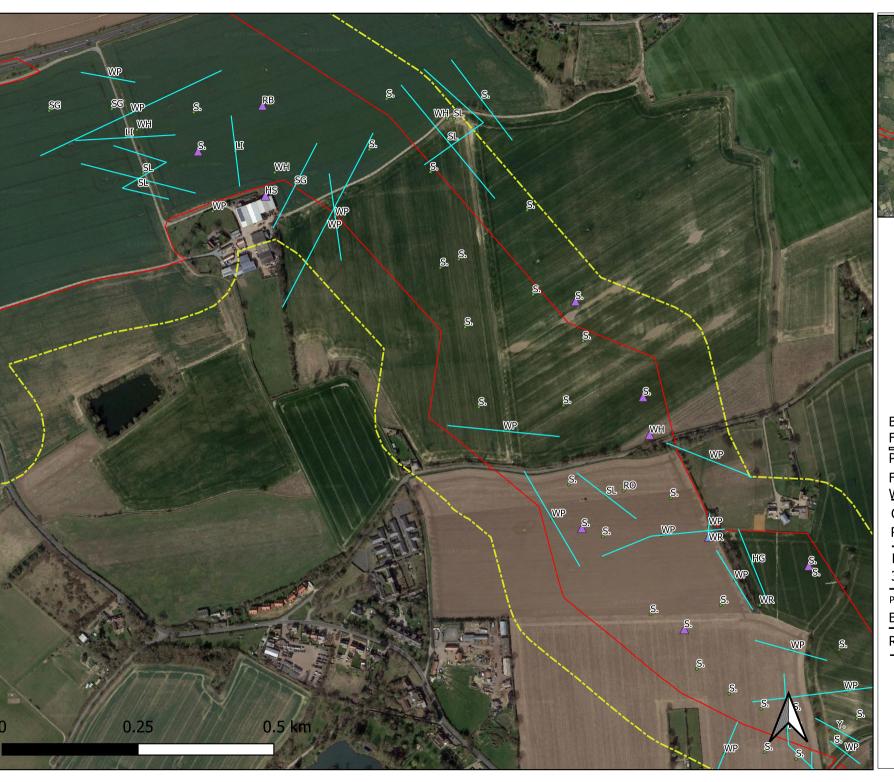
DATE:

30.01.2023

PRODUCED BY:

B. Turner







Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings

100m Buffer

Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1b

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

30.01.2023

PRODUCED BY:

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▲ Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1c

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

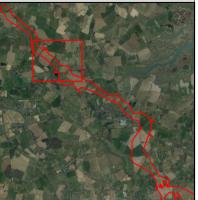
30.01.2023

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Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings

100m Buffer

Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1d

PROJECT TITLE:

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CLIENT:

Royal HaskoningDHV

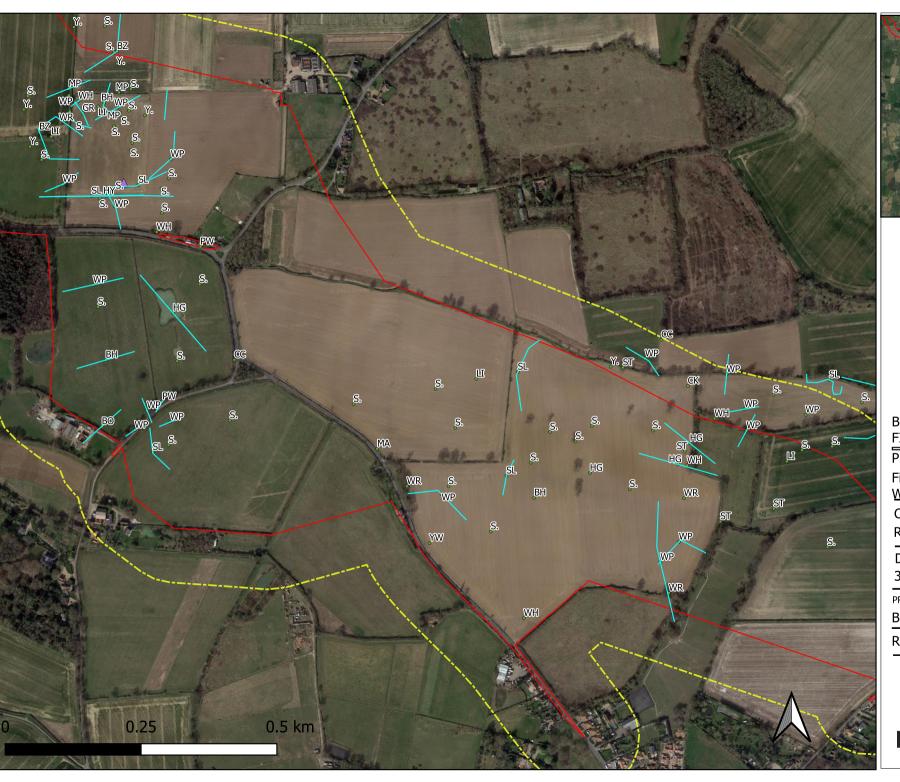
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▲ Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1e

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

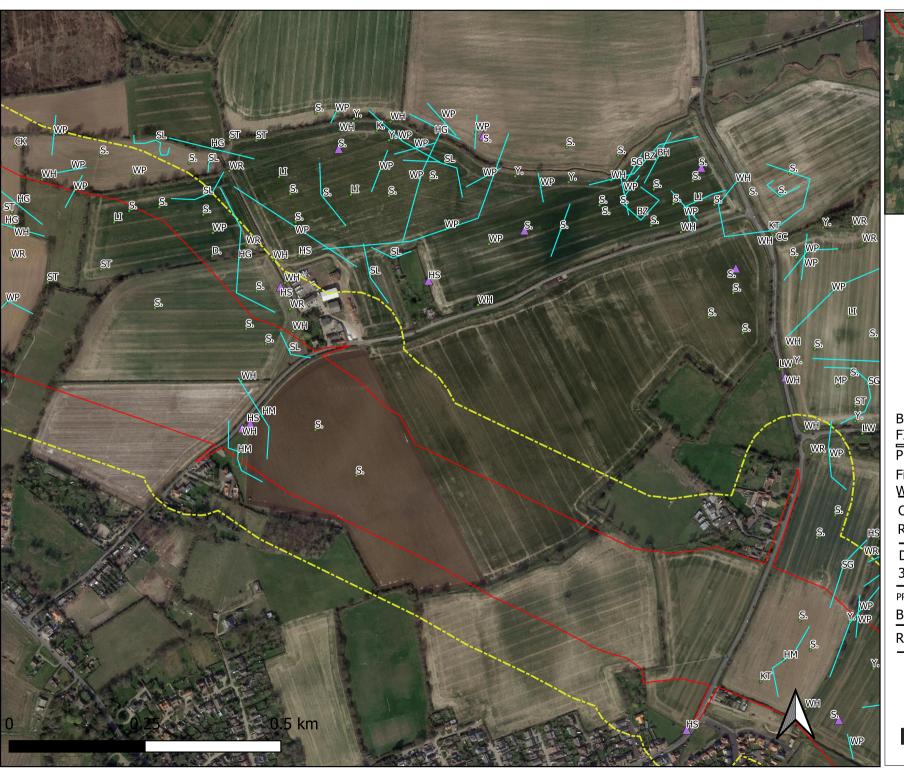
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Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings

100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1f

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

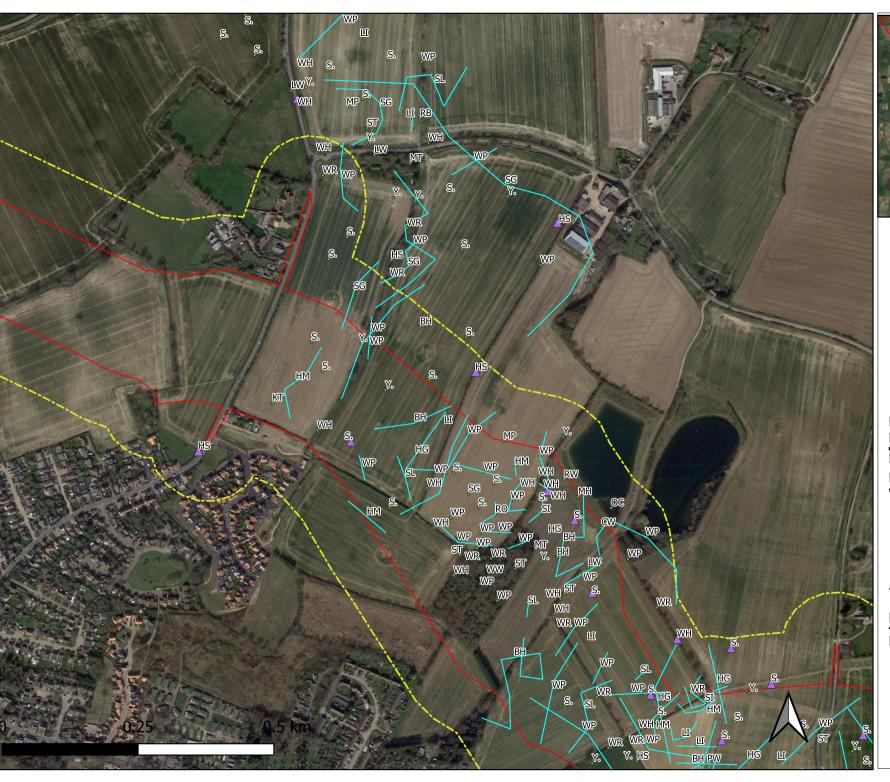
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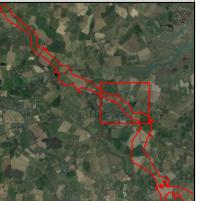
30.01.2023

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▲ Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1g

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

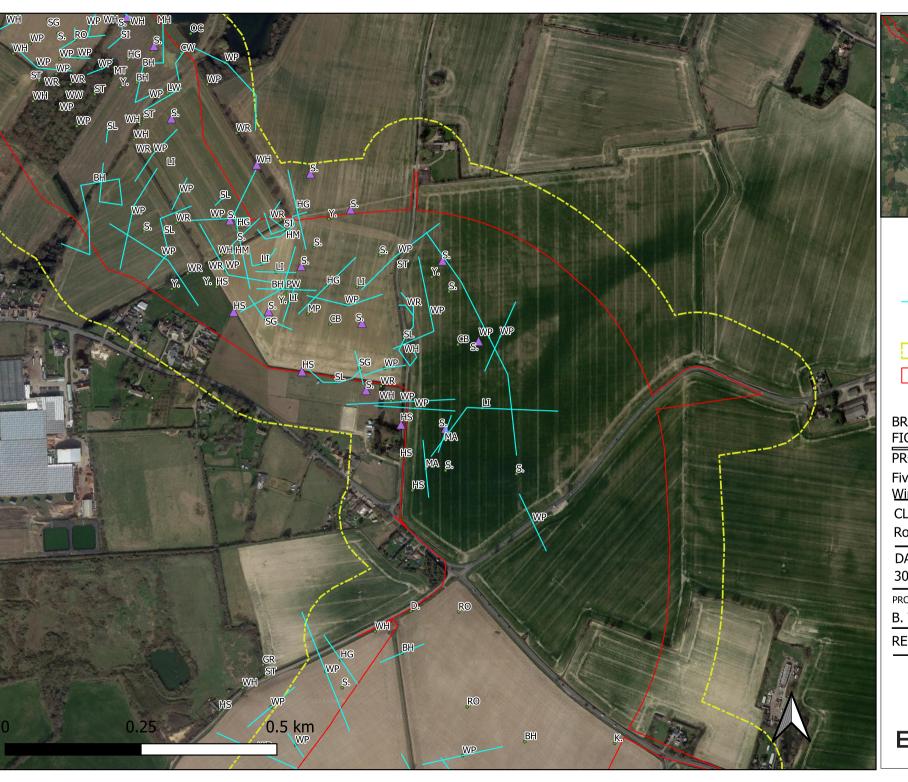
DATE:

30.01.2023

PRODUCED BY:

B. Turner







▲ Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1h

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

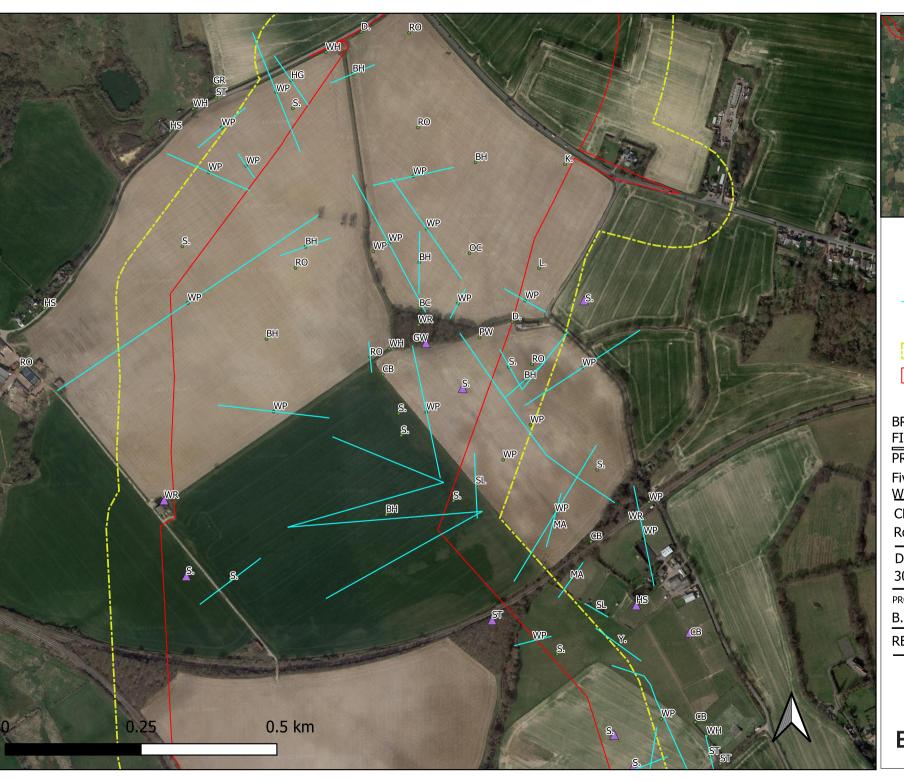
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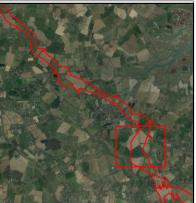
30.01.2023

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▲ Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1i

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

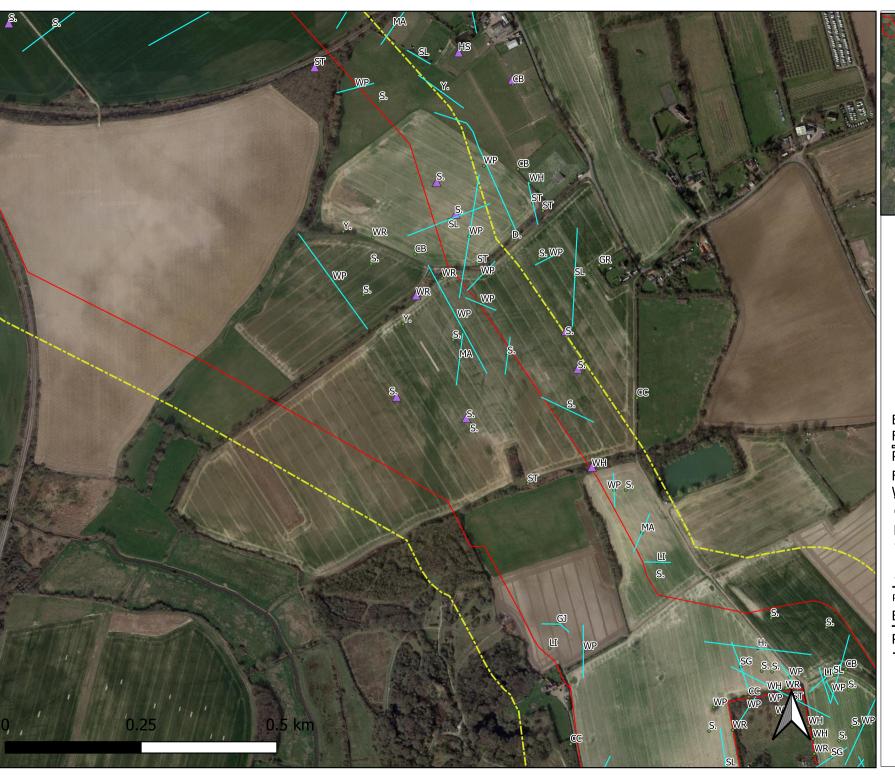
DATE:

30.01.2023

PRODUCED BY:

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▲ Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings

100m Buffer

Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1j

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

30.01.2023

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▲ Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings

100m Buffer

Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1k

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

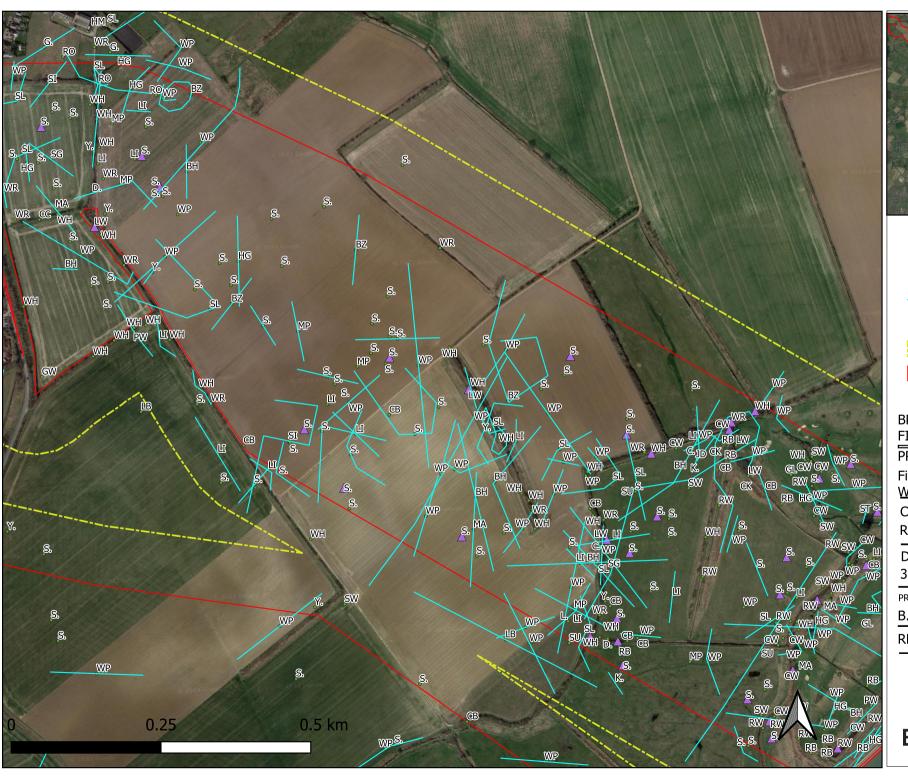
DATE:

30.01.2023

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Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 11

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

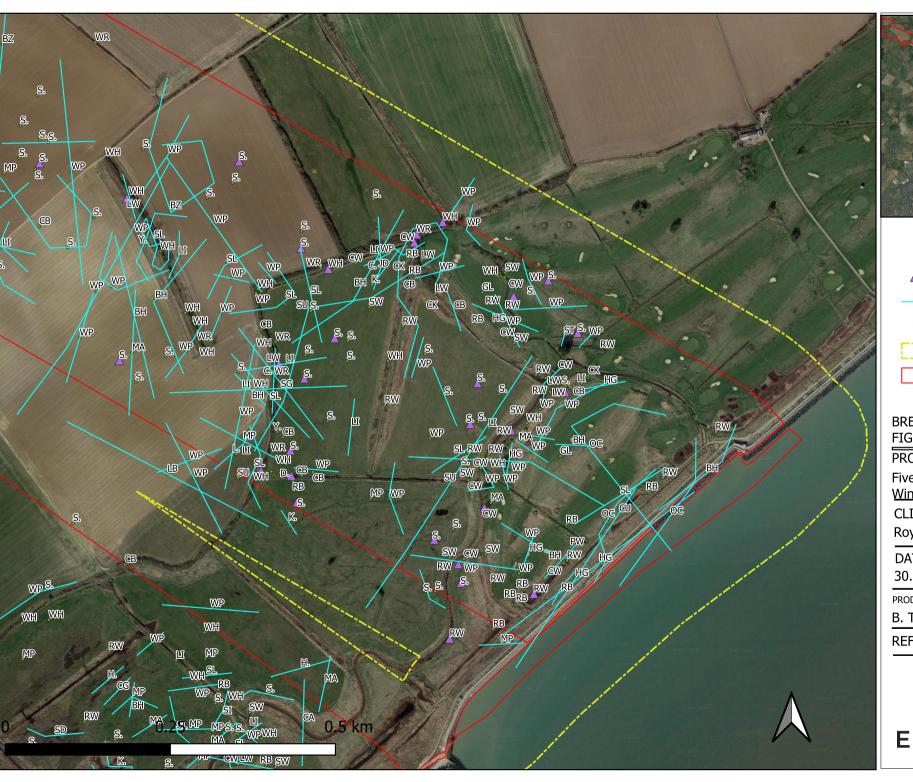
DATE:

30.01.2023

PRODUCED BY:

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Breeding Bird Territories

Breeding Bird Flight Lines

Breeding Bird Sightings



100m Buffer



Site Boundary

BREEDING BIRD SIGHTINGS FIGURE 1m

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

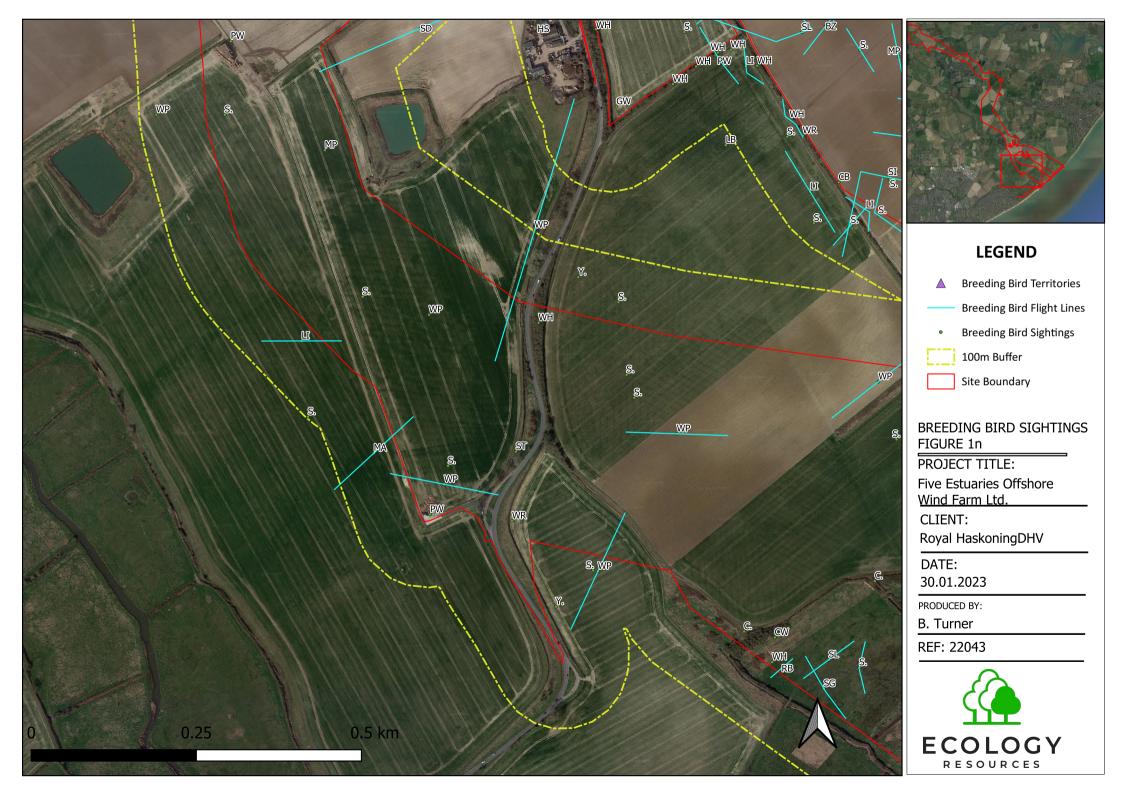
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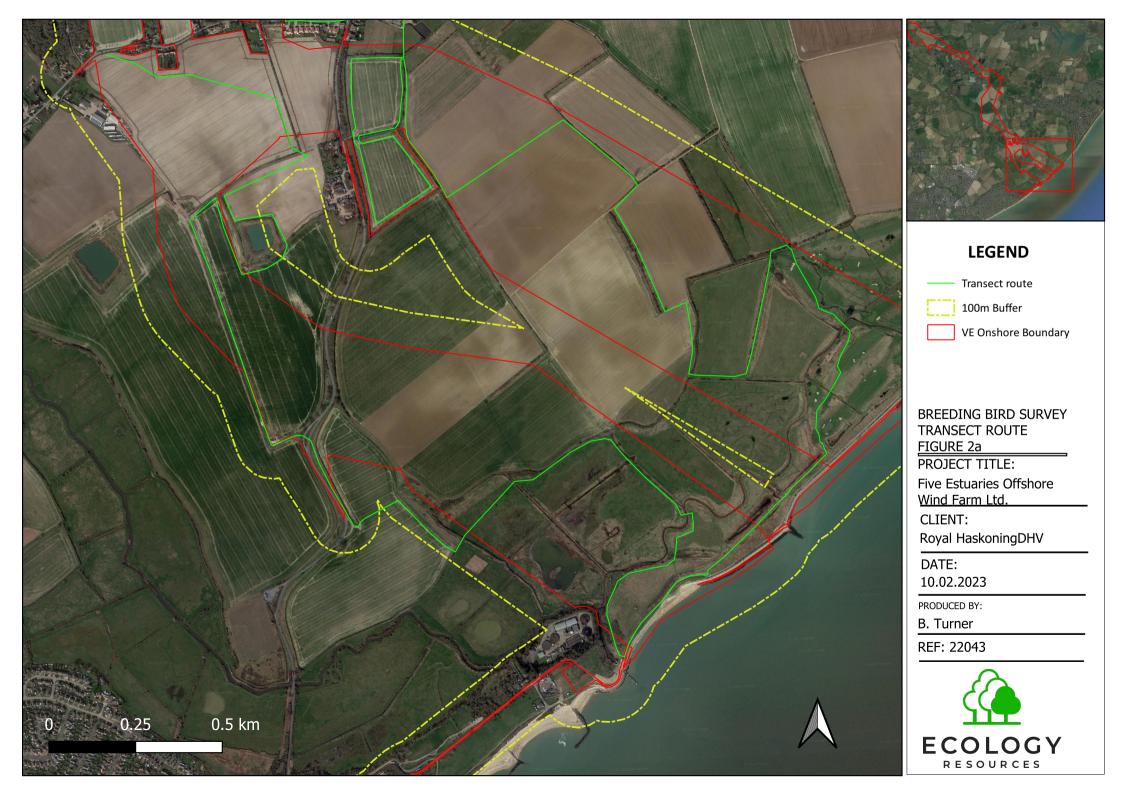
PRODUCED BY:

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Transect route

100m Buffer

VE Onshore Boundary

BREEDING BIRD SURVEY TRANSECT ROUTE FIGURE 2b

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

10.02.2023

PRODUCED BY:

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____ Tr

Transect route



100m Buffer



VE Onshore Boundary



Area not surveyed due to boundary revision

BREEDING BIRD SURVEY TRANSECT ROUTE FIGURE 2c

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

10.02.2023

PRODUCED BY:

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Transect route

100m Buffer



VE Onshore Boundary



Area not surveyed due to boundary revision

BREEDING BIRD SURVEY TRANSECT ROUTE FIGURE 2d

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

10.02.2023

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Transect route

100m Buffer

VE Onshore Boundary

BREEDING BIRD SURVEY TRANSECT ROUTE FIGURE 2e

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

10.02.2023

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— Transect route

100m Buffer

VE Onshore Boundary

BREEDING BIRD SURVEY TRANSECT ROUTE FIGURE 2f

PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

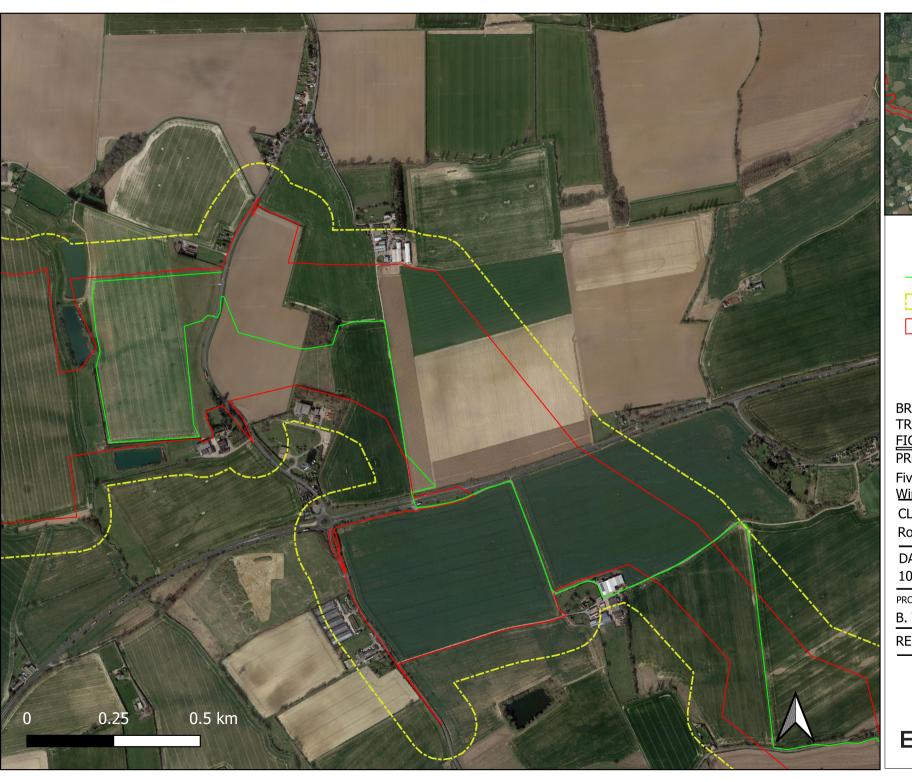
DATE:

10.02.2023

PRODUCED BY:

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Transect route

100m Buffer

VE Onshore Boundary

BREEDING BIRD SURVEY TRANSECT ROUTE FIGURE 2g PROJECT TITLE:

Five Estuaries Offshore Wind Farm Ltd.

CLIENT:

Royal HaskoningDHV

DATE:

10.02.2023

PRODUCED BY:

B. Turner





APPENDIX B: Survey Meta Data - Birds Sightings

Species	Binomial Name	2022 Su	rvey Date	S										Species Status	Breeding Status On Site
		12.05	13.05	19.05	24.05	25.05	26.05	07.06	08.06	09.06	21.06	22.06	23.06		
Avocet	Recurvirostra avosetta				1									Amber, Schedule 1	Possible
Barn Owl	Tyto alba		1											Green, Schedule 1	Probable
Blackbird	Turdus merula	2	20	13	5	17	8	1		6		3		Green	Probable
Blackcap	Sylvia atricapilla		5	10	8	9	5							Green	Probable
Black-headed Gull	Chroicocephalus ridibundus	2		1	6	3		3	6	3	5	1	1	Amber	Possible
Blue Tit	Cyanistes caeruleus	3	12	4	2	13	3	10	1	4	2	2	5	Green	Probable
Canada Goose	Branta canadensis	14			5									Green	Probable
Carrion Crow	Corvus corone	10	13	25	6	35	17		5		3			Green	Probable
Cetti's Warbler	Cettia cetti				4			3			2			Green, Schedule 1	Probable
Chaffinch	Fringilla coelebs	4	5	2	2	5	3	1	1	5	2	1	4	Green	Probable
Chiffchaff	Phylloscopus collybita		7	5	2	5	3							Green	Probable
Collared Dove	Streptopelia decaoto									3	3			Green	Probable
Common Buzzard	Buteo buteo		1	1	2	3	2	1	2	2	1		1	Green	Probable
Common Cuckoo	Cuculus canorus	1			1			1			1			Red, NERC	Probable
Common Pheasant	Phasianus colchicus	2		3	2	1		3	1		1		1	Green	Probable
Common Whitethroat	Sylvia communis	9	10	4	14	2	7	15	11	5	13	11	3	Amber	Probable
Coot	Fulica atra	1												Green	Probable
Cormorant	Phalacrocorax carbo	2												Green	Possible



Species	Binomial Name	2022 Su	irvey Date	es						Species Status	Breeding Status On Site				
		12.05	13.05	19.05	24.05	25.05	26.05	07.06	08.06	09.06	21.06	22.06	23.06		21, 21, 2
Corn Bunting	Miliaria calandra	1		2				2	1	3	8	4	1	Red, NERC	Probable
Curlew	Numenius arquata										1			Red	Possible
Dunnock	Prunella modularis	1		1		1	3	2		2	1	1	1	Amber, NERC	Probable
Eurasian Hobby	Falco subbuteo		1											Green Schedule 1	Possible
European Robin	Erithacus rubecula		2	1		1	4	1	1	1	4	2	1	Green	Probable
Garden Warbler	Sylvia borin			1	1	1								Green	Probable
Goldfinch	Carduelis carduelis	3	13	15	5	6	33	1		1	3		1	Green	Probable
Great Tit	Parus major	5	5	6	1	12	4							Green	Probable
Great-spotted Woodpecker	Dendrocopos major		1	1										Green	Probable
Green Woodpecker	Picus viridis										2			Green	Probable
Greenfinch	Chloris chloris		1									2		Red	Possible
Grey Heron	Ardea cinerea	1						1			2			Green	Probable
Greylag Goose	Anser anser	1	1	1										Amber	Possible
Grey Wagtail	Motacilla cinerea				3		1							Amber	Probable
Herring Gull	Larus argentatus	3	7	1	8			4	4	1	1	1		Red, NERC	Confirmed
House Sparrow	Passer domesticus		2	4	1		3	2		5		8		Red, NERC	Probable
House Martin	Delichon urbicum							2		1		1		Red	Possible
Jackdaw	Corvus monedula	10	12	10	25	32	8							Green	Probable
Kestrel	Falco tinnunculus	2			1							1		Amber	Possible
Lapwing	Vanellus vanellus					1					1			Red, NERC	Possible
Lesser Whitethroat	Sylvia curruca	5	5		2		2	4	3		3			Green	Probable
Lesser-black backed Gull	Larus fuscus						1	2			2			Amber	Non Breeder
Linnet	Carduelis cannabina	6	4	4	6			5	3	3	11	5		Red, NERC	Probable
Little Egret	Egretta garzetta	2												Green	Possible

22043 – Five Estuaries Offshore Wind Farm Breeding Bird Survey



Species	Binomial Name	2022 Su	022 Survey Dates											Species Status	Breeding Status On Site
		12.05	13.05	19.05	24.05	25.05	26.05	07.06	08.06	09.06	21.06	22.06	23.06		
Long-tailed Tit	Aegithalos caudatus								8			6		Green	Probable
Magpie	Pica pica	1		6	6	7	3	1		2	2	2	1	Green	Probable
Mallard	Anus platyrhynchos	2	2	5	3			2				1	1	Amber	Probable
Meadow Pipit	Anthus pratensis	8	3		5		1	2	2	3	6		2	Amber	Probable
Mistle Thrush	Turdus viscivorus							1						Red	Possible
Moorhen	Gallinula chloropus	1	1								2			Amber	Probable
Mute Swan	Cygnus olor				1				1					Green	Probable
Oystercatcher	Haematopus ostralegus	1			1	2		2			3	3		Amber	Probable
Pied Wagtail	Motacilla alba		2			1				1	2	1		Green	Probable
Red Kite	Milvus milvus								2					Green Schedule 1	Possible
Red-legged Partridge	Alectoris rufa		11	11		6	1		7			5		Green	Probable
Redshank	Tringa nebularia	1						1						Amber	Confirmed
Reed Bunting	Emberiza schoeniclus	7			5		1	1		1	9	1		Amber	Probable
Reed Warbler	Acrocephalus scirpaceus	12			9			5			5			Green	Probable
Rook	Corvus frugilegus		21	2		23	2	27	17	90	15	36	31	Amber	Non-breeder
Sedge Warbler	Acrocephalus schoenobaenus	3						4			2			Amber	Probable
Shelduck	Tadorna tadorna							2			2			Amber	Probable
Skylark	Alauda arvensis	6	58	26	36	7	12	38	49	60	34	28	30	Red, NERC	Probable
Song Thrush	Turdus philomelos		2	6					2	3	1	2	1	Amber, NERC	Probable
Starling	Sturnus vulgaris	1		5	11	4	15	1	9	152		38	250	Red, NERC	Probable
Stock Dove	Columba oenas	1						2					1	Amber	Probable
Swallow	Hirundo rustica	8	20	3	2	23	5	5	4	3	9	5	4	Green	Possible

22043 – Five Estuaries Offshore Wind Farm Breeding Bird Survey



Species	Binomial Name	2022 Su	2022 Survey Dates												Breeding Status On Site
		12.05	13.05	19.05	24.05	25.05	26.05	07.06	08.06	09.06	21.06	22.06	23.06		
Swift	Apus apus	1		1	2			5	2					Red	Possible
Willow Warbler	Phylloscopus trochilus								1	1				Amber	Possible
Woodpigeon	Columba palumbus	55	46	53	73	97	26	78	123	46	98	83	46	Amber	Probable
Wren	Troglodytes troglodytes		2	2	7	1	4	5	7	6	6	9	2	Amber	Probable
Yellow Wagtail	Motacilla flava									1			1	Red, NERC	Possible
Yellowhammer	Emberiza citrinella		1	4	4	1			6	11	2	10	10	Red, NERC	Probable



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