



Dudgeon and Sheringham Shoal Offshore Wind Farm Extensions

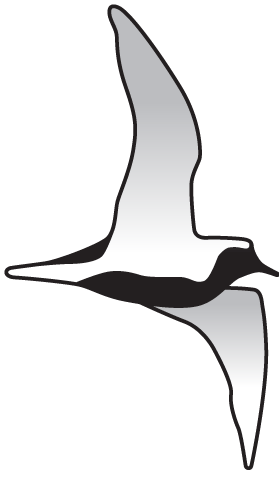
Preliminary Environmental Information Report

Volume 3

Appendix 22.5 - Breeding Bird

April 2021

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WILD FRONTIER ECOLOGY

Equinor Sheringham Shoal and Dudgeon Offshore
Wind Farm Extension Projects Onshore Grid
Connection



Breeding Birds Survey Report 2020

March 2021

Report produced by	Produced on behalf of
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The data which we have prepared and provided is accurate, and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that any opinions expressed are our best and professional bona fide opinions.



This report conforms to the British Standard 42020:2013 Biodiversity - Code of practice for planning and development.

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GLOSSARY OF TERMS

Term	Explanation
Dudgeon Offshore Wind Farm Extension site	The Dudgeon Offshore Wind Farm Extension lease area.
The Dudgeon Offshore Wind Farm Extension Project (DEP)	The Dudgeon Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.
Sheringham Shoal Offshore Wind Farm Extension site	Sheringham Shoal Offshore Wind Farm Extension lease area.
The Sheringham Shoal Offshore Wind Farm Extension Project (SEP)	The Sheringham Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.
PEIR	Preliminary Environmental Information Report
PEIR boundary	The area subject to survey and preliminary impact assessment to inform the PEIR, including all permanent and temporary works for DEP and SEP. The PEIR boundary will be refined down to the final DCO boundary ahead of the application for development consent.
DCO boundary	The area subject to the application for development consent, including all permanent and temporary works for DEP and SEP. The DCO boundary will be subject to updated impact assessment and further development of mitigation proposals to inform the ES.

Term	Explanation
Survey area	Area where potential impacts to breeding birds from the project could occur.
Onshore cable corridor	The area between the landfall and the onshore substation sites, within which the onshore cable circuits will be installed along with other temporary works for construction.
Landfall	The point on the coastline at which the offshore export cables are brought onshore and connected to the onshore export cables.
Onshore substation Zone	Parcels of land within the wider onshore substation search area identified as suitable for development of the onshore substation. Two substation zones (A and B) have been identified as having the greatest potential to accommodate the onshore substation.
Onshore substation sites	Parcels of land within onshore substation zones A and B, identified as the most suitable location for development of the onshore substation. Two sites have been identified for further assessment within the PEIR.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive. This includes candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) and is defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017.
WFE	Wild Frontier Ecology: undertook the 2020 breeding bird surveys

1. NON TECHNICAL SUMMARY

Wild Frontier Ecology Ltd. was commissioned by Equinor New Energy Limited to complete breeding bird surveys within and around the proposed route of the onshore grid connection cable associated with the proposed extensions of the Dudgeon and Sheringham Shoal Wind Farm Extension Projects. The surveys were undertaken between April 2020 and July 2020 and were conducted mainly from roads and Public Rights of Way (PRoW) as landowner access was limited at the time of the survey effort. At the start of the surveys, two potential routes were being considered, a western route from Weybourne in the north to the onshore substation sites, and an eastern route running from Bacton and terminating in the same area. For this report, only records for the subsequently selected western route are considered.

Breeding bird surveys were conducted along both routes in all areas within 10 kilometres (km) of European Designated Sites (Special Protection Areas (SPA) and Special Areas of Conservation (SAC)) which comprised North Norfolk Coast SPA and Broadland SPA. Breeding bird surveys were also undertaken in an area surrounding the River Wensum SAC corridor where it intersects with the PEIR boundary near Attlebridge, an area surrounding the River Yare near Barford and in the vicinity of the onshore substation sites (within 10 km buffer from Broadland SPA).

The breeding bird survey methodology followed an adaptation of the British Trust for Ornithology's (BTO) Common Bird Census methodology. All birds seen and heard (from public access or area where landowner access was permitted) within the survey area were recorded. Red and Amber listed species of Conservation Concern (BoCC) and Schedule 1 species were mapped.

Eight Red list species, six Amber list species and two Schedule 1 species territories were recorded within the survey area as well as significant numbers of sand martins breeding in the cliffs at Weybourne. The two Schedule 1 species with breeding territories recorded within the current survey area were Cetti's warbler *Cettia cetti* in reedbeds at Weybourne, and firecrest *Regulus ignicapilla* in Weybourne Wood. The majority of territories of red and amber listed species recorded in the survey area were of farmland breeding birds such as skylark *Alauda arvensis*, dunnock *Prunella modularis*, linnet *Linaria cannabina* and yellowhammer *Emberiza citrinella*. Small numbers of territories of a mix of woodland breeding Red and Amber listed bird species were recorded. Very few riverine species were recorded in the survey area, with one grey wagtail *Motacilla cinerea* territory recorded on the Wensum during the surveys (although this is now outside of the PEIR boundary).

Due to changes in the onshore cable corridor during the 2020 breeding bird survey effort, some areas were not surveyed on all six breeding surveys. These constraints will be addressed by conducting further bird surveys during the subsequent breeding season (in 2021). Survey coverage will also be improved by obtaining landowner access to the specific land parcels within the onshore cable corridor rather than being restricted to using roads and PRoWs.

1. BACKGROUND

Equinor New Energy Limited (hereafter the Applicant) is proposing to extend the existing operational Dudgeon and Sheringham Shoal Offshore Wind Farms, named the Dudgeon Offshore Wind Farm Extension Project (hereafter DEP) and Sheringham Shoal Offshore Wind Farm Extension Project (hereafter SEP). DEP and SEP will consist of a number of offshore and onshore elements including the offshore wind turbines and subsea array cables, up to two offshore substations, offshore and onshore export cables, and a new area for up to two onshore substations to accommodate the connection of DEP and SEP to the transmission grid. A full description of DEP and SEP is provided within Chapter 5 Project Description.

In August 2019, WFE was commissioned by the Applicant Limited to undertake breeding bird surveys to inform an impact assessment of the proposed onshore grid connection (a subterranean cable) for the proposed extensions to the offshore Dudgeon and Sheringham Shoal wind farms. The current proposals for the grid connection roughly comprise a 60 kilometre (km) route with landfall around Weybourne on the North Norfolk coast, with the PEIR boundary then running southwards and eventually eastwards around the west and south sides of Norwich, to the onshore substation sites.

This report outlines the aims, methods and results of the surveys for breeding birds which were completed between April and July 2020.

2. RELEVANT LEGISLATION AND POLICY

2.1 Birds

All bird species are protected under the Wildlife and Countryside Act 1981 as amended. This prevents killing or injuring any bird or damaging or destroying nests and eggs. Certain species (including barn owl *Tyto alba*, Cetti's warbler *Cettia cetti* and firecrest *Regulus ignacapillus*) are also listed under Schedule 1 of the Wildlife and Countryside Act 1981, which prohibits intentionally or recklessly disturbing the species at, on or near an 'active' nest.

The British Trust for Ornithology (BTO) lists Birds of Conservation Concern (BoCC), which fall into three categories: Red-listed - species of high concern; Amber-listed - species of medium concern; and Green-listed - species of lower concern. Species are placed on these lists based, among other criteria, on the percentage decline of breeding or wintering populations in recent years. These lists do not indicate rarity for the species concerned, and many listed species are currently common and widespread.

2.2 International (European) Site Designations

The European Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) as amended directs the designation of important wildlife sites through the European Community as Special Areas of Conservation (SAC) and gives statutory protection to habitats and species listed in the Directive as being threatened or of community interest. Sites identified as candidate SAC (cSAC) are provided with the same level of protection as SAC.

Annex I of 92/43/EEC as amended lists habitat types which are regarded as being of European importance. Included within these are a number of 'priority habitat types' which are habitats regarded as being in danger of disappearance and whose natural range falls broadly within the European Union. This European law had been transposed into UK legislation by The Conservation (Natural Habitats) &c Regulations 1994, now replaced by The Conservation of Habitats and Species Regulations 2017 (as amended).

Habitats of European-wide importance for birds are listed under the EC Wild Birds Directive (79/409/EEC) as amended. Habitats designated under this Directive are notified as Special Protection Areas (SPAs) and are identified for holding populations > 1% of the reference population as defined in Appendix 4 of the SPA review of bird species listed in Annex 1 of the same Council Directive. Sites identified as potential SPA (pSPA) are provided with the same level of protection as SPA.

Wetlands of International Importance are designated under the Ramsar Convention. These areas are extended the same protection at a policy level as SACs and SPAs.

3. SURVEY METHODS

3.1 Desk Study

The breeding bird survey areas were selected following the preliminary Expert Topic Group (ETG) meeting in which stakeholders (WFE, Royal Haskoning DHV, Equinor, Natural England, Environment Agency, South Norfolk & Broadland District Council and Norfolk County Council) advised that areas within 10km of SPAs should be the focus of the breeding bird survey effort. In addition, further survey areas of likely sensitivity for breeding birds were identified from a desk-based review of Ordnance Survey (OS) maps and other freely available mapping software such as Google Earth and Multi-Agency Geographic Information for the Countryside (MAGIC) Map Application. The local knowledge of WFE's team of ornithologists was also factored into the decision as to which areas warranted surveys. A major consideration was also the availability of Public Rights of Way (PRoW) such as footpaths and roads as areas without these could not be surveyed due to the limited landowner access in place at the time of the survey effort.

At the beginning of the breeding bird surveys, the survey area had three distinct sections: a southern section running from the onshore substation sites northwards to the area around Swannington/Alderford, where the route diverged into a western section running north to a potential landfall at Weybourne, and an eastern section running north-east to a potential landfall at Bacton. The eastern section was discounted part way through the breeding bird survey effort and therefore this report only refers to the data collected from the survey area within the PEIR (see Figures 1-10).

The survey area within the PEIR boundary included those areas within 10km of European Protected Sites, namely the North Norfolk Coast and Broadland SPAs. The northernmost survey section of the PEIR boundary, from Weybourne to Plumstead (within 10km of the North Norfolk Coast SPA) comprises the most varied habitats, ranging from coastal cliffs and grassland, extensive areas of mixed woodland/plantation and an arable landscape with small plantations and hedgerows.

The section adjacent to the River Wensum SAC, an area surrounding the River Yare and the southern section of the PEIR boundary to the proposed onshore substation sites (which is also within 10km of the Broadland SPA), were also identified as having the potential to support populations of important breeding bird species and provided a range of habitat to give an overall view of farmland and woodland species in the survey area.

3.2 Field Survey

The breeding bird surveys employed an adaptation of the methodology detailed by the British Trust for Ornithology (BTO) in their Common Bird Census (CBC)¹, and concentrated on recording and mapping Birds of Conservation Concern (BoCC)² Red and Amber listed species breeding in the survey area. BoCC Green listed species were recorded and numbers of pairs estimated, but territories were not mapped unless they were also

¹ Gilbert G., Gibbons D.W. and Evans J. (1998) *Bird Monitoring Methods*, RSPB, Sandy.

² Eaton M.A., Aebischer N.J., Brown A.F., Hearn R.D., Lock L., Musgrove A.J., Noble D.G., Stroud D.A. and Gregory R.D. (2015) *Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds* **108**, pp. 708–746.

Schedule 1 species³.

All surveys were undertaken by Graham Riley BSc ACIEEM and Ptolemy McKinnon BSc MSc working in a pair. Surveys were undertaken between April and July 2020. The survey area is shown in Figures 1-10. Selected, accessible land within the survey area was accessed and surveyed on foot. The vast majority of surveys were undertaken using PRowS, with the exception of Weybourne Woods where landowner access had been granted. Nesting and territorial behaviour (singing, nest building, carrying food, fighting, copulation, nest locations, alarm calling, carrying faecal sacs) were noted by standard codes, as were the age and sex of the birds concerned, where observed. Non-nesting behaviour such as over-flying the survey area was also noted, together with the direction of movement. Birds not considered likely to be nesting were still noted where observed. Table 1 below shows the dates and times during which breeding bird surveys were conducted.

When compiled after all survey visits during a single breeding season, the CBC data concerning BoCC Red and Amber list and Schedule 1 species was analysed using standard methodology to provide an estimate of bird breeding territory distribution and quantity^{4,5}. This was achieved by isolating the registrations recorded for a single, selected species in each survey visit, and then plotting all of those registrations together on a single map. The resulting cluster of registrations is then interpreted by an experienced ornithologist to define distinct breeding territories. The same method is repeated for each species recorded exhibiting nesting and/or territorial behaviour in any or all of the survey visits.

³ <https://www.legislation.gov.uk/ukpga/1981/69/schedule/1>

⁴ Marchant J.H. (1983). *BTO Common Bird Census Instructions*. BTO, Tring.

⁵ Bibby C.J., Burgess N.D., Hill D.A. and Mustoe S.H. (2000). *Bird Census Techniques* (2nd Edition). Academic Press, London.

Table 1. Breeding Birds Survey Timings and Weather Conditions

Date	Survey Route	Surveyors		Start Time	End Time	Precipitation	Wind (Direction & Beaufort Scale)	Temp. (°C)		Cloud cover (%)
								(min & max)		
23/04/2020	Weybourne to Plumstead	GR	PM	06:30	10:00	None	E2	9	15	0
05/05/2020	Weybourne to Plumstead	GR	PM	06:30	10:00	None	E3	6	10	50
12/05/2020	Weybourne to Plumstead	GR	PM	06:40	10:00	None	W3	5	11	40
19/05/2020	Weybourne to Plumstead	GR	PM	06:30	10:00	Light rain 06:45-07:20	W3	13	17	60
11/06/2020	Weybourne to Plumstead	GR	PM	06:30	10:30	Showers throughout	NE5	12	15	100
26/06/2020	Weybourne to Plumstead	GR	PM	06:30	10:15	Short shower 09:45-09:55	SE3	20	24	4
01/05/2020	Wensum, Yare and Substation Area Buffers	GR	PM	06:30	09:45	None	WSW	8	12	30-80
06/05/2020	Wensum, Yare and Substation Area Buffers	GR	PM	06:35	09:30	None	E2	6	12	20
14/05/2020	Wensum, Yare and Substation Area Buffers	GR	PM	06:40	09:30	None	NE3	6	9	60
01/06/2020	Wensum, Yare and Substation Area Buffers	GR	PM	06:40	10:15	Light rain 06:45-07:20	W3	13	20	60
19/06/2020	Wensum, Yare and Substation Area Buffers	GR	PM	06:30	10:00	Light rain from 09:30	S2	14	18	100
03/07/2020	Wensum, Yare and Substation Area Buffers	GR	PM	06:30	10:00	None	SW3	14	18	4

3.3 Data Search

A data search for biological records was completed with the Norfolk Biodiversity Information Service (NBIS) in January 2021. This returned 40,880 records of 265 confirmed species of bird within a 2km buffer of the PEIR boundary. To further refine the data, it was manipulated to show only records within the PEIR boundary and those of significance which lie outside of the PEIR boundary. Records of significance were determined by the conservation status of the species (BoCC Red and Amber Listed and Schedule 1 Listed species) and if noted as breeding or record indicated breeding. They were only included in the results where the location of the record was within approximately 50m of the PEIR boundary or well connected to the boundary via good quality habitat such as woodland and rivers. There are 54 records of breeding birds which lie within the PEIR boundary or are ecologically relevant (see note on grey wagtail *Motacilla cinerea* in Table 2). The data search records for each species are summarised in Table 2, below.

Table 2. Data Search Breeding Birds Records within or in close proximity to PEIR boundary

Species	Breeding Records	Location(s)	Dates of Records	Notes
Barn owl <i>Tyto alba</i>	2	Weybourne & Swannington	01/06/2005 & 01/06/2015	n/a
Black redstart <i>Phoenicurus ochrurus</i>	2	Weybourne	13/04/2013 & 20/04/2014	Both singing males
Cetti's warbler <i>Cettia cetti</i>	3	Weybourne	11/04/2012, 10/04/2016 & 12/04/2016	All singing males
Corn bunting <i>Emberiza calandra</i>	3	Weybourne	29/05/2005, 18/04/2006 & 17/06/2005	All singing males
Cuckoo <i>Cuculus canorus</i>	2	Weybourne	23/04/2007 & 26/05/2016	2007 record included juvenile in June
Dunnock <i>Prunella modularis</i>	2	Weybourne	01/06/2010 & 01/06/2012	Ten singing males and eight pairs respectively
Firecrest <i>Regulus ignicapillus</i>	5	Weybourne	11/05/2005, 19/04/2006, 09/05/2006, 16/06/2006 & 24/05/2015	Singing males in every record (two males in two records)
Goshawk <i>Accipiter gentilis</i>	1	Ringland	12/04/2006	Male and female in display at Slade Hills. Woodland where record is from runs through PEIR boundary.

Species	Breeding Records	Location(s)	Dates of Records	Notes
Grasshopper warbler <i>Locustella naevia</i>	4	Weybourne	19/04/2010, 20/04/2011, 05/05/2011 & 07/05/2012	All singing males
Grey partridge <i>Perdix perdix</i>	4	Weybourne	18/07/2007, 17/08/2007, 01/06/2012 & 14/06/2016	n/a
Grey wagtail <i>Motacilla cinerea</i>	7	Marlingford Mill	01/06/2007, 01/06/2010, 01/06/2011, 01/06/2012, 01/06/2013, 01/06/2014 & 04/10/2016	Breeding records outside PEIR boundary but ecologically relevant due to being located on the River Yare. There is a suitable structure (a bridge) for grey wagtail to breed at the location the PEIR boundary crosses the Yare.
Hobby <i>Falco subbuteo</i>	1	Weybourne	07/05/2013	Territorial pair along Holt-Cromer Ridge between Upper Sheringham and Weybourne - obviously breeding but nest site unknown.
Kestrel <i>Falco tinnunculus</i>	1	Weybourne	01/06/2012	n/a
Linnet <i>Linaria cannabina</i>	2	Weybourne	01/06/2010 & 01/06/2012	Eight and ten pairs respectively
Meadow pipit <i>Anthus pratensis</i>	1	Weybourne	01/06/2010	Ten pairs
Mistle thrush <i>Turdus viscivorus</i>	1	Weybourne	26/06/2016	Two adults and two juveniles
Mute swan <i>Cygnus olor</i>	1	Dunston	17/07/2011	Pair with young
Nightingale <i>Luscinia megarhynchos</i>	1	Weybourne	22/05/2007	Singing male
Nightjar <i>Caprimulgus europaeus</i>	1	Weybourne Heath	05/06/2006	Churring (displaying) male

Species	Breeding Records	Location(s)	Dates of Records	Notes
Reed bunting <i>Emberiza schoeniclus</i>	1	Weybourne	01/06/2012	Three pairs
Sand martin <i>Riparia riparia</i>	2	Weybourne	01/06/2011 & 01/06/2012	30 and ten plus nesting pairs respectively
Skylark <i>Alauda arvensis</i>	1	Weybourne	01/06/2010	17 breeding pairs
Song thrush <i>Turdus philomelos</i>	2	Weybourne	01/06/2010 & 01/06/2012	One pair and two pairs respectively
Stock dove <i>Columba oenas</i>	2	Weybourne	09/09/2008 & 01/06/2012	n/a
Swallow <i>Hirundo rustica</i>	2	Weybourne	01/06/2010 & 01/06/2012	Three and five breeding pairs respectively

4. SURVEY RESULT

Eight red listed and six amber listed species were recorded within (or just outside of) the PEIR boundary during the 2020 breeding bird surveys.

Tables 3 and 4 provide the Red and Amber list criteria. The following symbols indicate other information: † = UK BAP species; *=BoCC upgraded from amber to red in subsequent reviews of BoCC listings

Table 3: UK BoCC Red List criteria

Code	Issue
IUCN	Global Conservation Status. Species listed by Birdlife International as being Globally Threatened using IUCN criteria.
HD	Historical Decline: A severe decline in the UK population between 1800 and 1995 without substantial recent recovery.
BDp	Breeding Population Decline: Severe decline in the UK breeding population size of more than 50%, over 25 years (BDp1), or since 1969 (BDp2).
WDp	Non-breeding Population Decline: Severe decline in the UK non-breeding population size, of more than 50%, over 25 years (Wdp1) or since 1969 (WDp2).
BDr	Breeding Range Decline: Severe decline in the UK range, of more than 50%, over 25 years (BDr1) or since 1969 (BDr2).

Table 4: UK BoCC Amber List criteria

Code	Issue
ERLOB	Threatened in Europe.
HDrec	Historical Decline – Recovery: previously red listed for Historical Decline, but now with substantial recent recovery (population size has more than doubled in the last 25 years).
BDMp	Breeding Population Decline: As for red list criteria BDp1 and BDp2, but with moderate (≥ 25 - ≤ 50 %) decline.
WDMp	Non-breeding Population Decline: As for red list criteria WDp1 and WDp2, but with moderate (≥ 25 - ≤ 50 %) decline.
BDMr	Breeding Range Decline: As for red list criteria BDr1 and BDr2, but with moderate (≥ 25 - ≤ 50 %) decline.
BR and WR	Rarity: UK breeding population of less than 300 pairs (BR), or non-breeding population of less than 900 individuals (WR).
BL and WL	Localisation: At least 50% of the UK breeding (BL) or non-breeding (WL) population found in 10 or fewer sites.
BI and WI	International Importance: At least 20% of the European breeding (BI) or non-breeding (WI) population found in the UK.

The amalgamated breeding bird survey results are presented in Tables 5, 6, 7 and 8 below.

Maps showing the locations of Red, Amber and Schedule 1 listed breeding bird territories are provided in Figures 1-10, below. Areas indicated as 'No Coverage' were areas not surveyed for the following reasons:

- birds could not be recorded (seen or heard) due to limited access
- were deemed areas where no significant breeding bird impacts were envisaged e.g., areas of settlement such as Weybourne or Bodham
- an area outside the survey area at the time but is within the PEIR boundary

4.1 Weybourne to Plumstead Section

Forty-seven breeding bird species were recorded from the Weybourne to Plumstead section of the PEIR boundary, including seven Red listed, six Amber listed and two Schedule 1 species.

Table 5. Breeding Birds Recorded from the Weybourne to Plumstead Section (10km buffer from North Norfolk Coast SPA) (Figures 1-6)

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
House Sparrow <i>Passer domesticus</i>	Red listed (BD _p ¹ , BD _p ²)	1	1 pair recorded in Bodham marked by a single territory as shown in Figure 3. These will be using surrounding buildings to nest
Linnet <i>Linaria cannabina</i>	Red listed (BD _p ² , BDM _p ² , ERLOB) †	5	n/a
Marsh Tit <i>Poecile palustris</i>	Red listed (BD _p ² , BDM _p ¹ , ERLOB)	1	Recorded in Weybourne Wood
Skylark <i>Alauda arvensis</i>	Red listed (BD _p ² , BDM _p ¹ , ERLOB) †	40-60	Distributed evenly in arable land throughout this section
Song Thrush <i>Turdus philomelos</i>	Red listed (BD _p ²) †	2	n/a
Yellow Wagtail <i>Motacilla flava</i>	Red Listed (BD _p ¹ , BD _p ² , ERLOB)	1	Rare in North Norfolk. One territory recorded in field south of Manor Farm House near Baconsthorpe
Yellowhammer <i>Emberiza citrinella</i>	Red listed (BD _p ¹ , BD _p ² , ERLOB) †	17	n/a
Bullfinch <i>Pyrrhula pyrrhula</i>	Amber listed (BDM _p ¹ , BDM _p ²)	2	n/a
Dunnock	Amber listed	20	n/a

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
<i>Prunella modularis</i>	(BDM _p ²) †		
Kestrel <i>Falco tinnunculus</i>	Amber listed (BDM _p ¹ , BDM _p ²)	3	n/a
Reed bunting <i>Emberiza schoeniclus</i>	Amber listed (BDM _p ²)	3	n/a
Stock Dove <i>Columba oenas</i>	Amber listed (BI)	3	n/a
Tawny Owl <i>Strix aluco</i>	Amber listed	1	n/a
Blackbird <i>Turdus merula</i>	Green listed	10-20	n/a
Blackcap <i>Sylvia atricapilla</i>	Green listed	20-30	n/a
Blue Tit <i>Cyanistes caeruleus</i>	Green listed	10-20	n/a
Buzzard <i>Buteo buteo</i>	Green listed	1-10	n/a
Carrion Crow <i>Corvus corone</i>	Green listed	1-10	n/a
Cetti's Warbler <i>Cettia cetti</i>	Schedule 1 & Green Listed	1	Recorded in reedbeds by Weybourne Beach Car park
Chaffinch <i>Fringilla coelebs</i>	Green Listed	10-20	n/a
Chiffchaff <i>Phylloscopus collybita</i>	Green listed	10-20	n/a
Coal Tit <i>Periparus ater</i>	Green listed	20-30	n/a
Firecrest <i>Regulus ignacapillus</i>	Schedule 1 & Green listed	9	Recorded in Weybourne Wood
Goldcrest <i>Regulus regulus</i>	Green listed	20-30	n/a
Goldfinch <i>Carduelis carduelis</i>	Green listed	1-10	n/a
Great Spotted Woodpecker <i>Dendrocopos major</i>	Green listed	1-10	n/a

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
Great Tit <i>Parus major</i>	Green listed	10-20	n/a
Greenfinch <i>Chloris chloris</i>	Green listed	1-10	n/a
Green Woodpecker <i>Picus viridis</i>	Green listed	1-10	n/a
Jackdaw <i>Corvus monedula</i>	Green listed	1-10	n/a
Jay <i>Garrulus glandarius</i>	Green listed	1-10	n/a
Lesser Whitethroat <i>Sylvia curruca</i>	Green listed	1-10	n/a
Long-tailed Tit <i>Aegithalos caudatus</i>	Green listed	1-10	n/a
Magpie <i>Pica pica</i>	Green listed	1-10	n/a
Nuthatch <i>Sitta europaea</i>	Green listed	1-10	n/a
Reed Warbler <i>Acrocephalus scirpaceus</i>	Green listed	4	Breeding in reedbed at Weybourne
Robin <i>Erithacus rubecula</i>	Green listed	20-30	n/a
Sand Martin <i>Riparia riparia</i>	Green listed	38 apparently occupied burrows	Breeding in cliffs at Weybourne. Number of apparently occupied burrows estimated from number of birds present in active colonies and number of burrows present in cliffs. Active colony location is depicted as a single sand martin territory in Figure 1
Sedge Warbler <i>Acrocephalus schoenobaenus</i>	Green listed	5-10	Breeding in reedbed at Weybourne
Siskin <i>Spinus spinus</i>	Green listed	20-30	Recorded in Weybourne Wood
Stonechat <i>Saxicola rubicola</i>	Green listed	2	n/a
Treecreeper <i>Certhia familiaris</i>	Green listed	1-10	n/a

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
Whitethroat <i>Sylvia communis</i>	Green listed	20-30	n/a
Wood Pigeon <i>Columba palumbus</i>	Green listed	50-100	n/a
Wren <i>Troglodytes troglodytes</i>	Green listed	1-10	n/a
Pheasant <i>Phasianus colchicus</i>	Not listed	1-10	n/a
Red-legged Partridge <i>Alectoris rufa</i>	Not listed	1-10	n/a

Sand martins *Riparia riparia* were recorded breeding in the cliffs at Weybourne. Thirty-eight apparently occupied burrows were estimated from the number of birds recorded along the cliffs and the total number of burrows observed within the PEIR boundary. The location of this active colony is marked as a single sand martin territory in Figure 1.

Species such as skylarks *Alauda arvensis* (4 territories) were recorded breeding in the grassland and fields inland from the cliffs within the PEIR boundary. Forty to sixty skylark territories were recorded in the whole section between Weybourne and Plumstead. These are evenly distributed in arable fields within this section of the survey area. One territory of the Schedule 1 species Cetti's warbler was recorded in the reedbed beside the Weybourne beach car park. Three Reed bunting *Emberiza schoeniclus* territories were also recorded in the reedbed here.

One yellow wagtail *Motacilla flava* territory was recorded inland in an arable field south of Manor Farm House near Baconsthorpe (Figure 5). This is a rare breeder in North Norfolk with the Norfolk Bird Atlas⁶ showing a scattered distribution of confirmed territories along the North Norfolk coast.

Within Weybourne Wood, one territory of Red listed marsh tit *Poecile palustris* and song thrush *Turdus philomelos*, and Amber listed tawny owl *Strix aluco* were recorded within the PEIR boundary. Nine firecrest (which is also a Schedule 1 species) territories were also recorded here. Other common woodland species were recorded in the woodland with three territories of stock dove *Columba oenas* and three dunnock *Prunella modularis* territories here.

Further inland (between Weybourne Wood and Plumstead), records consisted mainly of small numbers of Red and Amber listed farmland birds such as skylark (40-50 territories), yellowhammer *Emberiza citrinella* (14 territories) and linnet *Linaria cannabina* (four territories). Dunnock (16 territories) and bullfinch *Pyrrhula pyrrhula* (one territory) were

⁶ Taylor, M. & Marchant, J.H. (2011). *The Norfolk Bird Atlas: Summer and Winter Distributions 1999-2007*. British Trust for Ornithology.

recorded in scrubby vegetation and hedgerows.

House sparrows *Passer domesticus* were recorded in areas of urban settlements and will be breeding in surrounding buildings. Number of territories were difficult to determine within these surveys due to access restrictions, so locations recorded are given for this species. One house sparrow pair was recorded in Bodham. Three kestrel *Falco tinnunculus* territories were recorded in this section of the survey area with birds being recorded hunting more than once in these areas to justify a breeding territory nearby.

4.2 River Wensum Section

Surveys in the Wensum area recorded a total of 32 breeding species.

Table 6. Breeding Birds Recorded from the River Wensum Section (Figures 7 & 8)

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
Grey Wagtail <i>Motacilla cinerea</i>	Red listed (BDM _p ²)	1	Recorded by A1067 bridge over River Wensum
House Sparrow <i>Passer domesticus</i>	Red listed (BD _p ¹ , BD _p ²)	2	Two locations where this species was recorded are marked by a territory as shown in Figure 7. Groups of 1 and 2 pairs recorded which will be using surrounding buildings to nest.
Linnet <i>Linaria cannabina</i>	Red listed (BD _p ² , BDM _p ² , ERLOB) †	3	n/a
Skylark <i>Alauda arvensis</i>	Red listed (BD _p ² , BDM _p ¹ , ERLOB) †	15-20	n/a
Song Thrush <i>Turdus philomelos</i>	Red listed (BD _p ²) †	4	n/a
Yellowhammer <i>Emberiza citrinella</i>	Red listed (BD _p ¹ , BD _p ² , ERLOB) †	2	n/a
Bullfinch <i>Pyrrhula pyrrhula</i>	Amber listed (BDM _p ¹ , BDM _p ²)	1	n/a
Dunnock <i>Prunella modularis</i>	Amber listed (BDM _p ²) †	12	n/a
Stock Dove <i>Columba oenas</i>	Amber listed (BI)	1	n/a

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
Blackbird <i>Turdus merula</i>	Green listed	1-10	n/a
Blackcap <i>Sylvia atricapilla</i>	Green listed	1-10	n/a
Blue Tit <i>Cyanistes caeruleus</i>	Green listed	1-10	n/a
Buzzard <i>Buteo buteo</i>	Green listed	1-10	n/a
Carrion Crow <i>Corvus corone</i>	Green listed	1-10	n/a
Chaffinch <i>Fringilla coelebs</i>	Green listed	10-20	n/a
Chiffchaff <i>Phylloscopus collybita</i>	Green listed	1-10	n/a
Coal Tit <i>Periparus ater</i>	Green listed	1-10	n/a
Collared Dove <i>Streptopelia decaocto</i>	Green listed	1-10	n/a
Great Spotted Woodpecker <i>Dendrocopos major</i>	Green listed	1-10	n/a
Great Tit <i>Parus major</i>	Green listed	1-10	n/a
Green Woodpecker <i>Picus viridis</i>	Green listed	1-10	n/a
Jackdaw <i>Corvus monedula</i>	Green listed	1-10	n/a
Jay <i>Garrulus glandarius</i>	Green listed	1-10	n/a
Lesser Whitethroat <i>Sylvia curruca</i>	Green listed	1-10	n/a
Long-tailed Tit <i>Aegithalos</i>	Green listed	1-10	n/a

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
<i>caudatus</i>			
Magpie <i>Pica pica</i>	Green listed	1-10	n/a
Robin <i>Erithacus rubecula</i>	Green listed	1-10	n/a
Whitethroat <i>Sylvia communis</i>	Green listed	1-10	n/a
Wood Pigeon <i>Columba palumbus</i>	Green listed	20-50	n/a
Wren <i>Troglodytes troglodytes</i>	Green listed	10-20	n/a
Pheasant <i>Phasianus colchicus</i>	Not listed	1-10	n/a
Red-legged Partridge <i>Alectoris rufa</i>	Not listed	1-10	n/a

There were high numbers of skylark (15-20 territories) and dunnock (12 territories) recorded in this area.

House sparrows were recorded in similar habitat to that in the Weybourne to Plumstead section, being noted in gardens and hedgerows in the village of Attlebridge where they will be breeding in nearby buildings. Two separate locations of one and two pairs were recorded of this species in the village. Grey wagtail was also recorded at Attlebridge with a territory on the River Wensum, although record is outside of the PEIR boundary.

The other red and amber listed species recorded were a mix of small numbers of farmland and woodland birds such as yellowhammer (two territories) and song thrush (four territories).

4.3 River Yare Section

Twenty species were recorded in the River Yare section of the PEIR boundary. Four Red listed and one Amber listed species were recorded in this survey area.

Table 7. Breeding Birds Recorded from the River Yare Section (Figure 9)

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
Linnet <i>Linaria cannabina</i>	Red listed (BD _p ² , BDM _p ² , ERLOB) †	1	n/a
S skylark <i>Alauda arvensis</i>	Red listed (BD _p ² , BDM _p ¹ , ERLOB) †	5-10	n/a
Song Thrush <i>Turdus philomelos</i>	Red listed (BD _p ²) †	1	n/a
Yellowhammer <i>Emberiza citronella</i>	Red listed (BD _p ¹ , BD _p ² , ERLOB) †	1	n/a
Dunnock <i>Prunella modularis</i>	Amber listed (BDM _p ²) †	3	n/a
Blackbird <i>Turdus merula</i>	Green listed	1-10	n/a
Blackcap <i>Sylvia atricapilla</i>	Green listed	1-10	n/a
Blue Tit <i>Cyanistes caeruleus</i>	Green listed	1-10	n/a
Carrion Crow <i>Corvus corone</i>	Green listed	1-10	n/a
Chaffinch <i>Fringilla coelebs</i>	Green listed	1-10	n/a
Chiffchaff <i>Phylloscopus collybita</i>	Green listed	1-10	n/a
Great Tit <i>Parus major</i>	Green listed	1-10	n/a
Greenfinch <i>Chloris chloris</i>	Green listed	1-10	n/a

Species	UK BoCC Conservation Status	Number of Territories recorded within and close to the PEIR boundary	Notes
Jackdaw <i>Corvus monedula</i>	Green listed	1-10	n/a
Robin <i>Erithacus rubecula</i>	Green listed	1-10	n/a
Whitethroat <i>Sylvia communis</i>	Green listed	1-10	n/a
Wood Pigeon <i>Columba palumbus</i>	Green listed	1-10	n/a
Wren <i>Troglodytes troglodytes</i>	Green listed	1-10	n/a
Pheasant <i>Phasianus colchicus</i>	Not listed	1-10	n/a
Red-legged Partridge <i>Alectoris rufa</i>	Not listed	1-10	n/a

As with the previous sections, the species with the largest number of territories recorded was skylark with 5-10 territories recorded. Other significant species were farmland and woodland birds such as song thrush (one territory) and dunnock (three territories).

4.4 Substation Section

Similarly, to the above sections, most observations around the Onshore Substation sites comprised low numbers of Red and Amber listed farmland and woodland species. Three Red listed and three Amber listed species were recorded here (21 species recorded in total).

Table 8. Breeding Birds Recorded from the Sub-station Section (Figure 10)

Species	UK BoCC Conservation Status	Number of Territories recorded within Ecology Survey Area
Linnet <i>Linaria cannabina</i>	Red listed (BD _p ² , BDM _p ² , ERLOB) †	2
Skylark <i>Alauda arvensis</i>	Red listed (BD _p ² , BDM _p ¹ , ERLOB) †	20-25
Yellowhammer <i>Emberiza citrinella</i>	Red listed (BD _p ¹ , BD _p ² , ERLOB) †	6
Bullfinch <i>Pyrrhula pyrrhula</i>	Amber listed (BDM _p ¹ , BDM _p ²)	1
Dunnock <i>Prunella modularis</i>	Amber listed (BDM _p ²) †	6
Kestrel <i>Falco tinnunculus</i>	Amber listed (BDM _p ¹ , BDM _p ²)	1
Blackbird <i>Turdus merula</i>	Green listed	5-10
Blackcap <i>Sylvia atricapilla</i>	Green listed	10-20
Blue Tit <i>Cyanistes caeruleus</i>	Green listed	5-10
Chaffinch <i>Fringilla coelebs</i>	Green listed	5-10
Chiffchaff <i>Phylloscopus collybita</i>	Green listed	5-10
Goldfinch <i>Carduelis carduelis</i>	Green listed	1
Great Spotted Woodpecker <i>Dendrocopos major</i>	Green listed	1
Great Tit <i>Parus major</i>	Green listed	5-10

Species	UK BoCC Conservation Status	Number of Territories recorded within Ecology Survey Area
Long-tailed Tit <i>Aegithalos caudatus</i>	Green listed	1-10
Robin <i>Erithacus rubecula</i>	Green listed	5-10
Whitethroat <i>Sylvia communis</i>	Green listed	10-20
Wood Pigeon <i>Columba palumbus</i>	Green listed	1-10
Wren <i>Troglodytes troglodytes</i>	Green listed	5-10
Pheasant <i>Phasianus colchicus</i>	Not listed	1-10
Red-legged Partridge <i>Alectoris rufa</i>	Not listed	1-10

Six dunnoek territories and six yellowhammer territories were recorded in hedgerows and arable margins, and 20-25 skylark territories in arable fields

4.5 Constraints and Limitations of Survey

A notable constraint to the 2020 breeding bird survey effort was limited landowner access for the areas that had been identified to be surveyed. As minimal landowner access was available at the time of the breeding bird survey, the 2020 field surveys were mainly conducted from public roads and PRowS. This resulted in some areas receiving only partial or no survey coverage. This particularly applied to inaccessible areas of Weybourne Wood (as shown in Figures 1-10).

Additionally, the surveys were conducted within and along an onshore cable corridor which has since been further refined. This has resulted in the surveys not covering all parts of the PEIR boundary, most notably within the section to the north of Weybourne village, and within the Wensum and substation areas. Despite this, the results obtained from the 2020 breeding bird survey effort do provide a useful baseline data set and therefore the results obtained have enabled an understanding of the area for its use and value for breeding birds to be made.

4.6 Further Survey Requirements and Expiry Dates

Further surveys within the breeding season (March to July 2021) undertaken within the PEIR boundary will be required to inform a detailed impact assessment on breeding bird species. Future surveys will focus on the PEIR boundary.

5. CONCLUSIONS

The breeding bird surveys recorded territories of 16 species of Red and Amber and Schedule 1 listed species. Another species of conservation significance recorded was sand martins which are nesting in the cliffs at Weybourne where the cable landfall is proposed. The majority of breeding bird species recorded during the survey effort included farmland species such as skylark, meadow pipit, yellowhammer and linnet.

Two Schedule 1 breeding species (Cetti's warbler and firecrest) were recorded in the current survey area. One Cetti's warbler territories was recorded in the reedbed beside Weybourne Beach Car Park. Nine firecrest territories were recorded within Weybourne Wood. Single marsh tit and tawny owl territories were recorded here too. A single grey wagtail territory was recorded on the River Wensum at Attlebridge with no other significant riverine breeding species recorded within the current survey area.

A lack of landowner access and evolving survey buffers were constraints to the survey, and updated surveys are advised. Following the updated surveys, the PEIR will be updated detailing appropriate advice for mitigation regarding sensitive breeding bird species.

APPENDIX

Figure 1: Breeding Bird Survey Area and Species Territories at Weybourne

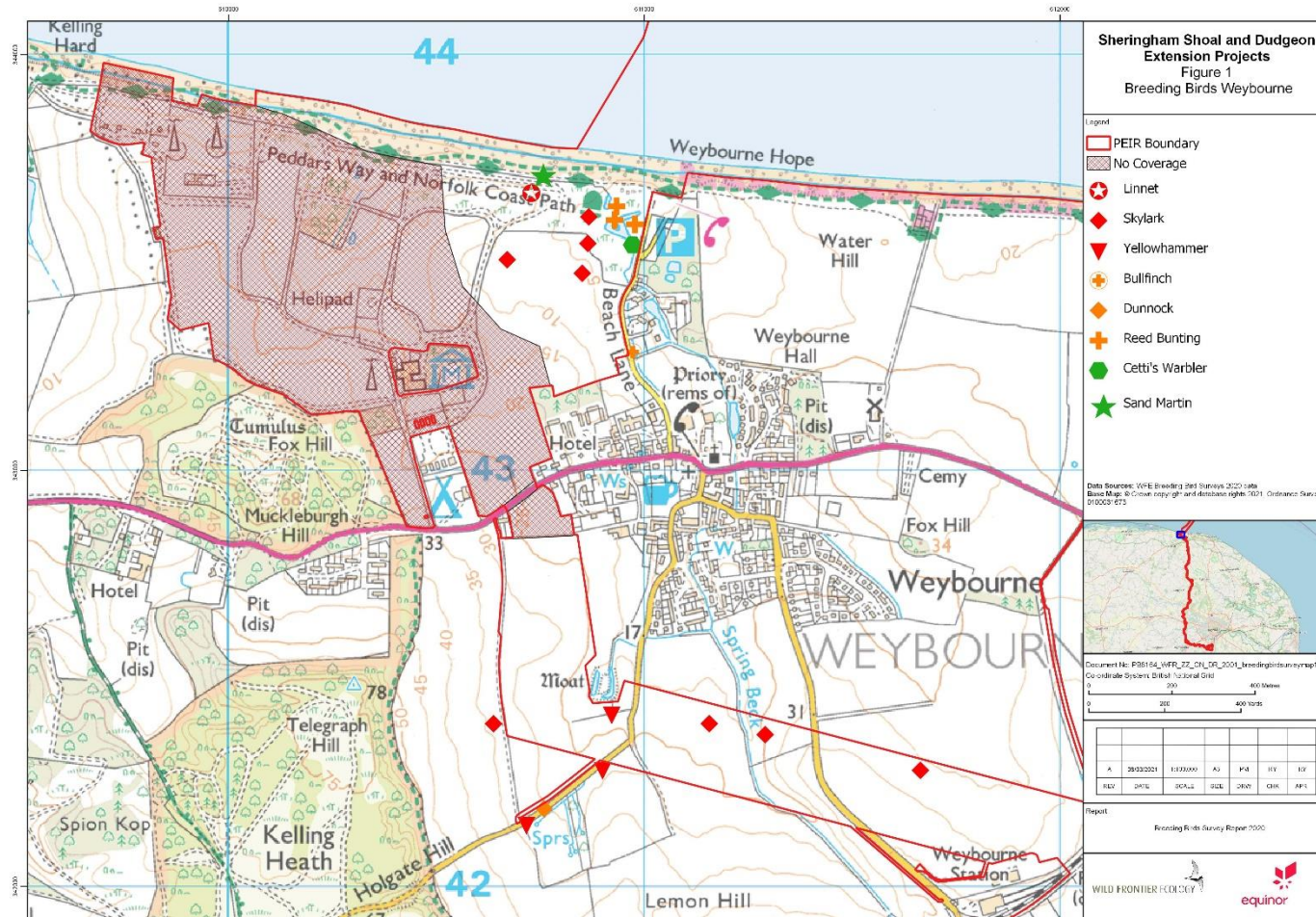


Figure 2: Breeding Bird Survey Area and Species Territories at Weybourne Wood

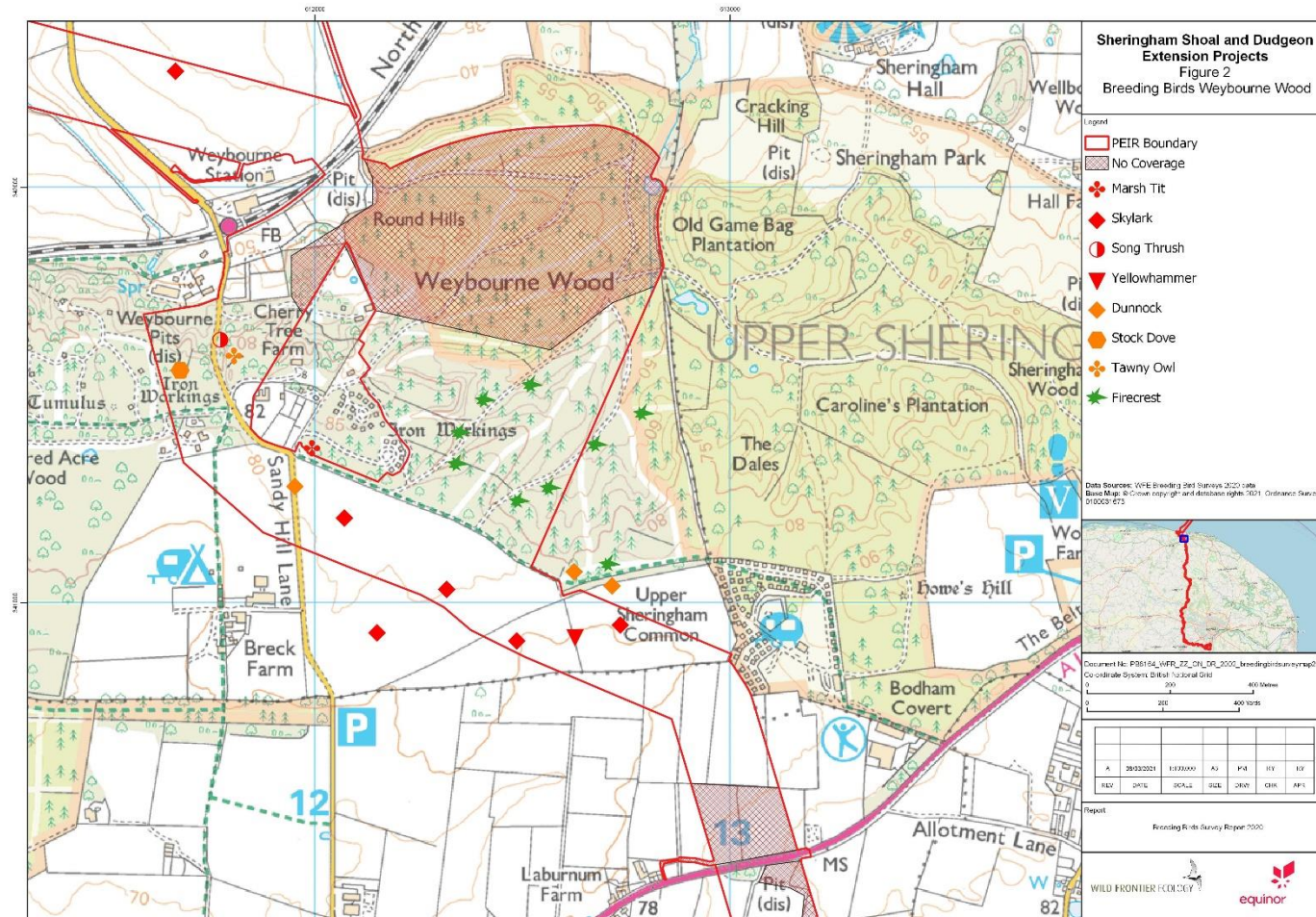


Figure 3: Breeding Bird Survey Area and Species Territories at Bodham

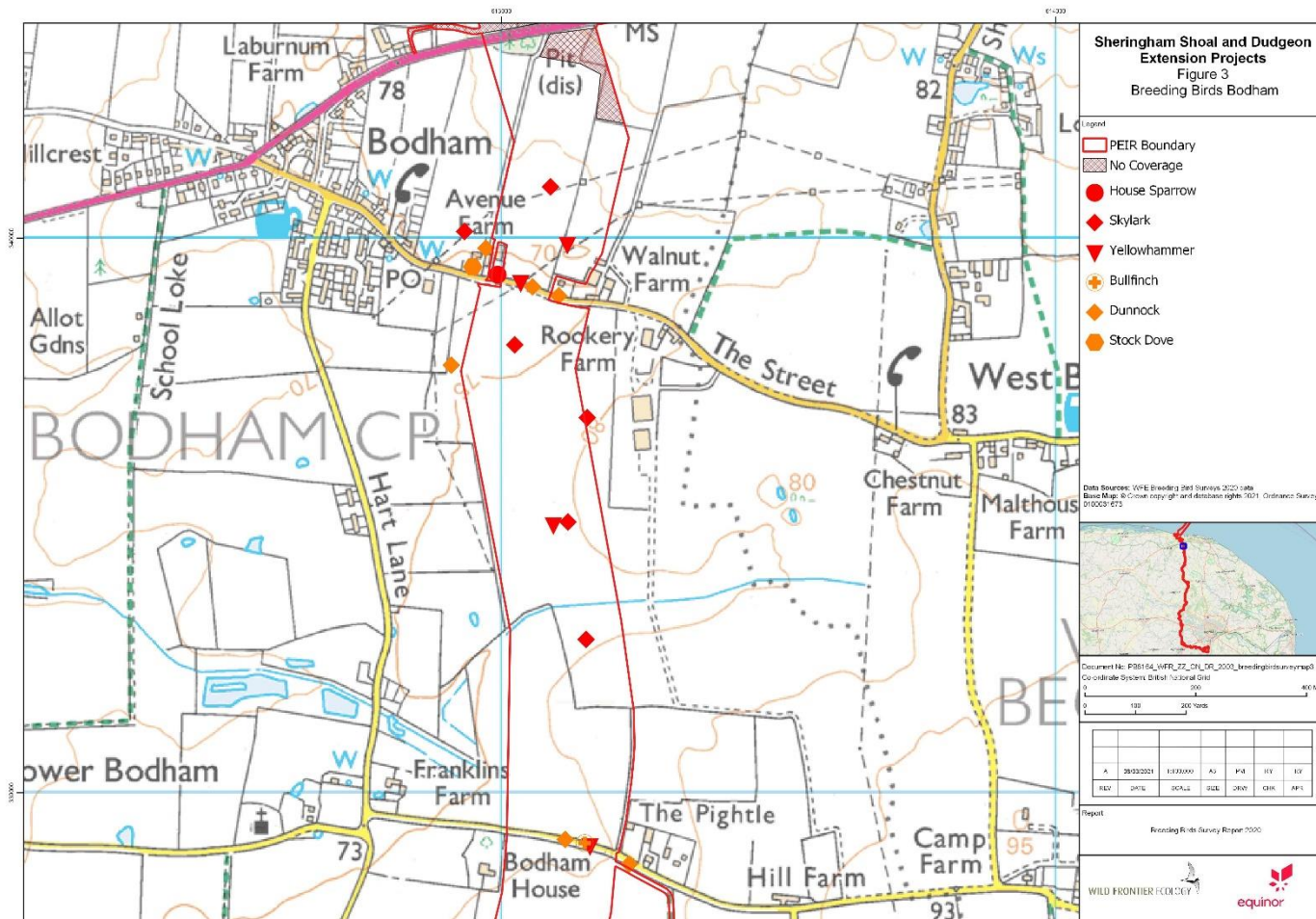


Figure 4: Breeding Bird Survey Area Species Territories at Lower Bodham

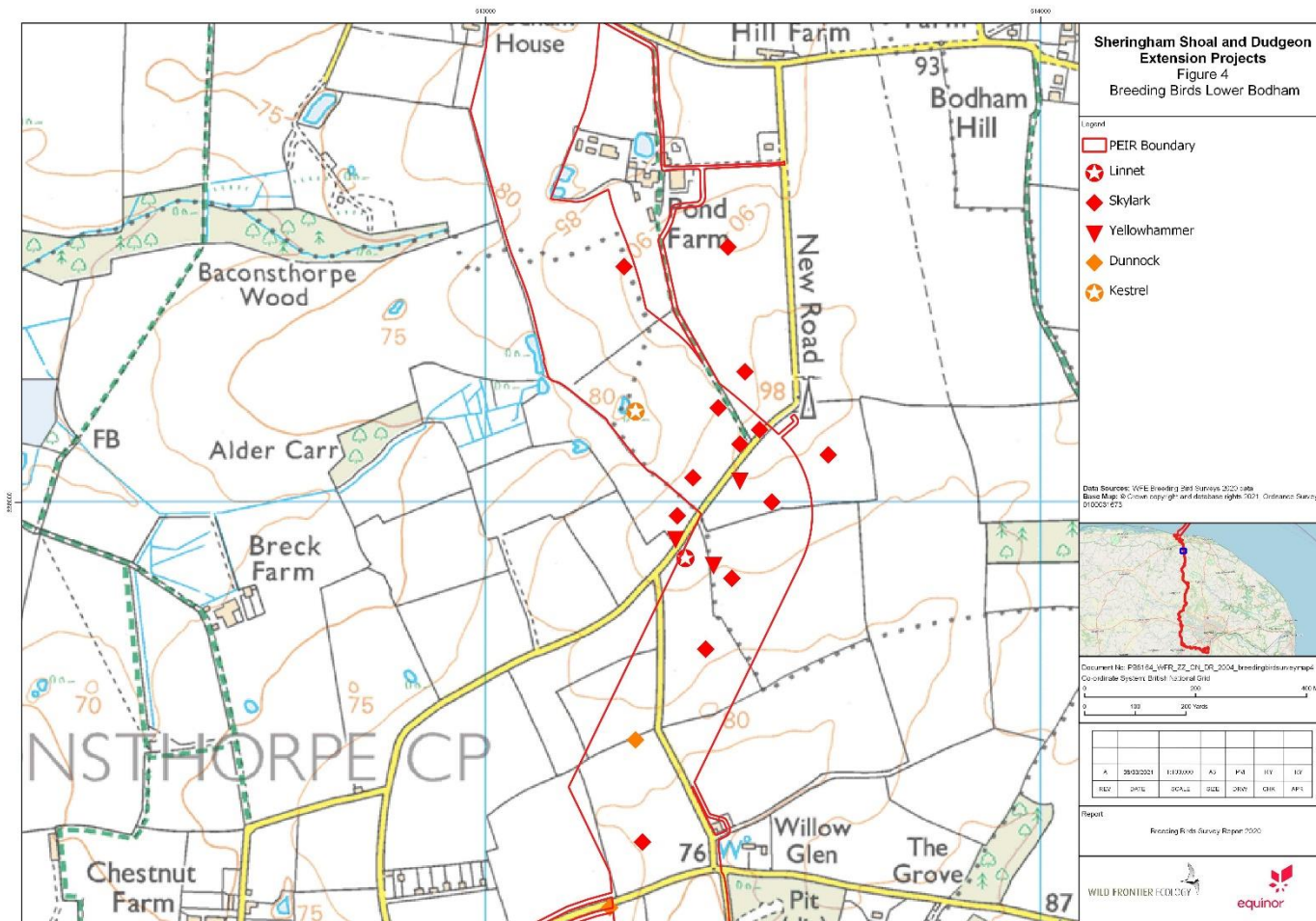


Figure 5: Breeding Bird Survey Area and Species Territories at Baconsthorpe

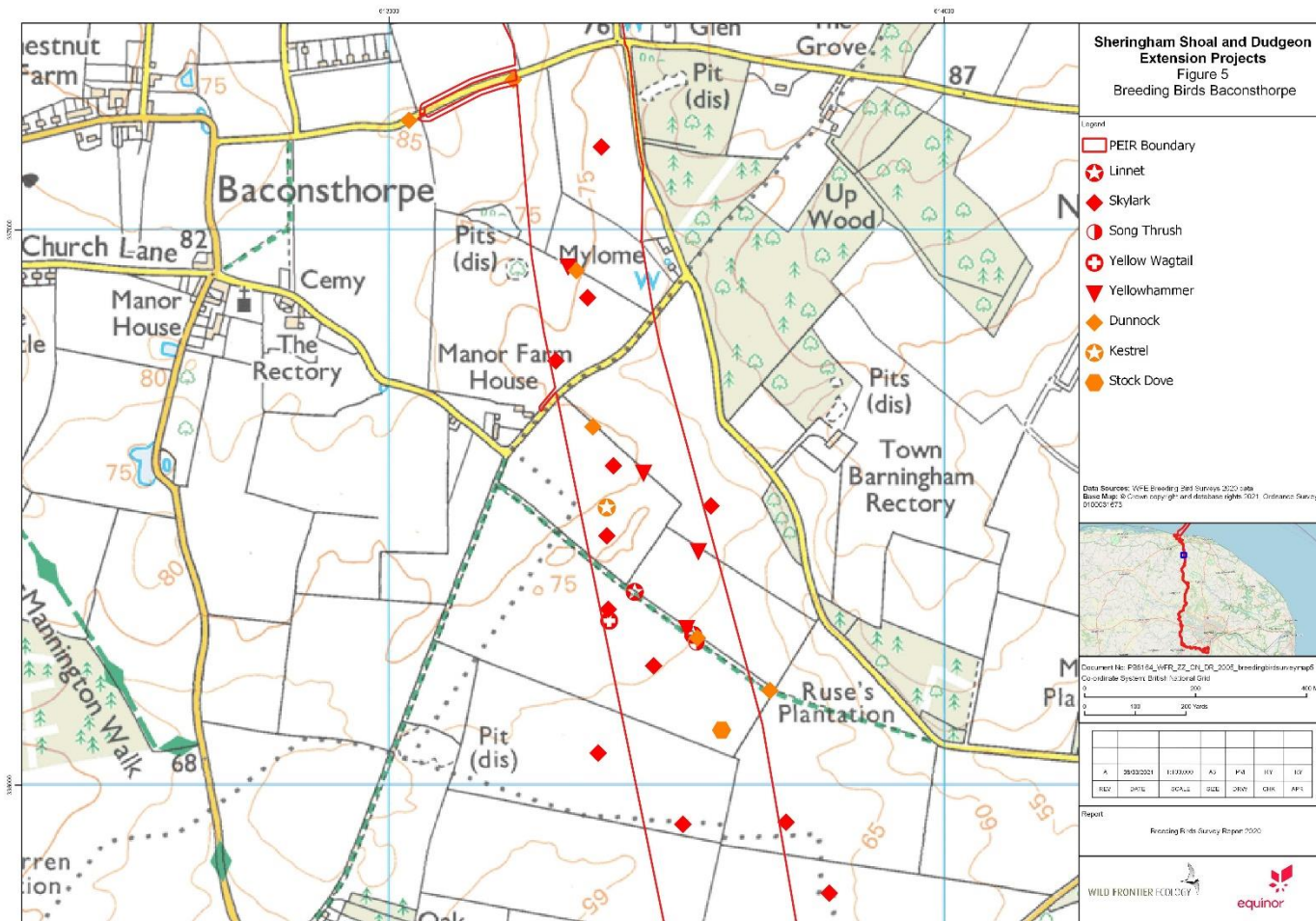


Figure 6: Breeding Bird Survey Area and Species Territories at Plumstead

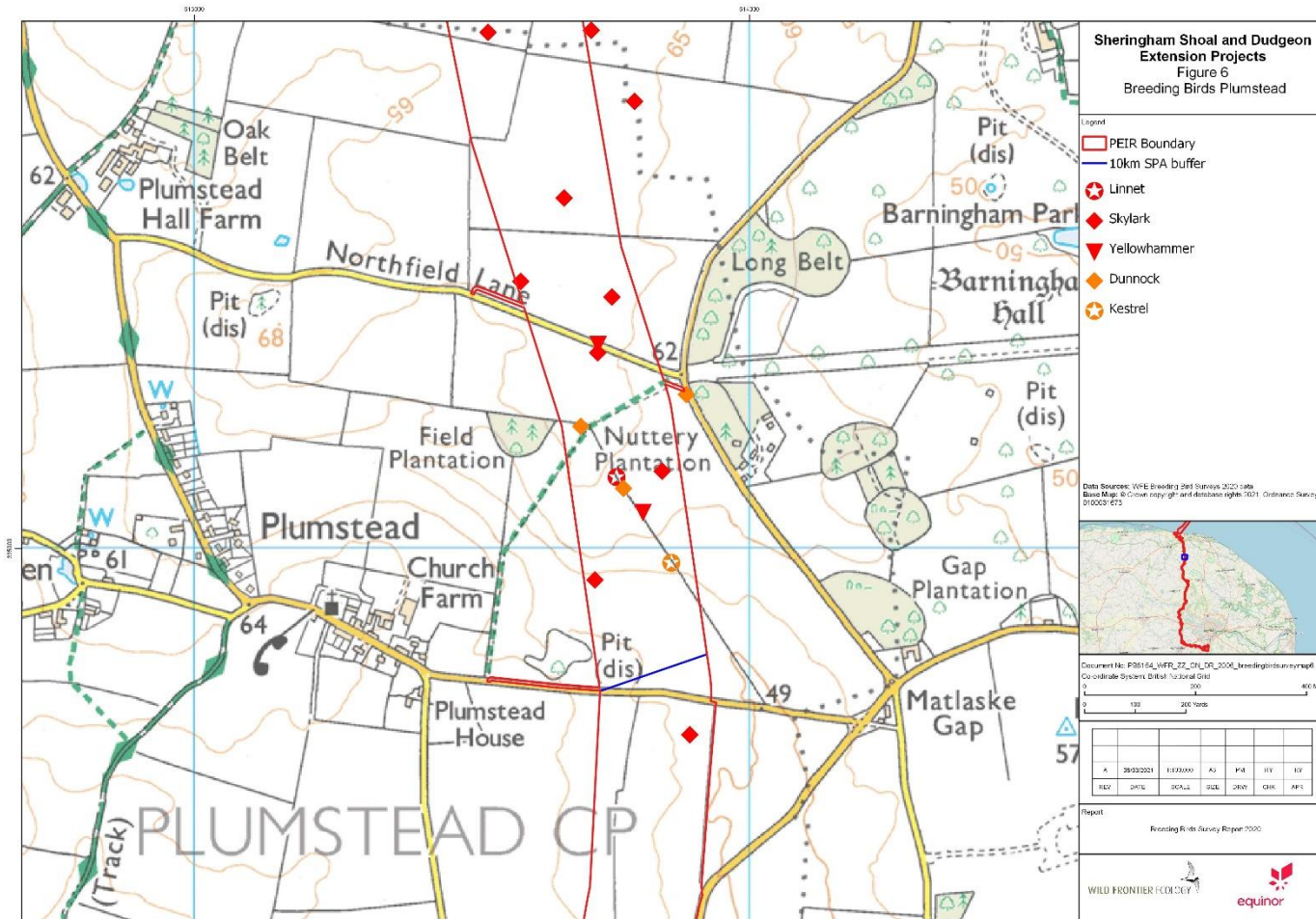


Figure 7: Breeding Bird Survey Area and Species Territories at Attlebridge (Wensum Section)

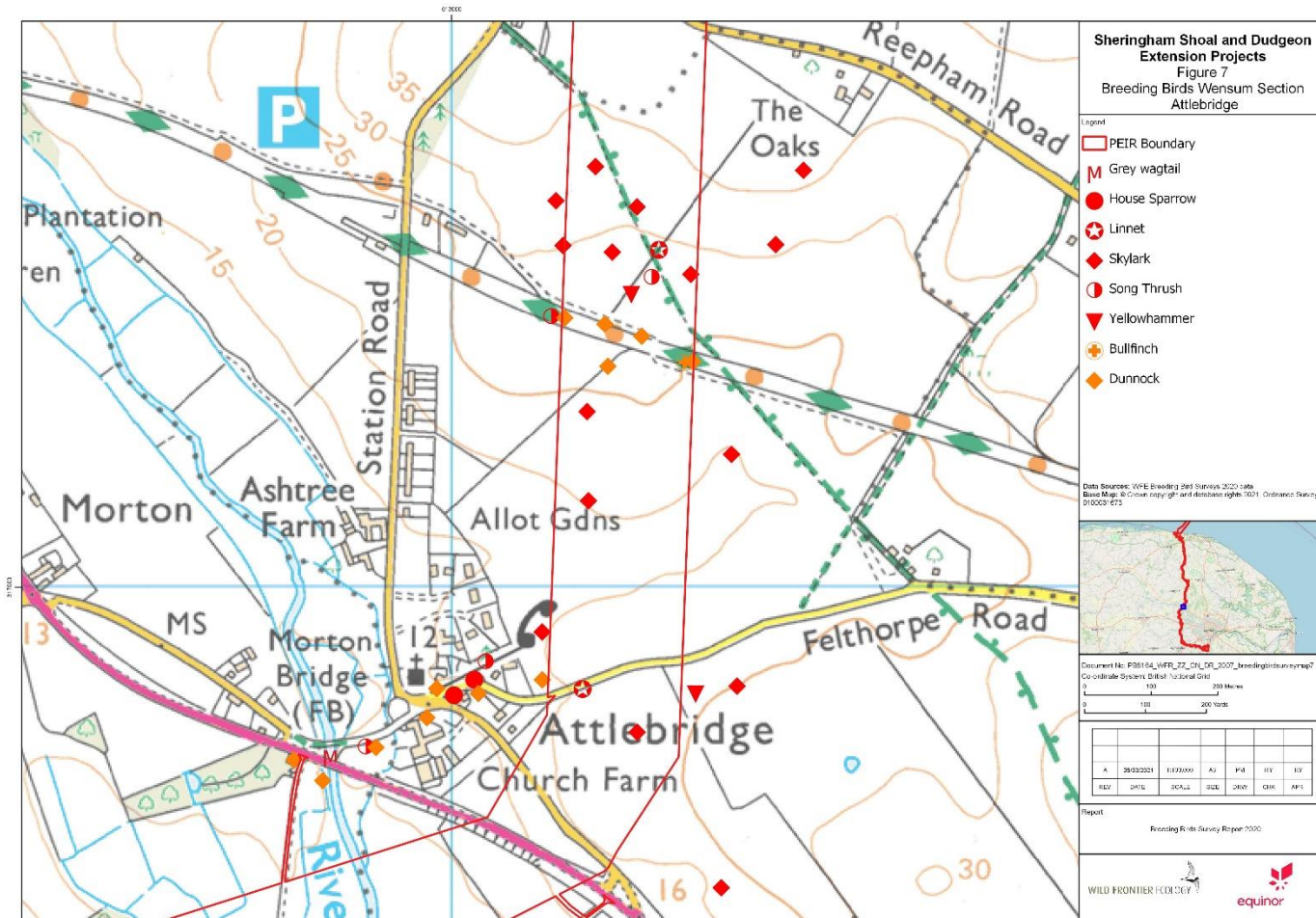


Figure 8: Breeding Bird Survey Area and Species Territories at Weston (Wensum Section)

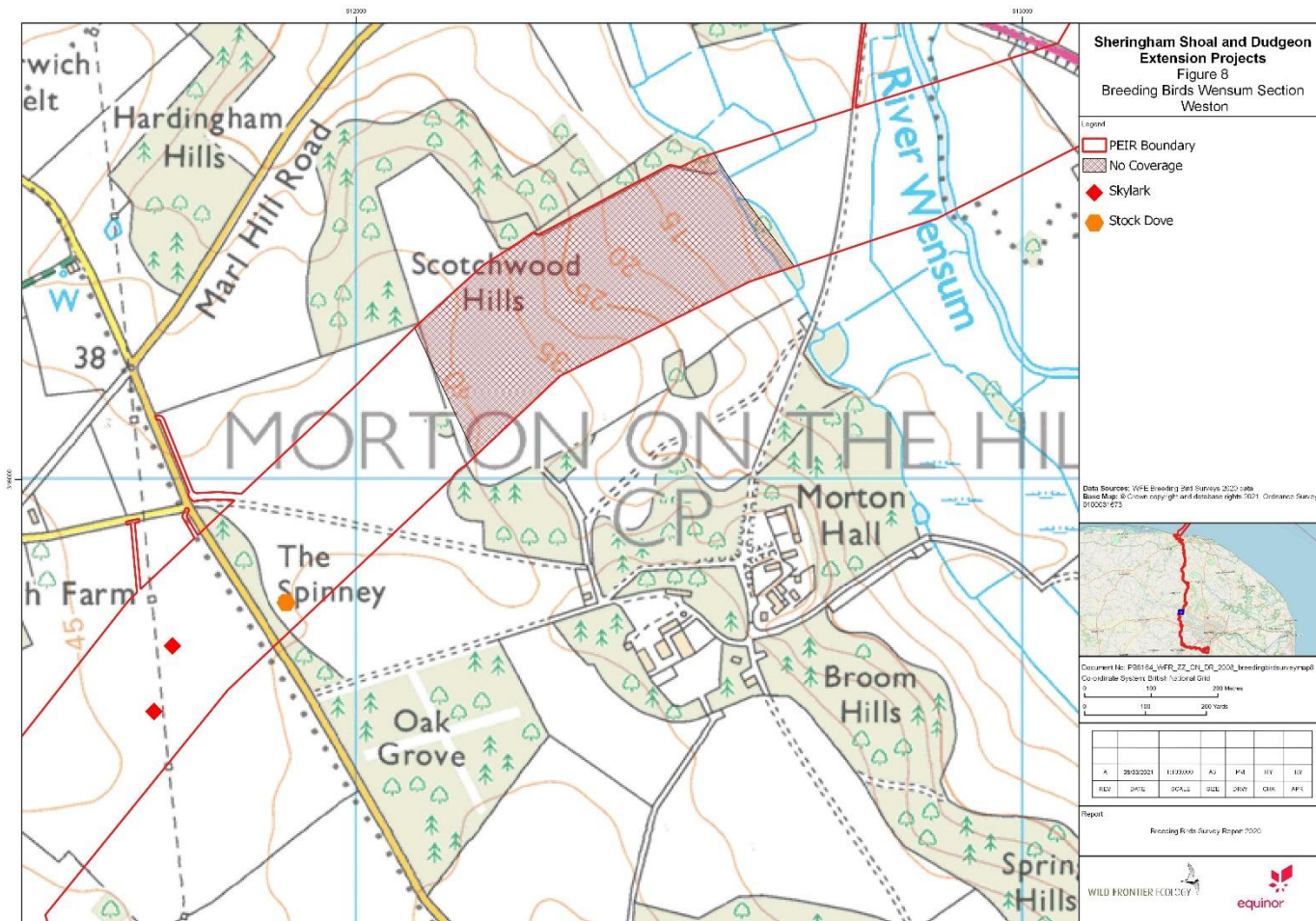


Figure 9: Breeding Bird Survey Area and Species Territories at Yare Section

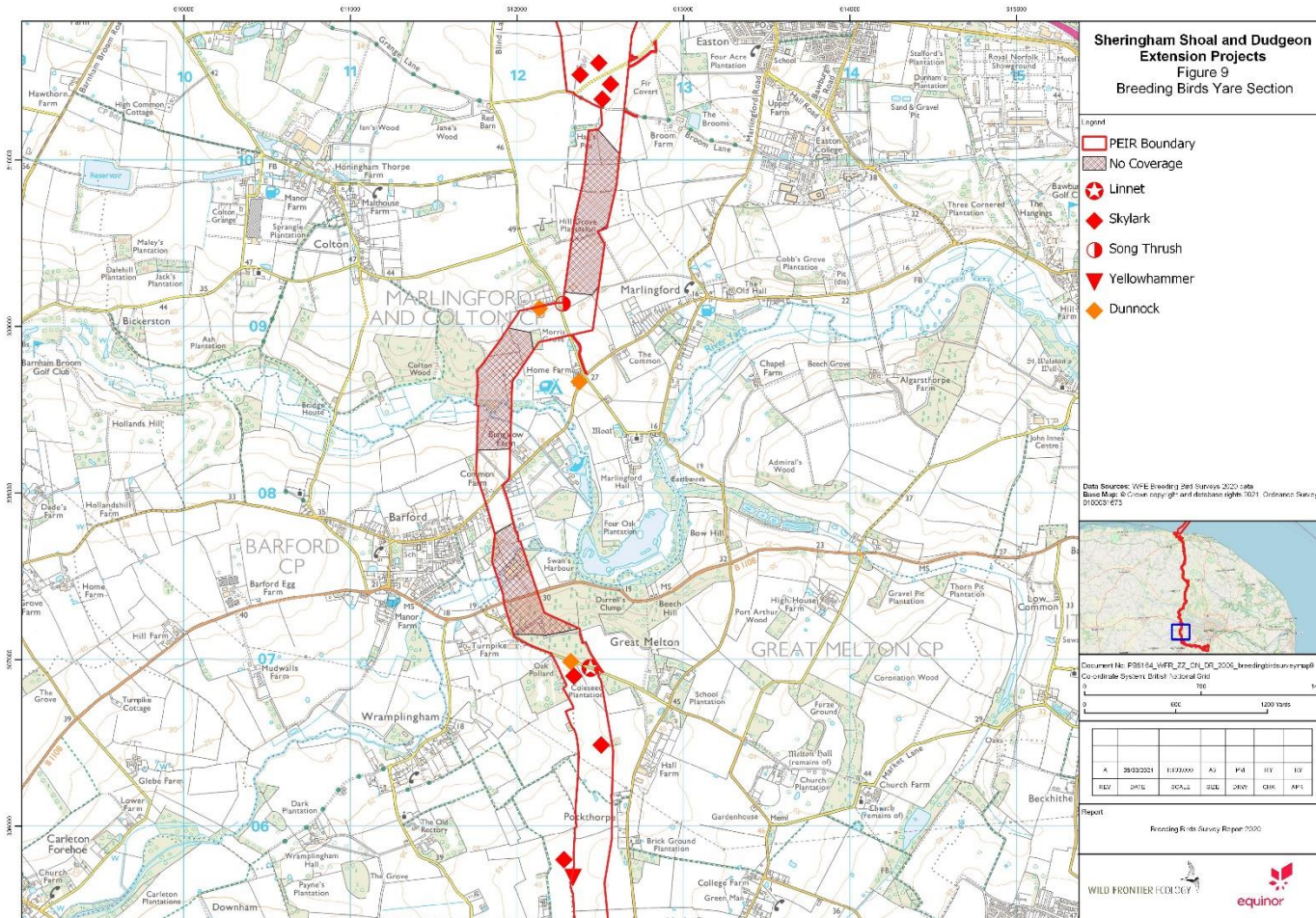


Figure 10: Breeding Bird Survey Area Species Territories at onshore substation sites

