



Dudgeon and Sheringham Shoal Offshore Wind Farm Extensions

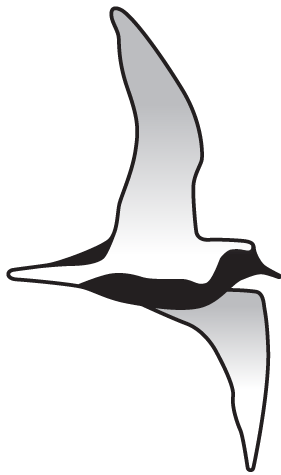
Preliminary Environmental Information Report

Volume 3

Appendix 22.4 - Overwintering Bird Survey

April 2021

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Royal HaskoningDHV	
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WILD FRONTIER ECOLOGY

Dudgeon and Sheringham Shoal Offshore Wind Farm
Extensions Projects



Wintering Birds Survey Report 2019-20

January 2021

Report produced by	Produced on behalf of
<p>Written by: Graham Riley BSc ACIEEM</p> <p>Checked by: Robert Yaxley BSc CEcol CEnv MCIEEM</p> <p>Authorised by: Robert Yaxley BSc CEcol CEnv MCIEEM 28th August 2020</p>	<p>Equinor New Energy Limited Forusbeen 50 4035 Stavanger Norway</p>
<p>Wild Frontier Ecology Ltd. Unit 2, Cold Blow Farm Great Snoring, Fakenham Norfolk, NR21 0HF Tel: 01328 864633 will@wildfrontier-ecology.co.uk</p>	

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Company Registered in England and Wales No 4942219.

VAT Reg No. 887 4692 54

Registered Office: Saxon House, Hellesdon Park Road, Drayton High Road, Norwich NR6 5DR

Director: Robert Yaxley BSc (Hons) CEcol CEnv MCIEEM.

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.
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

Term	Explanation
	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 a wintering bird survey of the areas within the onshore scoping area of the Dudgeon and Sheringham Shoal Extension Projects.

The surveys were undertaken between November 2019 and March 2020 and were conducted from roads and Public Rights of Way (PRoW) as no landowner access was available throughout the entire surveying period.

At the time of the surveys two potential cable landfall locations were being considered, a western route from Weybourne in the north to a proposed onshore substation near to the south of Norwich, and an eastern route running from Bacton and terminating in the same area. Subsequently the western route was selected and consequently this report only presents survey information relevant to this route.

Field surveys were conducted in all areas within 10 kilometres of European Designated Sites (Special Protection Areas (SPA) and Special Areas of Conservation (SAC)) which comprised North Norfolk Coast SPA and Broadland SPA (see figures 1 - 3). Surveys were also undertaken along the River Wensum SAC corridor (500 metre buffer) where it intersects with the route near Attlebridge and in the vicinity of the proposed Norwich main substation (within 10km buffer from Broadland SPA).

The survey recorded all Red and Amber listed species of Conservation Concern (BoCC), Schedule 1, and qualifying species for the relevant SPAs. The full list of target species is detailed within section 4 of this report.

Numbers of target species recorded during the surveys were low, comprising individuals and small groups of red and amber listed farmland species such as skylark, yellowhammer, meadow pipit and stock dove. There were no flocks of wintering waders and wildfowl recorded within the PEIR boundary and no significant species or concentrations were observed.

Due to the changes in the onshore cable corridor after the field surveys had been conducted, extensive areas that were surveyed are not within the PEIR boundary (particularly within the Weybourne cliffs, River Wensum and onshore substation sites), while the sections from Weybourne beach through to Weybourne Wood and current River Wensum Corridor were largely under-recorded. Other areas (i.e. Weybourne Wood and Kelling Heath Campsite areas) received little or no coverage due to the lack of landowner access. These landowner access/coverage constraints will be addressed by conducting further over-wintering bird surveys during the 2020/21 winter season (surveys currently ongoing). Survey coverage will also be improved by having landowner access to the land parcels rather than being restricted to roads and PRoWs.

Despite these issues the surveys represent a valid initial assessment of the habitats and species associated with the PEIR boundary.

2. BACKGROUND

Equinor New Energy Limited (hereafter the Applicant) is proposing to extend the existing operational Dudgeon and Sheringham Offshore Wind Farms, named the Dudgeon Extension Project (hereafter DEP) and Sheringham 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 to undertake wintering bird surveys to inform an impact assessment of the proposed onshore grid connection (a subterranean cable) for the permitted 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 wintering birds which were completed between November 2019 and March 2020.

3. RELEVANT LEGISLATION AND POLICY

3.1 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*) 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.

3.2 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 SACs, 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 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.

4. SURVEY METHODS

4.1. Desk Study

The field survey areas were identified from a desk-based review of Ordnance Survey (OS) maps and other freely available mapping software such as Google Earth and Magic Map Application and comprised those parts of the scoping area that were deemed potentially the most sensitive areas with suitable habitat for wintering birds. At the time of the wintering bird surveys the onshore scoping area had three distinct sections: a southern section running from the proposed substation 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. After the completion of the field surveys the eastern section was no longer being considered as a viable option and therefore this report presents and draws on only the data collected from the western route.

The survey zones along the western route included those areas within 10km of European Protected Sites, namely the North Norfolk Coast and Broadland SPA's. The northernmost survey section of the route, from Weybourne to Plumstead (within 10km of the North Norfolk Coast SPA) has 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 (500 m buffer) and the southern section of the route close to the proposed onshore substation, within 10km of the Broadland SPA, were also identified as having the potential to support populations of wintering bird species.

A list of target species for the field surveys was compiled and is as follows:

Table 1. Field Survey Target Species

<u>Common Name</u>	<u>Scientific Name</u>
Whooper Swan	<i>Cygnus cygnus</i>
Bewick's Swan	<i>Cygnus bewickii</i>
Bean goose	<i>Anser fabalis</i>
Pink-footed goose	<i>Anser brachrhynchus</i>
White-fronted goose	<i>Anser albifrons</i>
Brent goose	<i>Branta bernicla</i>
Barnacle goose	<i>Branta leucopsis</i>
Shelduck	<i>Tadorna tadorna</i>
Wigeon	<i>Mareca penelope</i>
Gadwall	<i>Mareca strepera</i>
Teal	<i>Anas crecca</i>
Mallard	<i>Ana platyrhynchos</i>
Shoveler	<i>Spatula clypeata</i>

<u>Common Name</u>	<u>Scientific Name</u>
Grey Partridge	<i>Perdix perdix</i>
Hen harrier	<i>Circus cyaneus</i>
Marsh harrier	<i>Circus aeruginosus</i>
Merlin	<i>Falco columbarius</i>
Crane	<i>Grus grus</i>
Lapwing	<i>Vanellus vanellus</i>
Golden plover	<i>Pluvialis apricaria</i>
Curlew	<i>Numenius arquata</i>
Ruff	<i>Calidris pugnax</i>
Snipe	<i>Gallinago gallinago</i>
Oystercatcher	<i>Haematopus ostralegus</i>
Stock dove	<i>Columba oenas</i>
Starling	<i>Sturnus vulgaris</i>
Skylark	<i>Alauda arvensis</i>
Fieldfare	<i>Turdus pilaris</i>
Song thrush	<i>Turdus philomelos</i>
Redwing	<i>Turdus iliacus</i>
Mistle thrush	<i>Turdus viscivorus</i>
Tree sparrow	<i>Passer montanus</i>
Linnet	<i>Linaria cannabina</i>
Twite	<i>Linaria flavirostris</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Yellowhammer	<i>Emberiza citrinella</i>
Corn bunting	<i>Emberza calandra</i>

The species chosen as detailed in table 1 above were those qualifying species for adjacent SPA's and BoCC Red and Amber listed species likely to be present within the habitats along the scoping area. Also recorded were any Schedule 1 species such as kingfisher *Alcedo atthis* and barn owl *Tyto alba* and any particularly notable numbers of Green listed species.

As all the surveys were conducted from roads and PRowS, various potential vantage points within the survey zones were identified from Google Earth where it was possible to safely park and access the survey area.

A data search with the Norfolk Biological Records Service was undertaken and returned records within a 2km radius of the PEIR boundary. Over 40,000 records of birds were returned, and because of this extremely large amount of data only the maximum counts of target species within areas relevant to the PEIR boundary are summarised below.

Table 2. Notable Records of Target Species NBIS Data Search

Target Species (BoCC Red and Amber Listed) and Schedule 1 and SPA qualifying species	Location of Record	Maximum Count	Year of Record
Whooper swan	Ringland	5	2016
Whooper swan	Weybourne	4	2013
Bewick's swan	Ringland	69	2008
Bewick's swan	Weybourne	9	2012
Bean goose	Weybourne	27	2011
Pink-footed goose	Weybourne	6,000	2016
Pink-footed goose	Bodham	180	2010
Pink-footed goose	Ringland	200	2005
White-fronted goose	Baconsthorpe	135	2011
White-fronted goose	Weybourne	40	2010
White-fronted goose	Ringland	24	2016
Brent goose	Weybourne	3,000	2011
Barnacle goose	Weybourne	20	2016
Shelduck	Weybourne	292	2015

Target Species (BoCC Red and Amber Listed) and Schedule 1 and SPA qualifying species	Location of Record	Maximum Count	Year of Record
Wigeon	Weybourne	1,560	2013
Wigeon	Ringland	80	2012
Teal	Weybourne	152	2016
Mallard	Ringland	20	2012
Grey partridge	Weybourne	10	2016
Grey partridge	Bodham	2	2015
Hen harrier	Weybourne, Attlebridge, Baconsthorpe (22 records)	1	2016 (most recent)
Marsh harrier	Weybourne	2	2015
Merlin	Weybourne, Bodham (36 records)	1	2016 (most recent)
Crane	Weybourne	2	2016
Crane	Weston Longville	1	2009
Crane	Honingham	2	2008
Crane	Ringland	3	2014
Lapwing	Weybourne	775	2007
Lapwing	Bodham	360	2012
Golden plover	Colton	1,000	2016

Target Species (BoCC Red and Amber Listed) and Schedule 1 and SPA qualifying species	Location Record of	Maximum Count	Year of Record
Golden plover	Bodham	30	2016
Golden plover	Weybourne	200	2015
Golden plover	Baconsthorpe	75	2007
Curlew	Weybourne	92	2012
Curlew	Baconsthorpe	16	2008
Ruff	Weybourne	4	2014
Snipe	Weybourne	4	2013
Oystercatcher	Weybourne	135	2013
Stock dove	Weybourne	65	2016
Starling	Weybourne	1,150	2016
Skylark	Weybourne	150	2015
Skylark	Ringland	40	2011
Fieldfare	Weybourne	100	2012
Song thrush	Weybourne	50	2012
Redwing	Weybourne	200	2012
Mistle thrush	Weybourne	10	2010
Tree sparrow	Weybourne	6	2013

Target Species (BoCC Red and Amber Listed) and Schedule 1 and SPA qualifying species	Location of Record	Maximum Count	Year of Record
Linnet	Weybourne	800	2008
Twite	Weybourne	70	2005
Reed bunting	Weybourne	29	2015
Reed bunting	Ringland	20	2012
Yellowhammer	Ringland	40	2012
Yellowhammer	Weybourne	45	2015
Yellowhammer	Bodham	55	2011
Corn bunting	Weybourne	6	2011

4.2. Field Survey

All surveys were undertaken by Graham Riley BSc ACIEEM (25 years ornithological survey experience - RSPB, self-employed and Consultancy) and Ptolemy McKinnon BSc MSc (four years ornithological survey experience - National Trust and Consultancy) working in a pair. Areas within the survey zones were walked (where PRowS were available) and scanned with binoculars looking for the target bird species (Table 1). When these were located the species and number of individuals present were marked on a map. The surveys from public roads were undertaken from the points identified during the desk study and involved scanning all areas within the survey buffer visible from the vantage point and marking relevant observations on survey maps.

The surveys were undertaken on the following dates and times:

Table 3. Survey Details

Date	Survey Route (Figures 1-3)	Start Time	End Time	Precipitation	Wind		Temp. °C		% Cloud Cover
					Direction	Speed	Max	Min	
26/11/2019	Wensum and Substation Area Buffers	11:00	15:35	light showers	SW	2	9	8	100
09/12/2019	Wensum and Substation Area Buffers	10:40	15:15	rain from 14:30	NW	3-4	7	7	50
14/01/2020	Wensum and Substation Area Buffers	10:10	15:30	light rain 14:00-15:00	S	4	11	9	60
10/02/2020	Wensum and Substation Area Buffers	10:55	15:00	rain from 14:00	W	5-6	8	7	10
11/03/2020	Wensum and Substation Area Buffers	11:20	15:10	None	SW		13	13	50

Date	Survey Route (Figures 1-3)	Start Time	End Time	Precipitation	Wind		Temp. °C		% Cloud Cover
19/11/2019	Weybourne to Plumstead	10:00	15:50	None	SW	2-3	4	3	0
04/12/2019	Weybourne to Plumstead	10:20	15:20	None	SW	2	7	7	10
07/01/2020	Weybourne to Plumstead	10:40	15:15	rain 13:30-14:30	SSW	4	10	8	70
06/02/2020	Weybourne to Plumstead	10:40	15:40	None	W	1	7	4	0
04/03/2020	Weybourne to Plumstead	10:45	15:30	None	SW	1	8	7	20

5. RESULTS

The results from all the over-wintering bird surveys are presented in Tables 3, 4 and 5 below.

Table 4.

Target species recorded from the Weybourne to Plumstead Section (10km buffer from North Norfolk Coast SPA) (Figures 4 and 5)

Target Species (BoCC Red and Amber Listed) and Schedule 1 and SPA qualifying species	Total Count PEIR boundary	Maximum Count
Black-headed gull (away from coast) (Amber list)	69	17
Common gull (away from coast) (Amber list)	1	1
Dunnock (Amber list)	1	1
Herring gull (away from coast) (Red list)	2	2
Kestrel (Amber list)	7	1
Meadow pipit (Amber list)	1	1
Mistle thrush (Red list)	1	1
Red kite (Schedule 1, Green list)	3	2
Redwing (Red list)	2	2
Skylark (Red list)	10	1
Song thrush (Red list)	1	1
Starling (Red list)	18	18
Stock dove (Amber list)	16	8

Target Species (BoCC Red and Amber Listed) and Schedule 1 and SPA qualifying species	Total Count PEIR boundary	Maximum Count
Yellowhammer	6	2

Table 5. Target Species recorded from the River Wensum Section (Figure 6)

Target Species (BoCC Red and Amber Listed) and SPA qualifying species	Total Count PEIR boundary	Maximum Count
Mute swan (Amber list) (just outside buffer boundary)	3	2

Table 6. Target Species recorded from the Substation section (Figure 7)

Target Species (BoCC Red and Amber Listed) and SPA qualifying species	Total Count PEIR boundary	Maximum Count
Black-headed gull (Amber list)	3	3
Fieldfare (Red list)	70	70
Kestrel (Amber list)	2	1
Mallard (Amber list)	10	8
Mistle thrush (Red list)	2	2
Meadow pipit (Amber list)	51	50
Oystercatcher (Amber list)	2	2

Redwing (Red list)	11	6
Skylark (Red list)	14	4
Song thrush (Red list)	2	1
Starling (Red list)	2	2
Stock dove (Amber list)	5	3

Eighteen target species were recorded in total across the three survey areas. There were no significant flocks of wildfowl and no flocks of wading birds such as lapwing *Vanellus vanellus* and golden plover *Pluvialis apricaria* recorded within the PEIR boundary.

The Weybourne to Plumstead section of the Onshore cable corridor recorded fourteen target species comprising low numbers of mainly Red and Amber listed farmland birds such as skylark *Alauda arvensis*, yellowhammer *Emberiza cinerea* and meadow pipit *Anthus pratensis* as well as seven records of foraging kestrels *Falco tinnunculus* and 3 red kites *Milvus milvus*. No significant species or notable concentrations were observed, although of interest was a flock of up to 3,500 pink-footed geese *Anser brachyrhynchus* that was present within a harvested sugar beet field just south of Weybourne cliffs during the November/December 2019 and January 2020 surveys (see Figure 4). This area is approximately 800m to the east of the refined PEIR boundary.

Due to the lack of coverage of the current PEIR boundary the River Wensum surveys recorded only a single target species, namely mute swan *Cygnus olor* with a total of 3 individuals, all just outside of the boundary but close enough to represent a valid record.

The Onshore substation section recorded a total of twelve target species, again comprising mainly low numbers of Red and Amber listed farmland species, with the most notable concentrations being a flock of 50 meadow pipits and a flock of 70 fieldfares, both recorded on single occasions.

5.1. Constraints and Limitations of Survey

A notable constraint encountered during the 2019/2020 over-wintering bird survey effort was limited landowner access to the survey areas that had been identified as suitable areas to support over-wintering bird species. No landowner access was available to any of the proposed survey areas at the outset of the over-wintering bird survey effort, therefore all surveys were conducted from public roads and PRowS. This resulted in some areas being only partially surveyed or not surveyed at all. This particularly applied to the area around Kelling Heath Campsite, Weybourne Wood and the section of land bordering the River Wensum. However, it is considered unlikely that any significant numbers of target species were overlooked during the surveys, particularly flocks of wintering waders

and wildfowl which are usually prominent in open fields and generally visible even from a moving vehicle.

Additionally, the over-wintering bird surveys were conducted within the scoping area, meaning coverage of the refined PEIR corridor is uneven with some sections receiving

very little survey coverage, particularly within the Weybourne Village/coastal section, River Wensum and Onshore substation areas. This is reflected in the relatively low number of species recorded by the surveys and will be addressed during the subsequent survey period.

5.2. Further Survey Requirements and Expiry Dates

Further surveys within the winter season (November to March) will be required to inform a detailed impact assessment for wintering bird species and will focus on the PEIR boundary. Pre-ground clearance works surveys will be necessary in order to locate any sensitive species such as pink-footed geese and avoid any potential disturbance and displacement impacts.

6. CONCLUSIONS

The wintering bird surveys recorded low numbers (generally fewer than 10 individuals) of the pre-identified target species, the majority of records relating to Red and Amber listed farmland species such as skylark, meadow pipit, yellowhammer and stock dove.

There were no flocks of wintering wildfowl or wader species recorded within the refined PEIR corridor, the closest significant gathering being a flock of 3,500 pink-footed geese 800 metres to the east at Weybourne.

A lack of landowner access and evolving survey buffers were constraints to the 2019-2020 survey, and therefore updated surveys are currently ongoing for the 2020/21 over-wintering bird survey season. Following these surveys the PEIR can be updated detailing appropriate advice for mitigation regarding sensitive wintering bird species. Despite the constraints the 2019/2020 surveys represent a valuable first step in understanding the species composition and populations of wintering birds present within the PEIR boundary.

Figure 2: Wintering Bird Survey Area River Wensum (500m buffer)

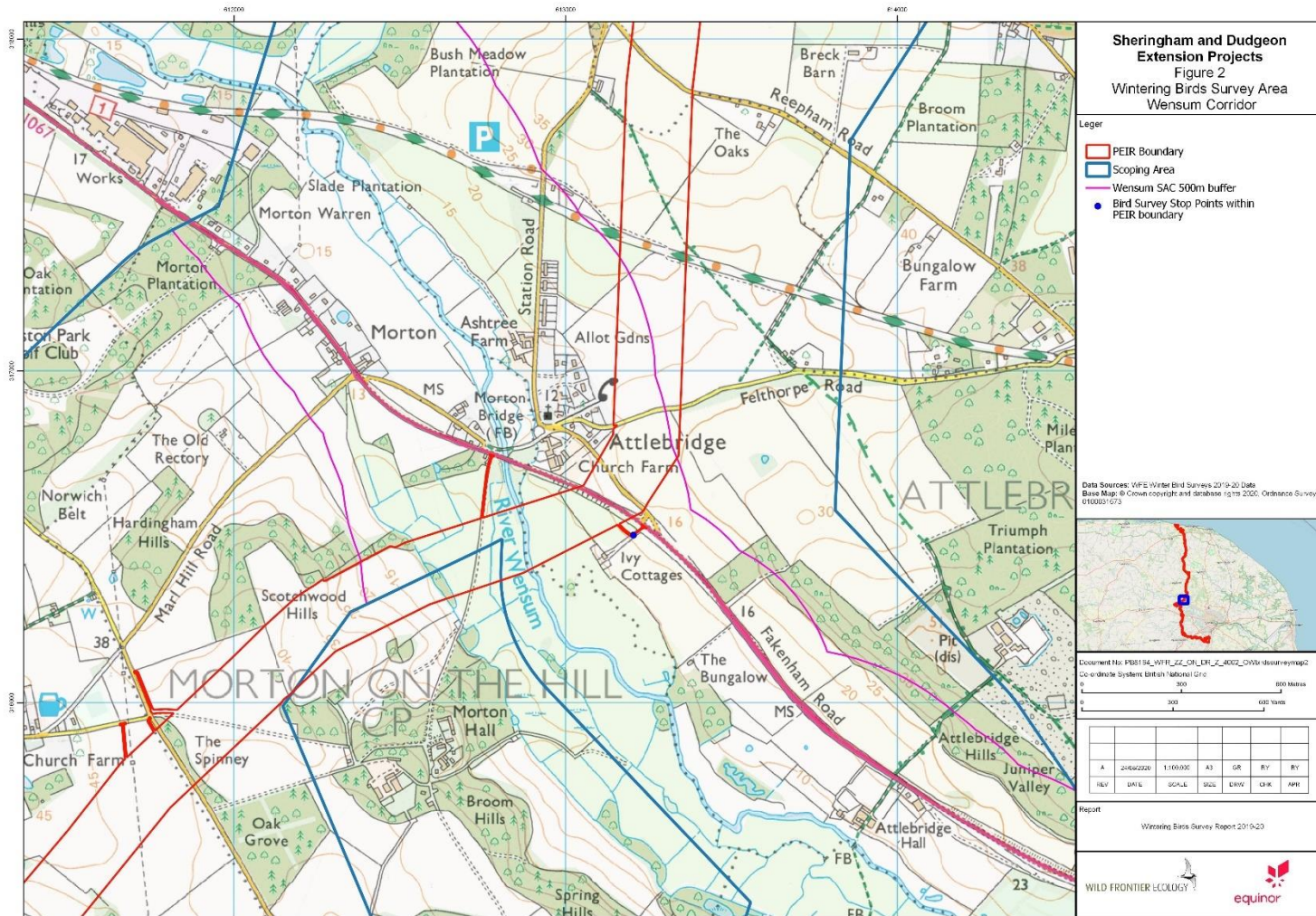


Figure 3: Wintering Bird Survey Area Onshore Substation (10km Broadland SPA buffer)

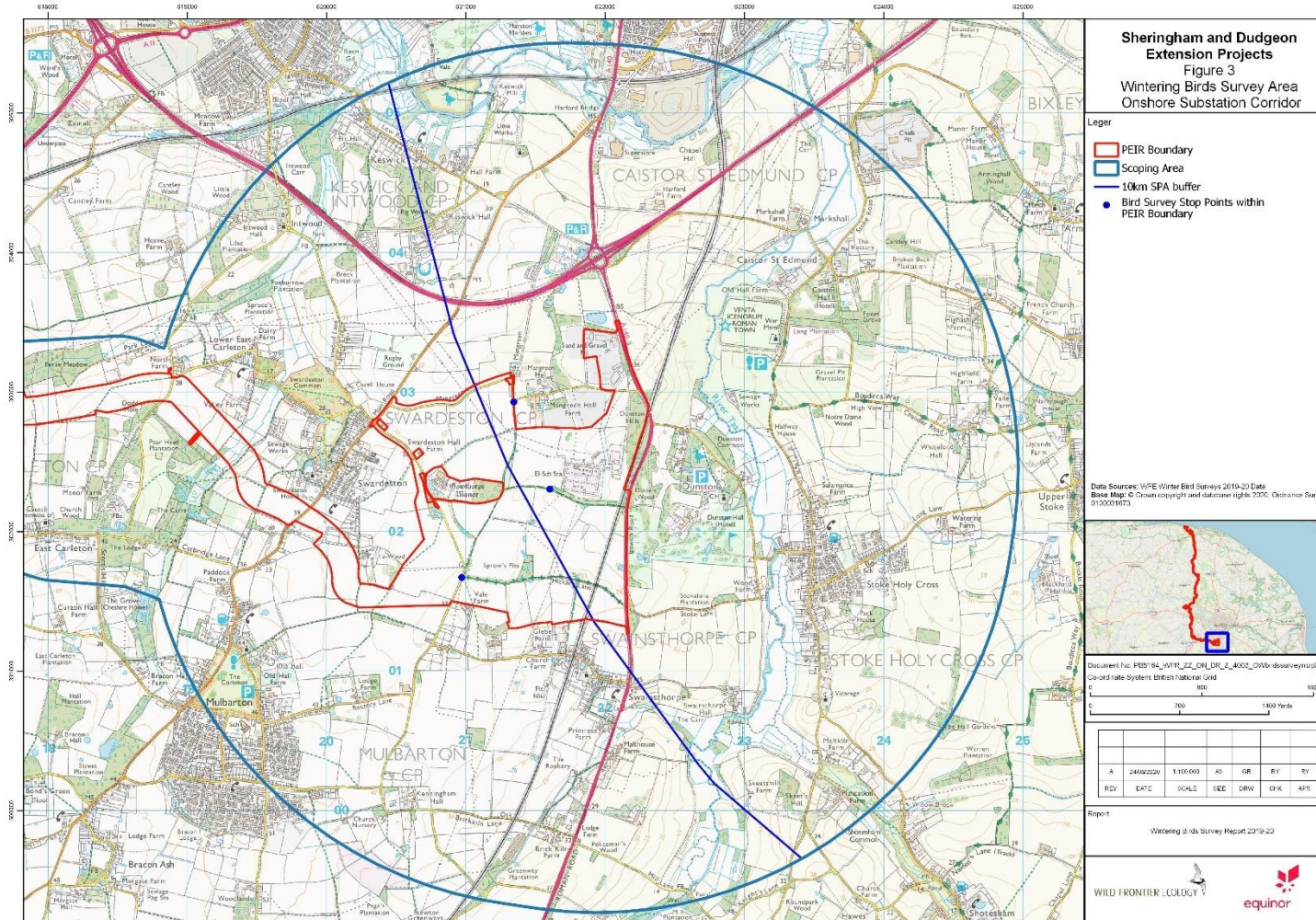


Figure 4: Wintering bird Survey Results Weybourne to Bodham Section

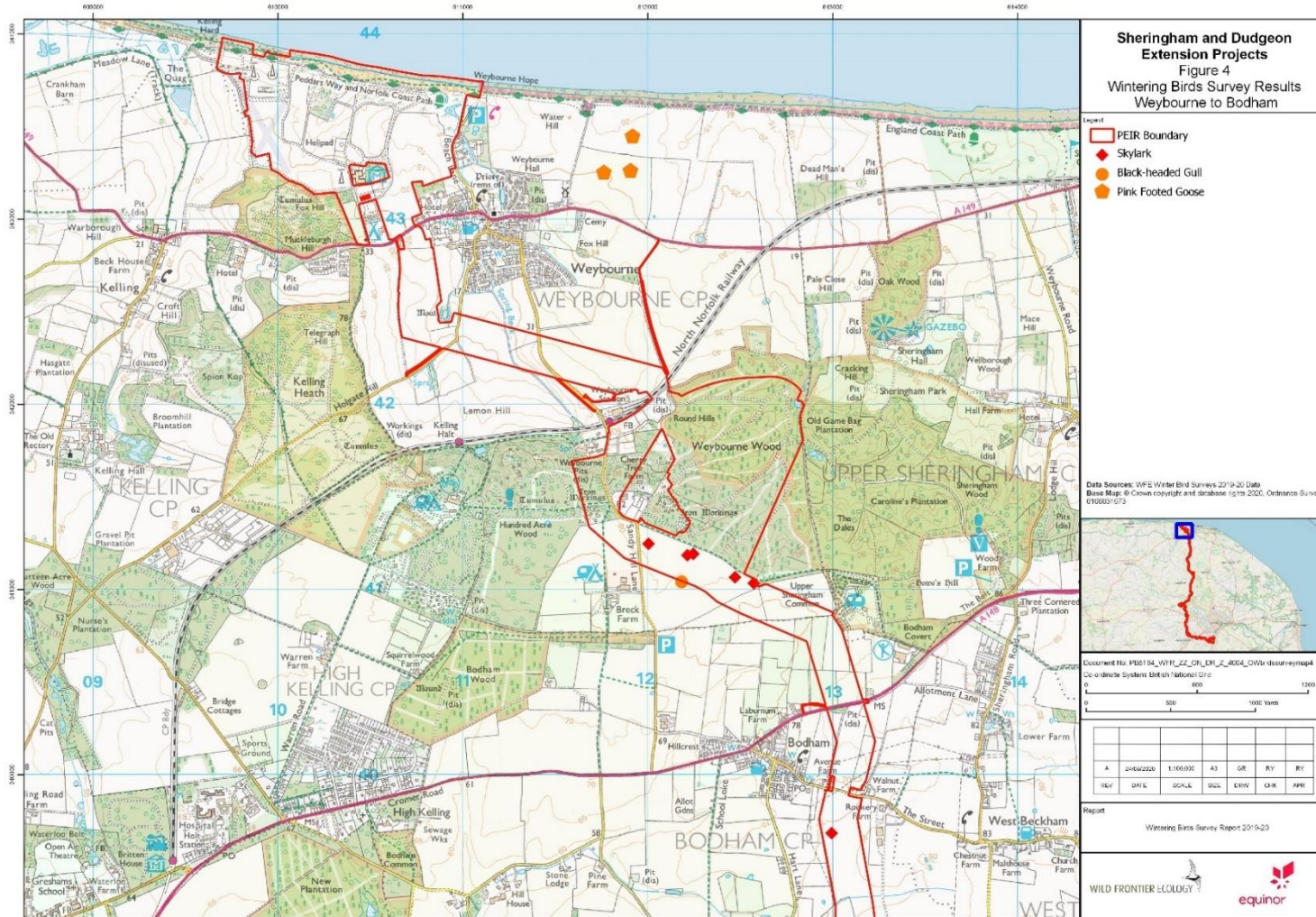


Figure 6: Wintering bird Survey Area and Results River Wensum Section

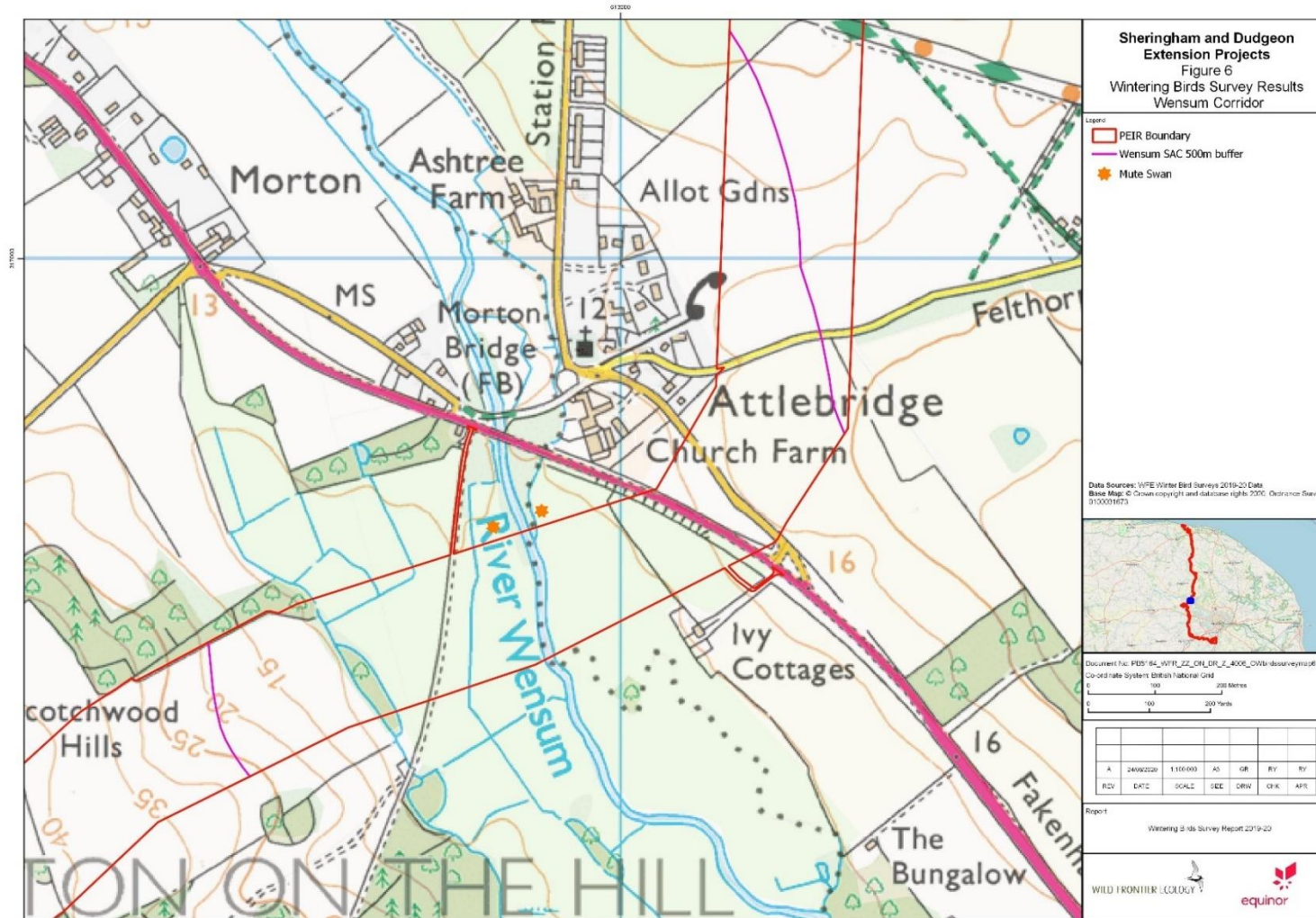


Figure 7: Wintering bird Survey Area and Results Substation Section

