

Hornsea 4

Ørsted



Hornsea Project Four: Preliminary Environmental Information Report (PEIR)

Volume 6, Annex 3.2: Onshore Ornithology – Wintering and Migratory Birds Survey Report

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Glossary

Term	Definition
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement (ES).
EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Export cable corridor (ECC)	The specific corridor of seabed (seaward of Mean High Water Springs (MHWS)) and land (landward of MHWS) from the Hornsea Project Four array area to the Creyke Beck National Grid substation, within which the export cables will be located.
Habitats Regulations Assessment (HRA)	A process which helps determine likely significant effects and (where appropriate) assesses adverse impacts on the integrity of European conservation sites and Ramsar sites. The process consists of up to four stages of assessment: screening, appropriate assessment, assessment of alternative solutions and assessment of imperative reasons of over-riding public interest (IROPI).
High Voltage Alternating Current (HVAC)	High voltage alternating current is the bulk transmission of electricity by alternating current (AC), whereby the flow of electric charge periodically reverses direction.
High Voltage Direct Current (HVDC)	High voltage direct current is the bulk transmission of electricity by direct current (DC), whereby the flow of electric charge is in one direction.
Ørsted Hornsea Project Four Ltd.	The proposed Ørsted Hornsea Project Four (UK) Ltd. offshore wind farm project; the term covers all elements within the Development Consent Order (i.e. both the offshore and onshore components). Hereafter referred to as Hornsea Four.
Maximum design scenario	The maximum design parameters of each Hornsea Four asset (both on and offshore) considered to be a worst case for any given assessment.
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Onshore	
Energy balancing infrastructure / EBI	The onshore substation includes energy balancing Infrastructure. These provide valuable services to the electrical grid, such as storing energy to meet periods of peak demand and improving overall reliability.
Haul Road	The track along the onshore ECC which the construction traffic would use to access work fronts.

Term	Definition
Landfall	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) tide and the Transition Joint Bay (TJB) inclusive of all construction works, including the offshore and onshore ECC, intertidal working area and landfall compound.
National Grid Electricity Transmission (NGET) substation	The grid connection location for Hornsea Four.
Onshore export cables	Cables connecting the landfall first to the onshore substation and then on to the NGET substation at Creyke Beck.
Onshore substation / OnSS	Located as close as practical to the NGET substation at Creyke Beck and will include all necessary electrical plant to meet the requirements of the National Grid.
Trenchless Techniques	Also referred to as trenchless crossing techniques or trenchless methods. These techniques include HDD, thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.

Acronyms

Acronym	Definition
BBS	Breeding Bird Survey
BOCC	Birds of Conservation Concern
ECC	Export Cable Corridor
ERY	East Riding of Yorkshire
IECS	The Institute of Estuarine & Coastal Studies
OnSS	Onshore Substation
OWF	Offshore Wind Farm
PEIR	Preliminary Environmental Information Report
VP	Vantage Point
WCA	Wildlife & Countryside Act, 1981

1 Introduction

1.1 Background

- 1.1.1.1 Orsted Hornsea Project Four Limited (hereafter Hornsea Four) is proposing to develop Hornsea Project Four Wind Farm (hereafter Hornsea Four). Hornsea Four will be located approximately 65 km offshore the East Riding of Yorkshire in the Southern North Sea and will be the fourth project to be developed in the former Hornsea Zone. Hornsea Four will include both offshore and onshore infrastructure including an offshore generating station (wind farm), Export Cable Corridor (ECC) to landfall and on to an Onshore SubStation (OnSS) with Electrical Balancing Infrastructure (EBI), and connection to the electricity transmission network.
- 1.1.1.2 The over-wintering bird surveys have been undertaken by The Institute of Estuarine & Coastal Studies (IECS) along the proposed refined landfall area, onshore ECC, together with an area of land identified for the OnSS and EBI.
- 1.1.1.3 The 2018/2019 over-wintering bird survey programme was designed to collect baseline data on the bird assemblage along the refined landfall, onshore ECC and within the OnSS site, and to subsequently assess the status and importance of the bird assemblage and individual species for inclusion in the Hornsea Four Preliminary Environmental Information Report (PEIR).
- 1.1.1.4 The 2018/2019 survey was undertaken in accordance with industry accepted standard survey techniques as described in [Section 2](#). The survey programme was undertaken from November 2018 to March 2019 inclusive, with six separate survey cycles undertaken within this period.
- 1.1.1.5 Further details of the survey methodologies are provided in [Section 2](#).

2 Survey Methodology

2.1 Survey Area

- 2.1.1.1 The 2018/2019 survey programme included a series of counts at a set number of Vantage Points (VPs) along the refined landfall area and onshore ECC. The VP locations are shown on [Figure 1](#) to [Figure 6](#). These sites are considered to reflect the range of habitats present along the refined landfall area and onshore ECC. These sites were presented to ERYC, Natural England and the RSPB at a technical panel meeting via the evidence plan process in January 2019.
- 2.1.1.2 In addition to the VPs, more detailed walk-over surveys were undertaken within the OnSS site ([Figure 7](#)). The route followed, and walked for each visit where access was granted, is shown on [Figure 7](#).
- 2.1.1.3 It should be noted that not all of the OnSS site was covered by the walk-over survey programme, and the walk-over surveys were designed to include the habitats that are characteristic of the area and its associated function delivery for over-wintering birds.
- 2.1.1.4 A total of six separate survey cycles were undertaken across the 2018/2019 over-wintering bird survey period (November 2018 to March 2019 inclusive). A summary of the completed surveys is provided in [Table 1](#).

2.2 VP Counts

2.2.1 Survey Preparation

- 2.2.1.1 All VP surveys were undertaken by a team of two experienced IECS ornithologists, using a car to access the vicinity of each VP location. Each VP location was then accessed by the surveyors on foot.
- 2.2.1.2 Each survey team was equipped with two sets of binoculars, a clipboard with pens/pencils, proforma recording sheets and maps of the refined landfall area, onshore ECC. In addition, and to ensure necessary Health and Safety provision, fully charged mobile phones, high visibility vests, a whistle and first aid kit were also carried by the surveyors.
- 2.2.1.3 Prior to each survey visit, a copy of the landowner access permission spreadsheet that had been co-ordinated and provided by Dalcour Maclaren (Hornsea Four's land agents), was passed to the IECS lead field surveyor. Only VP locations where landowner access had been agreed and notified were accessed.
- 2.2.1.4 Surveys were undertaken for approximately 5 hours from a period after dawn (e.g. approximately 8am until 1pm). Surveys were not undertaken during thick fog, where coverage is compromised nor in heavy rain or very strong winds when bird activity is likely to be suppressed.

2.2.2 Field Survey Methods for VP Counts

- 2.2.2.1 Once at the VP location (i.e. the VP standing point), a 5-minute settlement period was initiated. This was then followed by a 15-minute survey period. For each VP count, the survey team was issued with a site specific A4 map that had been marked with a 250 m survey radius from the centre of the VP (see [Appendix 1](#) Individual Vantage Point records). The survey radius is always provided on the map to ensure the observer focusses on bird registrations, many of which are auditory, within the confinement of the survey area, which in turn were chosen because of their immediate proximity to the refined landfall area and proposed onshore ECC. This limits the inclusion of sightings of birds at a greater distance from the proposed refined landfall area and onshore ECC.
- 2.2.2.2 All species seen on the ground, flying through, or heard (not seen) within the 250 m VP radius were recorded on the maps (e.g. species, number activity) using the standard recording procedures derived from Bibby et al, 2000.
- 2.2.2.3 In addition, weather conditions and any agricultural (or other notable) activity was recorded at the start and end of each VP count, as well as any observed disturbance events during the VP count. For example, any event that might affect the normal utilisation of the area, and might skew the utilisation data was recorded.

2.3 OnSS site walk-over Surveys

2.3.1 Survey Preparation

- 2.3.1.1 The OnSS site ([Figure 7](#)) was subject to six walkover survey transects between November 2018 and March 2019, inclusive.
- 2.3.1.2 A more detailed assessment of bird utilisation within this area was undertaken, given the proposed development is likely to include the permanent loss or alteration of habitat and associated function at this location.
- 2.3.1.3 Survey preparation followed a similar procedure to that followed for the VP Counts, whilst ensuring access to the OnSS site was safe, and that land access had been agreed in advance with the relevant landowner(s).

2.3.2 Field Survey Methods for the OnSS

- 2.3.2.1 To provide sufficient coverage, two transects were surveyed (walked) across around and within the OnSS site ([Figure 7](#)), ensuring that the surveyors walked all field boundaries and hedgerows, avoiding directly walking over fields where crops were present. Within the OnSS site, views of the fields were obtained from the field margins. As a result of the open view of the fields, the species were able to be recorded.
- 2.3.2.2 The exact survey transect routes were determined in the field on the first survey visit in order to accommodate safe access, then subsequently repeated for each subsequent survey visit.

The survey transect route was walked in reverse on alternate surveys so as to avoid any potential bias from covering habitat at the same time of the day.

2.4 Vantage Point locations

- 2.4.1.1 A total of 35 VPs were identified along the refined landfall area and proposed onshore ECC. These are shown on [Figure 1](#) to [Figure 6](#), with the VP numbers being sequential along the onshore ECC from south to north, ending at the landfall area. A full record of each VP, the dates it was surveyed, and the sightings can be found in [Appendix 1](#) Individual Vantage Point records
- 2.4.1.2 For the OnSS site and 400kV onshore ECC area transects were walked where land access was granted. These can be seen in [Figure 7](#).

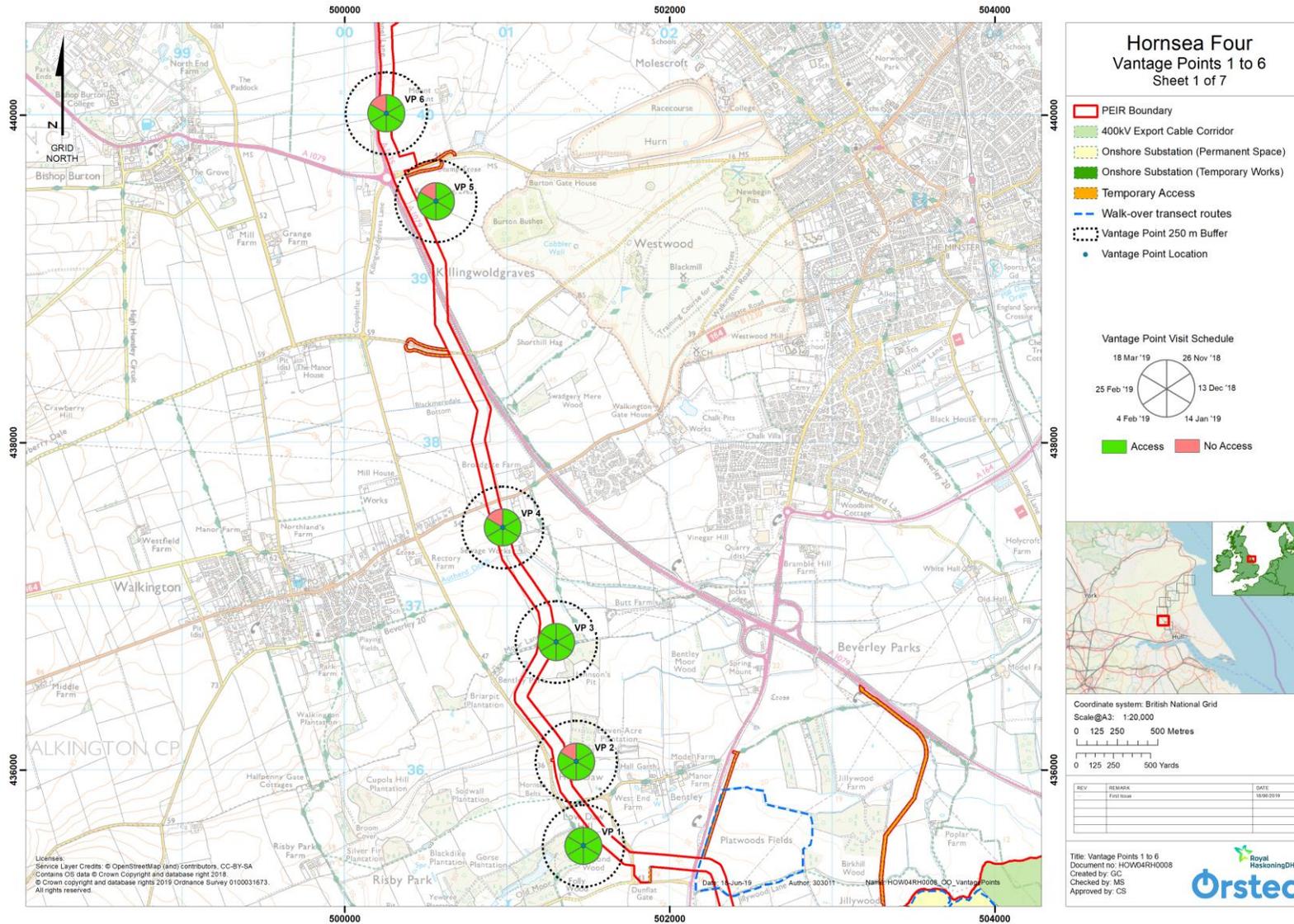


Figure 1: Vantage Points 1 to 6 (not to scale).

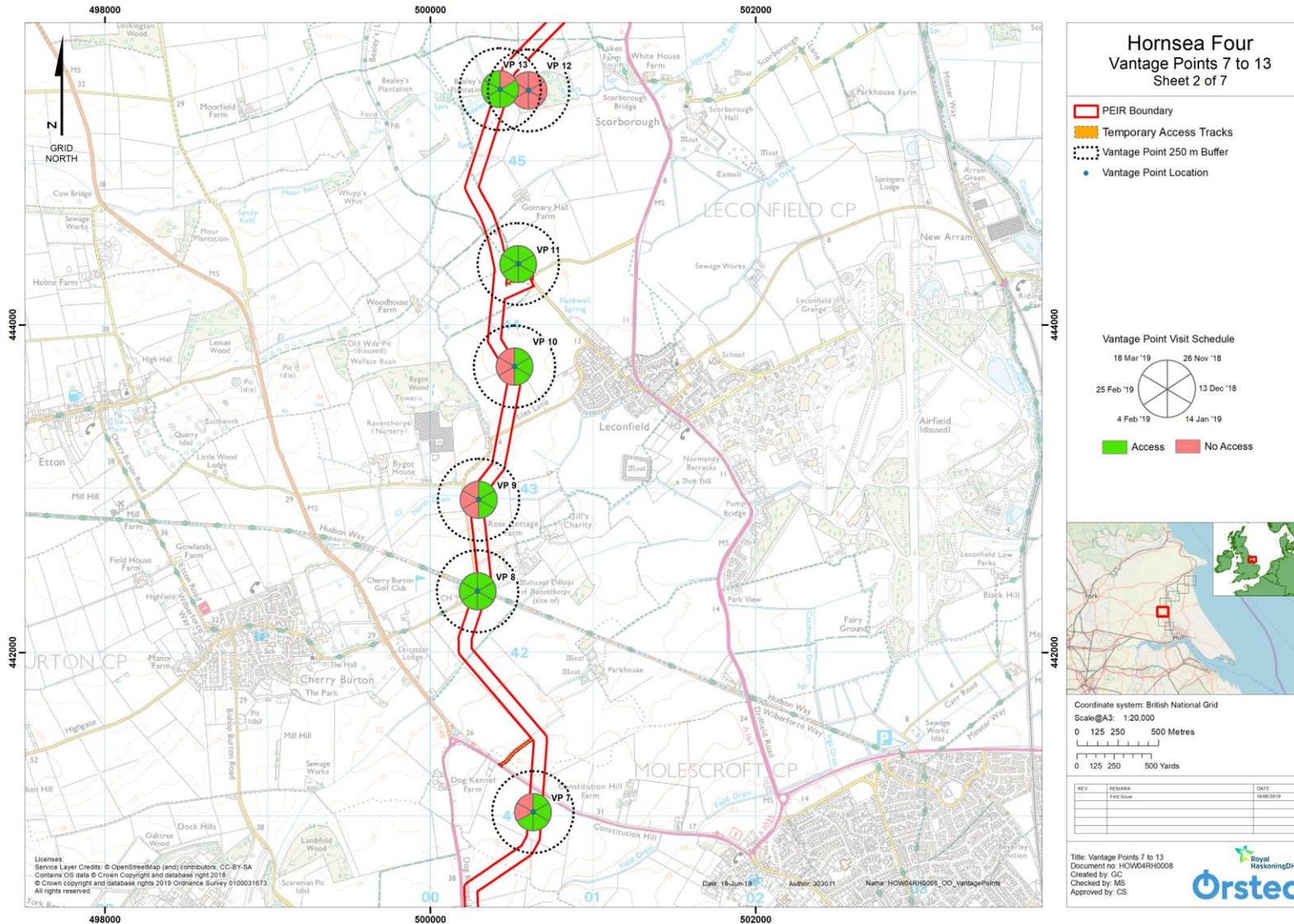


Figure 2: Vantage Points 7 to 13 (not to scale).

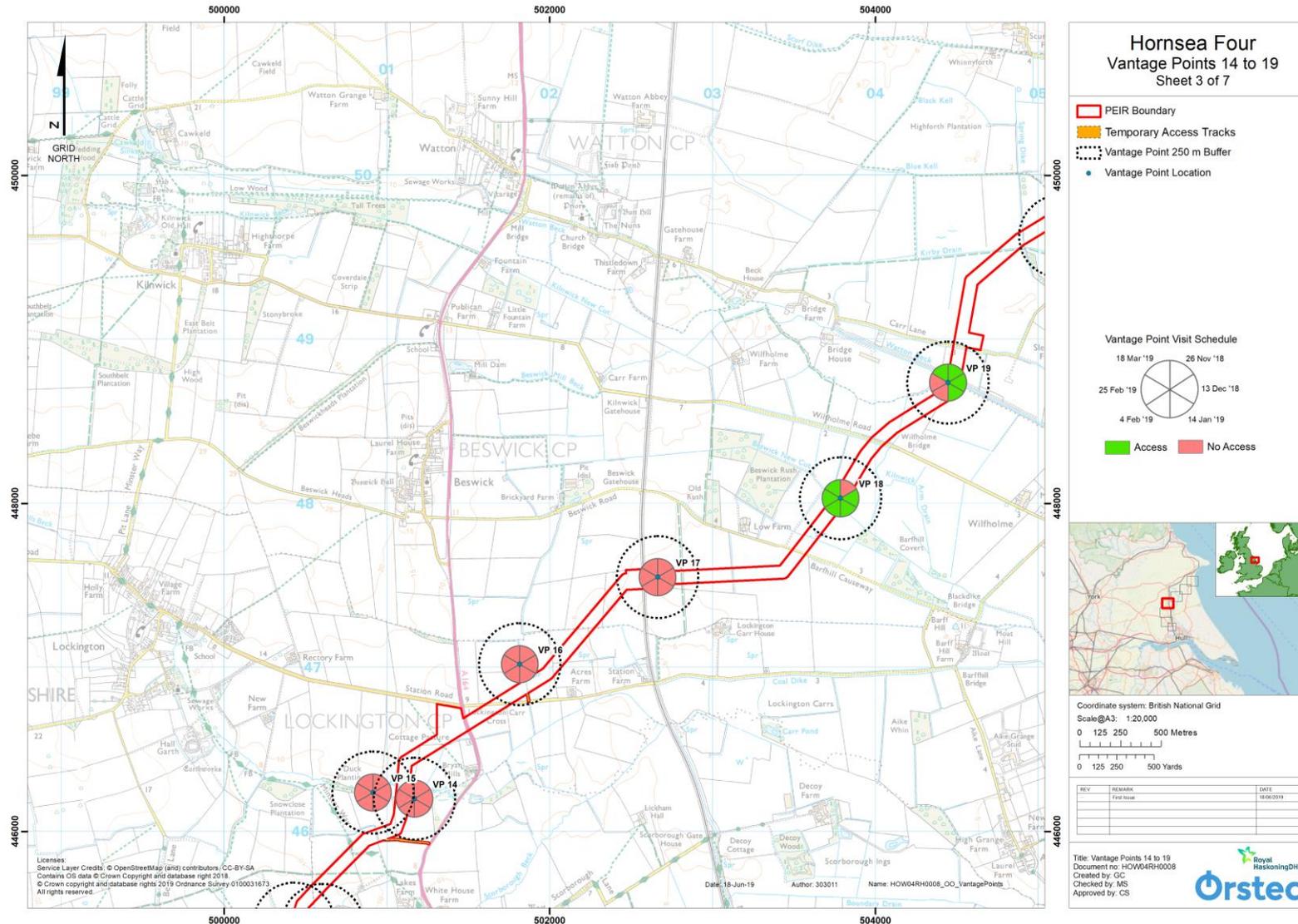


Figure 3: Vantage Points 14 to 19 (not to scale).

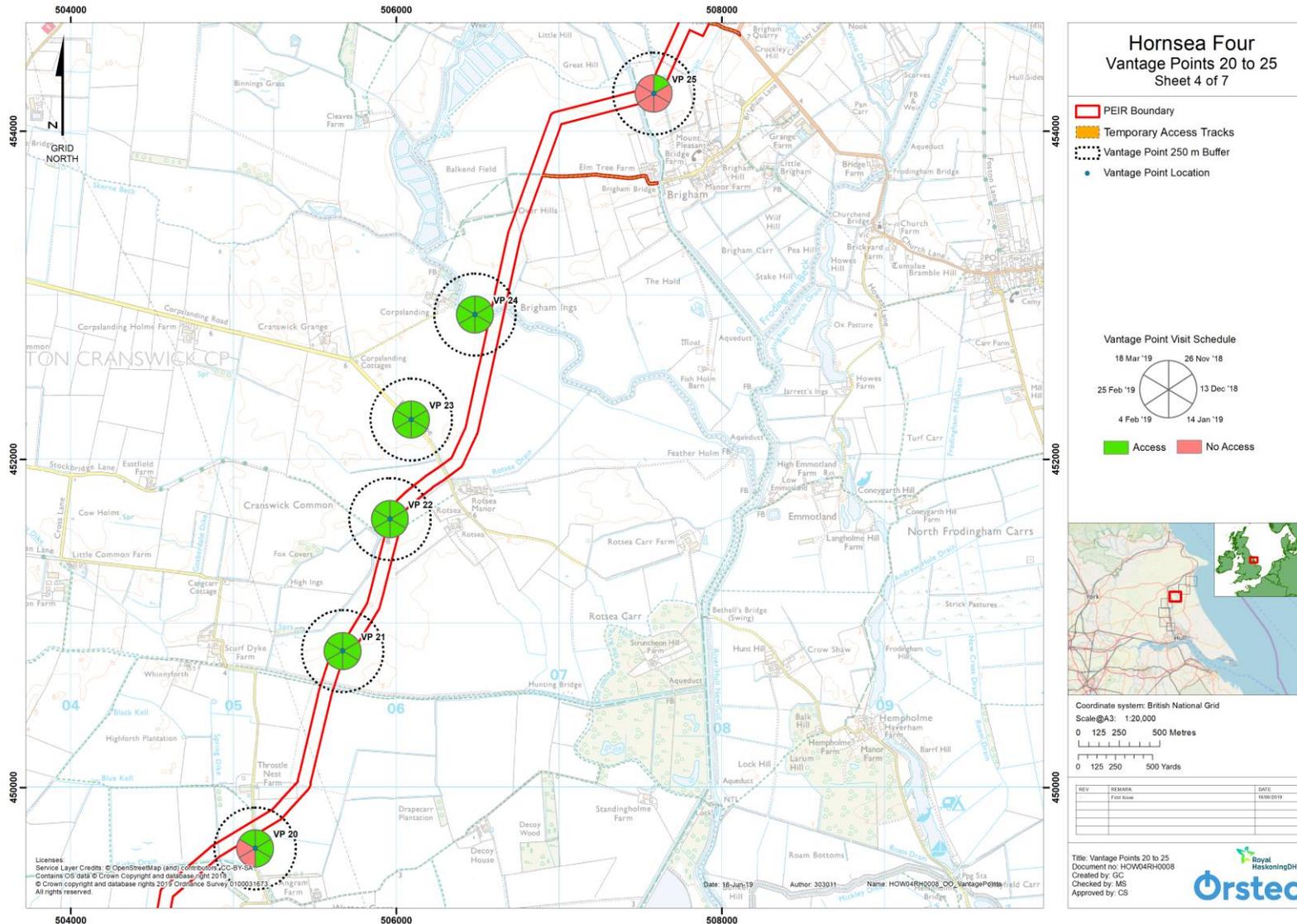


Figure 4: Vantage Points 20 to 25 (not to scale).

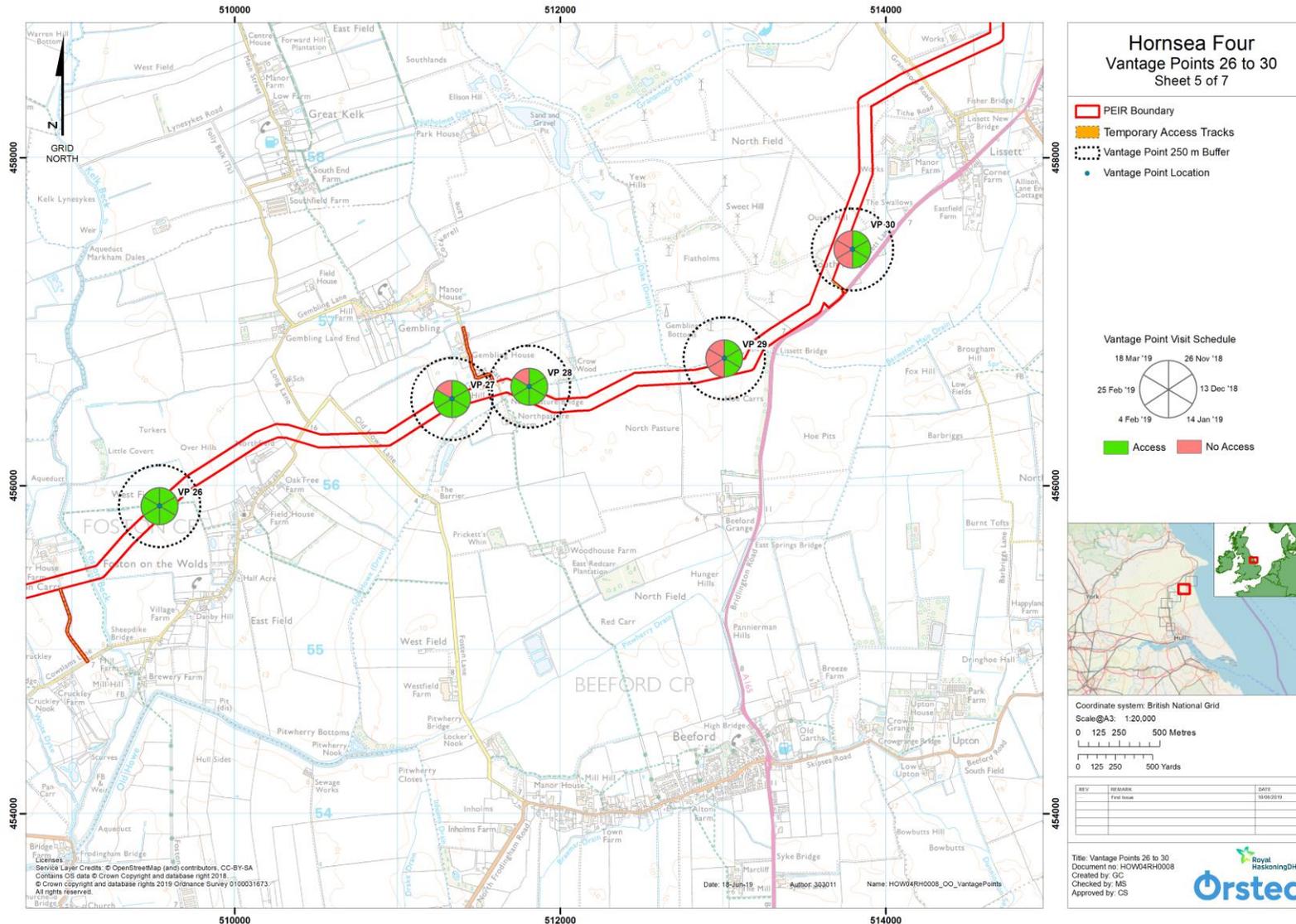


Figure 5: Vantage Points 26 to 30 (not to scale).

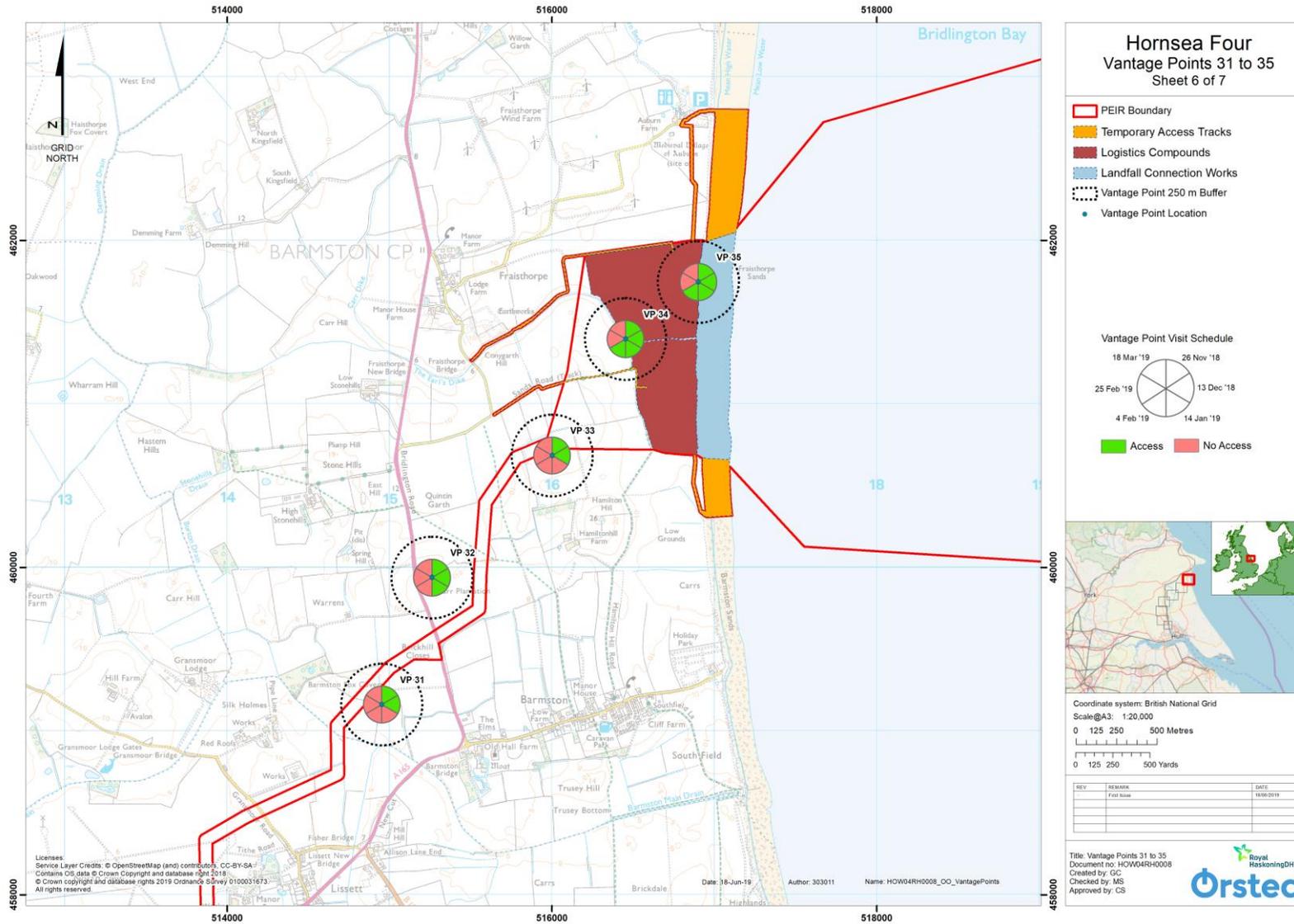


Figure 6: Vantage Points 30 to 35 (not to scale).

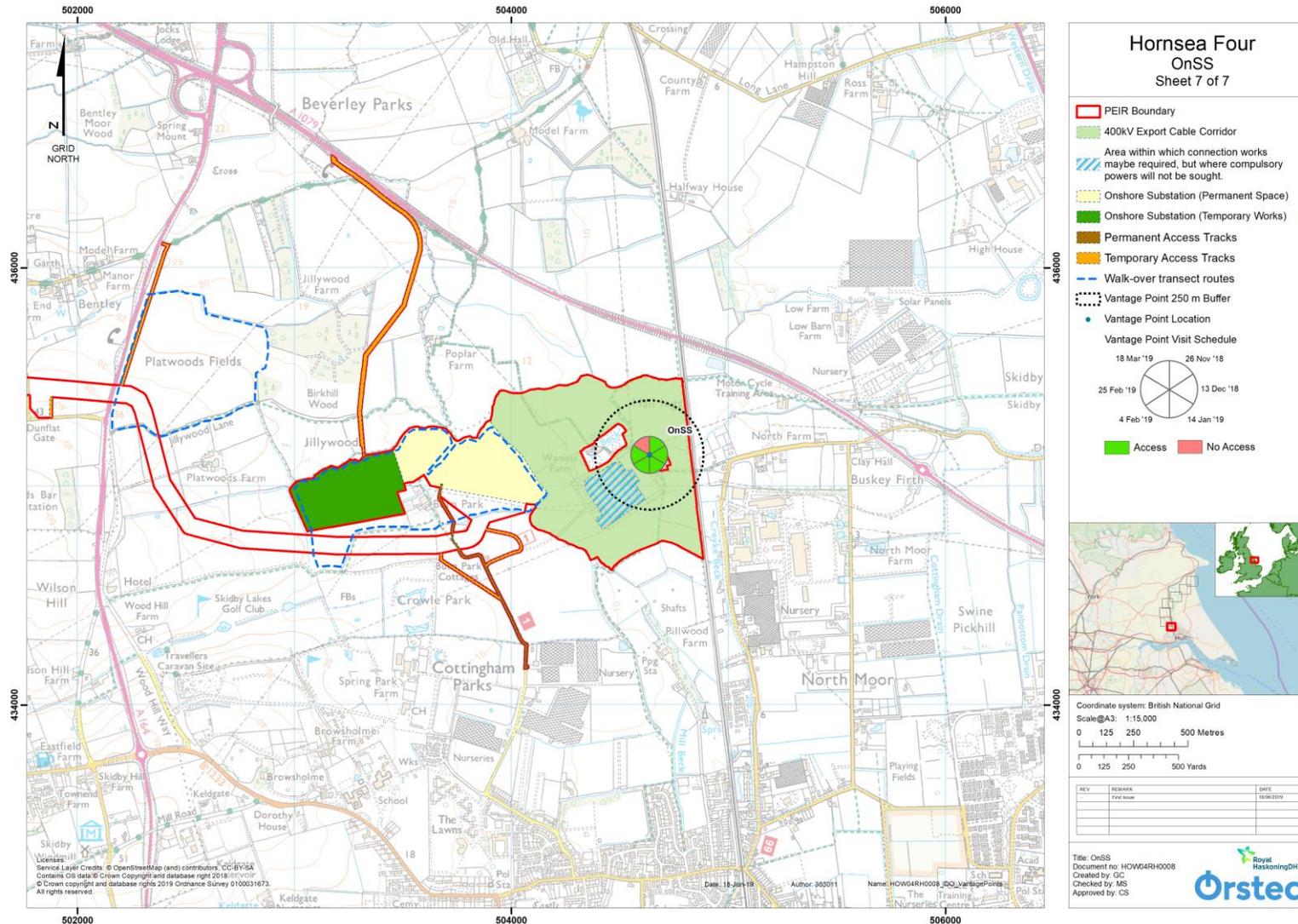


Figure 7: The OnSS and 400 kV ECC with walkover transect routes (not to scale).

3 Survey Results

3.1 Data Limitations

- 3.1.1.1 A total of 35 VPs were identified to be surveyed along the refined landfall area and proposed onshore ECC.
- 3.1.1.2 However, due to landowner access restrictions, not all VPs were accessible during the 2018/2019 over-wintering bird survey effort. No transects were able to be undertaken within the 400 kV onshore ECC area, and similarly, not all VPs were accessible on all planned visits within the scheduled six separate survey visits (see [Figure 1](#) to [Figure 7](#)).
- 3.1.1.3 Namely, VP 12, 14, 15, 16, and 17 (see [Figure 2](#) and [Figure 3](#)) were not surveyed on any of the 2018/2019 survey visits due to landowner access being denied throughout the survey effort.
- 3.1.1.4 Where access was not permitted for individual VP locations, the VP was not surveyed. Alternate PRow survey points were investigated, although for most VP locations, no access was possible. Where new VP locations were possible, these were marked as 'New', as shown on [Figure 1](#) to [Figure 7](#).
- 3.1.1.5 A number of minor modifications to the initial proposed VP locations were made following the first visit, primarily to relocate the VP to a field boundary, versus being stood in a field and unnecessarily standing and walking over crops. Or, for example, to move the VP to the alternate side of a ditch system which was more easily accessible .
- 3.1.1.6 The remaining 30 VPs were surveyed on multiple occasions, as shown in [Table 1](#).
- 3.1.1.7 All survey visits that could be achieved with landowner access permission in place were completed, with [Figure 7](#) showing the areas where transects were able to take place.

Table 1: VP Visit schedule and completion rate.

Vantage Point (VP)	Survey 1 w/c 26th Nov	Survey 2 w/c 13th Dec	Survey 3 w/c 14th Jan	Survey 4 w/c. 4th Feb	Survey 5 w/c 25th Feb	Survey6 w/c 18th Mar	Total Number Visits Completed
1	Green	Green	Green	Green	Green	Green	6
2	Green	Green	Green	Green	Green	Red	5
3	Green	Green	Green	Green	Green	Green	6
4	Green	Green	Green	Green	Green	Red	5
5	Green	Green	Green	Green	Green	Red	5
6	Green	Green	Green	Green	Green	Red	5
7	Green	Green	Green	Green	Red	Red	4
8	Green	Green	Green	Green	Green	Green	6
9	Green	Green	Green	Red	Red	Red	3
10	Green	Green	Green	Red	Red	Red	3
11	Green	Green	Green	Green	Green	Green	6
12	Red	Red	Red	Red	Red	Red	0
13	Red	Green	Green	Green	Green	Green	5
14	Red	Red	Red	Red	Red	Red	0
15	Red	Red	Red	Red	Red	Red	0
16	Red	Red	Red	Red	Red	Red	0
17	Red	Red	Red	Red	Red	Red	0
18	Red	Green	Green	Green	Green	Green	5
19	Green	Green	Green	Red	Red	Green	4
20	Green	Green	Green	Red	Red	Green	4
21	Green	Green	Green	Green	Green	Green	6
22	Green	Green	Green	Green	Green	Green	6
23	Green	Green	Green	Green	Green	Green	6
24	Green	Green	Green	Green	Green	Green	6
25	Green	Red	Red	Red	Red	Red	1
26	Green	Green	Green	Green	Green	Green	6
27	Green	Green	Green	Green	Green	Red	5
28	Green	Green	Green	Green	Green	Red	5
29	Green	Green	Green	Red	Red	Red	3
30	Green	Green	Green	Red	Red	Red	3
31	Green	Green	Red	Red	Red	Red	2
32	Green	Green	Green	Red	Red	Red	3
33	Green	Green	Red	Red	Red	Red	2
34	Green	Green	Green	Green	Red	Red	4
35	Green	Green	Green	Green	Red	Red	4
OnSS	Green	Green	Green	Green	Green	Red	5
VPs completed	28	29	27	20	17	13	134
% VPs visited	80%	83%	77%	57%	49%	37%	64%

3.2 VP Survey Results – Key Species Assessment

- 3.2.1.1 The refined landfall search area and onshore ECC is contained entirely within the jurisdiction of East Riding of Yorkshire District Council (ERYC), and runs through Holderness and part of the River Hull valley. This area is predominantly arable in nature, although some areas of woodland, scrub, grassland and open water are present too.
- 3.2.1.2 These habitat types are reflected in the location of the VPs, and a full mix of characteristic habitats have been covered.
- 3.2.1.3 Many birds associated with farmland habitats have been in decline, for example, through habitat loss and reduction in prey. This is reflected in the Birds of Conservation Concern (BOCC) 4 analysis (Eaton et al, 2015) which records a number of farmland birds in decline at a UK level.
- 3.2.1.4 As such, the number of Red List species noted as being present within the VPs (and along the onshore ECC) is not unexpected given the habitats that are present ([Table 2](#))
- 3.2.1.5 The species records from the VP surveys with BOCC4 status are shown in [Table 2](#) and [Table 3](#), and indicate an assemblage that is generally characteristic of the area.
- 3.2.1.6 The assemblage includes a number of farmland passerines, many of which are included on the red or amber BOCC4 lists (see [Table 2](#)), as well as a number of ducks, geese and waders.
- 3.2.1.7 A few records are noted as being of regional value, although it is emphasised that from the data collected during the VP surveys, the wintering bird assemblage for Hornsea Four is characteristic of the largely arable landscape of the River Hull valley/Holderness area. Consisting mainly of hedgerow and woodland. Consequently, when viewed in this context, the species recorded is not of any significant conservation value.
- 3.2.1.8 The presence of a flock of 66 Corn Bunting (*Emberiza calandra*) is of some note, given the UK decline in the species, although Holderness is one of the strongholds of the species in England (Balmer et al, 2013).
- 3.2.1.9 The presence of 275 Fieldfare (*Turdus pilaris*) with 822 total registrations, and 90 Redwing (*Turdus iliacus*) with 21 total registrations, whilst being relatively numerous within the context of the survey, is to be expected during the winter, with the arrival of large wintering flocks of these species and other thrushes from Scandinavia.
- 3.2.1.10 Another red list species, Lapwing (*Vanellus vanellus*) was also present, with a flock of 42 birds recorded. Lapwing and Golden Plover (*Pluvialis apricaria*) will utilise arable fields during the autumn and winter and can occur in large flocks.

3.2.1.11 Whilst the Lapwing is a red list species, the presence of small flocks around the Holderness is to be expected, and on occasion considerably larger occurrences can occur on inland arable fields and pasture (Allen et al, 2003).

3.2.1.12 Given the distance from the Humber Estuary e.g. over 10km at its closest, it is not considered that this occurrence has a significant diurnal link with the Humber Estuary Special Protection Area (SPA) population. It rather represents a dispersed mobile inland over-wintering utilisation, with areas being utilised depending on factors such as crop type, water-logging, agricultural activity and weather conditions (O'Connor and Shrubbs, 1991).

3.2.1.13 Based on the species recorded from the VP programme, and the levels of utilisation, it is considered that the findings show an over-wintering bird assemblage characteristic of the largely arable landscape of the ERY. The species recorded reflect the mix of habitats present, but more specifically, the predominance of arable agriculture.

Table 2: Total species recorded across all VPs during the 2018/2019 over-wintering bird survey (grouped and illustrated in order by BoCC4 status: Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
Red Status	895	1016	169	521		2601	300
Corn bunting	8	14		66		88	66
Fieldfare	335	322	115	50		822	275
Grey partridge				23		23	8
Herring gull	2			2		4	2
House sparrow		26				26	14
Lapwing				56		56	42
Linnet	181	99	1	11		292	52
Marsh Tit			8	1		9	2
Merlin	1					1	1
Mistle thrush			1	2		3	1
Redwing	50	118	33			201	90
Ringed plover				8		8	8
Skylark	31		1	114		146	13
Song thrush		9	5	2		16	4
Starling	222	316	2	125		665	300
Tree sparrow	2	22	3	1		28	10
Yellowhammer	63	90		60		213	28
Amber Status	287	75	31	212	121	726	60
Black-headed gull	16			6		22	6
Bullfinch		7	14			21	3
Common gull	154		1	109		264	60

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
Dunlin			2	1		3	1
Duncock		26	13			39	5
Gadwall					2	2	2
Green sandpiper					1	1	1
Greylag goose	4			2		6	4
Kestrel	8			1		9	1
Kingfisher	2					2	1
Mallard	28			2	85	115	18
Meadow pipit	16			43		59	21
Mute swan	2				1	3	1
Reed bunting	1	39		21		61	11
Snipe	5			8		13	6
Stock dove	42	1	1	9		53	23
Teal	9			10	32	51	10
Wigeon		2				2	2
Green Status	2369	462	969	2079	12	5891	1100
Blackbird	3	75	73			151	12
Blue tit		20	77			97	5
Brambling			2			2	2
Canada goose	2					2	2
Carrion crow	113	2	15	55	2	187	28
Chiffchaff			2			2	1
Collared dove	1					1	1
Common buzzard	24	4	13	1		42	7
Cormorant	9		10			19	5
Feral pigeon				20		20	20
Goldcrest			6			6	3
Golden plover	20			207		227	118
Goldfinch	78	34	27			139	16
Great tit		14	21	1		36	4
Great-spotted woodpecker		1	15			16	3
Green woodpecker			1	1		2	1
Greenfinch	39	2				41	30
Grey heron	1					1	1
Jay		1	4			5	2
Little Egret					2	2	2
Long-tailed tit			50			50	15
Magpie	1	9	16	3		29	3

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
Moorhen			1		7	8	3
Pheasant	1	6	16	93		116	40
Pied wagtail	11					11	1
Red kite	3					3	1
Red-legged partridge		2		17		19	5
Robin		38	34	1		73	3
Rook	259	95	77	354		785	139
Siskin	2		7			9	7
Sparrowhawk	1	1	4			6	1
Tree creeper			8			8	2
Water rail					1	1	1
Wren	1	22	36	3		62	3
Jackdaw	139	53	112	56		360	80
Chaffinch	21	55	95	2		173	13
Wood pigeon	1640	28	247	1265		3180	1100
Grand Total	3551	1553	1169	2812	133	9218	1100

3.3 OnSS Site Survey Results – Key Species Assessment

- 3.3.1.1 The habitat features within the OnSS site are broadly a similar mix of habitats to those within the refined landfall search area and onshore ECC, i.e. predominantly arable farming, but with some areas of woodland, scrub, grassland and wetland.
- 3.3.1.2 Assemblage data from the 2018/2019 over-wintering bird surveys indicate a similar mix of farmland passerines, as well as migratory thrushes, and some species more associated with aquatic margins.
- 3.3.1.3 The assemblage again includes a number of red and amber list BOCC4 species, including migratory thrushes e.g. Fieldfare and Redwing and some farmland species e.g. Linnet (*Carduelis cannabina*) and Yellowhammer (*Emberiza citronella*).
- 3.3.1.4 As such, the wintering bird assemblage composition is consistent with the range of habitats present within the OnSS site, and indeed the wider River Hull valley.

Table 3: Total species recorded within the OnSS site search area (grouped and illustrated in order by BoCC4 status: Red, Amber and Green status).

Species and BoCC4 status	Field	Hedgerow	In flight	Woodland	Total No. Recorded	Single visit maxima
Red Status	26	120	65	31	242	26
Fieldfare			16	2	18	10
Grey partridge	1		1		2	1
Herring gull			8		8	4
House sparrow		45			45	18
Linnet		15	28		43	26
Mistle thrush	6			1	7	3
Redwing		35	6	1	42	13
Skylark	15		1		16	4
Song thrush				7	7	2
Starling	4		4		8	4
Yellowhammer		25			25	15
Lesser Redpoll			1	20	21	12
Amber Status	329	26	36	54	445	88
Black-headed gull	94		5		99	78
Bullfinch		2		50	52	13
Common gull	144		9		153	47
Dunnock		21		4	25	7
Greylag goose	88				88	88
Kestrel	1		2		3	1
Mallard			3		3	3
Reed bunting	2	3			5	2
Stock dove			2		2	2
Lesser Black-backed gull			14		14	12
Great Black-backed gull			1		1	1
Green Status	189	440	412	357	1398	324
Blackbird		174		4	178	39
Blue tit		32		59	91	15
Brambling				1	1	1
Carrion crow	50		5	3	58	21
Chaffinch		92		72	164	28
Coal Tit				3	3	2
Common buzzard	1	2	13	2	18	3
Golfcrest				17	17	4
Goldfinch		14	3	27	44	18

Species and BoCC4 status	Field	Hedgerow	In flight	Woodland	Total No. Recorded	Single visit maxima
Great tit		12		32	44	8
Great-spotted woodpecker				2	2	1
Green woodpecker				1	1	1
Greenfinch		10		5	15	8
Jackdaw	2				2	2
Long-tailed tit		31		8	39	12
Magpie		3		2	5	3
Moorhen		1			1	1
Peregrine	4		2		6	2
Pheasant	14				14	7
Pied wagtail			3		3	1
Red-legged partridge	6				6	2
Robin		36		18	54	8
Rook	42		4		46	42
Siskin				15	15	15
Sparrowhawk				2	2	1
Tree creeper				4	4	1
Wood pigeon	70	6	382	67	525	324
Wren		27		11	38	7
Little Owl				2	2	2
Grand Total	544	586	513	442	2085	324

3.4 Schedule 1 Bird Species

- 3.4.1.1 In addition to the BOCC4 Red and Amber List species, that have a conservation priority but are broadly expected from an arable landscape, a small number of species that were recorded during the 2018/2019 over-wintering bird survey effort are specifically protected under Schedule 1 of the Wildlife and Countryside Act (WCA) (1981).
- 3.4.1.2 Schedule 1 of the WCA (1981) protects breeding birds, making it an offence to intentionally or recklessly disturb them at, on or near to an active nest. Whilst this specific requirement is not relevant during the winter, the potential presence of some species may indicate breeding potential.
- 3.4.1.3 **Table 4** lists the species recorded along the refined landfall search area, the onshore ECC and within the OnSS site that are included on Schedule 1 of the WCA (1981). Of these species, some will certainly not breed within the Hornsea Four area, and a few would be extremely unlikely to breed, as either their breeding range is well outside the project area and/or, suitable breeding habitat is not present. However, there are also several species recorded from the wintering surveys that are likely to breed in the same area. This will be

identified in [Annex 3.3: Breeding Bird Survey Report](#), which will be provided as a part of the Environmental Statement (ES).

Table 4: Species recorded from the 2018/2019 over-wintering programme included on Schedule 1 of the WCA (1981).

Species	Breeding Presence
Red Kite (<i>Milvus milvus</i>)	Potential breeder (possible but not known to breed locally to the onshore ECC/OnSS site)
Green Sandpiper (<i>Tringa ochropus</i>)	Over-wintering / passage only
Barn Owl (<i>Tyto alba</i>)	Potential breeder (likely but over 500m from the onshore ECC and not within the OnSS site)
Kingfisher (<i>Alcedo atthis</i>)	Potential breeder (likely but not necessarily within the onshore ECC/OnSS site)
Merlin (<i>Falco columbarius</i>)	Potential breeder (possible but unlikely)
Peregrine Falcon (<i>Falco peregrinus</i>)	Potential breeder (very likely with active pair in the OnSS site)
Firecrest (<i>Regulus ignicapilla</i>)	Potential breeder (extremely unlikely)
Fieldfare (<i>Turdus pilaris</i>)	Over-wintering only
Redwing (<i>Turdus iliacus</i>)	Over-wintering only
Brambling (<i>Fringilla montifringilla</i>)	Over-wintering only

3.4.1.4 Of the species listed in [Table 4](#), there is a likelihood that Peregrine will nest within the proposed OnSS site, having been observed as an active pair during the 2018/2019 over-wintering surveys within the area. Other species may also potentially breed within the area, or adjacent to it. For example, Kingfisher and Barn Owl, as these species have been recorded along the refined landfall area and onshore ECC, although with suitable nesting habitat located out-with the main onshore ECC.

3.4.1.5 A breeding bird survey effort will be undertaken along the landfall search area, onshore ECC and within the OnSS site between April and June 2019, inclusive. The results of which will be presented in [Annex 3.3: Breeding Bird Survey Report](#), as a part of the ES. It will also provide an indication of breeding bird utilisation.

4 Summary

- 4.1.1.1 The findings from the 2018/2019 over-wintering survey effort of the refined landfall search area, onshore ECC and OnSS site indicate a bird assemblage that is consistent with similar habitat mosaics in the Holderness and the River Hull Valley.
- 4.1.1.2 There are clear associations with habitat types, and to a lesser extent, with proximity to the coast. The presence of a suite of red and amber list BOCC4 species is to be expected.
- 4.1.1.3 Whilst aggregations were occasionally of note, for example 55 Corn Bunting in the northern part of the onshore ECC, for the most part, abundance levels were as expected (Balmer et al, 2013). As such, the presence of flocks of winter passerines and waders recorded from some locations but not on all occasions, reflect how the status of many species of birds during the winter varies spatially and temporally in response to food availability and weather (O'Connor and Shrubbs, 1991).
- 4.1.1.4 Several species included on Schedule 1 of the WCA, 1981 were recorded, and there is a likelihood that breeding activity along the refined landfall area, onshore ECC and/or within the OnSS site will occur. The breeding bird status and implications for Hornsea Four will be discussed separately and presented in the [Annex 3.3: Breeding Bird Survey Report](#), along with the ES, following completion of the breeding bird survey in June 2019.

5 References

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Appendix 1 Individual Vantage Point records

Vantage Point 1



Figure 8: Vantage Point 1 (Google Earth 2019).

Grid reference: TA 01434 35518

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	26/11/2018	13/12/2018	14/01/2019	06/02/2019	26/02/2019	18/03/2019

Table A1: Vantage Point 1 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	35	1	28	6	70	35
Marsh Tit			1		1	1
Mistle thrush				1	1	1
Redwing			25		25	25
Skylark				5	5	3
Song thrush			2		2	1
Starling	35				35	35
Yellowhammer		1			1	1
BoCC4 Amber status	14		4		18	4
Black-headed gull	2				2	1
Bullfinch			2		2	2
Common gull	12				12	4
Dunlin			1		1	1
Dunnock			1		1	1
BoCC4 Green status	39	10	81	39	169	18
Blackbird			10		10	2
Blue tit			3		3	2
Brambling			2		2	2
Carrion crow	5			4	9	3
Chiff chaff			1		1	1
Common buzzard	1		1		2	1
Goldfinch	16		13		29	8
Great tit		3	4		7	2
Great-spotted woodpecker			4		4	1
Green woodpecker			1		1	1
Grey heron	1				1	1
Pheasant		2	3	2	7	2
Red kite	1				1	1
Robin		4	5		9	2
Rook	4				4	4
Sparrowhawk			1		1	1
Wren			6		6	2
Jackdaw				15	15	15
Chaffinch	5	1	13		19	4
Wood pigeon	6		14	18	38	18
Total	88	11	113	45	257	35

Vantage Point 2

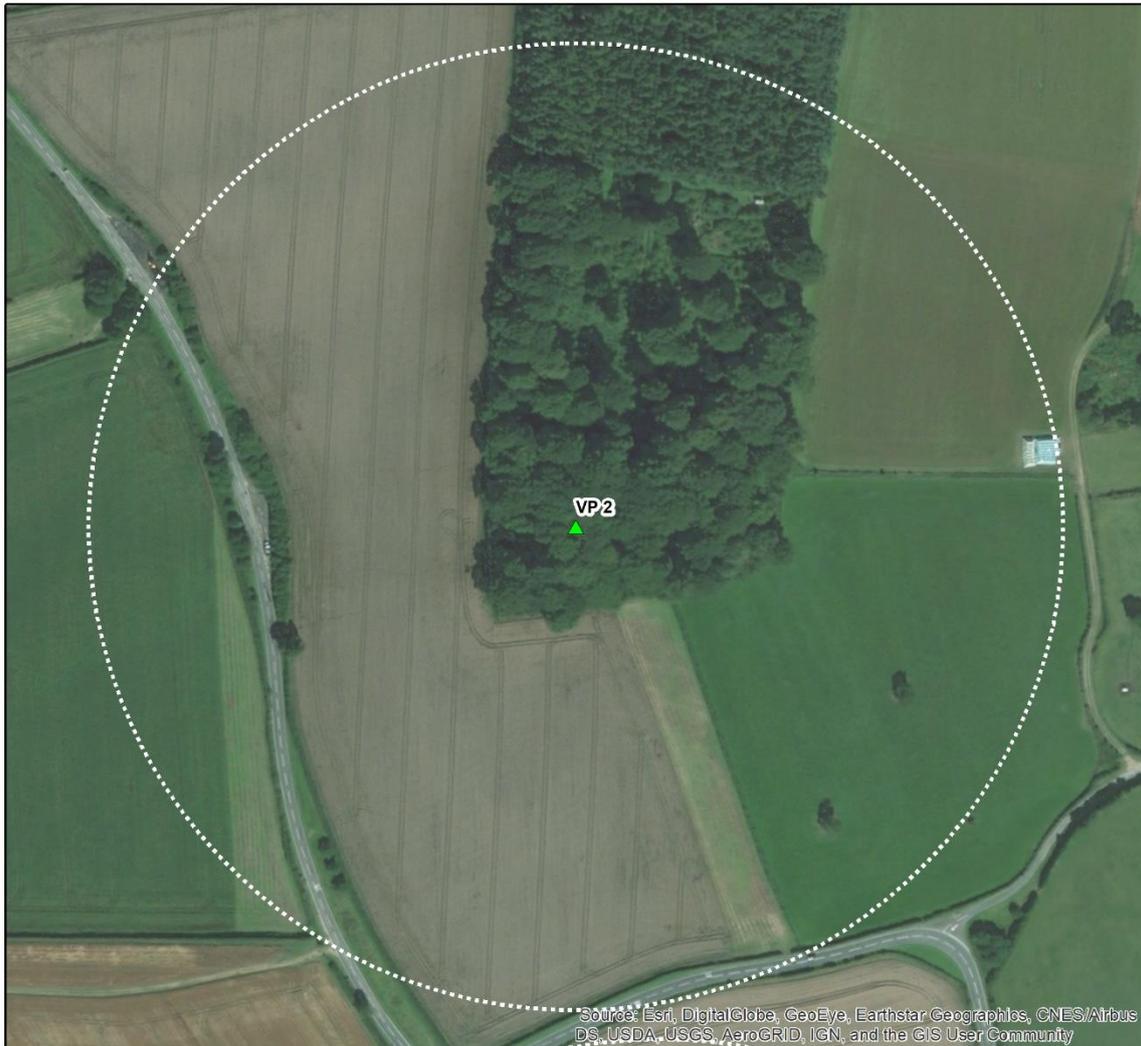


Figure 9: Vantage Point 2 (Google Earth 2019).

Grid reference: TA 01408 36029

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	26/11/2018	13/12/2018	14/01/2019	06/02/2019	26/02/2019	none

Table A2: Vantage Point 2 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	2	4	1	7	2
Fieldfare	2			2	2
Marsh Tit		2		2	1
Mistle thrush		1		1	1
Skylark		1		1	1
Song thrush			1	1	1
BoCC4 Amber status	2	3		5	2
Bullfinch		2		2	2
Common gull		1		1	1
Stock dove	2			2	2
BoCC4 Green status	2	118	2	122	18
Blackbird		6		6	3
Blue tit		11		11	4
Carrion crow		3		3	2
Common buzzard		3		3	2
Goldfinch	1			1	1
Great tit		3		3	2
Great-spotted woodpecker		5		5	3
Long-tailed tit		2		2	2
Magpie		2		2	1
Pheasant		6		6	3
Pied wagtail	1			1	1
Robin		4		4	2
Rook		1		1	1
Tree creeper		1		1	1
Wren		1		1	1
Jackdaw		3	2	5	3
Chaffinch		8		8	4
Wood pigeon		59		59	18
Grand Total	6	125	3	134	18

Vantage Point 3



Figure 10: Vantage Point 3 (Google Earth 2019).

Grid reference: TA 01314 36774

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	26/11/2018	13/12/2018	14/01/2019	06/02/2019	26/02/2019	18/03/2019

Table A3: Vantage Point 3 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status		20	6	4	30	10
Fieldfare		2			2	2
Marsh Tit			5		5	2
Redwing		6			6	3
Skylark				3	3	2
Song thrush			1		1	1
Yellowhammer		12		1	13	10
BoCC4 Amber status	2		6		8	2
Black-headed gull	1				1	1
Bullfinch			6		6	2
Common gull	1				1	1
BoCC4 Green status	169	26	134	5	334	140
Blackbird		3	9		12	2
Blue tit			18		18	4
Carrion crow	3				3	3
Common buzzard	3				3	1
Goldcrest			1		1	1
Goldfinch	2				2	1
Great tit			5		5	4
Great-spotted woodpecker			1		1	1
Jay			2		2	1
Long-tailed tit			23		23	13
Magpie			5		5	2
Pheasant			5	5	10	5
Pied wagtail	1				1	1
Red kite	1				1	1
Robin		3	5		8	2
Sparrowhawk			2		2	1
Tree creeper			4		4	2
Wren			3		3	2
Jackdaw	4	1			5	2
Chaffinch	1	3	20		24	8
Wood pigeon	154	16	31		201	140
Grand Total	171	46	146	9	372	140

Vantage Point 4



Figure 1.1: Vantage Point 4 (Google Earth 2019).

Grid reference: TA 00987 37478

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2018	13/12/2018	14/01/2019	06/02/2019	26/02/2019	none

Table A4: Vantage Point 4 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	2	27		9	38	14
Fieldfare	2				2	2
House sparrow		26			26	14
Skylark				9	9	4
Yellowhammer		1			1	1
BoCC4 Amber status			1		1	1
Bullfinch			1		1	1
BoCC4 Green status	21	92	1	899	1013	450
Blackbird		16			16	5
Blue tit		3			3	2
Carrion crow	3			2	5	2
Common buzzard	5				5	3
Golden plover				60	60	60
Goldfinch	2	2			4	2
Great tit		3			3	1
Magpie		5		1	6	3
Pheasant				7	7	6
Pied wagtail	2				2	1
Red-legged partridge				2	2	2
Robin		7			7	3
Rook	1				1	1
Jackdaw		50			50	50
Chaffinch		6	1		7	2
Wood pigeon	8			827	835	450
Grand Total	23	119	2	908	1052	450

Vantage Point 5



Figure 12: Vantage Point 5 (Google Earth 2019).

Grid reference: TA 00497 39494

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2018	13/12/2018	14/01/2019	06/02/2019	26/02/2019	none

Table A5: Vantage Point 5 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow		Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	65	1			59	125	55
Fieldfare	55				11	66	55
Herring gull	1					1	1
Lapwing					42	42	42
Skylark					2	2	1
Starling	9				4	13	9
Yellowhammer		1				1	1
BoCC4 Amber status	63				77	140	60
Black-headed gull					4	4	4
Common gull	63				73	136	60
BoCC4 Green status	34	18		14	9	75	5
Blackbird		1		2		3	1
Blue tit		6		4		10	3
Carrion crow	3				6	9	4
Common buzzard	1					1	1
Golden plover					1	1	1
Goldfinch	3			1		4	2
Great tit				1		1	1
Jay		1				1	1
Magpie		2				2	2
Pheasant		4				4	4
Red-legged partridge					2	2	2
Robin		3		2		5	1
Rook	3					3	3
Sparrowhawk				1		1	1
Wren				1		1	1
Jackdaw	12					12	5
Chaffinch	1	1		2		4	1
Wood pigeon	11					11	5
Grand Total	162	19		14	145	340	60

Vantage Point 6

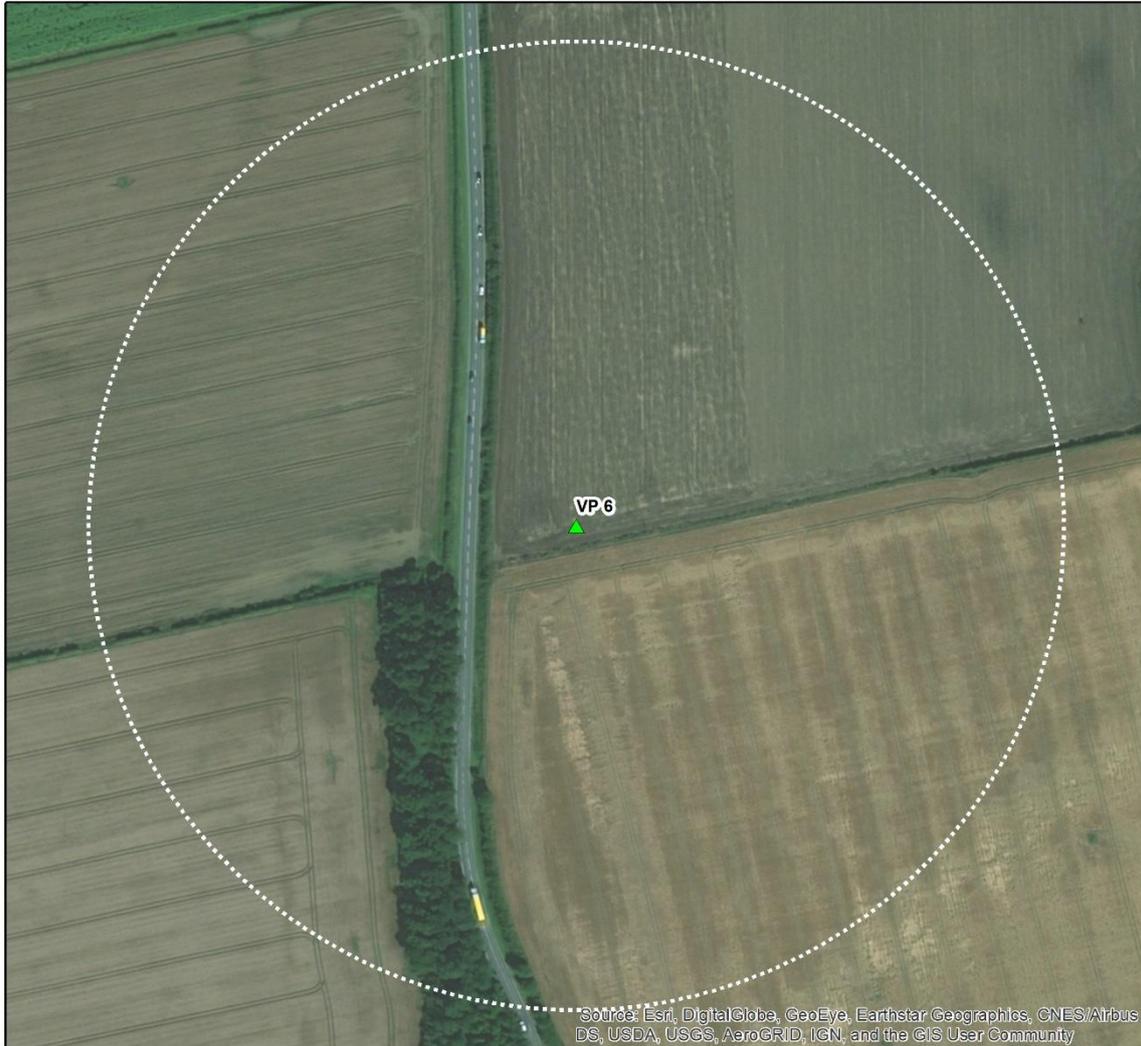


Figure 13: Vantage Point 6 (Google Earth 2019).

Grid reference: TA 00227 39983

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2018	13/12/2018	14/01/2019	06/02/2019	26/02/2019	none

Table A6: Vantage Point 6 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	149	29		6	184	46
Fieldfare	72				72	46
Linnet	62				62	32
Redwing	6				6	6
Skylark	9			6	15	9
Starling		1			1	1
Yellowhammer		28			28	28
BoCC4 Amber status	3				3	2
Common gull	2				2	2
Kestrel	1				1	1
BoCC4 Green status	33	4	13	4	54	6
Blackbird			1		1	1
Blue tit		1	4		5	3
Candada goose	2				2	2
Carrion crow	15			4	19	6
Goldfinch	4	1			5	3
Great tit		1	1		2	1
Robin		1	2		3	1
Rook	9				9	5
Tree creeper			1		1	1
Wren			3		3	1
Chaffinch	1		1		2	1
Wood pigeon	2				2	1
Grand Total	185	33	13	10	241	46

Vantage Point 7



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 14: Vantage Point 7 (Google Earth 2019).

Grid reference: TA 00557 41044

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2018	17/12/2018	15/01/2019	07/02/2019	none	none

Table A7: Vantage Point 7 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	53	300	4	357	300
Skylark			4	4	3
Starling	53	300		353	300
BoCC4 Amber status	49	3	40	92	25
Black-headed gull	2			2	2
Common gull	46			46	25
Dunnock		3		3	2
Meadow pipit	1		39	40	21
Reed bunting			1	1	1
BoCC4 Green status	9	7	120	136	120
Blackbird		4		4	3
Blue tit		1		1	1
Carrion crow	1			1	1
Common buzzard		1		1	1
Goldfinch	2			2	2
Robin		1		1	1
Rook	2			2	2
Chaffinch	1			1	1
Wood pigeon	3		120	123	120
Grand Total	111	310	164	585	300

Vantage Point 8

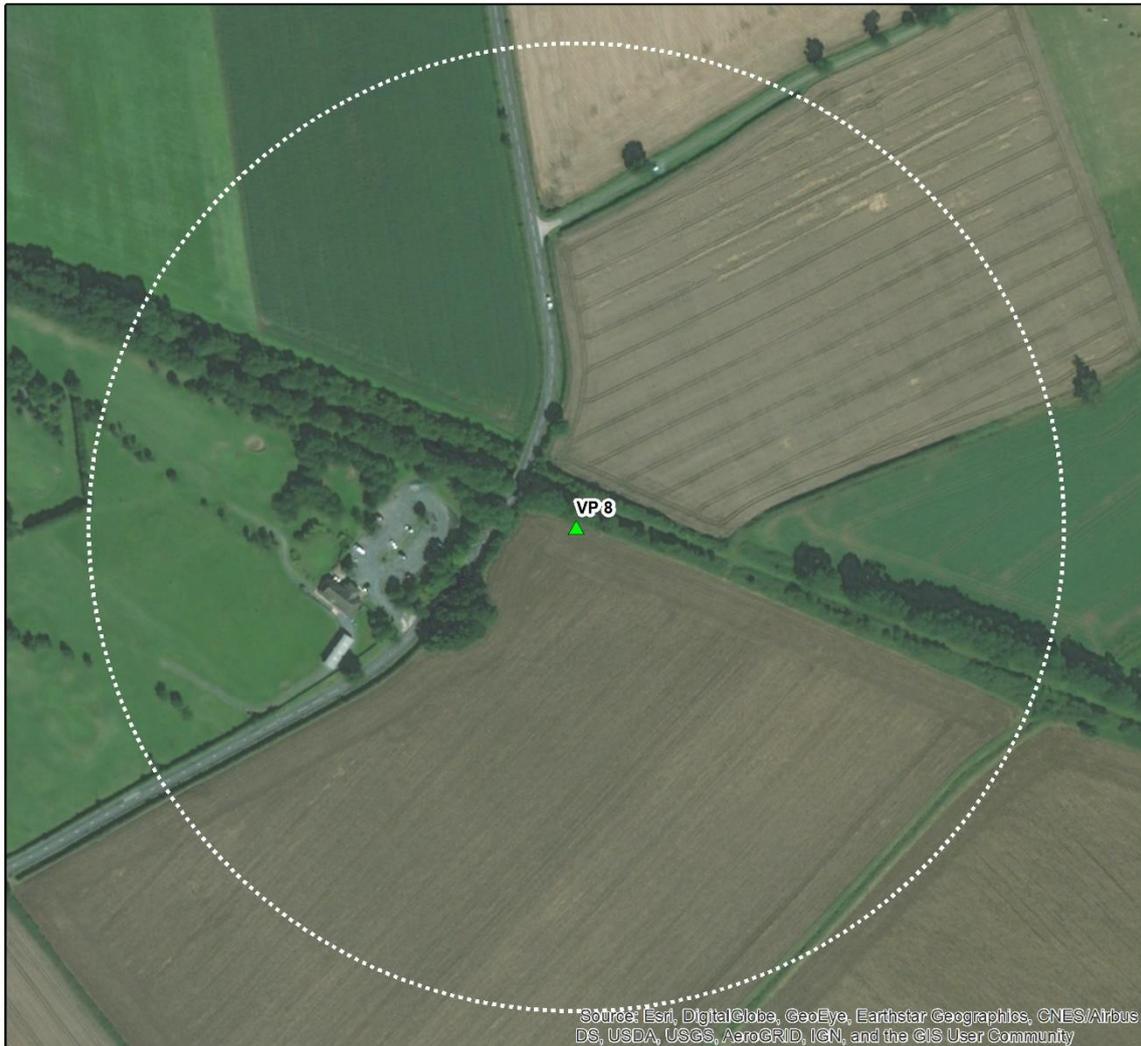


Figure 15: Vantage Point 8 (Google Earth 2019).

Grid reference: TA 00294 42367

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	29/11/2018	17/12/2018	15/01/2019	07/02/2019	27/02/2019	18/03/2019

Table A8: Vantage Point 8 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	11	373	2	38	424	275
Fieldfare	2	275	2	33	312	275
Redwing		93			93	90
Skylark				5	5	2
Starling	9				9	9
Yellowhammer		5			5	2
BoCC4 Amber status	13		3	2	18	4
Black-headed gull	5				5	4
Bullfinch			1		1	1
Common gull	5				5	2
Dunnock			2		2	1
Meadow pipit	1				1	1
Stock dove	2			2	4	2
BoCC4 Green status	72	19	59	15	165	50
Blackbird		9	6		15	5
Blue tit			6		6	3
Carrion crow	4			2	6	2
Goldcrest			1		1	1
Goldfinch	5		8		13	6
Great tit			2		2	1
Green woodpecker				1	1	1
Greenfinch	2				2	2
Long-tailed tit			4		4	4
Magpie			1		1	1
Red-legged partridge		1			1	1
Robin		2	5		7	2
Rook		5			5	5
Tree creeper			1		1	1
Wren			3		3	2
Chaffinch			12		12	4
Wood pigeon	61	2	10	12	85	50
Grand Total	96	392	64	55	607	275

Vantage Point 9

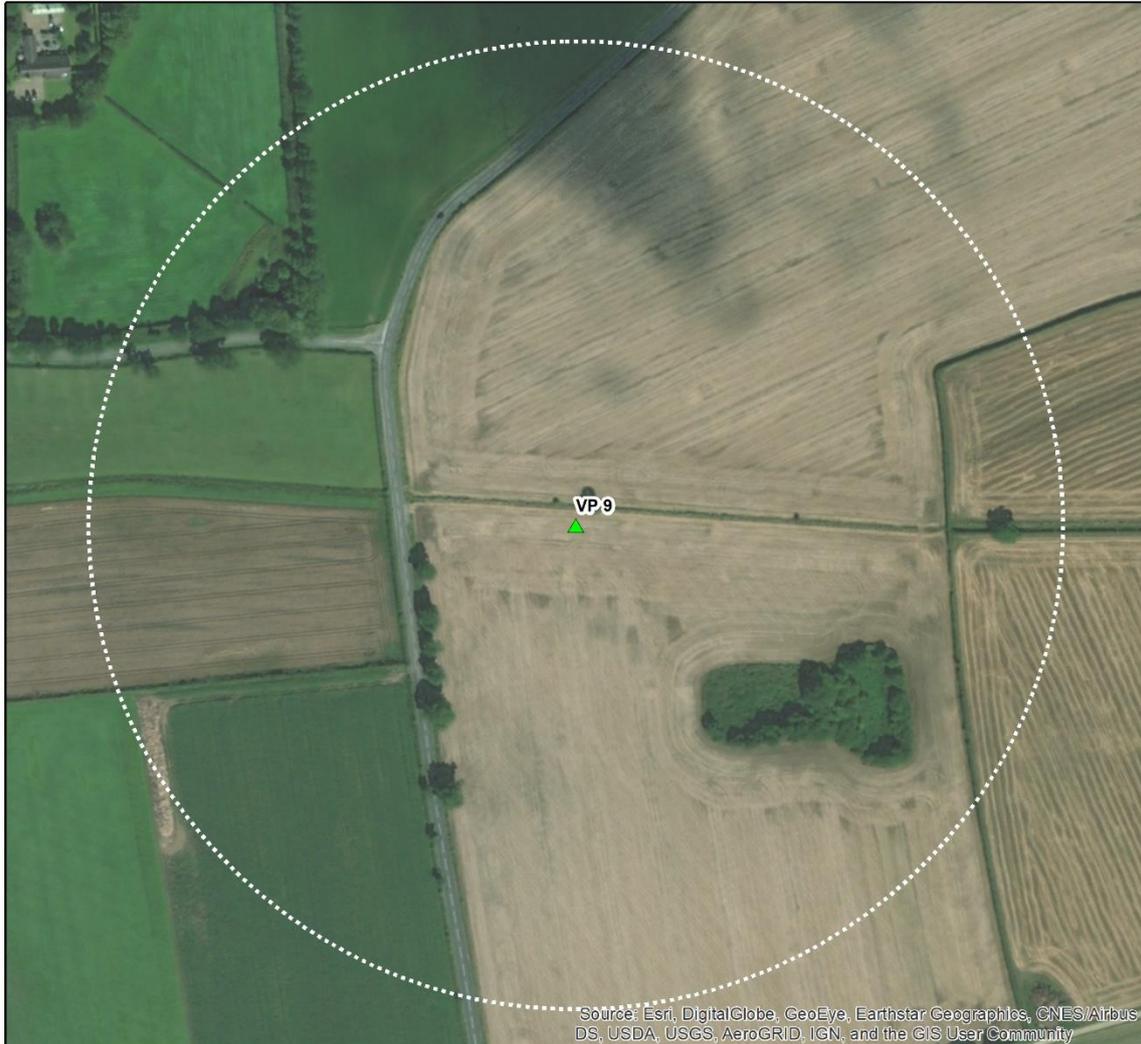


Figure 16: Vantage Point 9 (Google Earth 2019).

Grid reference: TA 00306 42934

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	29/11/2018	17/12/2018	15/01/2019	none	none	none

Table A9: Vantage Point 9 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	64		32		96	35
Fieldfare	49		25		74	35
Linnet	14				14	14
Redwing			4		4	4
Starling	1				1	1
Tree sparrow			3		3	3
BoCC4 Amber status	1		1		2	1
Dunnock			1		1	1
Meadow pipit	1				1	1
BoCC4 Green status	17	1	28	37	83	37
Blackbird		1	12		13	12
Blue tit			1		1	1
Carrion crow	3				3	2
Common buzzard	3				3	2
Long-tailed tit			15		15	15
Rook	6				6	6
Wren	1				1	1
Jackdaw	1				1	1
Wood pigeon	3			37	40	37
Grand Total	82	1	61	37	181	37

Vantage Point 10

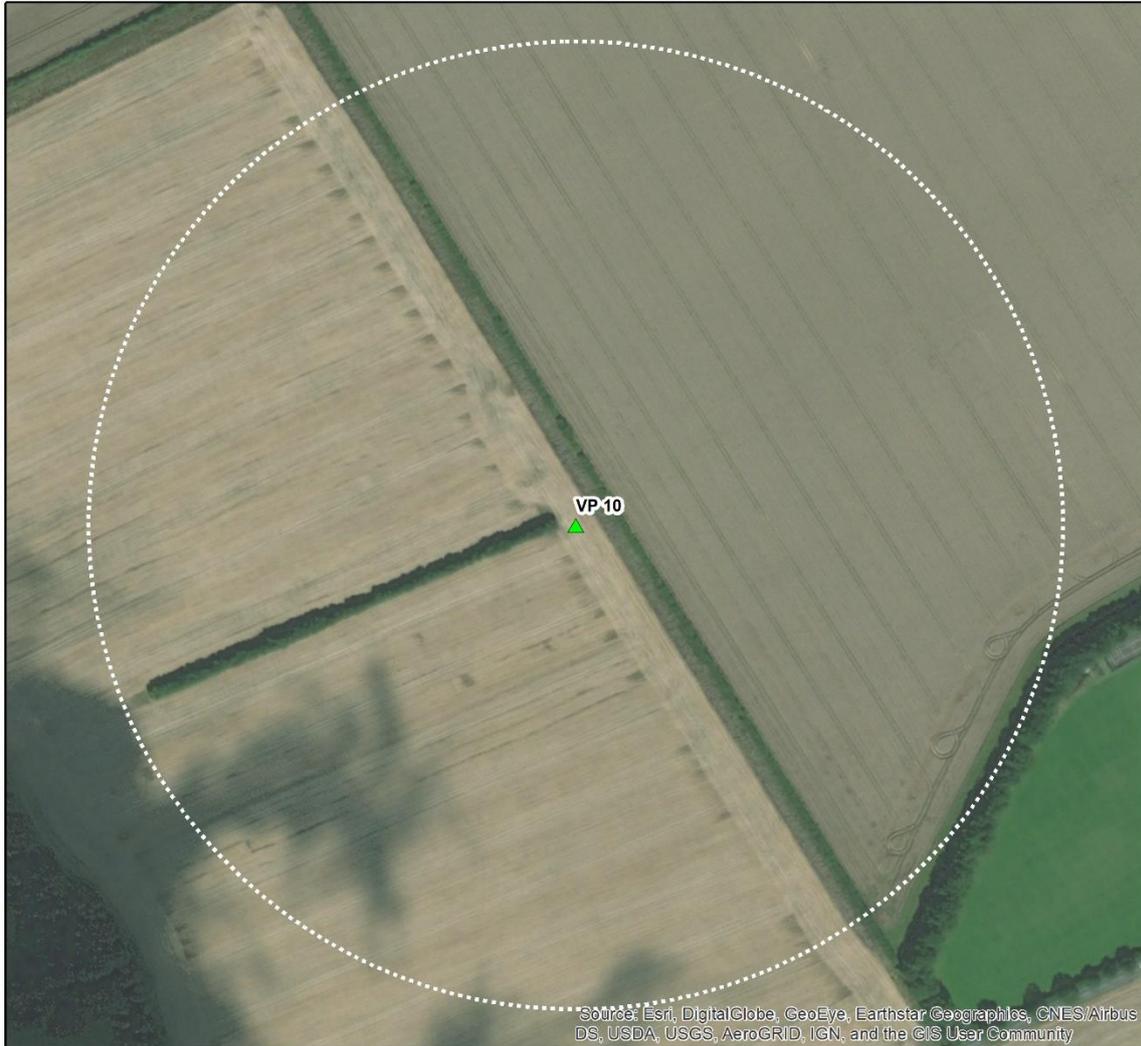


Figure 17: Vantage Point 10 (Google Earth 2019).

Grid reference: TA 00527 43753

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	29/11/2018	19/12/2018	15/01/2019	none	none	none

Table A10: Vantage Point 10 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	11	16		27	54	19
Fieldfare		15			15	15
Grey partridge				8	8	8
Linnet	9				9	7
Song thrush		1			1	1
Starling	2			19	21	19
BoCC4 Amber status	8				8	6
Black-headed gull	6				6	6
Stock dove	2				2	2
BoCC4 Green status	1125	17	1	134	1277	1100
Blackbird	2	5			7	5
Blue tit		2			2	2
Carrion crow	5		1	7	13	5
Collared dove	1				1	1
Common buzzard		2			2	2
Golden plover				6	6	6
Goldfinch	2				2	2
Great tit		1			1	1
Pheasant				19	19	18
Rook	3			8	11	8
Siskin	1				1	1
Wren		1			1	1
Chaffinch		6			6	5
Wood pigeon	1111			94	1205	1100
Grand Total	1144	33	1	161	1339	1100

Vantage Point 11

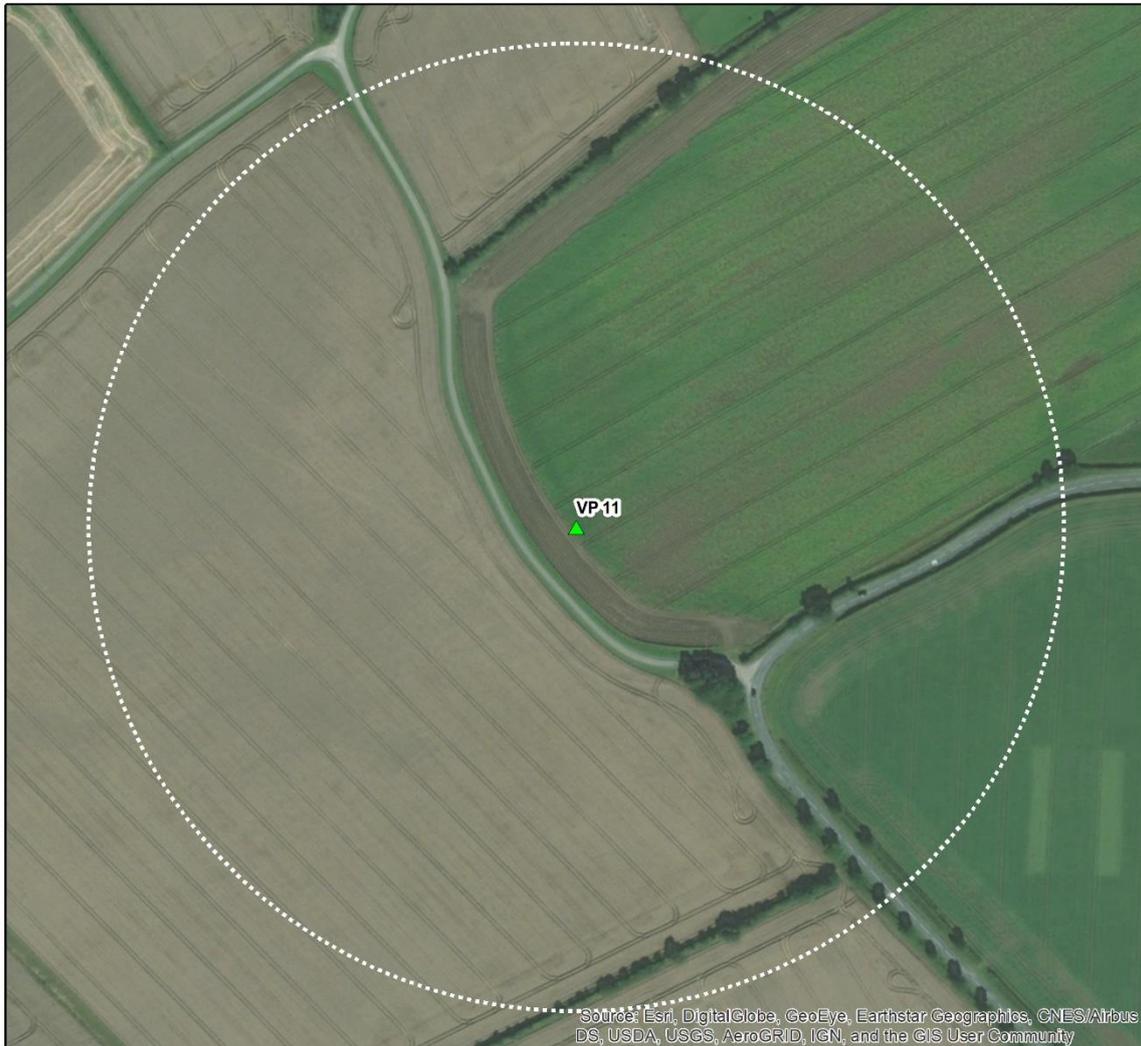


Figure 18: Vantage Point 11 (Google Earth 2019).

Grid reference: TA 00530 44338

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	29/11/2018	19/12/2018	15/01/2019	07/02/2019	27/02/2019	18/03/2019

Table A11: Vantage Point 11 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	15	3		36	54	22
Skylark				14	14	7
Starling	8			22	30	22
Yellowhammer	7	3			10	6
BoCC4 Amber status	13	2			15	11
Common gull	11				11	11
Dunnock		2			2	2
Kestrel	2				2	1
BoCC4 Green status	124	5	12	16	157	69
Blackbird		4			4	2
Blue tit			2		2	2
Carrion crow	10			5	15	6
Common buzzard	2				2	1
Goldfinch	3		2		5	2
Great tit			1		1	1
Greenfinch	1				1	1
Long-tailed tit			2		2	2
Red kite	1				1	1
Red-legged partridge				7	7	5
Robin			1		1	1
Rook	19			2	21	10
Wren			1		1	1
Jackdaw	14				14	10
Chaffinch	2	1	3		6	2
Wood pigeon	72			2	74	69
Grand Total	152	10	12	52	226	69

Vantage Point 12



Figure 19: Vantage Point 12 (Google Earth 2019).

Grid reference: TA 00573 45429

No counts undertaken due to land access limitations

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	n/a	n/a	n/a	n/a	n/a	n/a

Vantage Point 13



Figure 20: Vantage Point 13 (Google Earth 2019).

Grid reference: TA 00432 45441

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	none	17/12/2018	16/01/2019	07/02/2019	27/02/2019	18/03/2019

Table A12: Vantage Point 13 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status		2		10		12	6
Grey partridge				6		6	6
Marsh Tit				1		1	1
Skylark				3		3	2
Yellowhammer		2				2	1
BoCC4 Amber status	33	3	1		4	41	23
Bullfinch		2	1			3	1
Common gull	10					10	5
Duncock		1				1	1
Mallard					4	4	2
Stock dove	23					23	23
BoCC4 Green status	65	101	151	49		366	90
Blackbird		2	5			7	2
Blue tit		3	9			12	3
Carrion crow	2			1		3	2
Common buzzard	4		9			13	7
Goldcrest			4			4	3
Goldfinch	1					1	1
Great tit		1	2			3	1
Great-spotted woodpecker			3			3	2
Greenfinch		1				1	1
Jay			2			2	2
Long-tailed tit			2			2	2
Magpie			1			1	1
Pheasant				42		42	40
Red-legged partridge				6		6	5
Robin		2				2	2
Rook	20	90				110	90
Wren		2	5			7	2
Jackdaw	24		84			108	80
Chaffinch			10			10	4
Wood pigeon	14		15			29	14
Grand Total	98	106	152	59	4	419	90

Vantage Point 14



Figure 21: Vantage Point 14 (Google Earth 2019).

Grid reference: TA 01181 46193

No counts undertaken due to land access limitations

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	none	none	none	none	none	none

Vantage Point 15

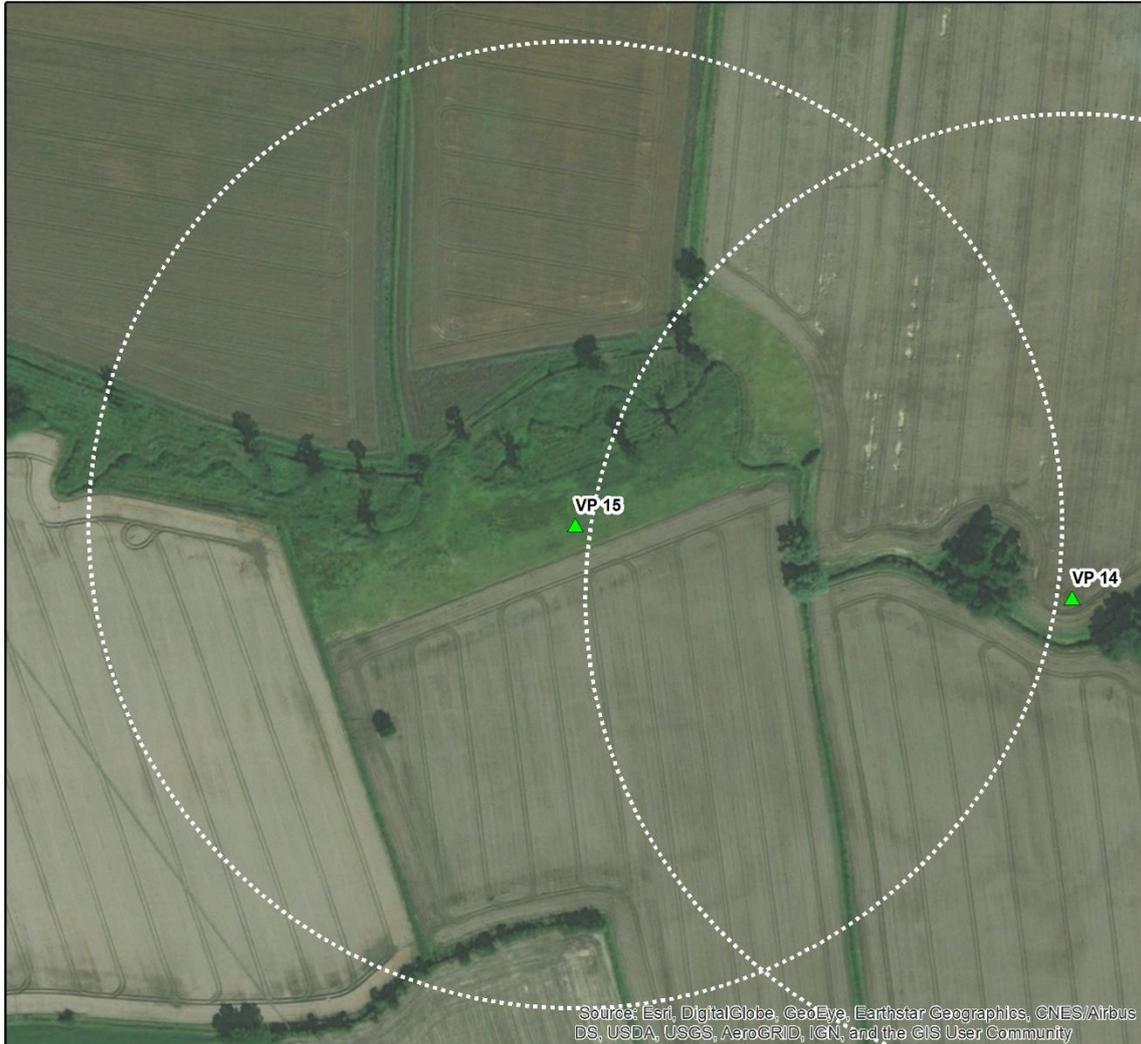


Figure 22: Vantage Point 15 (Google Earth 2019).

Grid reference: TA 00898 46251

No counts undertaken due to land access limitations

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	none	none	none	none	none	none

Vantage Point 16



Figure 23: Vantage Point 16 (Google Earth 2019).

Grid reference: TA 01807 47021

No counts undertaken due to land access limitations

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	none	none	none	none	none	none

Vantage Point 17



Figure 24: Vantage Point 17 (Google Earth 2019).

Grid reference: TA 02661 47556

No counts undertaken due to land access limitations

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	none	none	none	none	none	none

Vantage Point 18

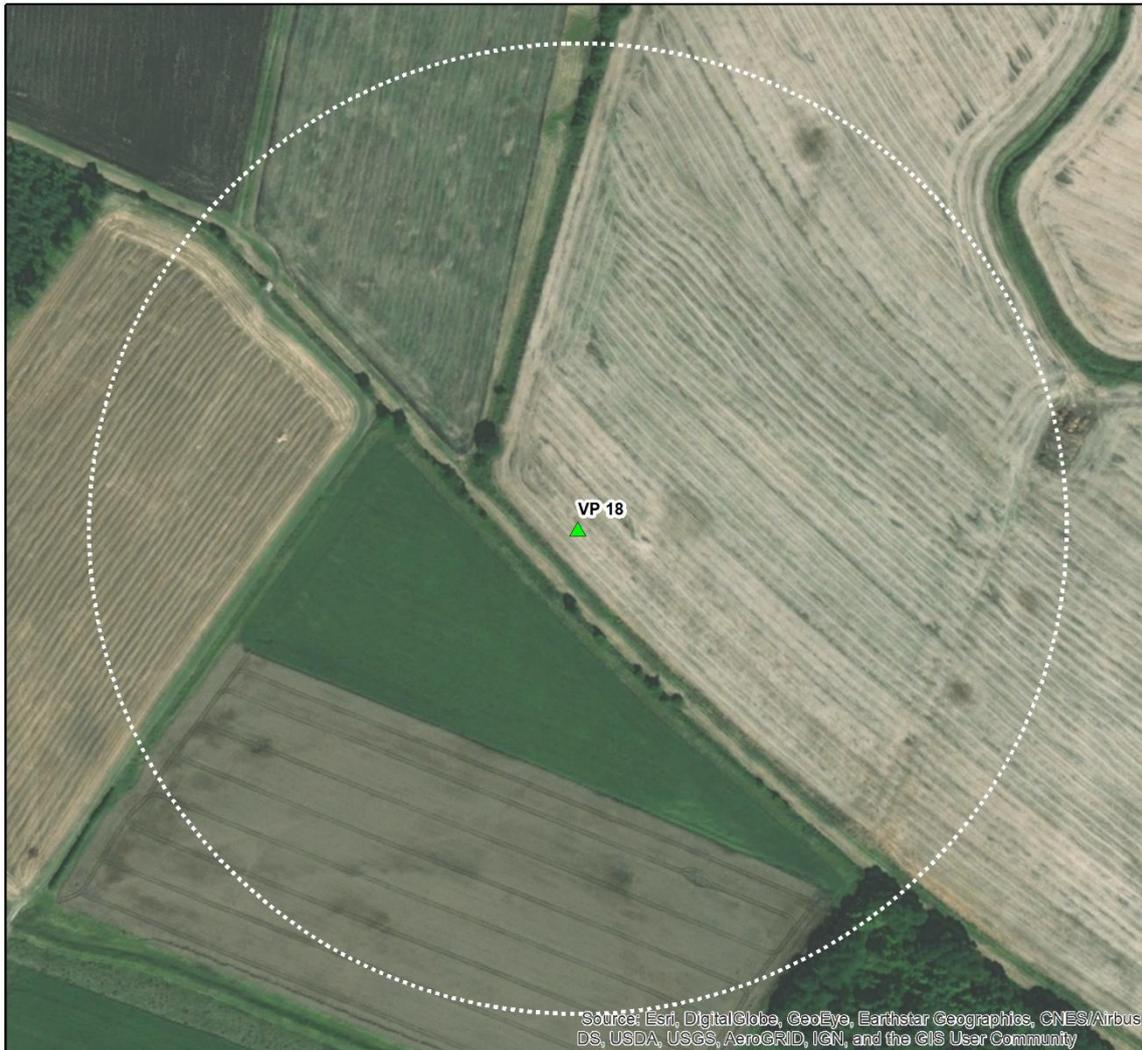


Figure 25: Vantage Point 18 (Google Earth 2019).

Grid reference: TA 03770 48032

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	None	19/12/2018	16/01/2019	05/02/2019	28/02/2019	18/03/2019

Table A13: Vantage Point 18 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	18	21	39	40		118	35
Fieldfare			35			35	35
Grey partridge				1		1	1
Linnet	1					1	1
Redwing			4			4	4
Skylark				6		6	6
Song thrush		1				1	1
Tree sparrow	2			1		3	2
Yellowhammer	15	20		32		67	26
BoCC4 Amber status	3	22		8	6	39	11
Dunnock		2				2	1
Green sandpiper					1	1	1
Mallard					2	2	2
Reed bunting		20		8		28	11
Stock dove	3					3	3
Teal					3	3	3
BoCC4 Green status	57	25	3	9	2	96	34
Blackbird		7				7	5
Carrion crow	1		2	4		7	4
Goldfinch		3				3	3
Greenfinch		1				1	1
Little Egret					2	2	2
Pheasant				1		1	1
Rook	35					35	34
Wren		1				1	1
Jackdaw	20			1		21	20
Chaffinch		13	1	2		16	10
Wood pigeon	1			1		2	1
Grand Total	78	68	42	57	8	253	35

Vantage Point 19



Figure 26: Vantage Point 19 (Google Earth 2019).

Grid reference: TA 04441 48736

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	29/11/2018	19/12/2018	16/01/2019	none	none	18/03/2019

Table A14: Vantage Point 19 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	125	41				166	87
Fieldfare	123	17				140	87
Redwing	2	19				21	14
Yellowhammer		5				5	4
BoCC4 Amber status	17	4		1	19	41	18
Kestrel	1					1	1
Mallard					18	18	18
Meadow pipit	8					8	8
Reed bunting		4		1		5	3
Teal	8				1	9	8
BoCC4 Green status	3	21	1	2		27	11
Blackbird	1	3				4	3
Goldfinch	1	11				12	11
Great tit		1				1	1
Sparrowhawk	1					1	1
Wren		4				4	2
Chaffinch		2				2	2
Wood pigeon			1	2		3	2
Grand Total	145	66	1	3	19	234	87

Vantage Point 20



Figure 27: Vantage Point 20 (Google Earth 2019).

Grid reference: TA 04916 49608

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	29/11/2018	19/12/2018	16/01/2019	none	none	18/03/2019

Table A15: Vantage Point 20 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	19	2	3			24	15
Fieldfare			3			3	3
Linnet	1					1	1
Redwing	1					1	1
Starling	2					2	2
Yellowhammer	15	2				17	15
BoCC4 Amber status	1				7	8	7
Mute swan	1					1	1
Teal					7	7	7
BoCC4 Green status	266	2	65	50		383	101
Blackbird			4			4	3
Carrion crow	36					36	28
Goldfinch	14					14	14
Magpie			1			1	1
Robin			2			2	1
Rook	80			42		122	54
Wren		2				2	1
Jackdaw	17			8		25	17
Chaffinch			15			15	13
Wood pigeon	119		43			162	101
Grand Total	286	4	68	50	7	415	101

Vantage Point 21

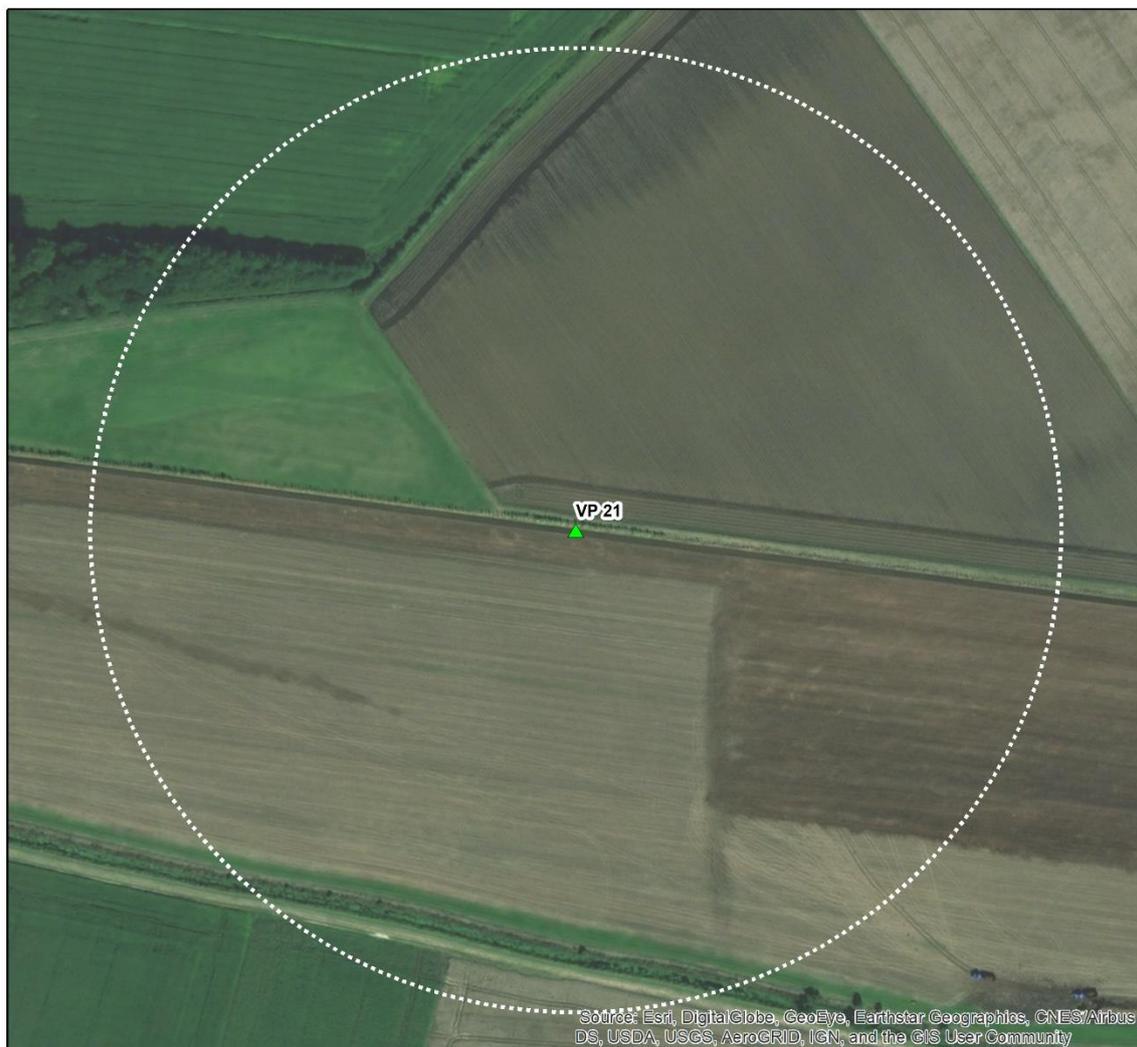


Figure 28: Vantage Point 21 (Google Earth 2019).

Grid reference: TA 05663 50846

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	28/11/2018	19/12/2018	16/01/2019	05/02/2019	28/02/2019	18/03/2019

Table A16: Vantage Point 21 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	55		1	51		107	40
Fieldfare	23			3		26	15
Lapwing				1		1	1
Linnet	25					25	25
Redwing	7					7	6
Skylark				7		7	5
Song thrush			1			1	1
Starling				40		40	40
BoCC4 Amber status	4		2		6	12	5
Duncock			1			1	1
Kestrel	1					1	1
Mallard					1	1	1
Meadow pipit	3					3	1
Stock dove			1			1	1
Teal					5	5	5
BoCC4 Green status	19	4	13	13	1	50	10
Blackbird		2	2			4	2
Carrion crow	3	2	2			7	2
Cormorant	1					1	1
Golden plover				10		10	10
Moorhen					1	1	1
Pheasant				3		3	2
Robin			1			1	1
Rook	5		2			7	5
Jackdaw	2		3			5	3
Chaffinch			3			3	3
Wood pigeon	8					8	7
Grand Total	78	4	16	64	7	169	40

Vantage Point 22



Figure 29: Vantage Point 22 (Google Earth 2019).

Grid reference: TA 06043 51681

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	28/11/2018	19/12/2018	16/01/2019	05/02/2019	28/02/2019	18/03/2019

Table A17: Vantage Point 22 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	1			1		2	1
Mistle thrush				1		1	1
Yellowhammer	1					1	1
BoCC4 Amber status			1	6	2	9	3
Duncock			1			1	1
Greylag goose				2		2	2
Kestrel				1		1	1
Stock dove				3		3	3
Teal					2	2	2
BoCC4 Green status	14	4	5	64		87	30
Blackbird		1	1			2	1
Blue tit			1			1	1
Carrion crow				2		2	2
Common buzzard				1		1	1
Cormorant	1					1	1
Greenfinch	1					1	1
Magpie		1				1	1
Pheasant				1		1	1
Rook				30		30	30
Sparrowhawk		1				1	1
Wren		1	1			2	1
Jackdaw	3			30		33	30
Chaffinch			2			2	2
Wood pigeon	9					9	4
Grand Total	15	4	6	71	2	98	30

Vantage Point 23

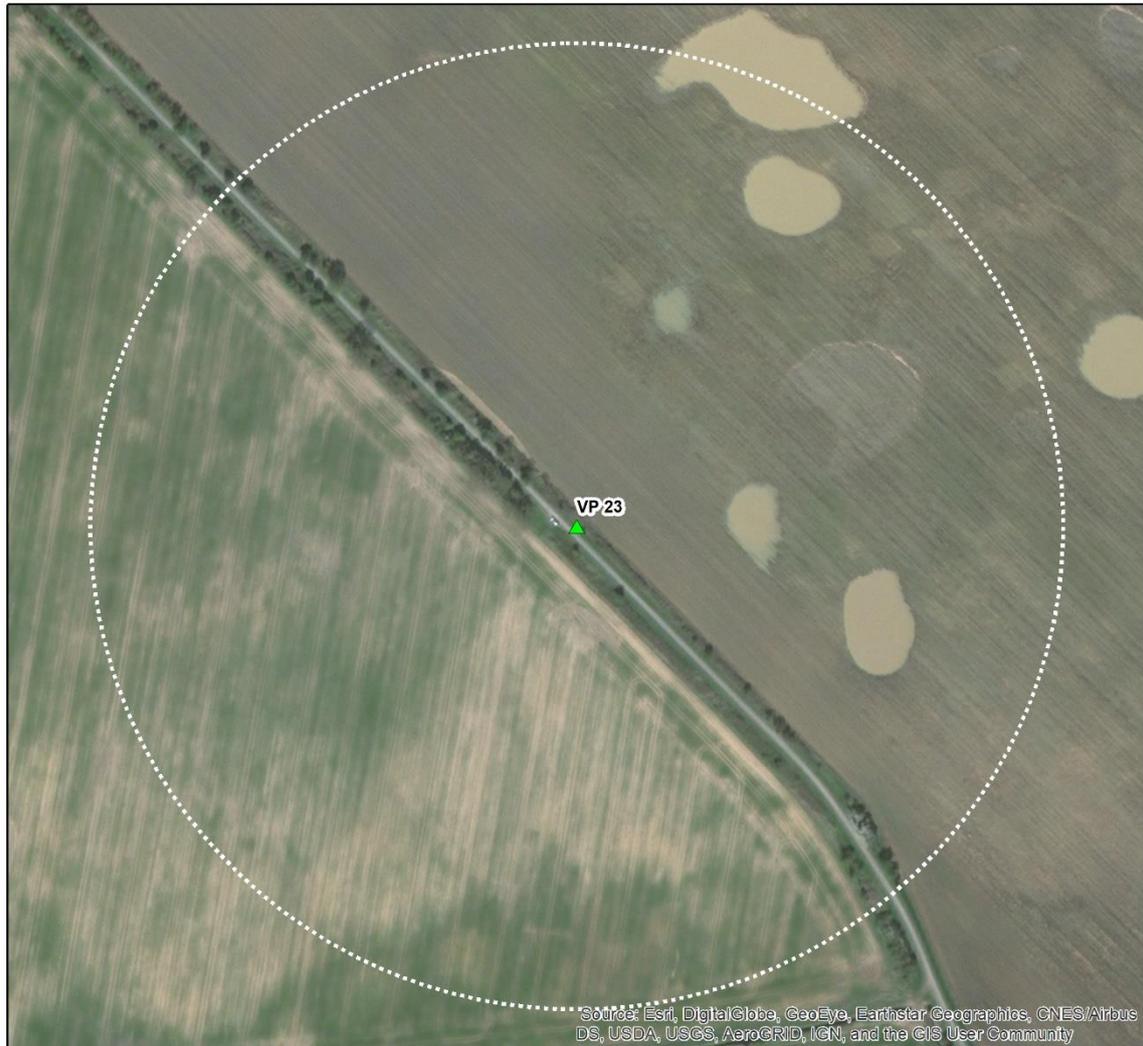


Figure 30: Vantage Point 23 (Google Earth 2019).

Grid reference: TA 06152 52174

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	28/11/2018	19/12/2018	16/01/2019	05/02/2019	28/02/2019	18/03/2019

Table A18: Vantage Point 23 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	18	13	18	49	13
Fieldfare		13		13	13
Grey partridge			2	2	2
Lapwing			12	12	12
Skylark	10		4	14	9
Starling	8			8	8
BoCC4 Amber status	1	4	4	9	4
Dunnock		4		4	2
Meadow pipit	1		4	5	4
BoCC4 Green status	7	21	5	33	5
Blackbird		4		4	2
Blue tit		1		1	1
Carrion crow	1		2	3	2
Cormorant	1			1	1
Golden plover	1			1	1
Great tit		1		1	1
Pheasant			3	3	3
Robin		3		3	2
Wren		5		5	2
Jackdaw	2			2	2
Chaffinch		7		7	5
Wood pigeon	2			2	2
Grand Total	26	38	27	91	13

Vantage Point 24



Figure 31: Vantage Point 24 (Google Earth 2019)

Grid reference: TA 06483 52879

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	28/11/2018	19/12/2018	15/01/2019	05/02/2019	28/02/2019	18/03/2019

Table A19: Vantage Point 24 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status				2		2	2
Skylark				2		2	2
BoCC4 Amber status	1	3	6		4	14	3
Bullfinch			1			1	1
Duncock		3	5			8	3
Gadwall					2	2	2
Kingfisher	1					1	1
Teal					2	2	2
BoCC4 Green status	5	9	52	14	4	84	8
Blackbird		1	10			11	8
Blue tit			5			5	5
Carrion crow			4	5		9	5
Cormorant	1		10			11	5
Great tit				1		1	1
Great-spotted woodpecker		1	1			2	1
Magpie			1	1		2	1
Moorhen					3	3	3
Pheasant			1	3		4	2
Red-legged partridge		1				1	1
Robin			3	1		4	2
Siskin	1		7			8	7
Water rail					1	1	1
Wren		1	5	3		9	3
Chaffinch	1	4				5	3
Wood pigeon	2	1	5			8	5
Grand Total	6	12	58	16	8	100	8

Vantage Point 25



Figure 32: Vantage Point 25 (Google Earth 2019).

Grid reference: TA 07603 54239

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	28/11/2018	none	none	none	none	none

Table A20: Vantage Point 25 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	40			40	34
Fieldfare	6			6	6
Redwing	34			34	34
BoCC4 Amber status	1			1	1
Mallard	1			1	1
BoCC4 Green status	4	2	1	7	2
Carrion crow	2		1	3	2
Common buzzard	1			1	1
Robin		1		1	1
Wood pigeon	1	1		2	1
Grand Total	45	2	1	48	34

Vantage Point 26



Figure 33: Vantage Point 26 (Google Earth 2019).

Grid reference: TA 09543 55879

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	28/11/2019	14/12/2019	15/01/2019	05/02/2019	28/02/2019	18/03/2019

Table A21: Vantage Point 26 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	66	53	16	26	161	52
Fieldfare			16		16	16
Grey partridge				6	6	4
Linnet	53	52			105	52
Skylark	10			20	30	12
Starling	1				1	1
Yellowhammer	2	1			3	1
BoCC4 Amber status	14	2		6	22	8
Mallard	5				5	5
Reed bunting		2		1	3	2
Snipe	1			1	2	1
Stock dove	8			4	12	8
BoCC4 Green status	14	2		35	51	20
Blackbird		2			2	2
Carrion crow	2			9	11	3
Cormorant	2				2	2
Feral pigeon				20	20	20
Pheasant				1	1	1
Rook	1				1	1
Jackdaw	4				4	2
Wood pigeon	5			5	10	5
Grand Total	94	57	16	67	234	52

Vantage Point 27



Figure 34: Vantage Point 27 (Google Earth 2019).

Grid reference: TA 11339 56527

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	28/11/2019	14/12/2019	15/01/2019	05/02/2019	28/02/2019	none

Table A22: Vantage Point 27 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	5	2	3	7		17	3
Fieldfare				3		3	3
Herring gull	1			2		3	2
Lapwing				1		1	1
Linnet	2		1			3	1
Skylark	1			1		2	1
Starling	1		2			3	2
Tree sparrow		1				1	1
Yellowhammer		1				1	1
BoCC4 Amber status	19	9	1	12	1	42	10
Bullfinch		5				5	3
Common gull	1					1	1
Dunlin			1			1	1
Dunnock		2				2	1
Kestrel	1					1	1
Mallard	12			2		14	8
Reed bunting		1				1	1
Snipe	4					4	4
Stock dove		1				1	1
Teal	1			10	1	12	10
BoCC4 Green status	42	36	66	6		150	46
Blackbird		7	2			9	2
Blue tit		2	2			4	2
Carrion crow	6		1			7	4
Common buzzard	2					2	2
Golden plover	7					7	7
Goldfinch		5	2			7	5
Magpie		1	3	1		5	2
Moorhen			1			1	1
Pheasant				5		5	3
Robin		7				7	2
Rook	4					4	4
Wren			1			1	1
Jackdaw	21	2	5			28	10
Chaffinch		4				4	3
Wood pigeon	2	8	49			59	46
Grand Total	66	47	70	25	1	209	46

Vantage Point 28

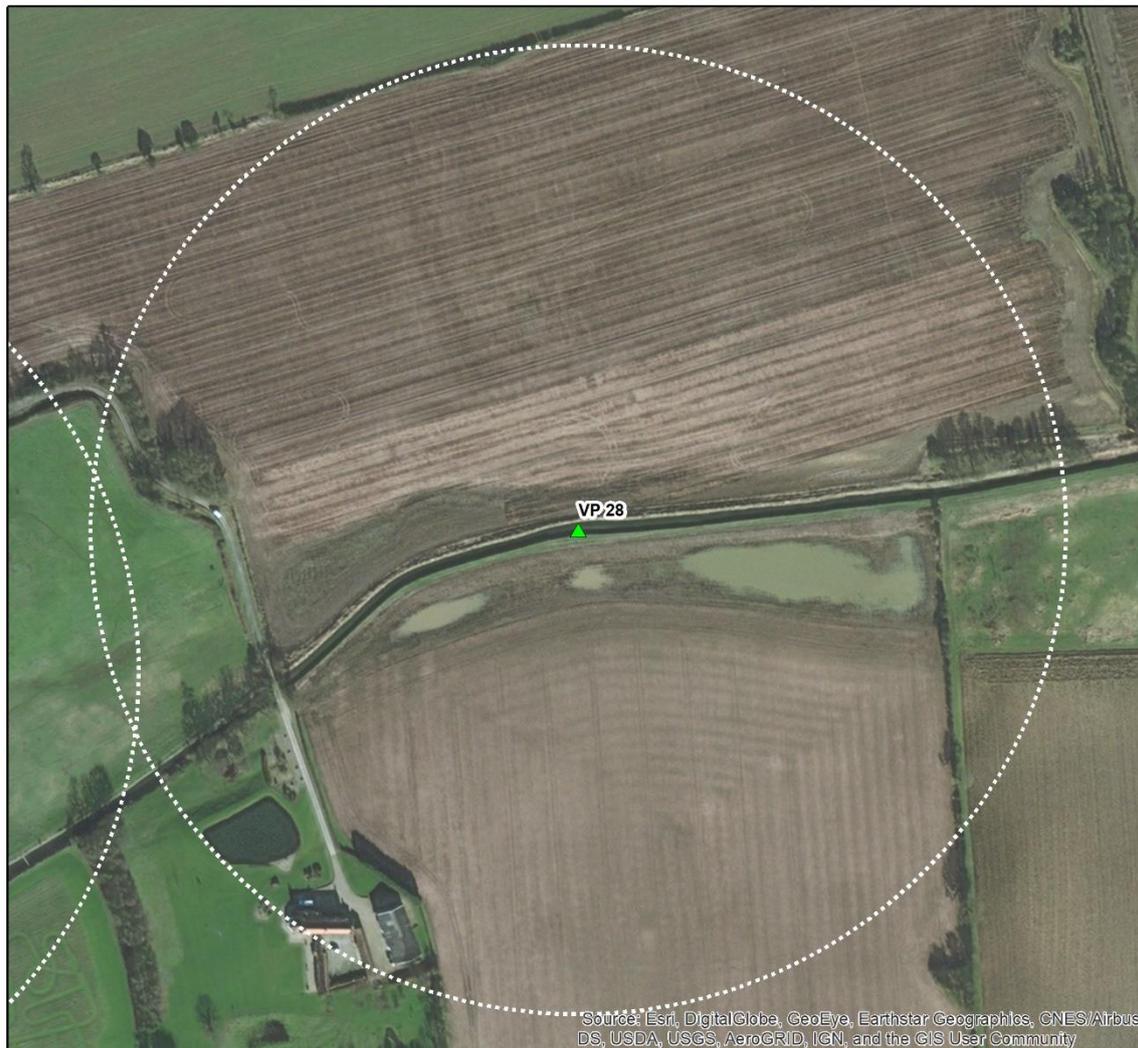


Figure 35: Vantage Point 28 (Google Earth 2019).

Grid reference: TA 11789 56588

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	15/01/2019	05/02/2019	28/02/2019	none

Table A23: Vantage Point 28 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	8	8	34	4		54	34
Fieldfare			34			34	34
Linnet	1					1	1
Skylark				3		3	2
Song thrush		7		1		8	4
Yellowhammer	7	1				8	7
BoCC4 Amber status	8	10		7	28	53	16
Duncock		8				8	5
Kestrel	1					1	1
Mallard	6				26	32	16
Mute swan					1	1	1
Snipe				7		7	6
Stock dove	1					1	1
Teal					1	1	1
Wigeon		2				2	2
BoCC4 Green status	42	17	27	148	3	237	110
Blackbird		2	1			3	1
Carrion crow	3			1		4	2
Common buzzard	2	1				3	1
Cormorant	1					1	1
Goldfinch	17	4				21	16
Great-spotted woodpecker			1			1	1
Magpie			2			2	2
Moorhen					3	3	2
Pied wagtail	2					2	1
Robin		3				3	2
Rook	4					4	2
Wren		4				4	2
Chaffinch	1	3	3			7	3
Wood pigeon	12		20	147		179	110
Grand Total	58	35	61	159	31	344	110

Vantage Point 29



Figure 36: Vantage Point 29 (Google Earth 2019).

Grid reference: TA 12999 56799

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	15/01/2019	none	none	none

Table A24: Vantage Point 29 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	2			2	2
Linnet	2			2	2
BoCC4 Amber status	1	1	42	44	18
Common gull		1		1	1
Mallard			34	34	18
Mute swan	1			1	1
Teal			8	8	4
BoCC4 Green status	3			3	1
Cormorant	1			1	1
Pied wagtail	2			2	1
Grand Total	6	1	42	49	18

Vantage Point 30



Figure 37: Vantage Point 30 (Google Earth 2019).

Grid reference: TA 13778 57452

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	15/01/2019	none	none	none

Table A25: Vantage Point 30 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	1	23			24	15
Linnet	1				1	1
Starling		15			15	15
Tree sparrow		4			4	4
Yellowhammer		4			4	4
BoCC4 Amber status	1				1	1
Common gull	1				1	1
BoCC4 Green status	26	2	91	268	387	139
Blackbird		1			1	1
Blue tit		1			1	1
Rook	5		74	268	347	139
Jackdaw	2		17		19	17
Chaffinch	1				1	1
Wood pigeon	18				18	10
Grand Total	28	25	91	268	412	139

Vantage Point 31



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 38: Vantage Point 31 (Google Earth 2019).

Grid reference: TA 14959 59163

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	none	none	none	none

Table A26: Vantage Point 31 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Field	Water body	Total No. Recorded	Single visit maxima
BoCC 4 Red status	87	42	40		169	84
Linnet	2	42			44	42
Starling	85		40		125	84
BoCC4 Amber status	4	1	37	2	44	24
Black-headed gull			2		2	2
Common gull			35		35	24
Duncock		1			1	1
Mallard	4				4	2
Teal				2	2	2
BoCC4 Green status	18	2	4		24	7
Goldfinch	1				1	1
Greenfinch	4				4	4
Pied wagtail	1				1	1
Robin		1			1	1
Rook			4		4	4
Jackdaw	8				8	7
Chaffinch	1	1			2	1
Wood pigeon	3				3	2
Grand Total	109	45	81	2	237	84

Vantage Point 32



Figure 39: Vantage Point 32 (Google Earth 2019).

Grid reference: TA 15236 59932

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	15/01/2019	none	none	none

Table A27: Vantage Point 32 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Total No. Recorded	Single visit maxima
BoCC 4 Red status	8		1	9	8
Song thrush			1	1	1
Starling	8			8	8
BoCC4 Amber status	1		2	3	1
Duncock			2	2	1
Stock dove	1			1	1
BoCC4 Green status	87	3	32	122	50
Blackbird			2	2	2
Blue tit			11	11	5
Chiff chaff			1	1	1
Golden plover	12			12	12
Goldfinch	2		1	3	2
Great tit		3	2	5	3
Long-tailed tit			2	2	2
Pheasant			1	1	1
Robin			4	4	3
Rook	56			56	50
Tree creeper			1	1	1
Wren			6	6	3
Jackdaw	5			5	5
Chaffinch			1	1	1
Wood pigeon	12			12	6
Grand Total	96	3	35	134	50

Vantage Point 33



Figure 40: Vantage Point 33 (Google Earth 2019).

Grid reference: TA 15972 60720

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	none	none	none	none

Table A28: Vantage Point 33 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	24	7	17	48	15
Corn bunting	7			7	7
Fieldfare	1			1	1
Linnet		5		5	5
Skylark	1		13	14	13
Yellowhammer	15	2	4	21	15
BoCC4 Amber status	3	1		4	2
Common gull	2			2	2
Kingfisher	1			1	1
Reed bunting		1		1	1
BoCC4 Green status	11	3	1	15	6
Goldfinch	1			1	1
Greenfinch	1			1	1
Magpie	1			1	1
Pheasant	1		1	2	1
Chaffinch	6	3		9	6
Wood pigeon	1			1	1
Grand Total	38	11	18	67	15

Vantage Point 34



Figure 41: Vantage Point 34 (Google Earth 2019).

Grid reference: TA 16507 61379

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	15/01/2019	05/02/2019	none	none

Table A29: Vantage Point 34 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Hedgerow	Woodland	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status	11	32		106	149	66
Corn bunting	1	14		66	81	66
Linnet	8			11	19	11
Merlin	1				1	1
Skylark				6	6	6
Tree sparrow		17			17	10
Yellowhammer	1	1		23	25	23
BoCC4 Amber status	3	11		10	24	9
Kestrel	1				1	1
Meadow pipit	1				1	1
Reed bunting	1	11		10	22	9
BoCC4 Green status	9	9	2		20	8
Carrion crow	5		2		7	5
Cormorant	1				1	1
Goldfinch	1	8			9	8
Pied wagtail	1				1	1
Rook	1				1	1
Wren		1			1	1
Grand Total	23	52	2	116	193	66

Vantage Point 35



Figure 42: Vantage Point 35 (Google Earth 2019).

Grid reference: TA 16985 61759

Visit:	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date:	27/11/2019	14/12/2019	15/01/2019	05/02/2019	none	none

Table A30: Vantage Point 35 species observations (grouped and illustrated in order by BoCC4 Red, Amber and Green status).

Species and BoCC4 status	In flight	Field	Total No. Recorded	Single visit maxima
BoCC 4 Red status		9	9	8
Ringed plover		8	8	8
Skylark		1	1	1
BoCC4 Amber status	4	1	5	4
Dunlin		1	1	1
Greylag goose	4		4	4
BoCC4 Green status	32	130	164	118
Carrion crow			2	2
Golden plover		130	130	118
Greenfinch	30		30	30
Pied wagtail	1		1	1
Rook	1		1	1
Grand Total	36	140	178	118