RWE

Tween Bridge Solar Farm

5.3 Report to Inform Habitat Regulations Assessment

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

APFP Regulation 5(2)(g)

Document Reference: 5.3

September 2026

Revision 8

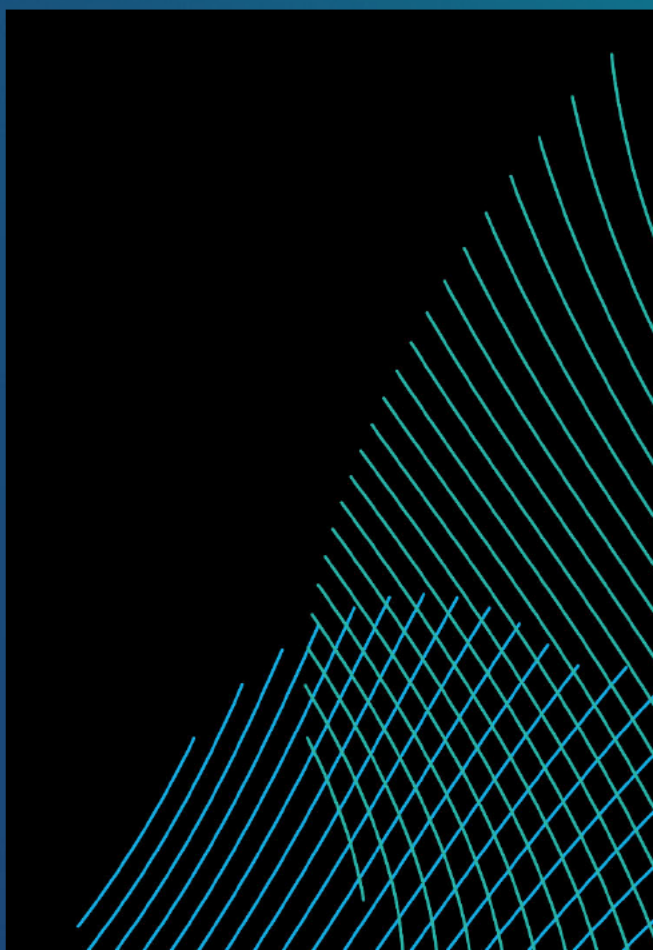


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1 Summary

1.1.1. This 'shadow' HRA has been prepared by Tyler Grange Group Ltd on behalf of RWE Renewables UK Solar and Storage Ltd. It has been prepared to accompany an application under Section 37 of the Planning Act 2008 to the Secretary of State for the Department of Energy Security and Net Zero for a Development Consent Order for the Tween Bridge Solar Farm.

1.1.2. The following Natura 2000 sites were screened in for sHRA:

- Humber Estuary SPA (7.7 km north);
- Humber Estuary Ramsar (1.3km northeast)
- Humber Estuary SAC (1.3km north);
- Thorne Moor SAC (0.53ha located within the Scheme on the northern boundary, with other sections adjacent to the northern boundary);
- Thorne and Hatfield Moors SPA (0.53 ha located within the Scheme on the northern boundary, with other sections adjacent to the northern boundary);
- Hatfield Moor SAC (0.1 km south).

1.1.3. Potential LSEs include impacts form construction as a consequence of damage, run-off, air quality, noise and disturbance and also from loss of functionally linked land associated with Humber Estuary SPA / Ramsar.

1.1.4. Mitigation measures have been proposed with further details being provided in the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]** and **Document Reference 7.6 Revision 6Outline Landscape Ecological Management Plan [Document Reference 7.6 Revision 6]**.

1.1.5. These mitigations, if implemented successfully, would enable the Scheme to be constructed, operated and decommissioned with no likely significant effects on the features of the above designations which were screened in for Appropriate Assessment.

1.1.6. Furthermore, once applied, the mitigation measures would render any potentially significant effects as either neutral or at such a negligible level that they would not

result in any in combination effects arising from the cumulative developments considered in **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5.**

1.1.7. This report has been updated following the Applicant's notice of intention to submit a request for changes to the application **[PD-006]** and subsequent **Change Request Document [AS-028]**. The updates comprise the removal of parcels **1/A, 1/B, 1/C, 1/D, 2/B**[1]**, 3/C, 3/D and 3/E** from the extent of land subject to compulsory acquisition, temporary possession and works powers; the modification of Mitigation Parcel **M1(A)** to avoid registered common land/Countryside and Rights of Way Act 2000 access land parcels **1/E, 2/A, 3/A and 3/B**; and an amendment to a proposed permissive path route through Mitigation Parcel M1(A) so that it would avoid encroaching upon parcel **2/A**. However, the updates as a consequence of the Change Request do not change the conclusions of this document, with no adverse effects on integrity to the features of the above designations which were screened in for Appropriate Assessment predicted to take place.

[1] A small area of land previously forming part of parcel 2A is now identified as parcel 2B in the Land Plans [Document Reference 2.2 Revision 3]. That land is not subject to compulsory acquisition, temporary possession or works powers. In addition, no benefit is assigned to that land for the purposes of the assessment contained in this report as it has never formed part of Mitigation Parcel M1(A) and no other habitat enhancement is proposed in respect of the land.

2 Introduction

2.1.1. This 'shadow' Habitats Regulations Assessment (sHRA) has been prepared by Tyler Grange (TG) Group Ltd. on behalf of RWE Renewables UK Solar and Storage Ltd. It has been prepared to accompany an application under Section 37 of the Planning Act 2008 to the Secretary of State (SoS) for the Department of Energy Security and Net Zero (DESNZ) for a Development Consent Order (DCO) known as 'the Scheme'.

2.1.2. The Order Limits consist of approximately 1,831 ha of agricultural land, the majority of which consists of arable farmland with cereal and non-cereal crops. Fields are bounded by ditches as well as fences, hedgerows and tree lines. Modified grassland used as pastoral land is also present within the Order Limits as well as a woodland copse and a number of ponds.

2.1.3. The operational Tween Bridge Wind Farm is located within the Order Limits, and consists of twenty-two operational wind turbines. The Stainforth and Keadby Canal crosses the Order Limit from west to east.

2.1.4. In the wider context, the Order Limits is surrounded by extensive areas of farmland and areas of woodland, with areas of lowland peat bog (Thorne & Hatfield Moors) located to the north and south of the Order Limits.

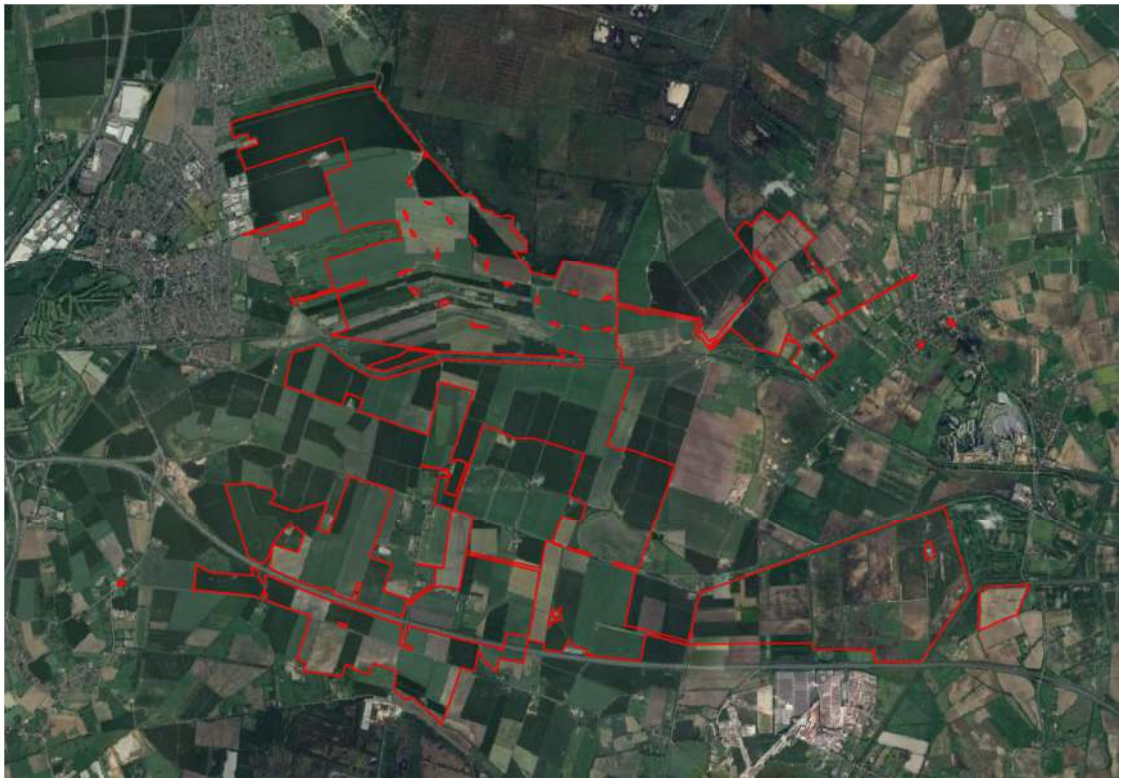


Figure 2-1: Site Context and Order Limits (Aerial Imagery © Google Earth 2025)

2.1.5. The proposals for the Order Limits are for the creation of a ground mounted solar farm and battery energy storage systems (BESS), together with associated infrastructure.

2.1.6. Two options in the design layout are considered for a fixed and tracker design and fixed design with further details set out in **ES Chapter 2 Scheme Description [APP-039]**. However, the parameters of the development are the same with only minor differences. As such the 'Assessment of Likely Effects' and 'Residual Effects' assess both design options as there are no significant differences.

2.1.7. The construction phase assumes the Scheme will be built out over up to a 54 month-period (2028- 2032) in either a single phased approach (development of Land Parcels completed one after another with the potential for breaks between development of Land Parcels) or through multiple phases (development of Land Parcels concurrently). For the multiple phase construction option, no more than two land parcels (within land parcels A-E) would be built out at the same time. ES Environmental Aspect Chapters determine in the methodology 'Assessment

Approach' section which of the two options for the construction phasing approach would give rise to the 'worst-case scenario' for the purpose of their assessment. The current connection date for the Scheme, within the NESO Connection Agreement, is 2029. As with all electricity generation projects, this date is under review by NESO as part of the ongoing connections reform process.

2.1.8. If the NESO Connection Agreement remains with the connection date of 2029, it would be possible to operate a phased start to operational generation. This phased approach would connect each Land Parcel to the RWE on-site 400kV substation when construction of that Land Parcel was completed. In this operational scenario there would be partial Scheme operation from 2029-2032 (3 years). From 2032 onwards the full Scheme would be generating at full operational capacity. The full Scheme would operate for 40 years until 2072. If the NESO Grid Connection date varies, which is not within the Applicants direct control, the timeframe where there could be partial operation of the Scheme could reduce or fail to materialise. In this situation the full operational Scheme would operate for 40 years from its new grid connection date. In either connection scenario there will be full operational generation for 40 years, which would be the worst-case scenario operational time period for the Scheme.

2.1.9. Following 40 years of a fully operational Scheme, it is proposed that the Scheme will be decommissioned. This decommissioning with take approximately 24 months and will be in a phased approach.

2.1.10. The Order Limits lies outside designated sites with the exception of a small 0.53ha area of Thorne & Hatfield Moors Special Protection Area (SPA), Thorne Moor Special Area of Conservation (SAC), Thorne, Crowle and Goole Moors Site of Special Scientific Interest (SSSI) and Hatfield Chase Ditches SSSI, which is located in Land Parcel A. Whilst the Thorne & Hatfield Moors SPA/SAC/SSSI lies within the Order Limit, it is outside the development footprint and this area is to be buffered from any development. Therefore no Scheme works are scheduled within these designated sites.

2.1.11. Details of the European statutory designated sites that occur within 10km of the Order Limits boundary, which is defined as the Zone of Influence (ZoI), are on Figure 2-2 below and include:

- Humber Estuary SPA;

- Humber Estuary Ramsar;
- Humber Estuary SAC;
- Thorne & Hatfield Moors SPA;
- Thorne Moor SAC; and
- Hatfield Moor SAC.

2.1.12. The Scheme will result in the loss of habitat that is used by species that are a qualifying feature of some of the above designated sites and is functionally linked to the SPA, specifically non-breeding birds, and without mitigation could also impacts the water quality and quantity leaving the Order Limits boundary, which could have a detrimental impact to the designated sites detailed above.

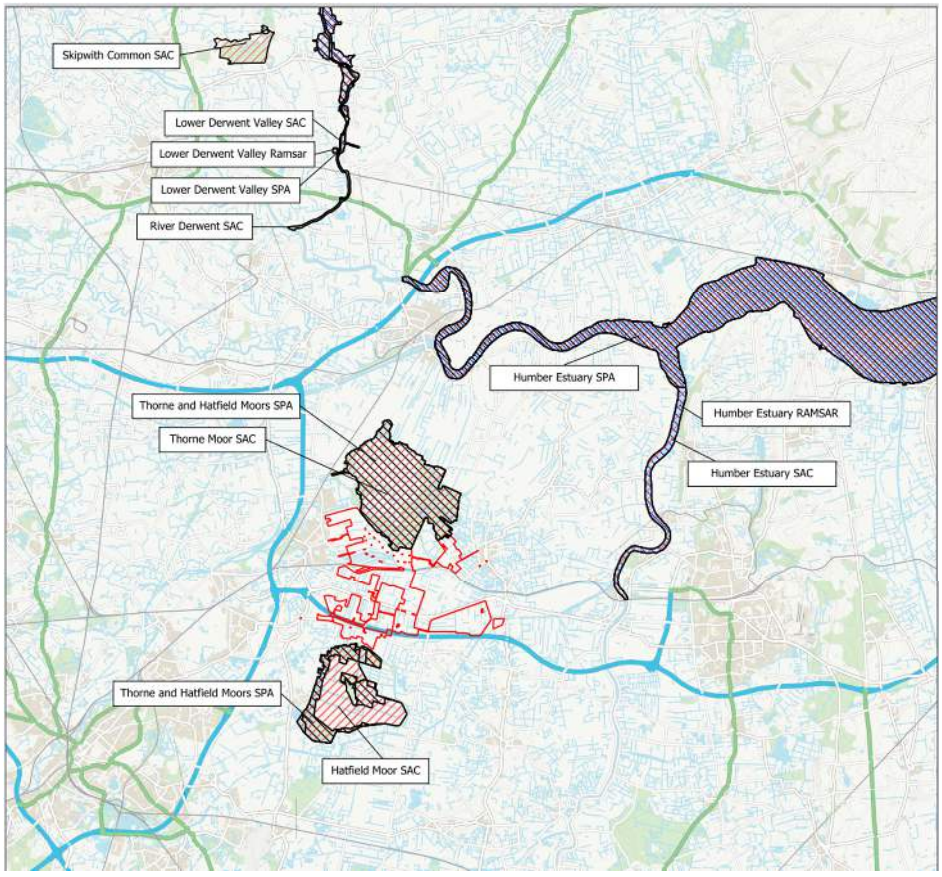


Figure 2-2: European Conservation Designations within ZoI to the Order Limits

2.1.13. In addition to the designated sites located within 10km, an extended search was also made for any European designated sites that are up to 30km away:

- Lower Derwent Valley SPA - 17.2km north;
- Lower Derwent Valley RAMSAR - 17.1km north;
- Lower Derwent Valley SAC - 17.1km north;
- Skipwith Common SAC - 22.2km north;
- River Derwent SAC - 13.8 km north.

2.1.14. However, given the distances of the above designated sites, it is only those designated for mobile species that are relevant. The Lower Derwent Valley SAC and Skipwith Common SAC are designated for a variety of habitats and so can be screened out of further assessment. The River Derwent SAC is designated due to comprising habitats, and also white-clawed crayfish, sea, river and brook lampreys, bullhead, Atlantic salmon and otter as a qualifying feature. However, given the distance from the Order Limits and lack of hydrological connectivity, this SAC can also be screened out.

2.1.15. Lower Derwent Valley SPA and Ramsar is included within this Report to Inform HRA, with this designated site supporting a range of wintering and breeding bird species.

2.2. Planning Context

2.2.1. The National Policy Statement (NPS), taken together with the overarching National Policy Statement for Energy (EN-1) and the Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments produced by the Planning Inspectorate and last updated in March 2025[2], provide the primary policy and guidance for decisions by the Secretary of State on applications they receive for nationally significant renewable energy infrastructure.

[2] Planning Inspectorate. March 2025. Projects: Advice on Habitats Regulations Assessments produced by the Planning Inspectorate

2.3. Purpose

2.3.1. This report sets out 'shadow' HRA stage 1 screening and provides information to inform HRA stage 2 Appropriate Assessment (AA).

3 Legislation and Planning Policy

3.1.1. The European Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992, often referred to as the 'Habitats Directive', provides for the protection of key habitats and species considered of European importance (listed under Annex I, II and IV of the Directive). The Birds Directive (formally known as Council Directive 2009/147/EC on the conservation of wild birds) was also adopted in 2009. These directives have been transposed into UK law through The Conservation of Habitats and Species Regulations, hereafter referred to as 'the Habitats Regulations 2017 (as amended)', and incorporated protections for European sites.

3.1.2. It should be noted that the UK's departure from the European Union (EU) does not alter the implementation of this legislation in the UK at the time of writing. Section 6 of the EU (Withdrawal) Act 2018 (as amended) requires retained EU law such as the Conservation of Habitat and Species Regulations 2017 (as amended) to be interpreted in line with "retained case law" which includes retained EU case law.

3.1.3. European sites comprise:

- Special Areas of Conservation (SAC) and candidate SACs (cSACs) designated under the Habitats Directive;
- Special Protection Areas (SPA) and potential SPAs (pSPAs), classified under the Birds Directive;
- Ramsar sites, designated under the Convention on Wetlands of International Importance; and
- European Marine Sites (EMS).

3.1.4. Under the Habitats Regulations, competent authorities are required to consider impacts of any plans / projects which may result in Likely Significant Effect (LSE) and/or adverse effects on the integrity of European sites - either alone or in-combination with other plans / projects. The assessment of the potential effects is termed an HRA, which is split into four stages, as described below, and shown in **Figure 3-1** of this report:

- **Stage 1** is a screening stage to determine if the proposed development is expected to have an LSE on a European site. If an LSE is determined, AA, Stage 2, is required;

- If required, **Stage 2** refers to an AA which is used to determine whether the project will adversely affect the integrity of any given European site(s) (through also considering proposed avoidance and mitigation measures), in view of their conservation objectives. Conservation objectives specify the overall target for a site's qualifying features (habitats and species / populations listed in Annex I and II) in order for that feature to be maintained or restored, to reach favourable conservation status;

- **Stage 3** is triggered if significant adverse effects are identified in stage 2 that cannot be avoided or mitigated. This stage requires alternative options to be examined to avoid significant impacts on European sites; and

- If it is deemed that the project should proceed for Imperative Reasons of Overriding Public Interest (IROPI), **Stage 4** comprises an assessment of compensatory measures which would be required.

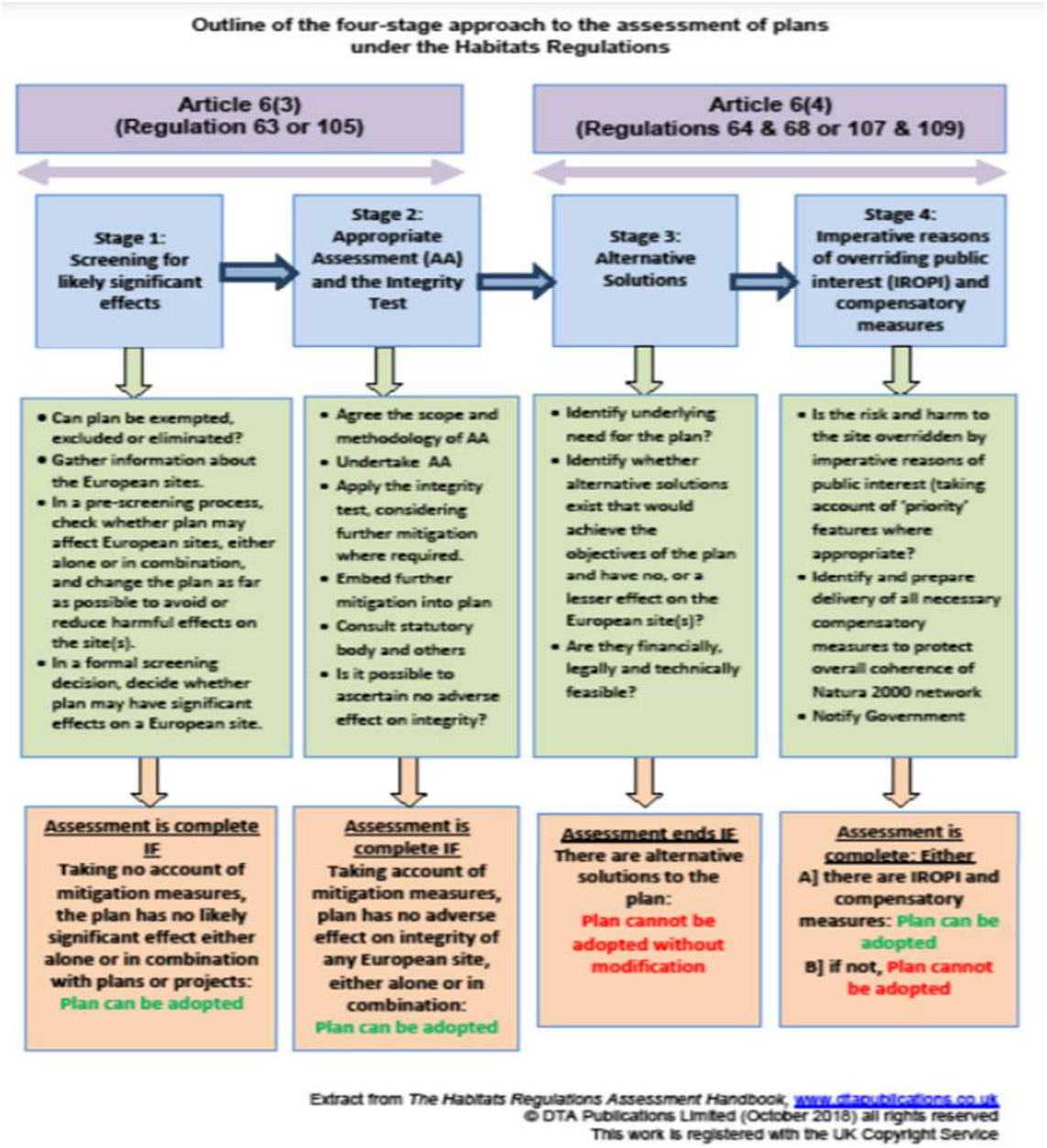


Figure 3-1: HRA stages[3]

3 Reproduced from DTA publications (2018) HRA handbook [Online] Available at: https://www.dtapublications.co.uk [Accessed: 14/11/2022].

3.1.5. The responsibility for undertaking the HRA, if required, lies with the competent authority who is responsible for granting consent for the scheme - in this case, this will be the Secretary of State. However, it is the Applicant's obligation to provide information to the competent authority to enable them to undertake the assessment. In this case, the applicant is RWE Renewables UK Solar and Storage Limited.

3.1.6. This report aims to provide sufficient information relevant to HRA screening (HRA stage 1) and to provide sufficient information for appropriate Assessment (AA) (HRA stage 2) of impacts which are not screened out.

3.2. National Planning Policy

3.2.1. The National Planning Policy Framework (NPPF), (December 2024) requires development plans to identify, map and safeguard international, national and locally designated sites of importance for biodiversity, such as European designated sites. Under the requirements of the NPPF, unless it has been concluded that the proposed development will not adversely affect the integrity of European designated sites, the usual presumption in favour of sustainable development does not apply.

3.3. Local Policy

3.3.1. The Order Limits is located within the boundaries of City of Doncaster Council and North Lincolnshire, with relevant policies detailed below.

Doncaster Council Local Plan (2021-35) [4]

Policy 30: Valuing Biodiversity and Geodiversity (Strategic Policy)

3.3.2. City of Doncaster Council has a range of internationally, nationally, and locally important habitats, sites and species that will be protected through the following principles:

- All proposals shall be considered in light of the mitigation hierarchy in accordance with National Policy.

[4] Doncaster City Council. Doncaster Local Plan. 2021 - 2035

- Proposals which may harm designated Local Wildlife Sites, Local Geological Sites, Priority Habitats, Priority Species, protected species or non-designated sites or features of biodiversity interest, will only be supported where:
    - they use the DEFRA biodiversity metric to demonstrate that a proposal will deliver a minimum 10% net gain for biodiversity;
    - they protect, restore, enhance and provide appropriate buffers around wildlife and geological features and bridge gaps to link these to the wider ecological network;
    - they produce and deliver appropriate long term management plans for local wildlife and geological sites as well as newly created or restored habitats;
    - they can demonstrate that the need for a proposal outweighs the value of any features to be lost; and
    - if the permanent loss of a geological site is unavoidable, then provision will be made for the site to first be recorded by a suitably qualified expert.
- Proposals which may impact Special Areas of Conservation, Special Protection Areas or RAMSAR Sites will only be supported where it can be demonstrated that there will be no likely significant effects and no adverse effects on the integrity of European sites, unless there are no alternative solutions, and it is justified by an "imperative reasons of overriding public interest" (IROPI) assessment under the Habitats Directives.
- Proposals that may either directly or indirectly negatively impact Sites of Special Scientific Interest will not normally be supported. Proposals should seek to protect and enhance Sites of Special Scientific Interest and maintain, strengthen, and bridge gaps to link them to the wider ecological network wherever possible.
- In order to ensure development does not negatively impact on nightjar populations, proposals located within 3km of Thorne and Hatfield Moors Special Protection Area, that impact habitats that nightjars may use for feeding

on, will only be supported where they deliver a net gain in nightjar foraging habitat.

The North Lincolnshire Local Development Framework[5]

Spatial Objective 6: Protecting and Enhancing The World Class Environment

3.3.3. To conserve and enhance our world class environments of the Humber Estuary and Crowle Moors Crowle Moors and improve our other natural, historic and built landscapes as well as guiding changes in a way which reduces and takes proper account of environmental impact, climate change and sea level rise.

CS17: Biodiversity

3.3.4. The council will promote effective stewardship of North Lincolnshire's wildlife through:

- Safeguarding national and international protected sites for nature conservation from inappropriate development.
- Appropriate consideration being given to European and nationally important habitats and species.
- Maintaining and promoting a North Lincolnshire network of local wildlife sites and corridors, links and stepping stones between areas of natural green space.
- Ensuring development retains, protects and enhances features of biological and geological interest and provides for the appropriate management of these features.
- Ensuring development seeks to produce a net gain in biodiversity by designing in wildlife, and ensuring any unavoidable impacts are appropriately mitigated for.
- Supporting wildlife enhancements that contribute to the habitat restoration targets set out in the North Lincolnshire's Nature Map and in national, regional and local biodiversity action plans.

[5] North Lincolnshire Local Development Framework. June 2011

- Improving access to and education/interpretation of biodiversity sites for tourism and the local population, providing their ecological integrity is not harmed.

4 Methodology

4.1.1. This report provides information relevant to HRA screening (stage 1) and AA (stage 2) and aims to determine if the Scheme is likely to have an LSE on any European sites screened in and the mitigation required.

4.1.2. The approach and methodology have also been determined following the detailed consultation process detailed in the **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5**

4.1.3. Detailed methodology at each stage is set out below.

4.1.4. To inform the scope of the Stage 1 Screening and potential for LSEs, the detail within **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5]** was used for reference.

4.1.5. The methodology utilised for the non-breeding bird surveys used to determine the potential for impact on bird populations forming part of nearby Special Protection Areas (SPA) and Ramsar is outlined in **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5]**.

4.1.6. The methodology used to determine the potential for impacts on water quality and quantity is also detailed within **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5]**.

4.2. HRA Stage 1: Screening

4.2.1. Screening aims to determine if the Scheme is expected to have any LSEs on European sites. An effect is considered 'likely significant' if, in the absence of mitigation, it cannot be excluded based on objective information and it might undermine a European site's conservation objectives.

4.2.2. To assess whether LSEs may occur, the following information is provided:

- Identification of relevant European sites and their respective qualifying features (presented in **Section 4, European sites**);
- Identification and understanding of the conservation objectives of the identified sites (presented in **Section 4, European site**s);

- Where relevant, an estimation of the likely magnitude, duration, location and extent of effects on European sites if any are anticipated (presented in **Section 5, HRA screening (stage 1);** and

- Identification of whether any element of the Scheme will have an LSE on any qualifying feature, either alone or in-combination with other projects and plans (presented in **Section 5, HRA screening (stage 1)**).

4.2.3. This assessment has been informed by thorough review of the Scheme (set out in **Section 1** above) and **the ES.** In addition, the following resources were reviewed to inform this report:

- The Habitats Regulations 2017 (as amended);

- UK government guidance on the use of Habitats Regulations Assessment1F[6];

- Joint Nature Conservation Committee for citations of European sites and associated conservation objective and site improvement plan documents[7];

- Natural England's web resources for citations of European sites and associated conservation objectives and site improvement plan documents;

- Multi-Agency Geographic Information for the Countryside (MAGIC) interactive maps for locations of statutory sites (DEFRA 2020) within a 30km search radius of the site[8];

- Doncaster Council Local Plan; and

- North Lincolnshire Core Strategy.

4.2.4. In order to establish the European sites which may be affected by the Scheme, a 10km search radius was used from the site boundary, which was defined as the Zone of Influence (ZoI). An additional search for designated sites that support mobile species was also undertaken up to 30km from the Order Limits boundary

6 Ministry of Housing, Communities and Local Government (2019) Guidance Appropriate assessment: Guidance on the use of Habitats Regulations Assessment, [Online] Available at: https://www.gov.uk/guidance/appropriate-assessment [Accessed: April 2023].

7 JNCC (2020) Joint Nature Conservation Committee for citations of internationally designated sites, [Online] Available at: https://jncc.gov.uk/our-work/uk-protected-areas/ [Accessed April 2023].

8 [Online] Available at: https://magic.defra.gov.uk/ [Accessed April 2023]

4.2.5. **Figure 2-2** shows the locations of the European Conservation Designations within the 10km search radius.

4.2.6. The CJEU in the case of People Over Wind, Peter Sweetman v Coillte Teoranta ruled that "*in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site*"[9]. Hence it is not acceptable for the stage 1 screening assessment to rely on avoidance or reduction (mitigation) measures. Therefore, if it cannot be concluded that there will be no LSE in the absence of mitigation measures at the screening stage, HRA stage 2 (AA) is required.

4.3. In-combination Assessment

4.3.1. This report considers the potential for 'in-combination effects' on European sites from the Scheme. The list of cumulative sites used is the same as that used for the cumulative impact assessment completed as part of the ES.

4.4. Assessment of Effects and Mitigation Measures

4.4.1. An assessment of the potential effects for European sites in view of their conservation objectives is made, in terms of the magnitude, duration, location and extent of effects, both alone and in-combination with other developments.

4.4.2. Mitigation measures can include both avoidance measures and reduction measures, but the former approach is preferred.

4.5. Integrity Test

4.5.1. The integrity test requires the competent authority to ascertain if the Scheme (alone and in-combination with other plans / projects) will not have a significant adverse effect on a European site's integrity, which is defined as:

9 Court of Justice of the European Union (CJEU) (2018) Judgement of 12.4.2018 - Case C-323/17 People Over Wind and Sweetman

"*The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the level of populations for the species for which it was classified.*"[10]

4.6. Consultation

4.6.1. Consultations with the following statutory bodies to inform the Ecological Assessment use to inform this sHRA were undertaken:

- Natural England (NE);
- Doncaster Council; and
- North Lincolnshire Council.

4.6.2. The ES provides a table of issues consulted on as part of the ES process, together with copies of advice provided by NE via Discretionary Advice Service (DAS).

10 The Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2019) Guidance: Appropriate Assessment, [Online] Available at: https://www.gov.uk/guidance/appropriate-assessment [Accessed: April 2023]

5 European Sites

5.1.1. The site falls within the Zone of Influence for six European Conservation Designations identified by MAGIC, listed in **Table 5-1** below. Qualifying features and threats of each European conservation designated site are provided in **Table 5-2**.

5.1.2. Designated sites which are identified for consideration within the screening assessment (HRA Stage 1) have been identified following the below criteria, which have been adapted from Highways England guidance[11]:

- Criterion 1: A designated site or functionally linked land (i.e. land that is used by mobile qualifying species) within, or within 10km of the proposed development (30km for European designated sites that support mobile species was also undertaken).
- Criterion 2: The proposed development crosses or lies adjacent to, upstream of, or downstream of, a watercourse which is designated in part or wholly as a designated site (i.e. is hydrologically linked);
- Criterion 3: The proposed development has a potential hydrogeological linkage to a designated site; and
- Criterion 4: Any designated sites within 10 km of the proposed development with relevant QIs which may be impacted by changes in air quality (i.e. aerially linked).

[11] Highways England (2020) Design Manual for Roads and Bridges LA 115 Habitats Regulations Assessment, Revision 1.

Table 5-1: European Statutory Designated Sites within the search radius of 10km

Site Name	Designation	EU Code	Area (ha)	Distance and Direction from Site
Humber Estuary	SPA	UK9006111	37630	7.7km north
	SAC	UK0030170	36657	5.6km northeast
	Ramsar	663	37,988	5.6km northeast
Thorne and Hatfield Moors	SPA	UK9005171	2438	0.53 ha within the site
Thorne Moor	SAC	UK0012915	1911	0.53 ha within the site
Hatfield Moor	SAC	UK0030166	1359	0.1 km south

5.1.3. In addition to the above, European designated sites that are located within 30km of the Order Limits and which are designated due to comprising relevant mobile species that have not been scoped out earlier, include:

- Lower Derwent Valley SPA - 17.2km north;
- Lower Derwent Valley Ramsar- 17.1km north;

5.1.4. The non-breeding and breeding bird surveys did not record any significant numbers of the Lower Derwent SPA and Ramsar species utilising the Order Limits.

5.1.5. The distance of this SPA and Ramsar to the Order Limits also ensures any impacts are unlikely. As such, these designated sites are not considered further and are screened out of the sHRA.

5.1.6. Given that the Order Limits does not lie within the Zol for any other European sites, and none are present within 10km of the Order Limits, effects on European sites other than those listed in **Table 4-1** have been scoped out of this assessment and are discussed no further within this report.

5.1.7. **Table 5-2**. below sets out the qualifying features and threats relating to each of the European conservation designated sites assessed as part of the HRA, which includes all potential threats and not just as a consequence of the Scheme.

Table 5-2: Qualifying Features and Threats for European Designations assessed as part of the HRA

Site Name	Qualifying Features	Threats[12]
Humber Estuary SPA	This site is designated as a Special Protection Area under Article 4.1 of the Directive 79/409/EEC for the following species: **Wintering** Avocet *Recurvirostra avosetta* (1.7% of the GB Population 5 year peak mean 1996/7-2000/01); Bittern *Botaurus stellaris* (4.0% of the GB Population 5 year peak mean 1998/99-2002/03); Hen harrier *Circus cyaneus* (1.1% of the GB Population 5 year peak mean 1997/98-2001/02); Golden Plover *Pluvialis apricaria* (12.3% of the GB Population 5 year peak mean 1996/97-2000/01); Bar-tailed godwit *Limosa lapponica* (4.4% of the GB Population 5 year peak mean 1996/97-2000/01); **On passage** Ruff *Philomachus pugnax* (1.4% of the GB Population 5 year peak mean 1996-2000);	Threats to the various components of the estuary include habitat degradation, both to the qualifying SAC habitats and supporting SPA habitats, through recreational usage. The SPA component is also under threat through the loss of functionally linked land associated with development. Construction activities also put all components under threat through uncontrolled pollution/run-off. Located beyond the distance that impacts could occur from air quality and noise. Abiotic (slow) natural processes Invasive non-native species Changes in biotic conditions

[12] Information on threats to designations were taken from their respective Natura 2000 Standard Data Forms, Site Improvement Plans and/ or Supplementary Advice Documentation.

	In the breeding season Bittern *Botaurus stellaris* (10.5% of the GB Population 3 year peak mean 2000-2002); Marsh harrier *Circus aeruginosus* (6.3% of the GB Population 5 year peak mean 1998-2002); Avocet *Recurvirostra avosetta* (8.6% of the GB Population 5 year peak mean 1998-2002); Little tern *Sterna albifrons* (2.1% of the GB Population 5 year peak mean 1998-2002); This site is also designated as a Special Protection Area under Article 4.2 of the Directive 79/409/EEC for the following species: **Wintering** Shelduck *Tadorna tadorna* (1.5% of subspecies/ Population 5 year peak mean 1996/97-2000/01); Knot *Calidris canutus* (6.3% of the subspecies/ Population 5 year peak mean 1996/97-2000/01); Dunlin *Calidris alpina* (1.7% of the subspecies/ Population 5 year peak mean 1996/97- 2000/01); Black-tailed godwit *Limosa limosa* (3.2% of the subspecies/ Population 5 year peak mean 1996/97- 2000/01); Redshank *Tringa totanus* (3.6% of the subspecies/ Population 5 year peak mean 1996/97- 2000/01); **On passage** Knot *Calidris canutus* (4.1% of the subspecies/ Population 5 year peak mean 1996-2000);	Changes in abiotic conditions

	Dunlin *Calidris alpina* (1.5% of the subspecies/ Population 5 year peak mean 1996- 2000); Black-tailed godwit *Limosa limosa* (2.6% of the subspecies/ Population 5 year peak mean 1996- 2000.); Redshank *Tringa totanus* (5.7% of the subspecies/ Population 5 year peak mean 1996- 2000); The site also qualifies under Article 4.2 of Directive 79/409/EEC for its 'internationally important assemblage of birds over winter', which include: Dark-bellied brent goose *Branta bernicla bernicla*; Shelduck *Tadorna tadorn*; Wigeon *Anas penelope*; Teal *Anas crecca*; Mallard *Anas platyrhynchos;* Pochard *Aythya ferina;* Scaup *Aythya marila;* Goldeneye *Bucephala clangula;* Bittern *Botaurus stellaris;* Oystercatcher *Haematopus ostralegus* Avocet *Recurvirostra avosetta;* Ringed plover *Charadrius hiaticula;* Golden plover *Pluvialis apricaria;* Grey plover *P. squatarola;* Lapwing *Vanellus vanellus* Knot *Calidris canutus*	

	Sanderling *C. alba* Dunlin *C. alpina* Ruff *Philomachus pugnax;* Black-tailed godwit *Limosa limosa* Bar-tailed godwit *L. lapponica* Whimbrel *Numenius phaeopus;* Curlew *N. arquata* Redshank *Tringa tetanus;* Greenshank *T. nebularia*; and Turnstone *Arenaria interpres*.	
Humber Estuary Ramsar	The Humber Estuary is designated a Ramsar due to comprising the following Ramsar criteria[13]: Criterion 1 – estuarine habitat Criterion 3 – breeding colony of grey seals Criterion 3 – breeding natterjack toad Criterion 5 – waterfowl assemblage in non-breeding season Criterion 6 – golden plover (passage) Criterion 6 – red knot (passage and wintering) Criterion 6 – dunlin (passage and wintering) Criterion 6 – black-tailed godwit (passage and wintering) Criterion 6 – redshank (passage and wintering)	Disturbance to vegetation through cutting / clearing Vegetation succession Water diversion for irrigation/domestic/industrial use Overfishing Pollution – domestic sewage Pollution – agricultural fertilisers Recreational/tourism disturbance (unspecified) Coastal squeeze causing loss of intertidal habitats and saltmarsh due to sea level rise and fixed defences.

[13] JNCC. 31 August 2007. Information Sheet on Ramsar Wetlands (RIS) . Humber Estuary

	Criterion 6 – Shelduck (wintering) Criterion 6 – golden plover (wintering) Criterion 6 – bar-tailed godwit (wintering) Criterion 8 – migration route for river lamprey and sea lamprey.	
Humber Estuary SAC	The site is designated as an SAC for the presence of the following Annex I habitats which are a primary reason: 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide The following Annex I habitats are also present as a qualifying feature, but not a primary reason for selection 1110 Sandbanks which are slightly covered by sea water all the time 1150 Coastal lagoons 1310 Salicornia and other annuals colonizing mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 2110 Embryonic shifting dunes 2120 "Shifting dunes along the shoreline with *Ammophila arenaria* (""white dunes"")" 2130 "Fixed coastal dunes with herbaceous vegetation (""grey dunes"")" * Priority feature 2160 Dunes with *Hippopha rhamnoides* The following Annex II habitats are also present as a qualifying feature, but not a primary reason for selection	Industrial or commercial areas; Pollution to groundwater (point sources and diffuse sources); Human induced changes in hydraulic conditions; Abiotic (slow) natural processes; Changes in abiotic conditions. Construction activities also put all components under threat through uncontrolled pollution/run-off.

	1095 Sea lamprey *Petromyzon marinus* 1099 River lamprey *Lampetra fluviatilis* 1364 Grey seal *Halichoerus grypus*	
Thorne and Hatfield Moors SPA	**ARTICLE 4.1 QUALIFICATION (79/409/EEC)** During the breeding season the area regularly supports nightjar *Caprimulgus europaeus* (66 breeding pairs), 1.9% of the GB breeding population 5 count peak mean 1993, 1995-1998	Other urbanisation, industrial and similar activities. Outdoor sports and leisure activities, recreational activities. Construction activities also put all components under threat through uncontrolled pollution/run-off.
Thorne Moors SAC	**Annex I habitats** Degraded bogs still capable of regeneration Active raised bogs Thorne Moor is England's largest area of raised bog, lying a few kilometres from the smaller Hatfield Moors, both within the former floodplain of the rivers feeding the Humber estuary (Humberhead Levels), and includes the sub-components Goole Moors and Crowle Moors**.**	Outdoor sports and leisure activities, recreational activities. Air pollution, air-borne pollutants. Human induced changes in hydraulic conditions. Biocenotic evolution, succession. Other human intrusions and disturbances Construction activities also put all components under threat through uncontrolled pollution/run-off. Invasive non-native species.
Hatfield Moors SAC	**Annex I habitats**	Outdoor sports and leisure activities, recreational activities.

	7120 Degraded raised bogs still capable of natural regeneration Like Thorne Moors, Hatfield Moors is a remnant of the once-extensive bog and fen peatlands within the Humberhead Levels, and is still the second-largest area of extant lowland raised bog peat in England	Other human intrusions and disturbances. Invasive non-native species. Air pollution, air-borne pollutants. Human induced changes in hydraulic conditions. Biocenotic evolution, succession. Construction activities also put all components under threat through uncontrolled pollution/run-off.

5.1. Conservation Objectives

5.1.1. Conservation objectives are set out by NE to help public bodies comply with the law and to protect European sites.

5.1.2. Conservation objectives for the European protected sites are set out below in **Table 5-3**. '*To ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds directive by maintaining or restoring*':

5.1.3. The conservation objectives for both the Humber Estuary SPA and Thorne and Hatfield Moors SPA are the same and are detailed on the table below**.**

Table 5-3: Humber Estuary SPA and Thorne and Hatfield Moors SPA Conservation Objectives

SPA Conservation Objectives
• Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

5.1.4. The conservation objectives for the Humber Estuary SAC are detailed on the table below.

Table 5-4: Humber Estuary SAC Conservation Objectives

SAC Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5.1.1. The conservation objectives for Thorne Moors SAC and Hatfield Moors SAC are the same and are detailed on the table below.

Table 5-5: Thorne Moors SAC and **Hatfield Moors SAC Conservation Objectives**

SAC Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats ¬
- The structure and function (including typical species) of qualifying natural habitats, and
- The supporting processes on which qualifying natural habitats rely

5.1.2. Ramsar sites do not have conservation objectives detailed in the same way as they are for SPAs and SACs, although there is an overall Humber Management Scheme (HMS)[14] that provides a coordinated approach for the management of the Humber Estuary European Marine Site (EMS). With support from both statutory and non-statutory organisations, actions are developed and delivered to bring the estuary into what is known as 'favourable condition'.

[14] The Humber Management Scheme

6 HRA Screening (Stage 1)

6.1.1. The aim of the HRA Screening is to establish whether construction or operation of the Scheme is likely to result in a LSE on European Sites, either alone or in combination with other projects / plans.

6.1.2. In this stage, the following information is required:

- Identification of internationally designated sites;
- Identification / understanding of conservation objectives of each interest/ qualifying feature;
- Estimation of the likely magnitude, duration, location and extent of effects of the changes on internationally designated sites, as far as can be reasonably predicted; and
- Identification of whether any element of the development will have an LSE on any feature or interest, either alone or in combination with other projects / plans.

6.2. Site Context

6.2.1. Figure 2-2 illustrates the location of the Order Limits in relation to the European Sites concerned and they are summarised below.

Thorne Moor SAC & Hatfield Moors SACs

6.2.2. Both SAC's are designated for their 'degraded raised bogs still capable of natural regeneration'. Hatfield Moors SAC is situated approximately 100m south of the Order Limits. A small section of the northeastern boundary of the Order Limit extends into Thorne Moor SAC. Whilst this small 0.53ha area is included within the Order Limits, no development works are proposed within the SAC. The Order Limits is dominated by intensively managed arable farmland and the habitat survey did not identify any areas of bog habitat. Areas of peat are shown as present within the Order Limits based on geological and Natural England maps. However, no evidence of peat/heath/bog mire communities were recorded during the habitat surveys.

LSEs during Construction

6.2.3. The SAC is linked to the Order Limits by a network of drainage ditches and impacts could occur to this SAC from any changes in water quality such as from fuel leakages from machinery, contaminated run-off and excess debris entering watercourses, and quantity of water entering watercourses, should this increase or decrease as a consequence of construction. Polluting incidences and run-off could detrimentally impact the SAC including the flora and fauna it supports. Furthermore, run-off including from mud and debris arising from construction works entering the surface water / land drainage system, causing blockages and restricting flow could result in a negative impact.

6.2.4. Impacts from air borne pollution, during construction, comprising dust and vehicle emissions, could detrimentally impact the qualifying features.

LSEs during Operation

6.2.5. Operational effects are defined as effects following the construction of the Scheme. Operational effects generally relate to the change to land use and/or operational disturbance of habitats or species within or adjacent to the Order Limits, on either a temporary or permanent basis. Some effects may reduce with habituation or remain for the lifetime of The Scheme.

6.2.6. There are no operational effects relating to land take or habitat loss additional to those already addressed under Construction.

6.2.7. In addition, as the Scheme is for renewable energy generation and energy storage there will be no impacts as a consequence of increases in population size or recreation.

Thorne & Hatfield Moors SPA

6.2.8. This is designated for its population of breeding nightjar and is divided into two different areas that comprise the same boundaries as the SAC detailed above. The southern section is located approximately 100m south of the Order Limits and a small section of the northeastern boundary of the Order Limit extends into the northern section, although no development works are proposed within the SPA.

6.2.9. The survey scope and the scope for assessment of impacts to nightjar was agreed with Natural England, with information provided by them through two different DAS

responses, as well as an online Teams meeting (see Appendix 4). In addition, Natural England's comments on the PEIR Chapter, which included detail on the approach for nightjar was used to inform the ES and this Report to Inform HRA.

6.2.10. Nightjar surveys of the SPA were undertaken in 2022, as part of ongoing monitoring works for the Tween Bridge Wind Farm instructed by RWE. Please refer to **Technical Appendix 7.4 [APP-075]** within **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5** for full details. In summary, surveys found 58 churring males in Thorne and Crowle Moors (to the north of the Order Limits), which is the highest number on record since 2017. Surveys of Hatfield Moors (south of the Order Limits) found 52 churring males or territories which is the highest number since survey began in 2005. Surveys were focused within the SPA boundaries but no churring males/territories were noted within the Order Limits or immediately adjacent.

6.2.11. Following information from Natural England, nightjar data was requested from the nightjar study undertaken in the area *'LIFE+ - 'That's Life' Monitoring of European Nightjar'*. This data was received in May and June 2025 and has informed this assessment and is included in **Appendix 7.4 Nightjar Survey Results [APP-075]** within **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5.**

6.2.12. Radio-tracking studies were carried over this period with a number of male nightjar tagged and tracked from the Thorne and Hatfield Moors SPA.

6.2.13. The records provided show territories that occur on the edges of the moorland sites (Thorne and Hatfield). The locations cluster in areas outside of the Scheme strongly suggesting that nesting did not occur within the Order Limits boundary. This is supported by the Breeding Bird Survey results and would be consisted with the known nesting preferences for this species i.e. heathland, moorland and young conifer woodland.

6.2.14. Some of the less clustered, outer territory location points fall within the Order Limits and it can be reasonably presumed that these outliers are more closely associated with foraging behaviour. Several studies have highlighted the importance of habitats beyond the song territories **[Ref: 7-47]** for foraging Nightjar. The same study also demonstrated the importance of having foraging and nesting habitats in close proximity and that these are not always the same habitat type.

Additional research **[Ref: 7-48]** showed that Nightjar avoided conifer plantations and arable for improved grassland for foraging.

LSEs during Construction

6.2.15. No development is proposed within the SPA boundary, so no impacts from land take will occur.

6.2.16. Habitats within the Order Limits have limited potential for the species, consisting of intensively managed arable farmland, which holds little value as a habitat or foraging resource for this specialist species and therefore the loss of this habitat will not be significant for nightjar.

6.2.17. No moorland habitat was found within the Order Limits and usage by this species is restricted to occasional use as a foraging resource along boundaries that will be retained and protected, although there could be some small loss of potential foraging habitat as a consequence of the Scheme.

6.2.18. No development is proposed within the SPA boundary, so no impacts from land take will occur.

6.2.19. No moorland habitat was found within the Order Limits and usage by this species is restricted to occasional use as a foraging resource along boundaries that will be retained and protected.

6.2.20. Given the close proximity of the SPA to the Order Limits boundary, should construction take place during the time nightjar are present between April and August [15], there is potential that temporary disturbance could occur from construction noise, artificial lighting, and visual disturbance associated with construction activities.

6.2.21. Polluting incidences such as from fuel leakages from machinery, contaminated run-off could detrimentally impact the SPA including the flora and fauna it supports. Furthermore, run-off including from mud and debris arising from

[15] Nightjar Bird Facts | Caprimulgus Europaeus

construction works entering the surface water / land drainage system, causing blockages and restricting flow could result in a negative impact.

6.2.22. Impacts from air borne pollution during construction, comprising dust and vehicle emissions, could detrimentally impact the qualifying features.

LSEs during Operation

6.2.23. There are no operational effects relating to land take or habitat loss additional to those already addressed under Construction.

6.2.24. In addition, as the Scheme is for renewable energy generation and energy storage there will be no impacts as a consequence of increases in population size or recreation.

Humber Estuary SAC

6.2.25. The SAC is located approximately 5.6km from the Order Limits. This SAC is designated for its estuarine habitats including coastal plain-mudflats and sandflats. It also supports populations of sea and river lampreys as well as grey seals which are qualifying features of the SAC.

LSEs during Construction

6.2.26. No direct impacts are anticipated on the predominantly coastal and maritime habitats and species the SAC supports, due to the separation distance of over 5.6km. Whilst drains and ditches within and adjacent to the Order Limits could support lamprey species, no records of them were returned within the data search and therefore they are considered unlikely to be present. However, buffers around drains and watercourses as well as measures set out within the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]** would ensure the habitat is retained and protected suitable to support lamprey and their free movement in the future.

6.2.27. The potential impacts from dust pollutants and any changes in water quality such as from fuel leakages from machinery, contaminated run-off and excess debris entering watercourses, and quantity of water entering watercourses, should this increase or decrease as a consequence of construction. could impact this SAC and the species that are present including sea and river lamprey, and the migration corridors that these species may use.

LSEs during Operation

6.2.28. There are no operational effects relating to land take or habitat loss additional to those already addressed under Construction.

6.2.29. In addition, as the Scheme is for renewable energy generation and energy storage there will be no impacts as a consequence of increases in population size or recreation.

Humber Estuary SPA

6.2.30. The Humber Estuary SPA is situated approximately 7.7km northeast of the Order Limits. Species associated with the Humber Estuary SPA and Ramsar recorded within the Order Limits included: Mallard, teal, lapwing, golden plover, grey plover, curlew, hen harrier and marsh harrier.

6.2.31. Within the Wider Survey Area (WSA) which comprised surrounding fields up to 600m from the Order Limits in line with best practice, target species comprised: mallard, teal, golden plover, hen harrier and marsh harrier.

6.2.32. Additionally, species associated with the Humber Estuary SPA were listed in the WSA and included marsh harrier, hen harrier, lapwing, mallard and teal.

6.2.33. **Table 6-1 and 6-2** below summarises peak counts of each qualifying species recorded within the Order Limits and are a direct extract from Appendix 1.

Table 6-1: SPA qualifying species recorded within and outside of the Order Limits during 2022/23. Note that nocturnal and diurnal surveys were combined and peak count of the two is provided, alongside the percentage of the *most up to date (2023/24) WeBS 5-year mean totals.*[16]

Species	2022				2023		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar

[16] Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B., Caulfield, E., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M., and Frost, T.M. 2025.
Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.

Within the Order Limits							
Curlew Humber Estuary 5 year mean 2022/23 **2,473**	0	0	0	0	0	0	2 (0.08%)
Golden plover Humber Estuary 5 year mean 2022/23 **21,160**	53 (0.25%)	0	0	37 (0.17%)	21 (0.10%)	0	0
Greylag goose Humber Estuary 5 year mean 2022/23 **2,569**	375 (14.60%)	0	19 (0.74%)	0	0	0	8 (0.31%)
Lapwing Humber Estuary 5 year mean 2022/23 **15,951**	390 (2.44%)	25 (0.16%)	31 (0.19%)	127 (0.8%)	260 (1.63%)	32 (0.20%)	32 (0.20%)
Mallard Humber Estuary 5	**92 (6.31%)**	**24 (1.64%)**	0	12 (0.82%)	**27 (1.85%)**	**64 (4.39%)**	6 (0.41%)

year mean 2022/23 **1,459**							
Pink-footed goose Humber Estuary 5 year mean 2022/23 **23,330**	**330 (1.41%)**	**360 (1.54%)**	0	0	0	0	0
Teal Humber Estuary 5 year mean 2022/23 **9,994**	0	2 (0.02%)	0	3 (0.03%)	6 (0.06%)	0	4 (0.04%)
Outside of the Order Limits							
Golden plover	76	480	21	20	1	0	38
Lapwing	260	136	1	71	14	6	13
Mallard	60	2	5	42	21	17	10
Pink-footed goose	700	42	0	0	0	21	0
Teal	0	0	0	0	23	3	9

Table 6-2: SPA qualifying species and species part of the wider waterbird assemblage recorded within and outside of the Order Limits during the Winter Walkover and Nocturnal Bird Surveys combined during 2023/24.

Note that nocturnal and diurnal surveys were combined and the maximum peak count of the two is provided alongside the percentage of the most up to date (2023/24) WeBS 5-year mean totals.[17]

Species	2023				2024			
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Within the Order Limits								
Curlew WeBS 5-year mean for the Humber Estuary **2,473**	0	0	0	0	0	0	2 (0.16%)	2 (0.16%)
Dunlin WeBS 5-year mean for the Humber Estuary **22,346**	0	6 (0.027 %)	27 (0.121 %)	0	0	0	0	0
Greylag goose WeBS 5-year average for the Humber Estuary	0	**210 (9.19%)**	**157 (6.87 %)**	12 (0.52%)	0	**27 (1.18%)**	**76 (3.33%)**	9 (0.39%)

[17] Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B., Caulfield, E., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M., and Frost, T.M. 2025.
Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.

2285 [18] [19]								
Golden plover (WeBS 5-year mean for the Humber Estuary **21,623)**	0	0	82 (0.38 %)	2 (0.00 9%)	84 (0.389%)	0	6 (0.028%)	0
Lapwing WeBS 5-year mean for the Humber Estuary **11,859**	5 (0.042 %)	**220 (1.855 %)**	**371 (3.129 %)**	53 (0.447 %)	79 (0.666%)	**147 (1.24%)**	11 (0.093%)	4 (0.034%)
Mallard WeBS 5-year mean for the Humber Estuary 1,459	2 (0.14%)	**33 (2.26 %)**	**78 (5.35 %)**	**125 (8.567 %)**	**49 (3.357%)**	**92 (6.305 %)**	**16 (1.096%)**	10 (0.685%)
Oystercatcher WeBS 5-year mean for the Humber Estuary 7,218	0	0	0	0	0	0	2 (0.028%)	0

[18] Contains Wetland Bird Survey (WeBS) data from Waterbirds in the UK 2023/24 © copyright and database right 2025. WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, with fieldwork conducted by volunteers.

[19] Contains Goose and Swan Monitoring Programme (GSMP) data from Waterbirds in the UK 2023/24 © copyright and database right 2025. GSMP is a partnership, run by and jointly funded by BTO, JNCC and NS, with fieldwork conducted by both volunteer and professional surveyors.

Pink-footed goose WeBS 5-year mean for the Humber Estuary **27,329**	0	**1600* (5.85 %)**	**620 (2.27 %)**	194 (0.71%)	0	**1530 (5.63%)**	0	0
Teal WeBS 5-year mean for the Humber Estuary **9,994**	0	0	0	2 (0.020 %)	12 (0.120%)	2 (0.020%)	2 (0.020%)	1 (0.010%)
Wigeon WeBS 5-year average for the Humber Estuary **6,452**	0	6 (0.093 %)	0	0	0	42 (0.651%)	0	0
Outside of the Order Limits								
Greenshank	1	0	1	0	0	0	0	0
Greylag goose	0	184	36	64	0	0	22	1
Golden plover	0	3	20	0	1	0	0	0
Lapwing	54	48	28	12	27	66	29	2
Mallard	49	57	28	30	8	63	47	2
Pink-footed goose	0	1120	0	668	14	0	0	0

Teal	3	4	5	18	8	9	6	2

6.2.34. Based on the Year 1 and Year 2 survey results, the non-breeding bird assemblage recorded within the Order Limits is typically representative of farmland habitats.

6.2.35. An assessment of significance has been undertaken to determine if the Order Limits are considered to be 'functionally linked' to the Humber Estuary SPA, which is situated approximately 7.7km northeast. Functional linkage is not defined in case law but is generally considered to be relevant when over 1% of a given SPAs population of qualifying features are regularly present and the site is considered 'important' in the life cycle of the qualifying species.

6.2.36. Greylag goose, lapwing, mallard, and pink-footed goose exceeded the 1% threshold of their WeBS 5-year mean[20] from the Humber Estuary SPA within the Order Limits, indicating potential use of Functionally Linked Land (FLL).

6.2.37. Although greylag geese are not a qualifying feature of the SPA[21], in accordance with advice from Natural England within their DAS response data 04.04.25 (see Appendix 5), as numbers recorded exceeded the 1% threshold of their WeBS 5-year mean, impacts to loss of functionally linked land for this species is assessed.

6.2.38. Although the numbers of golden plover recorded in the Order Limits demonstrates that the Order Limits is not functionally linked to the SPA for this species, the numbers in the Wider Survey Area indicate that the habitats there could be functionally linked to the SPA.

Other Features Considered in Screening

6.2.39. Although the number of golden plover recorded within the Order Limits demonstrates that the Order Limits is not functionally linked to the SPA for this species, given the number recorded in the wider survey area, measures have been provided for this species too.

[20] Contains Wetland Bird Survey (WeBS) data from Waterbirds in the UK 2023/24 © copyright and database right 2025. WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, with fieldwork conducted by volunteers.

[21] JNNC. STANDARD DATA FORM for sites within the 'UK national site network of European sites' – Humber Estuary

6.2.40. The breeding bird surveys undertaken in 2022, 2023 and 2025 demonstrate that the Order Limits does not comprise important habitat or functionally linked land for breeding species associated with the Humber Estuary SPA. Occasional Marsh Harrier were recorded flying over with no breeding activity recorded, confirming the Order Limits is not functionally linked for this species.

LSEs during Construction

6.2.41. Potential impacts on non-breeding birds associated with the Humber Estuary SPA include loss of functionally linked land for lapwing, mallard, and pink-footed goose and disturbance to these species and golden plover in adjacent land during construction, with temporary disturbance from construction noise, artificial lighting, and visual disturbance associated with construction activities.

6.2.42. Field boundaries including ditches, drains and hedgerows will be retained and protected, and these habitats will be enhanced as part of the mitigation, with species diverse grassland along field margins and hedgerow planting. Details including management practices are set out within the **Outline Ecological Construction Management Plan [Document Reference: 7.5 Revision 5]** and **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]**. Ditch habitats will be retained and therefore remain available for water birds such as mallard. However, SPA species could be temporarily disturbed within and adjacent to the Order Limits during construction. Prior to construction commencing, an updated ecological desk study and habitat walkover survey of the Order Limits will be undertaken by a suitably qualified ecologist to determine whether the suitability of habitats for passage and non-breeding birds associated with the Humber Estuary SPA and Ramsar site has increased since the baseline surveys were completed. The results of this pre-commencement survey will be used to inform the ecological mitigation to be included within the Landscape and Ecological Management Plan to be prepared and approved for the relevant phase of the Scheme in accordance with Requirement 8 of the Draft DCO [Document Reference 3.1 Revision 8].

LSEs during Operation

6.2.43. There are no operational effects relating to land take or habitat loss additional to those already addressed under Construction.

6.2.44. In addition, as the Scheme is for renewable energy generation and energy storage there will be no impacts as a consequence of increases in population size or recreation.

Humber Estuary Ramsar

6.2.45. The Humber Estuary Ramsar is situated approximately 5.6km northeast. Species associated with the Humber Estuary Ramsar recorded within the Order Limits included: golden plover and dunlin (see Appendix 1).

6.2.46. Within the Wider Survey Area (WSA) which comprised surrounding fields up to 600m from the Order Limits in line with best practice, Ramsar species comprised: golden plover.

6.2.47. The numbers of golden plover recorded within the Order Limits are detailed above with regards to the Humber Estuary SPA. Although the numbers of golden plover recorded in the Order Limits demonstrates that the Order Limits is not functionally linked to the SPA for this species, the numbers in the Wider Survey Area, indicate that the habitats there could be functionally linked to the SPA and therefore of importance to the Ramsar too.

6.2.48. Dunlin were recorded on three occasions during all surveys, with a peak count of 27 on one occasion, which equates to 0.121% of the Humber Estuary population. As such, the Order Limits is not functionally linked to this species, although the habitats are used occasionally (see Appendix 1).

6.2.49. Based on the habitats present within the Order Limits, there is no potential for Grey seal.

LSEs during Construction

6.2.50. Potential impacts on non-breeding birds associated with the Humber Estuary Ramsar are the same as detailed for the SPA, include temporary disturbance from construction noise, artificial lighting, and visual disturbance associated with construction activities to golden plover outside of the Order Limits during construction due to the numbers recorded in the WSA during surveys.

6.2.51. No direct impacts are anticipated on the predominantly coastal and maritime habitats and species the Ramsar supports, due to the separation distance of over 5.6km. Whilst drains and ditches within and adjacent to the Order Limits could

support lamprey species, no records of them were returned within the data search and therefore they are considered unlikely to be present. However, buffers around drains and watercourses as well as measures set out within the Outline Ecological Construction Management Plan would ensure the habitat is retained and protected suitable to support lamprey and their free movement in the future.

6.2.52. The potential impacts from airborne pollutants, comprising dust and vehicle emissions and any changes in water quality and quantity could impact sea and river lamprey that utilise the Ramsar and the migration corridors these species could use..

LSEs during Operation

6.2.53. There are no operational effects relating to land take or habitat loss additional to those already addressed under Construction.

6.2.54. In addition, as the Scheme is for renewable energy generation and energy storage there will be no impacts as a consequence of increases in population size or recreation.

LSEs during Decommissioning – All Internationally Designated Sites

6.2.55. Decommissioning effects are considered to be similar to those already described in relation to the construction phase, namely direct and indirect disturbance, temporary/permanent habitat loss and vegetation removal. Updated ecological desk study and species-specific surveys will therefore be undertaken prior to decommissioning in order to record the presence of protected and notable species and habitats, identify potential effects and any necessary protection and mitigation measures in order to comply with planning policy and wildlife legislation applicable at the time. Further detail is provided in section 6.

Potential Likely Significant Effects

6.2.56. **Table 6-3** below summarises the potential impact pathways and LSEs considered as part of this assessment. The following section outlines the potential LSEs on the nearby European protected sites.

Table 6-3: European sites assessed as part of the screening stage

Designated Site	Qualifying Feature	Potential Impact	Screened in / out
Thorne and Hatfield Moors SPA	Breeding nightjar	Small loss of potential foraging habitat Temporary disturbance impact from construction could occur from noise, lighting and construction activities during breeding season – April to August. Polluting incidences and run-off could impact the SPA including the flora and fauna it supports. Furthermore, run-off including from mud and debris arising from construction works entering the surface water / land drainage system, causing blockages and restricting flow could result in a negative impact. Impacts from air quality during construction, including dust and vehicle emissions, could detrimentally impact the qualifying features.	Screened in
Thorne Moor SAC and Hatfield Moor SAC	Degraded raised bogs still capable of natural regeneration	Changes in water quality and quantity. Polluting incidences and run-off could detrimentally impact the SACs, including the flora and fauna they support. Furthermore, run-off including from mud and debris arising from construction entering the surface water / land drainage system, causing blockages and restricting flow Impacts from air quality during construction, including dust and	Screened in

		vehicle emissions, could impact the qualifying features..	
Humber Estuary SPA	Avocet (wintering)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Bittern (wintering)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Hen harrier (wintering)	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Golden plover (wintering)	Order Limits not functionally linked, but temporary disturbance to foraging/roosting habitat adjacent to Order Limits in use by this species from construction noise, artificial lighting, and visual disturbance associated with construction activities.	Screened **in**
	Bar-tailed godwit (wintering)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Grey plover (wintering)	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Turnstone (passage)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out

	Ruff (passage)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Bittern (breeding)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Marsh harrier (breeding)	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Avocet (breeding)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Little tern (breeding)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Shelduck (wintering)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Knot (wintering)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Dunlin (wintering)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Black-tailed godwit (wintering)	No habitat with potential to support species within Order	Screened out

		Limits. SPA too far to be directly impacted.	
	Redshank (wintering)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Knot (passage)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Dunlin (passage)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Black-tailed godwit (passage)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Redshank (passage)	No habitat with potential to support species within Order Limits. SPA too far to be directly impacted.	Screened out
	Assemblage qualification (non-breeding season)		
	Dark-bellied brent goose	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened o**ut**
	Pink-footed goose	Loss of functionally linked land. Temporary disturbance to foraging/roosting habitat within and adjacent to Order Limits from construction noise, artificial lighting, and visual disturbance	Screened in

		associated with construction activities.	
	Shelduck	No habitat with potential to support species within site	Screened out
	Wigeon	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Teal	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Mallard	Loss of Loss of functionally linked land. Temporary disturbance to foraging/roosting habitat within and adjacent to Order Limits from construction noise, artificial lighting, and visual disturbance associated with construction activities.	Screened in
	Pochard	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Scaup	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Goldeneye	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out

	Bittern	No habitat with potential to support species within site	Screened out
	Oystercatcher	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Avocet	No habitat with potential to support species within site	Screened out
	Ringed plover	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Golden plover	Order Limits not functionally linked, but disturbance to foraging/roosting habitat adjacent to Order Limits in use by this species.	Screened in
	Lapwing	Loss of functionally linked land. Temporary disturbance to foraging/roosting habitat within and adjacent to Order Limits from construction noise, artificial lighting, and visual disturbance associated with construction activities.	Screened in
	Knot	No habitat with potential to support species within site	Screened out
	Sanderling	No habitat with potential to support species within site	Screened out
	Dunlin	No habitat with potential to support species within site	Screened out

	Ruff	No habitat with potential to support species within site	Screened out
	Black-tailed godwit	No habitat with potential to support species within site	Screened out
	Bar-tailed godwit	No habitat with potential to support species within site	Screened out
	Whimbrel	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Curlew	Only low numbers recorded and Order Limits not functionally linked for this species. SPA too far to be directly impacted.	Screened out
	Redshank	No habitat with potential to support species within site	Screened out
	Greenshank	No habitat with potential to support species within site	Screened out
Humber Estuary Ramsar	Criterion 3 – breeding colony of grey seals	No habitat with potential to support species within site	Screened out
	Criterion 3 – breeding natterjack toad	No habitat with potential to support species within site	Screened out
	Criterion 5 – waterfowl assemblage in non-breeding season	Loss of over-wintering foraging/roosting habitat within the Order Limits Temporary disturbance to foraging/roosting habitat adjacent to Order Limits from construction noise, artificial lighting, and visual	Screened in

		disturbance associated with construction activities.	
	Criterion 6 – golden plover (passage)	Order Limits not functionally linked, but temporary disturbance to foraging/roosting habitat adjacent to Order Limits in use by this species from construction noise, artificial lighting, and visual disturbance associated with construction activities.	Screened in
	Criterion 6 – knot (passage and wintering)	No habitat with potential to support species within the Order Limits.	Screened out
	Criterion 6 – dunlin (passage and wintering)	No habitat with potential to support species within the Order Limits.	Screened out
	Criterion 6 – black-tailed godwit (passage and wintering)	No habitat with potential to support species within the Order Limits.	Screened out
	Criterion 6 – redshank (passage and wintering)	No habitat with potential to support species within the Order Limits.	Screened out
	Criterion 6 – Shelduck (wintering)	No habitat with potential to support species within the Order Limits.	Screened out
	Criterion 6 – golden plover (wintering)	Order Limits not functionally linked, but temporary disturbance to foraging/roosting habitat adjacent to Order Limits in use by this species from construction noise, artificial lighting, and visual disturbance associated with construction activities..	Screened in

	Criterion 6 – bar-tailed godwit (wintering)	No habitat with potential to support species within the Order Limits.	Screened out
	Criterion 8 – migration route for river lamprey and sea lamprey	Potential impacts from airborne pollutants, comprising dust and vehicle emissions and any changes in water quality and quantity could impact sea and river lamprey that utilise the Ramsar and migration corridors these species may use.	Screened in
	Criterion 1 – estuarine habitat	Potential for impacts from any changes in water quality or quantity, although the Scheme is considered to be sufficiently distant from the estuarine habitats associated with the estuary to avoid any additional direct or indirect impacts. Potential impacts from air quality during construction, including dust and vehicle emissions, could impact the qualifying features.	Screened i**n**
Humber Estuary SAC	1**130** Estuaries, 1110 Sandbanks which are slightly covered by sea water all the time, 1140 Mudflats and sandflats not covered by seawater at low tide 1150 coastal lagoons 1310 salicornia and other annuals colonizing mud and	Potential for impacts from any changes in water quality or quantity, although the Scheme is considered to be sufficiently distant from the estuarine habitats associated with the estuary to avoid any additional direct or indirect impacts. Potential impacts from air quality during construction, including dust and vehicle emissions, could impact the qualifying features. and any changes in water quality and quantity could impact this SAC and the species that are	Screened in

	sand, 1330 Atlantic salt meadows, 2110 embryonic shifting dunes, 2120 shifting dunes along the shoreline with *Ammophilia arenaria*, fixed coastal dunes with herbaceous vegetation, 2160 dunes with *hippopha rhamnoides*, 1095 sea lamprey, 1099 river lamprey	present including sea and river lamprey and migration corridors these species may use.	
	1364 grey seal	No habitat with potential to support species within Order Limits	Screened out

7 Appropriate Assessment (Stage 2)

7.1. Approach to Appropriate Assessment

7.1.1. Where significant effects are likely, or it is uncertain if there would be likely significant effects, an AA is required.

7.1.2. For an AA, the implication of the plan/project on each affected site must be assessed in light of its conservation objectives. The development of conservation objectives is required by the 1992 Habitats' Directive (92/43/EEC); an objective of this legislation is to achieve 'favourable conservation status' (see **Box 6.1**) of the habitats and / or species features for which the site is designated.

Box 7-1: Favourable conservation status, as defined in the Habitats Directive

Conservation status for habitats is defined in Article 1(e) as:

"[The] *conservation status of natural habitats* [is] *the sum of influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species… The conservation status of natural habitats will be taken as 'favourable' when:*

- *its natural range and areas it covers within that range are stable or increasing; and*
- *the species structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and*
- *the conservation status of its typical species is favourable.*"

Conservation status for species is defined in Article 1(i) as:

"[The] *conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within* [its] *territory…The conservation status of species will be taken as 'favourable' when:*

- *population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; and*
- *the natural range of the species is neither being reduced for the foreseeable future; and*

7.2. Appropriate Assessment

7.2.1. Following the screening, the need for an AA has been identified based on the information included on Table 6.3.

7.2.2. Information to inform an Appropriate Assessment for each of the relevant designated sites is given below. This information includes an impact assessment comprising descriptions of the qualifying features of the designated sites and their conservation objectives, as well as in-combination mitigation measures.

Impact Assessment

7.2.3. The design of the Scheme includes a range of inherent embedded elements which avoid or reduce the potential for adverse ecological impacts, including retaining existing identified higher value habitat features such as hedgerows, ponds, ditches, and woodlands, and focusing the majority of the Scheme proposals within lower ecological value agricultural land. Additionally, sensitive, or high value ecological features outside the Order Limits, which are described below, have been protected as part of the design which sets in place buffer zones and other safeguarding measures, all of which has been built-in to as part of the iterative design process.

Construction

7.2.4. Given the nature of the Scheme, solar and BESS, construction works will be minimal, with most potential construction impacts likely to occur through construction vehicle movements, security fence installation and the placement of the Panel Areas and BESS on the ground. In addition, potential impacts could occur due to the construction of cables and other infrastructure, although such impacts will, in the main, be temporary.

7.2.5. The potential for adverse effects during the construction phase have been 'designed out' where practicable, and these will be controlled through standard good construction and environmental working practices as an integral part of the Scheme, detailed within the **Construction Environmental Management Plan [REP4-045]** and within the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]**. Nonetheless, further detail relating to potential ecological impacts during construction prior to the implementation of mitigation is provided below.

Thorne & Hatfield Moors SPA

7.2.6. This is designated for its population of breeding nightjar.

7.2.7. No infrastructure development is proposed within the SPA boundary, so no impacts from land take will occur. In addition, the SPA is to be buffered from any development by a minimum of 10m (the buffer extends up to 15m in some places). This buffer will help to reduce construction, as well as operational impacts with further detail provided in Figure 7-2 and 7-3.

7.2.8. Habitats within the Order Limits have limited potential for foraging nightjar, consisting of intensively managed arable farmland, which holds little value as a habitat or foraging resource for this specialist species (see previous section) and therefore the loss of this habitat will not be significant for nightjar.

7.2.9. Higher value boundary habitats that are likely to support invertebrate species for foraging will be retained and protected during works, followed by habitat enhancement for this species with the introduction of species-rich neutral grassland around field boundaries, along ditches, hedgerow margins and woodland edges (see Figure 7-3), which will also provide strengthened dispersal corridors throughout the landscape for this species and increase potential foraging habitat.

7.2.10. No moorland habitat suitable for nesting nightjar was found within the Order Limits and usage by nightjar is restricted to occasional use as a foraging resource along boundaries that will be retained and protected.

7.2.11. Given the close proximity of the SPA to the Order Limits boundary, should construction take place during the time nightjar are present between April and August [22]there is potential that temporary disturbance impact from construction could occur from construction noise, artificial lighting, and visual disturbance associated with construction activities.

7.2.12. Polluting incidences and run-off during construction could detrimentally impact the SPA including the flora and fauna it supports. Furthermore, run-off including from mud and debris arising from construction works entering the surface water / land drainage system, causing blockages and restricting flow could result in a negative impact, such as to invertebrates that nightjar forage on.

[22] RSPB (2025) Nightjar Bird Facts | Caprimulgus Europaeus https://www.rspb.org.uk/birds-and-wildlife/nightjar

7.2.13. Impacts from air borne pollution construction, comprising dust and vehicle emissions, could also detrimentally impact the qualifying features.

Thorne Moor & Hatfield Moors SACs

7.2.14. Both SACs are designated for their 'degraded raised bogs still capable of natural regeneration'. Hatfield Moors SAC is situated 100m south of the Order Limits. A small section of the northeastern boundary of the Order Limit extends into Thorne Moor SAC. Whilst this small 0.53ha area is included within the Order Limits (Land Parcel A), no development works are proposed within the SAC. The Order Limits is dominated by intensively managed arable farmland and the habitat survey did not identify any areas of bog habitat. Areas of peat are shown as present within the Order Limits based on geological and Natural England maps. However, no evidence of peat/heath/bog mire communities was recorded during the habitat survey. With no construction activities occurring within the SAC boundaries, including the area within the Order Limits, there will be no direct construction impacts (such as habitat loss or land take) on the SAC.

7.2.15. The SAC is linked to the Order Limits by a network of drainage ditches and impacts could occur to this SAC from any changes in water quality and quantity. Polluting incidences and run-off could detrimentally impact the SAC including the flora and fauna it supports. Furthermore, run-off including from mud and debris arising from construction works entering the surface water / land drainage system, causing blockages and restricting flow could result in a negative impact.

7.2.16. Impacts from air borne pollution during construction, comprising dust and specifically vehicle emissions, could detrimentally impact the qualifying features.

Humber Estuary SPA

7.2.17. The SPA is designated for its assemblage of birds including wintering, passage and breeding birds. Such birds may use the Order Limits on occasion as part of a wider territory to forage and roost. Habitats which they can utilise include agricultural and arable fields, and if more than 1% of the qualifying number of each individual species is found to be present then this is considered to be functionally linked land. As suitable habitat is present within the Order Limits and results have recorded these habitats to be used by SPA bird species, there is the potential for likely significant effects to lapwing, mallard, pink-footed geese and greylag geese through loss of habitat.

7.2.18. Given the numbers of golden plover within the survey area, impacts could also take place to this species through a loss of habitat and disturbance during construction from construction noise, artificial lighting, and visual disturbance associated with construction activities.

7.2.19. Given the low numbers recorded (i.e. below significance threshold of 1% of SPA population) – and general absence of suitable habitat, the following wintering species do not require any specific mitigation: curlew, marsh harrier, hen harrier and teal.

7.2.20. The results of the breeding bird surveys undertaken in 2023 and 2025 demonstrate that the Order Limits does not comprise important habitat or functionally linked land for breeding species associated with the Humber Estuary SPA.

7.2.21. The field boundaries including ditches, drains and hedgerows will be retained and protected, and these habitats will be enhanced with species diverse grassland along field margins and hedgerow planting that will enhance foraging opportunities for breeding and wintering bird species. Details including management practices are set out within the **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]**.

7.2.22. Given the distance of the SPA from the Order Limits there will be no impacts from direct land take or airborne emissions, including dust with dust only considered to be significant within 200m. However, as the Order Limits are functionally linked to a number of species for which the SPA is designated the construction of the Scheme could result in temporary impacts from construction noise, artificial lighting, and visual disturbance associated with construction activities, as well as habitat loss to these species including, pink-footed geese, mallard and lapwing.

7.2.23. Although given the distance of the SPA form the Order Limits impacts from water quality and quantity are not likely, the extensive ditch network in the area could result in impacts arising from any changes in water quality and quantity. Polluting incidences and run-off could detrimentally impact the SAC including the flora and fauna it supports. Furthermore, run-off including from mud and debris arising from construction works entering the surface water / land drainage system, causing blockages and restricting flow could result in a negative impact.

Humber Estuary Ramsar

7.2.24. The Ramsar is designated for its estuarine habitats, populations of grey seals and assemblage of birds including wintering, passage and breeding birds and migrating river and sea lamprey.

7.2.25. No direct impacts are anticipated on the predominantly coastal and maritime habitats and species the Ramsar supports, such as grey seal , due to the separation distance of over 5.6km. Whilst drains and ditches within and adjacent to the Order Limits could support lamprey species, no records of them were returned within the data search and therefore they are considered unlikely to be present. However, buffers around drains and watercourses would ensure the habitat is retained and protected suitable to support lamprey and their free movement in the future.

7.2.26. Field boundaries including ditches, drains and hedgerows will be retained and protected, and these habitats will be enhanced with species diverse grassland along field margins and hedgerow planting. Details including management practices are set out within the **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]**.

Humber Estuary SAC

7.2.27. The SAC is designated for its estuarine habitats including coastal plain-mudflats and sandflats. It also supports populations of sea and river lampreys as well as grey seals which are qualifying features of the SAC.

7.2.28. No direct impacts are anticipated on the predominantly coastal and maritime habitats and species the SAC supports, due to the separation distance of over 5.6km. Whilst drains and ditches within and adjacent to the Order Limits could support lamprey species, no records of them were returned within the data search and therefore they are considered unlikely to be present. However, buffers around drains and watercourses would ensure the habitat is retained and protected suitable to support lamprey and their free movement in the future.

7.2.29. Field boundaries including ditches, drains and hedgerows will be retained and protected, and these habitats will be enhanced with species diverse grassland along field margins and hedgerow planting. Details including management practices are set out within the **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]**.

Operational

7.2.30. Operational effects are defined as effects following the construction of the Scheme. For designated sites, operational effects can include ongoing changes in habitat availability and suitability for mobile qualifying species, changes in land management, changes in water quality associated with the cessation of intensive agricultural management, low-level disturbance from maintenance activity, and any operational lighting, where required.

7.2.31. There would be no operational land take within Thorne and Hatfield Moors SPA, Thorne Moor SAC, Hatfield Moors SAC, Humber Estuary SPA, Humber Estuary Ramsar, Humber Estuary SAC. There would also be no direct operational habitat loss from any statutory designated site. Operational effects on these sites are therefore limited to indirect effects, including effects on mobile qualifying species using land within the Order Limits, potential changes to water quality or hydrological pathways, and disturbance associated with routine operation and maintenance.

Thorne and Hatfield Moors SPA

7.2.32. Thorne and Hatfield Moors SPA is designated for breeding nightjar. The assessment set out above identifies that no nesting nightjar were recorded within the Order Limits, that no moorland nesting habitat is present within the Order Limits, and that the habitats within the Order Limits are principally intensively managed arable farmland of limited value for nightjar. However, previous radio-tracking data indicates that parts of the Order Limits may be used on occasion by nightjar for foraging, particularly along retained boundary features.

7.2.33. During operation, there would be no additional habitat loss beyond that assessed for construction. The operational Scheme would not be permanently lit and would be subject to low levels of human activity associated with routine inspection, maintenance and habitat management. As such, operational disturbance to nightjar is likely to be limited.

7.2.34. The main operational effect prior to additional mitigation would be the change in availability and suitability of foraging habitat within the Order Limits. The loss of intensively managed arable habitat is not considered likely to result in a significant adverse effect on nightjar, given its limited suitability for this species. Retained boundary habitats, including hedgerows, woodland edges and ditch corridors, would continue to provide foraging and commuting opportunities. The creation of species-rich grassland margins, wider grassland areas and enhanced field

boundaries would increase invertebrate availability and provide improved foraging opportunities for nightjar compared to the existing arable baseline. Ground-nesting bird monitoring will include carcass searches around the solar arrays, with results reported to the relevant local planning authority. Any nightjar carcass showing evidence of panel collision will also be reported to Natural England, with any remedial measures agreed with Natural England before implementation.

7.2.35. The provision of grassland mitigation areas will also result in enhanced foraging opportunities for nightjar compared to the existing situation. In addition, grassland buffers are to be provided around the perimeter of solar array parcels and along non-statutory designated drains, with a minimum 5m buffer from the top of the bank, extended to 9m from the top of the bank for Internal Drainage Board watercourses, and approximately 40m grassland area, including a 10m buffer to the bank top of River Torne. Grassland buffers are also to be provided to retained hedgerows and around Whittaker's Plantation Candidate Local Wildlife Site. These buffers will comprise tussocky grassland, creating enhanced foraging opportunities for nightjar and strengthening green corridors through the Order Limits.

Humber Estuary SPA

7.2.36. Humber Estuary SPA is designated for an assemblage of wintering, passage and breeding birds. The construction assessment identifies that the Order Limits are considered to provide Functionally Linked Land for lapwing, pink-footed goose, greylag goose and mallard, with consideration also given to golden plover recorded in adjacent land during the non-breeding bird surveys.

7.2.37. During operation, there would be no additional land take over and above that assessed during construction. However, the presence of solar panels, fencing and associated infrastructure would result in a long-term change in the character and suitability of parts of the Order Limits for open-field foraging and roosting species. This operational effect is different to the temporary disturbance effects associated with construction, as it would continue for the operational lifetime of the Scheme.

7.2.38. In the absence of additional mitigation, the operational Scheme could reduce the availability and suitability of open foraging and roosting habitat for lapwing, pink-footed goose, greylag goose and mallard. This would be most relevant to species which require open vistas or open arable / grassland for foraging and roosting. The

effect would be long-term, although it would not affect the entirety of the Order Limits equally, as retained fields, buffers, margins, ditches, ponds and boundary habitats would remain available, and the wider landscape contains extensive agricultural land.

7.2.39. Operational disturbance from maintenance activity would be limited, temporary and infrequent. The operational Scheme would not be permanently lit, and routine activities are expected to result in lower levels of disturbance than current intensive agricultural operations.

Humber Estuary Ramsar

7.2.40. Humber Estuary Ramsar is designated for estuarine habitats, grey seal, migratory fish and its non-breeding waterfowl assemblage. Due to the distance between the Ramsar and the Order Limits, there would be no direct operational effects on estuarine habitats, coastal habitats, grey seal or bird species which are exclusively associated with coastal and maritime habitats.

7.2.41. Operational effects on the Humber Estuary Ramsar are therefore limited to potential effects on mobile bird species using land within the Order Limits, potential effects on connected watercourses, and potential benefits arising from changes in land management.

7.2.42. As set out for the Humber Estuary SPA, the presence of solar panels, fencing and associated infrastructure would result in a long-term change in the suitability of parts of the Order Limits for open-field foraging and roosting birds. In the absence of additional mitigation, this could affect Ramsar waterfowl assemblage species which use the Order Limits or adjacent land, including lapwing, pink-footed goose, greylag goose and mallard.

7.2.43. Operational effects associated with water quality are anticipated to be beneficial rather than adverse. The cessation of intensive arable management would reduce agricultural inputs and associated run-off into the ditch network within the Order Limits. This is likely to improve water quality and habitat condition within retained ditches, drains and ponds over time.

All International Designated Sites

7.2.44. Landscape planting will take place under and around the solar panels and above ground infrastructure (further detail below) and will be managed throughout the lifetime of the Scheme in accordance with the Landscape and Ecological Management Plan to deliver biodiversity benefits and enhanced natural habitats. These benefits will therefore be long-term.

7.2.45. Designated sites within and adjacent to the Scheme will benefit from enhanced habitat connections, opportunities for species dispersal within the Order Limits subject to very low levels of disturbance and the cessation of soil disturbance (ploughing) and inputs of agricultural chemicals to waterways and wetlands.

7.2.46. Improvement to water quality as a consequence of arable reversion and the cessation of agrichemical inputs is likely to result in an enhancement for aquatic flora and fauna associated with all designated sites

7.2.47. Once constructed, the Scheme will be fenced and there will be limited disturbance, noise or lighting associated with the Scheme. The operational solar facility will not be lit, with lighting for example typically restricted to the entrance doorways of the small number of structures that require occasional maintenance visits and designed to minimise light spill. The operational Scheme is likely to result in less overall human activity and disturbance than is associated with current normal farming practices, to which local bird populations have already become relatively tolerant.

7.2.48. Periodic cleaning and maintenance of PV modules will take place although will be temporary and not considered significant. The Solar PV modules will be cleaned using de-ionised water, with no chemicals used in the cleaning process, unless required in an exceptional case in discrete areas. When an exceptional case is required, a Pollution Prevention Plan for solar panel maintenance will be implemented, including the use of biodegradable cleaning products, avoidance of cleaning during rainfall, containment and appropriate disposal of wash water, maintenance of buffers to watercourses, and provision of spill response equipment to prevent contamination of surface water, groundwater, drainage systems, and sensitive habitats, with detail provided within the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]**.

Decommissioning

7.2.49. Baseline conditions within the Order Limits are likely to change over the 40 years of operation, and prediction of these conditions at this point is considered unreliable in terms of predicting likely future decommissioning effects on biodiversity. However, potential impacts from decommissioning are considered to be similar to those already described in relation to the construction phase, namely direct and indirect disturbance, temporary/permanent habitat loss and vegetation removal.

Mitigation Measures

7.2.50. The 'Information to Inform an AA' looks at potential mitigation measures which would be required to determine if the magnitude, duration, location and extent of effects can be reduced/removed. These have been designed following the consultation undertaken with Natural England and detailed in the **ES Chapter 7 Ecology and Nature Conservation [Document reference 6.2.7 Revision 5].**

7.2.51. Full details on construction methods is detailed in the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]** with a summary below.

7.2.52. These mitigation measures would form part of the planning consent, including related DCO requirements, for the Scheme, if approved. Mitigation measures can include both avoidance measures and reduction measures, but the former approach is preferred. Mitigation measures for each qualifying feature of the SPA/Ramsar/SAC are considered separately, below.

7.2.53. Construction is to be undertaken in phases and has been designed minimise disturbance from construction noise, artificial lighting, and visual disturbance associated with construction activities, as well as vehicle movements in order to reduce potential effects from disturbance and air quality / pollution.

7.2.54. Habitat protection buffers will be maintained throughout the construction phase and will be implemented as part of the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]** and identified with appropriate fencing in line British Standards BS5837:2012 to prevent accidental damage and signage along with team briefings at 'tool box talks'.

7.2.55. Measures are to be implemented during construction to prevent impacts from contaminated run-off, including from fuel spills, silt and mud, preventing impacts

to water quality and quantity within designated sites and habitats that could be used by species that originate from the designated sites.

7.2.56. To prevent run-off, including from mud and silt, and pollution occurring, protection measures will be implemented during the clearance and all subsequent construction stages, as set out below. Construction methodology will be designed to comply with good practice guidelines (CIRIA, 2015[23]) and will include the following measures as necessary:

- Use of double stacked straw bales or other methods such as bunds to collect any potential run-off;
- Using secondary containment such as bunds around storage tanks where necessary;
- Ensuring deliveries are completed away from any watercourses/ditches;
- Ensure chemicals and hazardous substances are securely stored, labelled appropriately and regularly inspected; and
- Provision of jet washer and water bowser to remove mud from vehicles as necessary.

7.2.57. A pollution/spillage plan will also be put in place prior to the start of works. This will include training for site management, tool box talk for operatives and provision of spill kits.

7.2.58. Standard measures will also be undertaken to prevent impacts from lighting, noise and airborne pollutants such as from dust and vehicle emissions, with further detail below.

7.2.59. **Damage** - Throughout the construction period, the site manager will be responsible for ensuring that the protective fencing of retained habitats remains in place and fit for purpose. The maintenance of all such protection measures will be the responsibility of the site manager, however, an experienced ecologist acting as an ECoW will be available to attend the Order Limits, if required, throughout the

[23] CIRIA (2015). Environmental good practice onsite guidance (fifth edition) (C81 1D). London.

construction period should any issues arise. This will prevent impacts to adjacent. Retained designated sites.

7.2.60. **Air pollution** –Air pollution from non-road mobile machinery (NRMM) is unlikely to affect local air quality significantly. However, there are potential impacts on sensitive habitats when NRMM are located near designated sites. As detailed in **Appendix 14.1 - Air Quality Impacts on Designated Ecological Sites [APP-115]** if there are fewer than 1,000 movements per day, no significant effect is anticipated, whilst the screening distances set out in Natural England's Standard Advice will be used as minimum offset distances for all NRMM.

7.2.61. This will be controlled through locating site compounds away from any of these areas, the implementation of signs within the Order Limits to designate any areas where sensitive habitats are located. Workers will be informed during inductions, toolbox talks, and regular briefings about the importance of minimising vehicle use in these areas, ensuring operations are conducted in a manner that adheres to ecological protection guidelines.

7.2.62. **Lighting** - In order to prevent disturbance to nocturnal species no construction works will occur after dusk, except for potential Horizontal Directional Drilling (HDD) (see below for further detail). Shorter hours will be undertaken during winter months, due to less daylight hours, with working hours starting one hour after sunrise and still finishing one hour after sunset where possible.

7.2.63. It is therefore anticipated that no construction lighting will be required for the majority of works with the exception of HDD. Any dusk to dawn light which could occur would likely be restricted to vehicle headlights entering or leaving the Order Limits at the start of end of the working day which would be nominal and restricted in both extend and duration.

7.2.64. In the event any lighting is required, such as for security, this will follow the measures detailed above, e.g. utilise cool white light (2700K) LED lamps; and avoid the lighting of hedgerows, ditch corridors and retained offsite habitats through sensitive placement of lighting and choice of luminaire, in order to minimise impacts to foraging nightjar and other nocturnal species, which could utilise these habitats.

7.2.65. Some nightwork may be required as part of HDD, subject to requirements of rail networks, but if this is the case lighting will be directed to only where it is needed to avoid any retained sensitive habitats and will only be short-term and temporary. As such, potential impacts from this work would not be significant.

7.2.66. The measures above will minimise potential impacts to nocturnal species such as nightjar, especially when considering that the majority of the Order Limits comprises arable and therefore is not suitable foraging habitat for this species.

7.2.67. **Noise** – Any noise impacts will be temporary and measures will be undertaken to minimise impacts as much as possible through a combination of methods of work, implementation of mitigation measures and timings of works.

7.2.68. The majority of construction activity will comprise earth excavation and movement of plant through the Order Limits. It is expected that the majority of construction activity will be below 70dB and would therefore not cause any disturbance response to birds which may be utilising retained or adjacent land, including golden plover. Consequently, no specific mitigation is considered necessary for noise impacts with regards to the Humber Estuary SPA/Ramsar and SAC.

7.2.69. Given the proximity of Thorne and Hatfield Moors SPA to the Order Limits and the fact it is designated for breeding nightjar, impacts from noise could occur during construction in proximity to the SPA boundary.

7.2.70. To prevent impacts, the following measures will be adopted and included in the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]**:

- Ensuring vehicles and machinery are regularly serviced and in good condition;
- Speed limits;
- Installing silencers or attenuators where applicable;
- Replacing older equipment with quieter alternatives;
- Using broadband reversing alarms;
- Not leaving engines idling when not in use; and

- Siting any generators in the east of the Order Limits as far as practicable and at least 200m from the Thorne and Hatfield Moors SAC.

7.2.71. In addition, construction will be timed to avoid being undertaken during sensitive periods adjacent to the Thorne and Hatfield Moors SPA when nightjar could be present, generally between April to August, with no construction to take place within 200m of this SPA within this period. In addition, construction will be timed to avoid being completed when non-breeding birds could be present within mitigation areas, with no construction to take place within 200m of the mitigation areas between October to February.

7.2.72. Where construction activities have the potential to generate elevated noise levels in proximity to sensitive ecological receptors, temporary acoustic screening measures will be implemented where necessary. This may include the use of acoustic barriers or bunding around high-noise activities, which may be incorporated into temporary site infrastructure such as security fencing where practicable. The requirement for such measures will be determined on site by the ECoW, based on the nature and location of activities and their proximity to mitigation areas and the international designated sites.

7.2.73. The ECoW will review the effectiveness of the proposed noise mitigation measures during construction and the requirement for mitigation will be considered met where all mitigation measures have been fully implemented and there is evidence that noise within identified sensitive areas, including the mitigation areas between October to February and Thorne and Hatfield Moors SPA between April to August, have been reduced to levels that are not expected to result in significant adverse effects on ecological receptors. This will be informed by noise monitoring, ensuring levels are below 70dB at the boundary of the sensitive areas during construction, visual inspections ensuring all measures are in place, and observations of species behaviour where relevant, such as whether birds are recorded leaving land within the sensitive areas at the time of noise events.

7.2.74. **Visual Disturbance** – as qualifying birds of the nearby Humber Estuary SPA/Ramsar are known to use adjacent land, there is a risk that construction activity comprising regular human presence and plant movement could disturb birds in adjacent land. Some of this land is visually separated/screened from the proposed construction areas by existing hedgerows/built form, which would negate the need for any additional screening. In some instances, however, and depending on the phasing of construction activity, there may be areas where

construction activity would not be visually screened from adjacent land and would, therefore, require a degree of mitigation.

7.2.75. Where construction is to take place in parcels adjacent to the mitigation areas at a time of year when sensitive estuary birds would be present, taken to be September – March in any given year, additional screening in the form of hoarding/hessian mesh on the perimeter Heras fencing will be provided. Such features will provide visual separation between the construction areas and adjacent land, and mitigate for any visual disturbance risk. It is expected, however, that not all of the Scheme would be 'built out' at the same time, so in the event of any visual disturbance, birds would be able to relocate to undisturbed parts of the Order Limits without conflicting with the conservation objectives of the Humber Estuary SPA/Ramsar.

7.2.76. Additional screening in the form of hoarding/hessian mesh on the perimeter Heras fencing will also be provided when construction is to take place within adjacent land to the Thorne and Hatfield Moors SPA during the time nightjar could be present, between April to August, to minimise impacts form visual disturbance.

7.2.77. **Horizontal Directional Drilling** - HDD will generally be utilised during construction under highways and some watercourses. General HDD practices are outlined below:

- Reflect known ground conditions to select a specific route and depth through the most homogeneous geological conditions possible;
- Casing of weaker un-cohesive layers to reduce bentonite breakout;
- Use as low a concentration of bentonite as reasonably practicable;
- Operatives to monitor the drilling for evidence of breakout and cease drilling and seal fissures or voids if applicable, as required;
- Monitoring of drilling fluid returns and volumes to help identify losses;
- Retain a stock of sandbags and pumps on site to contain breakout and dispose accordingly;
- Bentonite water slurry will be stored in the launch pits and transported to a registered disposal site(s); and,

- HDD wastewater (including bentonite) will be incarcerated within the launch pit and transported to a specialised local facility for disposal

7.2.78. Further details regarding bentonite breakout, will be included within a HDD Method Statement that will form part of the final Construction Environmental Management Plan(s). Natural England will be consulted on measures addressing bentonite breakout that form part of the HDD Method Statement.

7.2.79. **ECoW**. A suitably qualified and experienced ECoW will be appointed prior to the commencement of construction activities and through whom appropriate ecological advice will be provided throughout. The ECoW will be responsible for undertaking and/or coordinating checks for protected species before the various phases of construction and decommissioning activities commence. The ECoW (or appointed 'clerk' on behalf of the ECoW) will also maintain a watching brief and advisory role as necessary throughout the construction phase to ensure compliance with the approved methods and relevant legislation.

7.2.80. **Habitats**. Higher value boundary habitats that are likely to support invertebrate species will be retained and protected during works, followed by habitat enhancement with the introduction of species-rich neutral grassland around field boundaries, which will also provide strengthened dispersal corridors throughout the landscape for wildlife. These measures will create habitats of more importance to foraging nightjar, creating a significant enhancement compared to the existing situation. In addition, these measures will benefit mallard.

7.2.81. Retention and enhancement of ponds and ditches, through improved habitat management, as detailed in the **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]**, along with the cessation of agricultural farming, will improve water quality of these habitats and enhance opportunities for mallard. These measures will help increase invertebrate numbers and aquatic vegetation, therefore improving foraging opportunities[24].

7.2.82. A non-breeding bird mitigation strategy (see Appendix 2) has been produced and the premise of this is to mitigate for non-breeding birds associated with the Humber Estuary SPA that utilise the habitats within the Order Limits, through the provision of appropriate habitat that is managed for the benefit of the birds,

[24] Mallard Duck Facts | Anas Platyrhynchos

including the retention of some areas of arable and the reversion of existing arable land to a permanent species-diverse pasture..

7.2.83. Multiple parcels have been selected across the Order Limits to provide such mitigation strategy (see Appendix 2). The mitigation areas have been selected to reflect bird use where possible. Given the mobility of SPA bird species, and the location of the Order Limits approximately 7.7 km from the Humber Estuary SPA, it is clear that birds will utilise suitable habitat across a large area. This is supported by non-breeding bird survey results that show use of the Order Limits changed between the survey periods.

7.2.84. The mitigation parcels have been selected so as to:

- broaden the coverage of the mitigation parcels over larger areas, accessing different and unique micro-climates/ground conditions per area; and
- allow birds to move between different areas and not be reliant on a single parcel. The locations are also beneficial as they are not proposed to be 'encompassed' by the proposed Panel Areas but share boundaries with retained area (i.e. the canal and surrounding agricultural land), providing more naturalised and preferred buffers to the mitigation areas. The location of the areas that comprise the mitigation land are illustrated in Appendix 1.

7.2.85. The mitigation strategy detailed in Appendix 2 demonstrates that there is more than enough land that can provide suitable mitigation for non-breeding birds. The delivery of the mitigation strategy will be secured through a requirement to implement the accompanying **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6],** which also includes a full assessment of each mitigation parcel is detailed in the supporting Outline Landscape and Ecological Management Plan detailing the proposals and management of each mitigation parcel.

7.2.86. Bird Days calculations have been used as a tool to inform the approximate mitigation areas required, alongside ecological knowledge of the carrying capacity of different habitat types. Section 2 of the Non-Breeding Bird Mitigation Strategy (see Appendix 2) sets out calculations of mitigation land availability with 150m open vistas to prevent impacts from visual disturbance, particularly for lapwing which are more susceptible to this impact than the other FLL species, pink-footed geese and mallard.

7.2.87. Further to this, a total of 43.67ha of mitigation land with 150m open vistas is located beyond 600m of existing wind turbines and this 43.67ha is available for lapwing and other FLL species (see **Table 7.1** and **Figure 7-1** below). The Bird Days calculations demonstrate that 24.99 ha is required for lapwing (Appendix 2) confirming that more mitigation land is provided than required. Additional mitigation land within 600m of turbines, including parcels M1 and M2, is also available, and lapwing were recorded using these areas during the supporting surveys (see Appendix 1), therefore ensuring that additional land is also available for this species.

7.2.88. When considering mitigation land beyond 600m of turbines, 108.84ha is available for pink-footed geese and mallard, the remaining functionally linked species recorded within the Order Limits and which do not require the 150m open vistas (see **Table 7.1** and **Figure 7-1** below). Bird Days calculations indicate that 22.98 ha is required for pink-footed geese, and as this species forages in similar habitats to lapwing without competing for the same resources, it is clear that more than sufficient land is provided for this species.

7.2.89. Bird Days calculations are not applicable to mallard (see Appendix 2). However, substantial mitigation land remains available beyond 600m of turbines for this species, even after accounting for lapwing and pink-footed geese (85.86 ha), in addition to enhancements to the ditch network and ponds, which will improve habitat suitability for this species compared to existing.

Mitigation Field Number	Total Area (ha)	Total Area with 150m open vista	Total Area beyond 600m of existing Turbine (ha)	Total Area beyond 600m of existing turbine and with 150m open vista (ha)
M1	6.87*	0.00	0.00	0.00
M2	13.42	0.00	0.00	0.00
M3	6.73	1.90	6.17	1.90
M4	19.94	2.97	19.94	2.97
M5	19.24	3.20	8.86	1.98
M7	4.76	0.64	4.76	0.64
M8	10.71	1.17	10.71	1.17
M11	20.84	5.14	20.84	5.14
M12	34.83	12.83	34.83	12.83

M13	29.55	14.03	29.55	14.03
M15	16.85	3.01	16.85	3.01
Total	**183.74**	**44.89**	**152.51**	**43.67**

***Mitigation Field Number M1 reduced in size to remove land comprising registered common land / Countryside and Rights of Way Act 2000 (CRoW) access land**

Table 7.1 Extent of Mitigation Areas

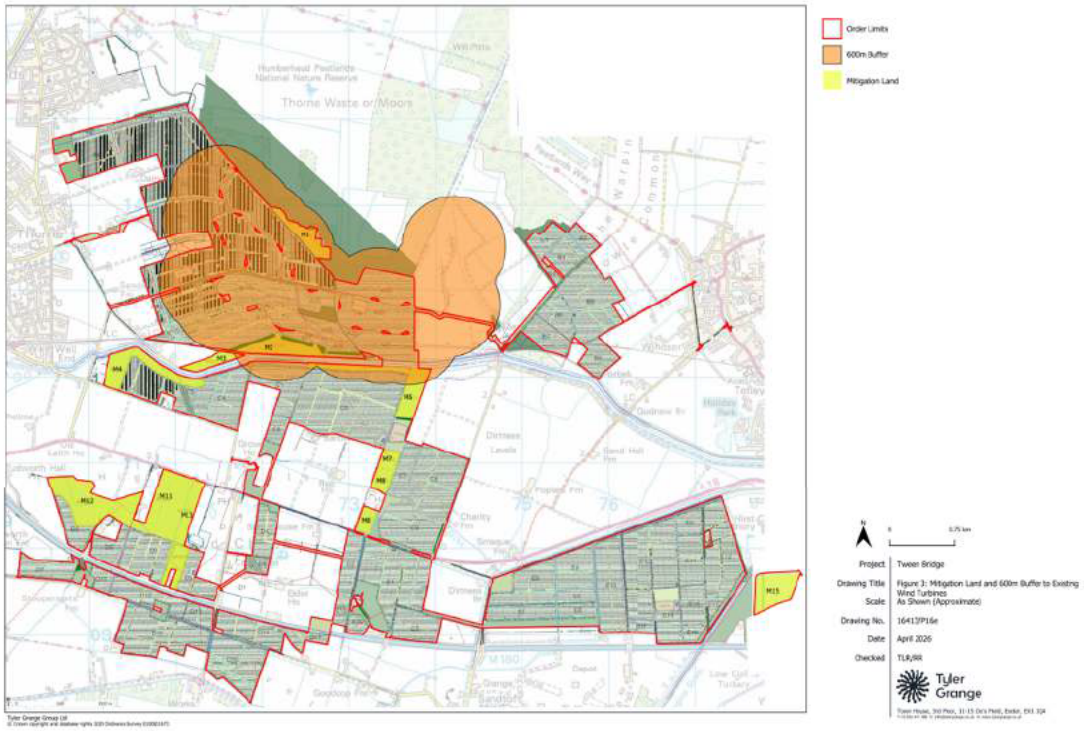


Figure 7-1. Mitigation areas and wind turbine buffer locations.

7.2.90. The principles of management are set out in the accompanying **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]** and comprise:

- Seeding grassland with an appropriate mix and utilizing existing topography (or creating such with equipment) to create shallow scrapes which will not be intended to permanently hold water, but to occasionally hold water over-

winter during periods of prolonged rainfall. Such areas are particularly beneficial for the non-breeding birds recorded within the Order Limits and associated with the Humber Estuary;

- Once the grassland is established, the first cut to 15cm undertaken in late summer after core breeding season. The cut will be rotational, so that not all of the mitigation parcels are cut at once – another benefit of having the mitigation response spread across multiple parcels. This will ensure that skylark and other ground-nesting birds have continued access to suitable nesting habitat;

- Second cut to 5cm in Autumn and retained as such until beginning of March (i.e. over the passage and over-wintering season.

- The second cut is important as it will ensure that smaller wading birds such as lapwing and golden plover have adequate access to the soil directly, where these species forage. Grass left too long would impede this ability. Geese would not compete with lapwing and golden plover as they forage upon the grass itself.

- Providing arable land for the duration of the proposals within the Order Limits boundary, to ensure that foraging opportunities for pink footed and greylag geese is secured and provided, in addition to grassland areas. The main principles to be implemented as part of the arable management for the benefit of pink footed and greylag geese will include:

    - Use sugar beet where possible;

    - Use other appropriate crops on rotation when sugar beet is not being grown, such as winter cereal crops, oil seed rape, Post-harvest cereal stubbles, potatoes [**Ref. 7-34**];

    - Post-harvest, the fields should be left until the spring before ploughing to maximise the foraging resource, with the geese foraging on roots chopped into fragments by the harvester, as well as unharvested roots;

    - Avoidance of deep ploughing; Incorporation of a ley crop within the management rotation; Inclusion of permanent grass margins to the fields measuring a minimum 2 metres.

7.2.91. The provision of the land detailed above and the management proposed will ensure that there is sufficient land available for those non-breeding bird species associated with the Humber Estuary SPA and Ramar, resulting in no overall impact to these species as a consequence of the Scheme.

7.2.92. The provision of the grassland mitigation areas will also result in enhanced foraging opportunities for nightjar compared to the existing situation.

7.2.93. In addition, grassland buffers are to be provided around the perimeter of all solar array parcels and along all non-statutory designated drains, which will have a minimum 5m buffer from top of the banks and which is extended to 9m from top of the banks for all Internal Drainage Board (IDB), and approximately 40m grassland area, including a 10m buffer to the bank top of River Torne. Grassland buffers are also to be provided to all hedgerows measuring between 3 metres and 15m around the retained Whittaker's Plantation Candidate Local Wildlife Site (CLWS). These grassland buffers will comprise tussocky grassland to create enhanced foraging opportunities for nightjar and will provide strengthened green corridors through the Order Limits.

7.2.94. Furthermore, large neutral grassland buffers that will be managed to provide suitable foraging habitat for nightjar are also to located across the Order Limits in north to south and east to west directions, ensuring extensive opportunities and connectivity for night is provided. This areas measures a range of widths, including numerous buffers that are 10m, 20m, 30m, 40m and 60m wide as detailed on Figure 7-2 and 7-3.

7.2.95. The table below summarises the sites and features 'screened in' for further assessment, potential effects and proposed mitigation.

Table 7-2: Mitigation Measures for Internationally Designated Sites

Site	Qualifying Features	Likely Significant Effects	Embedded/Additional Mitigation and Enhancements
Thorne and Hatfield Moors (SPA)	Breeding nightjar	Disturbance from construction noise, artificial lighting, and visual disturbance associated with	Timing of construction works in proximity to the SPA to avoid the

		construction activities. to nightjar utilising adjacent Moors during construction phase Small loss of potential foraging habitat. Degradation of habitat quality during construction, including impacts from dust and run-off. Changes to hydrological regime during construction	breeding period of nightjars – April-August. Noise reduced during construction and no lighting towards SPA Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] to prevent construction impacts Retention and protection of hedgerows, creation of neutral grassland margins to hedgerows, woodland, ditches and river corridor, creation of species-rich neutral grassland in place of intensively managed arable in mitigation areas and around solar arrays,. Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] and Outline LEMP [Document Reference 7.6 Revision 6]. Adoption of Outline Ecological Construction Management Plan

			[Document Reference 7.5 Revision 6]. Improved water quality due to cessation of arable farming.
Thorne and Hatfield Moors (SAC)	7120 Degraded raised bogs still capable of natural regeneration	Degradation of habitat quality Changes to hydrological regime	Implementation of appropriate drainage strategy to prevent impacts to water quality and quantity. Improved water quality due to cessation of arable farming. Adoption of and adherence to the Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] and Outline LEMP [Document Reference 7.6 Revision 6].
	Golden plover (wintering)	Temporary disturbance from construction noise, artificial lighting, and visual disturbance associated with construction activities. to foraging/roosting habitat adjacent to Order Limits	Adoption of measures detailed in the Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed Although not required, habitat creation created as part of additional mitigation to comprise large areas of open,

			permanent pasture with scrapes.
	Assemblage qualification (non-breeding season)		
	Pink-footed goose (wintering)	Loss of over-wintering foraging/roosting habitat Temporary disturbance from construction noise, artificial lighting, and visual disturbance associated with construction activities to foraging/roosting habitat adjacent to Order Limits	Embedded mitigation not sufficient to mitigate for loss of open land which is required by this species. Additional mitigation to comprise large areas of open, permanent pasture with scrapes and arable managed for their benefit. Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed.
	Mallard (wintering)	Loss of over-wintering foraging/roosting habitat Temporary disturbance from	Additional mitigation to comprise large areas of open, permanent pasture with scrapes and arable t Drainage strategy and Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] and Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]

		construction noise, artificial lighting, and visual disturbance associated with construction activities to foraging/roosting habitat adjacent to Order Limits	to prevent impacts to water quality and quantity and to improve water quality. Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed.
	Golden plover (wintering)	Temporary disturbance from construction noise, artificial lighting, and visual disturbance associated with construction activities to foraging/roosting habitat adjacent to Order Limits	Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed. Although not required, additional mitigation to comprise large areas of open, permanent pasture with scrapes will benefit this species.
	Lapwing (wintering)	Loss of over-wintering foraging/roosting habitat Temporary disturbance from construction noise, artificial lighting, and visual disturbance associated with	Embedded mitigation not sufficient to mitigate for loss of open land which is required by this species. Additional mitigation to comprise large areas of open, permanent pasture with scrapes.

		construction activities to foraging/roosting habitat adjacent to Order Limits	Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed.
Humber Estuary Ramsar	Criterion 1 – estuarine habitat	Potential for impacts from any changes in water quality or quantity, although the Scheme is considered to be sufficiently distant from the estuarine habitats associated with the estuary to avoid any additional direct or indirect impacts. Potential impacts from air quality during construction, including dust and vehicle emissions, could impact the qualifying features.	Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will prevent impacts to water quality and quantity and prevent impacts from air quality.
	Criterion 5 – waterfowl assemblage in non-breeding season	Loss of over-wintering foraging/roosting habitat Temporary disturbance from construction noise,	Embedded mitigation not sufficient to mitigate for loss of open land which is required by this species. Additional mitigation to comprise large areas of

		artificial lighting, and visual disturbance associated with construction activities to foraging/roosting habitat adjacent to Order Limits	open, permanent pasture with scrapes and arable. Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed.
	Criterion 6 – golden plover (passage)	Loss of over-wintering foraging/roosting habitat Temporary disturbance from construction noise, artificial lighting, and visual disturbance associated with construction activities to foraging/roosting habitat adjacent to Order Limits	Embedded mitigation not sufficient to mitigate for loss of open land which is required by this species. Additional mitigation to comprise large areas of open, permanent pasture with scrapes. Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed.
	Criterion 6 – golden plover (wintering)	Loss of over-wintering foraging/roosting habitat Temporary disturbance from construction noise, artificial lighting, and	Embedded mitigation not sufficient to mitigate for loss of open land which is required by this species. Additional mitigation to comprise large areas of

		visual disturbance associated with construction activities to foraging/roosting habitat adjacent to Order Limits	open, permanent pasture with scrapes. Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will ensure any birds using adjacent land outside of the Order Limits are not disturbed.
	Criterion 8 – migration route for river lamprey and sea lamprey	No direct impacts but potential for dust pollution/degradation of watercourses and could affect migration corridors	Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]
Humber Estuary SAC	**1130** Estuaries, 1110 Sandbanks which are slightly covered by sea water all the time, 1140 Mudflats and sandflats not covered by seawater at low tide 1150 coastal lagoons 1310 salicornia and other annuals colonizing mud and sand, 1330 Atlantic salt meadows, 2110 embryonic shifting dunes, 2120 shifting dunes along the shoreline with *Ammophilia arenaria*,	Potential for impacts from any changes in water quality or quantity, although the Scheme is considered to be sufficiently distant from the estuarine habitats associated with the estuary to avoid any additional direct or indirect impacts. Potential impacts from air quality during construction, including dust and vehicle emissions, could impact the qualifying features.. and any changes in water quality and	Adoption of Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6] will prevent impacts to water quality and quantity, and air quality.

	fixed coastal dunes with herbaceous vegetation, 2160 dunes with *hippopha rhamnoides*, 1095 sea lamprey, 1099 river lamprey	quantity could impact this SAC and the species that are present including sea and river lamprey and migration corridors these species may use.	

Operational

7.2.96. Once operational the provision of landscaping and ecological buffers along retained ditch corridors, the river corridor, hedgerow and woodland comprising tussocky grassland buffers will provide strengthened green corridors and their long-term maintenance and management will ensure that impacts on the adjacent statutory designated sites are avoided and that foraging opportunities for nightjar and other species, are enhanced compared to the current situation. No impact pathways exist which would warrant the need for additional mitigation measures.

7.2.97. The cessation of intensive arable management, resulting in a reduction in agrichemical use in the Order Limits boundary could have a significant improvement to water quality within the ditch network present that extends to the designated sites creating an enhancement for aquatic fauna and flora. This could improve the water quality in the area and increase foraging opportunities for nightjar and other species.

7.2.98. The cessation of intensive arable management within the Order Limits, including the associated reduction in agrichemical inputs, is expected to increase invertebrate abundance across terrestrial habitats, including the grassland mitigation areas. As set out in the **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]**, shallow scrapes will be created within mitigation areas where clay soils are present, enabling periodic water retention during and following heavy precipitation. The scrapes will be designed to maximise the edge habitat which is where the optimal foraging habitat

is present based on RSPB guidance[25]. These scrapes are not currently present within the Order Limits, and target bird species are known to utilise the Order Limits in their absence. Accordingly, any periods during which scrapes remain dry are not considered significant for the target species. Furthermore, the extent of grassland provision within the mitigation areas, which will comprise enhanced habitat compared to the existing situation and exceeds that required by the Bird Days approach, will deliver enhanced foraging habitat for waders and geese compared with the existing baseline, thereby ensuring an adequate extent of suitable habitat is available even if the scrapes remain dry.

7.2.99. The buffers to be provided to ditches and the designated sites will also reduce potential impacts to invertebrates, including solar arrays being mistaken for open water.

7.2.100. The creation and enhanced management to grassland buffers along retained ditch and river corridors, hedgerow and woodland buffers will provide strengthened green corridors and enhanced foraging for the benefit of nightjar and other wildlife.

7.2.101. Research has confirmed that intensively managed arable land provides relatively poor foraging conditions for nightjar, as well as skylark, owing to lower habitat heterogeneity and reduced prey accessibility and is considered as contributing to declines in insect prey abundance, potentially reducing foraging quality for aerial insectivores such as nightjars[26] . Consequently, conversion of arable land to species-rich grassland and a reduction on agricultural chemicals that will improve water quality, is likely to increase the availability of suitable foraging habitat for nightjars and contribute positively to their conservation[27] . The creation of large grassland areas and suitable margins along the mitigation parcels, hedgerows and

[25] RSPB. Scrape Creation for Waders

[26] Mitchell, L.J., 2019. *The influence of environmental variation on individual foraging and habitat selection behaviour of the European nightjar*. PhD thesis. University of York.

[27] Mitchell, L.J., 2019. *The influence of environmental variation on individual foraging and habitat selection behaviour of the European nightjar*. PhD thesis. University of York.

watercourses as shown in Figure 6, will therefore increase foraging opportunities, especially in combination with a cessation in intensive agricultural management.

7.2.102. The Scheme will not result in the inclusion of permanent lighting, preventing impacts to any nocturnal invertebrates.

7.2.103. The Scheme will have no impacts as a consequence of increases in population size or recreation.

Decommissioning

7.2.104. Baseline conditions within the Order Limits are likely to change over the 40 years of operation, and prediction of these conditions at this point is considered unreliable in terms of predicting likely future decommissioning effects on biodiversity. As such, updated ecological desk study and species-specific surveys will be undertaken prior to decommissioning in order to record the presence of protected and notable species and habitats, identify potential effects and any necessary protection and mitigation measures in order to comply with planning policy and wildlife legislation applicable at the time.

7.2.105. Long term land management within the Order Limits post decommissioning phase will be largely based and managed in adherence to agricultural / land management government policies and agri-environmental grant opportunities available at that time.

7.2.106. The **Outline Decommissioning Environmental Management Plan (DEMP) [REP4-051]** (secured by requirement of the DCO which would be finalised once the party responsible for undertaking decommissioning works in the Order Limits has been appointed) will form an integral element of the decommissioning phase. This will set out the methods by which decommissioning will be managed to avoid, minimise, and mitigate any adverse effects on the local and wider environment. Further information is provided below.

In Combination Integrity Test

7.2.107. It is considered that adverse effects on the integrity of the designated sites detailed can be ruled out, based on the assessment of residual effects to passage / non-breeding birds arising from the Scheme in combination with the potential effects arising from other projects identified as detailed in the Cumulative Impacts Chapter of the ES –**Chapter 17 [REP4-019]**.

7.2.108. All relevant sites identified in the **ES Chapter 17 – Cumulative Impacts [REP4-019]** were assessed to determine whether Likely Significant Effects could arise. These effects were then considered in combination with the Likely Significant Effects attributable to the Scheme. Further information on the specific plans and developments included in the in-combination integrity test is provided in Appendix 6 and a summary is included below.

7.2.109. A review of the identified cumulative developments detailed in Appendix 6 with regards to the Humber Estuary SAC/SPA/Ramsar, Thorne and Hatfield Moors SAC/SPA, details that qualifying bird species associated with these designated sites, and areas of functionally linked habitat, are the main potential impacts to these designated sites.

7.2.110. The cumulative projects comprise predominantly residential developments around Scunthorpe, Thorne, Stainforth and Doncaster, together with employment developments, energy infrastructure schemes and nationally significant infrastructure projects (NSIPs). Despite the scale and number of developments considered, the consistent conclusion is that significant residual ecological effects are avoided through embedded design measures, project-specific mitigation and habitat management proposals.

7.2.111. The largest concentration of cumulative development occurs around Burringham Road and Scotter Road South, Scunthorpe. The developments considered include Land west of Scotter Road South, The Lakes, Scunthorpe (PA/SCR/2024/10); Land off Burringham Road (PA/2023/1124; 593 dwellings); Land East of the M181/A1077(M), Burringham, Scunthorpe (PA/2025/254; up to 550 dwellings); Land north of Burringham Road (PA/2023/1750; 158 dwellings); Land south of Silica Lodge Garden Centre, Scotter Road South (PA/2023/1585; 81 dwellings); and Ashby Parklands, Burringham Road (PA/2024/780; 128 dwellings).

7.2.112. Land north of Burringham Road (PA/2023/1750) identified potential likely significant effects associated with functionally linked land, qualifying bird species, construction disturbance, water quality and operational recreational pressure. However, the HRA concluded that the development would not adversely affect the integrity of the Humber Estuary SAC, SPA or Ramsar site, Thorne and Hatfield Moors SPA, Thorne Moor SAC or Hatfield Moor SAC following mitigation. Land south of Silica Lodge Garden Centre (PA/2023/1585) identified a potential likely significant effect from recreational pressure on the Humber Estuary SAC, SPA and Ramsar site.

The Appropriate Assessment concluded that no adverse effect on integrity would occur following the securing of a financial contribution towards the Strategic Access Management and Mitigation Strategy. Land off Burringham Road (PA/2023/1124) screened out likely significant effects, while the assessment for Ashby Parklands (PA/2024/780) identified no impact on designated sites. Detailed ecology information was not available for Land East of the M181/A1077(M) (PA/2025/254), and the assessment therefore relied on the scale, nature and distance of the development when considering the potential for an in-combination effect.

7.2.113. The developments closest to the Order Limits notably, Land to the South of Alexandra Street, Thorne (24/02105/FULM), approximately 1.15 km from the Order Limits, identified permanent habitat loss affecting breeding bird assemblages, although not SPA qualifying species and overall impacts were concluded to be negligible and not significant. Similarly, Land on the North East Side of Selby Road, Thorne (22/00590/REMM) and Land at Waggons Way, Stainforth (25/00583/FULM), which are located within approximately 1.4 km and 3.6 km respectively of the Order Limits, both concluded that residual ecological effects would be negligible or absent following implementation of habitat creation, enhancement and construction mitigation measures.

7.2.114. Several developments assessed potential impacts with qualifying species of the Thorne and Hatfield Moors SPA, particularly nightjar. The schemes at Land north of Burringham Road, Scunthorpe (PA/2023/1750), Land to the South of Alexandra Street, Thorne, and Land at Hurst Lane, Auckley all considered potential effects on nightjar populations or SPA foraging habitat. In each case, surveys found either no evidence of breeding nightjar within the development footprint, limited habitat suitability, or sufficient mitigation to ensure no adverse effects on SPA populations. Consequently, no project identified significant residual effects on Thorne and Hatfield Moors SPA qualifying species.

7.2.115. With regards to NSIPs in the area, mitigation Area M15 is approximately 1,300m from new powerlines to be created as part of the High Marnham Electricity Transmission Project (EN020034) and no potential for collision and/or displacement would take place as this is significantly further than the 600m buffer required for wind turbines as detailed by Natural England in their Statement of Common Ground [REP2-096] and Natural England have also confirmed there

would be no cumulative effects associated with this NSIP in their Statement of Common Ground [REP2-096].

7.2.116. The Fenwick Solar Project (EN010152) assessed potential loss of farmland used by SPA-associated birds but concluded that affected habitat represented only a very small proportion of the available resource within the wider landscape, resulting in no significant adverse residual or cumulative effects. The North Lincolnshire Green Energy Park, Flixborough Wharf (EN010116) undertook detailed assessment of disturbance risks to Humber Estuary SPA mallard populations and likewise concluded no adverse effect on integrity following mitigation and ecological monitoring commitments.

7.2.117. No other development sites in the local area were assessed as having potential impacts to international designated sites. Importantly, no development reviewed within the cumulative assessment identified significant residual ecological effects following mitigation. Where likely significant effects were initially identified through HRA screening, these related primarily to recreational pressure, temporary construction disturbance, water quality risks or functionally linked land for birds. In all cases, further assessment demonstrated that mitigation would avoid effects on the conservation objectives of European sites. Furthermore, many developments are residential or employment schemes with differing impact pathways from the Proposed Development, thereby reducing the likelihood of meaningful cumulative interaction.

Overall Conclusion

7.2.118. The cumulative assessment provides a robust evidence base demonstrating that, although numerous developments are proposed or consented within the surrounding area, there are no significant residual ecological effects that could combine with those of the Proposed Development. Potential cumulative impacts on the Humber Estuary SAC/SPA/Ramsar, Thorne and Hatfield Moors SAC/SPA, qualifying bird populations and functionally linked habitat have been assessed repeatedly across the identified developments and have consistently been screened out, mitigated, or concluded to result in no adverse effect on integrity. Consequently, no significant in-combination ecological effects will take place either alone or in combination with any other plans or projects.

7.2.119. This assessment has been made in consideration of the timing and scale of the projects included in the in combination assessment, the mitigation proposed for

those projects and considering the mitigation and assessment results pertaining to the Scheme including:

- Onsite mitigation for loss of habitats used by passage and non-breeding birds: golden plover, lapwing, pink-footed geese and greylag geese, including the provision of large areas of neutral grassland and also arable provision, with both habitats managed specifically for these bird species that are associated with the Humber Special Protection Area (SPA) and have been recorded utilising the Order Limits.

- Adoption of measures to avoid / mitigate habitat loss, run-off, pollution, air quality, noise and disturbance during the construction phase outlined within the **Outline Ecological Construction Management Plan [Document Reference 7.5 Revision 6]** and decommissioning detailed in the **Outline DEMP [Document Reference 7.3 Revision 2].** These measures will prevent impacts to retained habitats and the designated sites in the area, including Thorne and Hatfield Moors SPA, Thorne Moors Special Area of Conservation (SAC) , Hatfield Moors SAC, Humber Estuary SPA / Ramsar and SAC.

- Adoption of the **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]** for the lifetime of the proposed development to ensure the quality of habitat provided on site for passage / non-breeding birds associated with Humber Estuary SPA / Ramsar and nightjar, which are associated with Thorne and Hatfield Moors SPA, is maintained. The measures will additionally assist with providing biodiversity gains.

7.2.120. In addition to the above, the Scheme will result in the cessation of intensive agricultural management in the area, such as the regular application of agrichemical input, soil exposure and disturbance through cropping and ploughing. Therefore, water quality both within the Order Limits and wider area, including the adjacent European designated sites will improve.

7.2.121. Given the nature of the proposals, solar, there will be no impacts as a consequence of the proposals from recreation or increases in population size to any European designated site.

7.2.122. The implementation of the mitigation measures described above ensures that all potential impact pathways arising from the Scheme have been effectively avoided, reduced, or controlled. On this basis, and having regard to the potential Likely

Significant Effects associated with other plans and projects identified in **ES Chapter 17 – Cumulative Impacts [REP4-019]),** as well as the Conservation Objectives and qualifying features of the relevant designated sites, the competent authority can conclude that the proposed Scheme will not result in Likely Significant Effects, either alone or in-combination with other plans or projects. Consequently, the integrity of the designated sites will not be adversely affected. Furthermore, any future planning application within the potential zone of influence of an internationally designated site will be required to demonstrate the absence of adverse effects, both alone and in-combination, in order to secure planning permission. This provides additional assurance that no cumulative effects will arise.

Monitoring

7.2.123. Details of required monitoring are described, either for the purposes of validating the findings of the AA, or as an early warning which would enable any actions resulting in an unexpected adverse impact to be stopped, paused, reduced, altered or removed.

7.2.124. A Condition Assessment of habitats on site would be undertaken as part of the **Outline** Landscape and Ecological Management Plan **[Document Reference 7.6 Revision 3]** (standard monitoring would be a condition assessment at years 1, 2, 3, 5, 20 and 30). Where the condition of habitats does not meet the criteria set out in the **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]** remedial action to restore the habitat would be undertaken following agreement with the relevant Local Planning Authorities and Natural England, as necessary.

7.2.125. Non-breeding bird surveys are also proposed to help inform management and any remedial measures that may be necessary, as detailed in the supporting **Outline Landscape and Ecological Management Plan [Document Reference 7.6 Revision 6]**.

8 Conclusions

8.1.1. Having undertaken an Appropriate Assessment of the proposed development in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended), and taking account of the avoidance, mitigation and management measures secured as part of the project, it is concluded that the proposal will not adversely affect the integrity of the Humber Estuary SPA, SAC and Ramsar, or the Thorne and Hatfield Moors SPA either alone or in combination with other plans or projects.

8.1.2. The assessment has demonstrated that the identified impact pathways have been avoided, reduced or otherwise fully mitigated through the implementation of the proposed measures. Consequently, there will be no loss, degradation or fragmentation of qualifying habitats, nor any disturbance or other effects that would undermine the population, distribution, structure, function, supporting processes or conservation objectives of the qualifying features of the European sites.

8.1.3. The competent authority can therefore conclude, beyond reasonable scientific doubt, that the proposed development will not result in adverse effects on the integrity of the Humber Estuary SPA, SAC and Ramsar or the Thorne and Hatfield Moors SPA. The implementation of the proposed mitigation measures will ensure that the conservation objectives of the designated sites continue to be met and that the favourable conservation status and favourable condition of their qualifying features are maintained in the short, medium and long term.

8.1.4. Accordingly, development consent may be granted in compliance with the requirements of the Habitats Regulations, as the proposal will not adversely affect the integrity of the European sites concerned.

Appendix 1: Non-Breeding Bird Survey Report (Year 1 and Year 2)

Tween Bridge NSIP Solar Farm

on behalf of Pegasus Planning Ltd.

Technical Appendix 7.3: Non-Breeding Bird Survey Report



avianecology

Document Control				
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This report has been prepared in accordance with the terms and conditions of appointment for the Bird Surveys [on request]. Avian Ecology Ltd. (6839201) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

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INTRODUCTION

1.1 Project Background

1.1.1 Avian Ecology Ltd. was commissioned by Pegasus Planning Ltd. to undertake non-breeding bird surveys in the 2022/2023 (Year 1) and 2023/2024 (Year 2) (passage and winter) periods in relation to a proposed renewable energy generating project ('The Draft Order Limits'); consisting of ground-mounted solar photovoltaic ('PV') arrays, together with on-site energy storage and associated infrastructure.

1.1.2 The Scheme is located on land to the east of the town of Thorne and to the west of the town of Crowle (the 'Draft Order Limits'), South Yorkshire at approx. central OS grid reference: SE 72436 11486.

1.1.3 This report presents the detailed methodologies and findings from surveys conducted between September 2022 and March 2023, and again between September 2023 and April 2024.

The objectives of this report are to:

- Identify the presence of non-breeding bird species (waterbirds) within the Draft Order Limits, and on adjacent land; and,
- Assess the potential importance of the non-breeding waterbird bird assemblages which the Draft Order Limits and adjacent land supports.

1.1.4 The English vernacular bird names used in this report follows that of 'The British List: A Checklist of Birds of Britain (10th edition)' (British Ornithologists' Union, 2022).

1.2 The Draft Order Limits

1.2.1 The Draft Order Limits (see Figure 1) encompass a series of connected agricultural land parcels, predominantly under arable management. The fields are bounded by a network of watercourses, hedgerows, fences, and tree lines. A broadleaved woodland plantation copse is present within the area, along with several ponds.

1.2.2 The Tween Bridge Wind Farm, comprising twenty-two operational wind turbines, is located within the Draft Order Limits. The Stainforth and Keadby Canal also intersects the centre of the Draft Order Limits, running from west to east.

1.2.3 Several internationally and nationally designated sites of ornithological importance lie within proximity to the Order Limits. Within 10 km are key international sites such as the Humber Estuary SPA and Ramsar site, and the Thorne & Hatfield Moors SPA, all of which are designated for their ornithological importance.

1.2.4 Nationally, the Humberhead Peatlands National Nature Reserve, located directly adjacent to the Order Limits, includes the Thorne, Crowle and Goole Moors SSSI and Hatfield Moors SSSI sites, which are known to support ornithological populations.

1.2.5 The Draft Order Limits also fall within Natural England's SSSI Impact Risk Zones (IRZs) for these sites, highlighting potential sensitivities to bird populations from nearby developments.

1.3 Bird Species Definitions

1.3.1 All non-breeding waterbird species will be hereafter referred to as "notable species".

1.3.2 Notable species also includes species comprising non-breeding (i.e. passage and wintering) qualifying interests of the Humber Estuary SPA and Ramsar site, otherwise referred to as "main component species" in line with

Annex B Humber Estuary Special Protection Area: non-breeding waterbird assemblage (Version 1.2, June 2023) guidance. [1]

1.3.3 *Main Component species are defined as:*

- *All species listed individually under the assemblage feature on the SPA citation (i.e. the species that qualified in 2007 when the site was designated);*
- *Species which might not be listed on the SPA citation but occur at site levels of more than 1% of the national population according to the most recent Humber Estuary Wetland Bird Survey (WeBS) 5-year average count;*
- *Species where more than 2000 individuals are present according to the most recent Humber Estuary WeBS count.*

1.3.4 *Natural England advises that the main component species of the Humber Estuary SPA non-breeding waterbird assemblage include (June 2023):*

Species listed individually under the assemblage feature on the SPA citation:

- *Avocet;*
- *Bar-tailed godwit;*
- *Bittern*
- *Black-tailed godwit;*
- *Brent goose;*
- *Curlew*
- *Dunlin*
- *Golden plover*
- *Golden eye*
- *Greenshank*
- *Grey plover;*
- *Knot;*
- *Lapwing;*
- *Mallard;*
- *Oystercatcher;*
- *Pochard;*
- *Redshank;*
- *Ringed plover;*
- *Ruff;*
- *Sanderling;*
- *Scaup;*
- *Shelduck;*
- *Teal;*
- *Turnstone;*
- *Whimbrel;*
- *Wigeon;*

1.3.5 *Species not listed on the SPA citation but occurring at site levels of more than 1% of the national population according to the most recent Humber Estuary Wetland Bird Survey (WeBS) 5-year average count:*

- *Green sandpiper;*
- *Greylag goose;*
- *Little egret;*

[1] Natural England (2023) *Annex B: Humber Estuary Special Protection Area: non-breeding waterbird assemblage*. Version 1.2, June 2023. Available at: https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020036-000104-Natural%20England.pdf (Accessed: 16 July 2025).

- *Pink-footed goose;*
- *Shoveler;*
- *Crane*

1.3.6 *Other species required for consideration but are not considered to be non-breeding waterbirds but are listed in the citation include:*

- *Hen harrier;*
- *Marsh harrier;*
- *Little tern;*
- *Avocet; and*
- *Bittern*

Annex 1 and Schedule 1 species

1.3.7 Schedule one of the Wildlife and Countryside Act 1981 (as amended[2]) and Annex 1 species listed under Annex I of the EU Birds Directive (Directive 2009/147/EC[3]) recorded during the surveys will be referred to as such, unless included in the notable species definition above.

Secondary Species

1.3.8 All other species will be referred to as "Secondary Species". These are species that are neither Schedule one, Annex I, or notable species.

2 METHODOLOGY

2.1 Desk study

2.1.1 A desk study was undertaken during 2023, to identify any existing ornithological records within a 2km radius of the Draft Order Limits. Records were requested from the Doncaster Local Records Centre (DLRC) and Greater Lincolnshire Nature Partnership (GLNP).

2.1.2 For the purposes of this report, the search was refined to species listed as qualifying interest of the International sites within Humber Estuary Ramsar site and SPA, Amber List, Red List, NERC S41, Birds of Conservation Concern (BoCCs) Amber and Red List species (as per Stanbury *et al*., 2021[4]), Doncaster and Lincolnshire Local Biodiversity Action Plan, Annex 1 and/or Schedule 1 species only and which may use the Draft Order Limits for winter foraging.

2.1.3 Furthermore, the search was restricted to only those records for the last 10 years (2013; as part of the 2023 desk study search during the first issue of the report in 2023), to ensure the most up to date information is considered, and less relevant historic records discounted.

[2] UK Government, 2025. Wildlife and Countryside Act 1981. [online] Legislation.gov.uk. Available at: https://www.legislation.gov.uk/ukpga/1981/69 [Accessed 16 Jul. 2025].
[3] European Commission, 2023. Birds Directive. [online] Environment.ec.europa.eu. Available at: https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive_en [Accessed 16 Jul. 2025].
[4] Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 747.

2.1.4 The results of the desk study are summarised in Section 3.1, with further details presented in Annex 1.

2.2 Non-breeding bird surveys methods during Year 1 and Year 2

2.2.1 Surveys were carried out within all suitable habitats within the Draft Order Limits, and all suitable fields within a 600m buffer (the Wider Survey Area) of the Draft Order Limits, as shown in Figure 1. The combination of the Draft Order Limits and Wider Survey Area will be termed 'Survey Area' hereafter.

2.2.2 A total of 14 walkover survey visits (two per month) were completed between September 2022 and March 2023, one diurnal and one nocturnal, with 23 walk-over surveys (three per month, two in April) completed between September 2023 and April 2024. All walk-overs used the 'look-see' methodology as described in Gilbert *et al*. 1998[5]. During each survey visit surveyors observed each field within the Survey Area, walking the boundaries and stopping at intervals and scanning the fields for bird species, with binoculars.

2.2.3 All bird species seen and (or) heard were recorded onto field maps. The number of Secondary Species were tallied during the survey, however these were not formally mapped.

2.2.4 A total of seven Nocturnal walkover survey visits were completed adopting an adapted version of the 'look-see' methodology (Gilbert *et al*. 1998[8]). During each survey visit surveyors observed each field within the Study Area, walking the boundaries and stopping at intervals and scanning the fields for bird species, with thermal imaging cameras and recording vocalisations of birds where possible.

2.2.5 Surveys were carried out using Pulsar Lexion thermal imaging cameras used to aid detection of species and where possible record the birds to species level. Where individual birds were unidentifiable due to distance or small size of the species, surveyors used knowledge of behaviour and suitable habitat for these species to make an informed estimate of a species group e.g., *Calidris* wader (sanderling or dunlin).

Survey Area

2.2.6 For ease of interpreting the survey results, fields within the Survey Area were numbered 1-570. Fields within the Draft Order Limits and within the Wider Survey Area are defined in **Table 2.1 below** and illustrated on **Figures 2-7**.

Table 2.1: Field allocations for Draft Order Limits and Wider Survey Area.

Land Parcel	Field Number Range
The Draft Order Limits	1-13, 15-35, 37-43, 45-54, 60-64, 67-106, 113-120, 122, 129-130, 132-138, 141-142, 150-154, 168-176, 180, 217-218, 220-222, 226, 243-246, 248-249, 253-256, 275, 279-285, 289-292, 392, 394, 402, 407-413, 415-416, 420, 436-437, 496-500, 521, 563-564, 570-624 and 626.
Outside of the Draft Order Limits	14, 36, 44, 55-59, 65-66, 107-112, 121-128, 131, 139, 140, 143-149, 155-167, 177-178, 181-216, 219, 223-242, 247, 250-252, 257-274, 276-278, 286-288, 293-406, 414, 417-435, 438-495, 501-543, 545-562, 565-569 and 625.

Survey Effort

Year 1 (2022/23)

2.2.7 Non-breeding bird surveys (diurnal and nocturnal) were undertaken between September 2022 and April 2023.

2.2.8 During year 1, Nocturnal Bird Surveys were carried out in tandem with the diurnal non-breeding Bird Surveys.

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

Year 2 (2023/24)

2.2.9 A second year of non-breeding bird surveys were undertaken between September 2023 and March 2024.

2.2.10 Nocturnal Bird Surveys were carried out separately from diurnal non-breeding Bird Surveys and were carried out monthly between September 2023 and March 2024.

Vantage Point Surveys

2.2.11 Between September 2023 and March 2024 (not carried out during the April 2024 passage period), Vantage Point (VP) flight activity surveys were undertaken from six VP locations:

- VP1 – SE 72180 11755;
- VP2 – SE 70377 08799;
- VP3 – SE 72059 09720;
- VP4 – SE 75858 10057;
- VP5 – SE 74195 12713; and,
- VP6 – SE 71099 15154.

2.2.12 Figure 8 shows the VP locations used and their viewshed coverage which appropriately covered the Draft Order Limits.

2.2.13 The VP flight activity surveys followed the NatureScot guidance (SNH, 2017[6]) which although is intended for wind farm developments, is considered appropriate to use for the Scheme, in the absence of guidance specific to solar farm developments. Surveys were carried out over a 3hr period and flights and activity of Important Ornithological Features were recorded onto basemaps. Any activity by Secondary Species was also recorded every 15 minutes, but detailed flights of these species were not recorded.

2.2.14 All VP surveys were undertaken during daylight hours, and throughout the survey period surveys were timed to cover the full range of low and high tide times which are likely to influence bird use of nearby terrestrial habitats, such as within the Survey Area.

2.2.15 Survey effort for VP flight activity surveys and a breakdown of survey conditions are presented in **Annex 2**. A summary of VP survey effort is presented below in **Table 2.2.**

Table 2.2: VP Flight Activity Survey Effort (hrs)

VP	2023				2024			Total
	September	October	November	December	September	October	November	
1	3	3	3	3	3	3	3	21
2	3	3	3	3	3	3	3	21
3	3	3	3	3	3	3	3	21
4	3	3	3	3	3	3	3	21
5	3	3	3	3	3	3	3	21
6	3	3	3	3	3	3	3	21

Field Survey Limitations

2.2.16 In response to scheme design, the Draft Order Limits boundary has evolved over time. As such, a c.25ha area beyond the southern boundary of the Survey Area was not subject to survey in 2022/23. This area consists of

[6] Scottish Natural Heritage (2017) - *Guidance Note - Recommended Bird Survey Methods To Inform Impact Assessment of Onshore Windfarms* – available at https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms

intensively managed agricultural land which is consistent with the majority of the Study Area. This area was surveyed in 2023/24, so was surveyed throughout the Year 2 survey period. It is therefore considered, that this combined with the relatively small extent of the area is not a limitation to the survey and subsequent assessment.

2.2.17 Access was permitted to all other parts of the Draft Order Limits during all surveys. All fields considered suitable for notable species within the Wider Survey Area were visible from the Draft Order Limits and/or PRoWs.

2.2.18 Nocturnal surveys were aided by Pulsar nightvision scopes however, it is appreciated that identification to species level is not always possible, so observers used knowledge of likely species and their behaviour to identify species as best as possible.

2.2.19 No significant limitations in the field survey data in informing the design and assessment of the Scheme are therefore identified.

Assessing Importance

2.2.20 For the purposes of this report, the importance of the Survey Area to qualifying species and the wider assemblage of the nearby Humber Estuary Ramsar site and SPA is assessed using functional linkage, by comparing the relevant WeBS 5 year mean to the field surveys data (monthly peak counts). This was done with the most up to date WeBS data available 2022/23 and 2023/34 and therefore were compared against that year of data that was collected (**Table 3.1** and **3.2**).[7]

3 RESULTS

3.1 Desk Study Results

3.1.1 **Annex 1** provides details of relevant recent historical ornithological records returned from the Devon Biodiversity Records Centre (DBRC) and Gloucestershire Local Nature Partnership (GLNP).

3.1.2 In summary relevant records included notable species, such as pink-footed goose, white-fronted goose, whooper swan, greylag goose, redshank and oystercatcher.

3.1.3 The most frequent records referred to those observations of birds within Crowle Moor and Thorne Moor within the Thorne & Hatfield Moors SPA to the immediate northeast of the Draft Order Limits.

3.1.4 These records informed the identification of notable species for survey and recording and the approach to surveys, including the requirement for nocturnal surveys.

3.1.5 Although this data search was carried out in 2023, it remains relevant as the landscape has not changed, the species involved are highly mobile, and the data provides a good overall representation.

3.2 Non-Breeding Bird Surveys – Year 1 (2022/23)

3.2.1 Ten qualifying species and species part of the wider waterbird assemblage were identified during the non-breeding bird surveys, within the Draft Order Limits. The general trend of peak bird activity during autumn and early winter (September–January), with notable declines from February onward. greylag and pink-footed geese, lapwing, and golden plover were especially abundant in the earlier months. By March and April, most species

[7] Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B., Caulfield, E., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M., and Frost, T.M. 2025.
Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.

had decreased significantly or disappeared altogether, indicating seasonal migration patterns or reduced local presence in late winter to early spring.

3.2.2 Other notable waterbird species recorded within the Draft Order Limits include whooper swan (Annex 1) with two flocks of 23 and 34 recorded as utilising the area during February and January. Other records include grey heron (peak count 1), and little grebe (2).

3.2.3 Marsh harrier, a qualifying non-breeding species of the Humber Estuary SPA and Ramsar was recorded during September and December.

3.2.4 Schedule 1 bird species recorded within the Draft Order Limits include barn owl (2), hen harrier (1), peregrine (1), osprey (1).

3.2.5 Outside of the Draft Order Limits, seasonal patterns in bird activity, with peak counts occurring primarily in autumn and early winter were evident. Pink-footed goose (peak 700) and lapwing (peak 260) showed the highest numbers, especially in September and October, which coincides with the autumn migration period. Golden plover also peaked sharply in October (480) and did not reach numbers similar to this hereafter. Greylag goose numbers were minimal early on but rose significantly in February and March (peaks of 155 and 34), suggesting a later seasonal presence. Mallard exhibited steady presence through the winter months, peaking in January (42). Most other species appeared in low numbers or sporadically, with only isolated records, such as common crane (3) and marsh harrier (2).

3.2.6 Schedule one species recorded outside of the Draft Order Limits, include barn owl (1), hen harrier (1), osprey (1), peregrine (1) and red kite (1).

3.2.7 All data collected can be found in **Annex 3**.

Table 3.1: SPA qualifying species recorded within and outside of the Draft Order Limits during 2022/23. Note that nocturnal and diurnal surveys were combined and peak count of the two is provided, alongside the percentage of the moving (2022/23) WeBS 5-year moving mean totals.

Species	2022				2023		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Within the Draft Order Limits							
Curlew Humber Estuary 5 year mean 2022/23 **2,473**	0	0	0	0	0	0	2 (0.08%)
Golden plover Humber Estuary 5 year mean 2022/23 **21,160**	53 (0.25%)	0	0	37 (0.17%)	21 (0.10%)	0	0
Green sandpiper Humber Estuary 5 year mean 2022/23 **14**	**1 (7.14%)**	**1 (7.14%)**	**1 (7.14%)**	0	**1 (7.14%)**	0	0
Greylag goose Humber Estuary 5 year mean 2022/23 **2,569**	375 (14.60%)	0	19 (0.74%)	0	0	0	8 (0.31%)
Lapwing Humber Estuary 5 year mean 2022/23 **15,951**	390 (2.44%)	25 (0.16%)	31 (0.19%)	127 (0.8%)	260 (1.63%)	32 (0.20%)	32 (0.20%)
Little egret Humber Estuary 5 year mean 2022/23 **215**	0	1 (0.47%)	1 (0.47%)	0	0	0	1 (0.47%)

Mallard Humber Estuary 5 year mean 2022/23 **1,459**	**92 (6.31%)**	**24 (1.64%)**	0	12 (0.82%)	**27 (1.85%)**	**64 (4.39%)**	6 (0.41%)
Pink-footed goose Humber Estuary 5 year mean 2022/23 **23,330**	**330 (1.41%)**	**360 (1.54%)**	0	0	0	0	0
Shoveler Humber Estuary 5 year mean 2022/23 **317**	0	0	0	0	2 (0.63%)	0	0
Teal Humber Estuary 5 year mean 2022/23 **9,994**	0	2 (0.02%)	0	3 (0.03%)	6 (0.06%)	0	4 (0.04%)
Outside of the Draft Order Limits							
Golden plover	76	480	21	20	1	0	38
Green sandpiper	0	0	0	1	0	0	0
Greylag goose	150	0	0	0	0	155	34
Lapwing	260	136	1	71	14	6	13
Little egret	1	2	1	1	1	0	0
Mallard	60	2	5	42	21	17	10
Pink-footed goose	700	42	0	0	0	21	0
Shoveler	1	0	0	0	0	0	0
Teal	0	0	0	0	23	3	9
Common crane	3	0	0	0	0	0	2

3.3 Non-Breeding Bird Surveys – Year 2 (2023/24)

3.3.1 Twelve notable non-breeding bird species that are qualifying features and part of the wider bird assemblage were recorded within the Draft Order Limits during the non-breeding bird surveys.

3.3.2 Non-breeding bird species recorded within the Draft Order Limits show clear seasonal trends among the bird species recorded throughout the Survey Area. Many species recorded, including dunlin, lapwing, greylag goose, golden plover, and pink-footed goose, peak in autumn (October–November), suggesting migratory stopovers or early winter arrivals. Several waterfowl, such as mallard, wigeon, and teal, are more prominent during winter months (December–February), indicating overwintering behaviour. In early spring (March–April), species such as curlew, little egret, and oystercatcher begin to appear, likely reflecting returning migrants. Overall, there is a pattern of sharp autumn influxes followed by gradual winter declines and early spring arrivals.

3.3.3 Outside of the Draft Order Limits shows that most species peak in autumn (September–November), especially pink-footed goose, greylag goose, and golden plover, indicating migratory movement. Lapwing, Mallard, and Teal maintain more consistent presence across months, with Mallard and Lapwing showing slight increases in February–March. Little egret appeared most common in early autumn, disappearing by winter. Overall, the area appears to support autumn migration activity, with fewer species and lower numbers through winter and early spring.

3.3.4 Only a small number of fields and months exceeded the 1% threshold of the Humber Estuary 5-year mean (2022/23) for each species within the Draft Order Limits. These were: mallard in field 20 (92 birds in September 2022), lapwing in field 65 (260 in September 2022), green sandpiper in fields 50 and 63 (1 in October 2022) and field 129 (1 in November 2022), and pink-footed goose in field 39 (475 in October 2022), field 31 (360 in November 2022), and field 42 (330 in September 2022). All other records were below the 1% threshold.

3.3.5 All data collected can be found in **Annex 3**

Table 3.2. SPA qualifying species and species part of the wider waterbird assemblage recorded within and outside of the Draft Order Limits during the Winter Walkover and Nocturnal Bird Surveys combined during 2023/24.

Note that nocturnal and diurnal surveys were combined and the maximum peak count of the two is provided alongside the percentage of the most up to date (2023/24) WeBS 5-year mean totals.[8]

Species	2023				2024			
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Within the Draft Order Limits								
Curlew WeBS 5-year mean for the Humber Estuary **2,473**	0	0	0	0	0	0	2 (0.16%)	2 (0.16%)
Dunlin WeBS 5-year mean for the Humber Estuary **22,346**	0	6 (0.027%)	27 (0.121%)	0	0	0	0	0
Little egret WeBS 5-year mean for the Humber Estuary **226**	0	1 (0.442%)	0	0	0	0	1 (0.442%)	0
Green sandpiper WeBS 5-year mean for the Humber Estuary **19**	0	0	0	**1 (5.26%)**	0	0	0	0
Greylag goose WeBS 5-year average for the Humber Estuary **2285** [9] [10]	0	**210 (9.19%)**	**157 (6.87%)**	12 (0.52%)	0	**27 (1.18%)**	**76 (3.33%)**	9 (0.39%)
Golden plover (WeBS 5-year mean for the Humber Estuary **21,623)**	0	0	82 (0.38%)	2 (0.009%)	84 (0.389%)	0	6 (0.028%)	0
Lapwing WeBS 5-year mean for the Humber Estuary **11,859**	5 (0.042%)	**220 (1.855%)**	**371 (3.129%)**	53 (0.447%)	79 (0.666%)	**147 (1.24%)**	11 (0.093%)	4 (0.034%)
Mallard WeBS 5-year mean for the Humber Estuary 1,459	2 (0.14%)	**33 (2.26%)**	**78 (5.35%)**	**125 (8.567%)**	**49 (3.357%)**	**92 (6.305%)**	**16 (1.096%)**	10 (0.685%)
Oystercatcher WeBS 5-year mean for the Humber Estuary 7,218	0	0	0	0	0	0	2 (0.028%)	0

[8] Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B., Caulfield, E., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M., and Frost, T.M. 2025.
Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.

[9] Contains Wetland Bird Survey (WeBS) data from Waterbirds in the UK 2023/24 © copyright and database right 2025. WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, with fieldwork conducted by volunteers.

[10] Contains Goose and Swan Monitoring Programme (GSMP) data from Waterbirds in the UK 2023/24 © copyright and database right 2025. GSMP is a partnership, run by and jointly funded by BTO, JNCC and NS, with fieldwork conducted by both volunteer and professional surveyors.

Pink-footed goose WeBS 5-year mean for the Humber Estuary **27,329**	0	**1600* (5.85%)**	**620 (2.27%)**	194 (0.71%)	0	**1530 (5.63%)**	0	0
Teal WeBS 5-year mean for the Humber Estuary **9,994**	0	0	0	2 (0.020%)	12 (0.120%)	2 (0.020%)	2 (0.020%)	1 (0.010%)
Wigeon WeBS 5-year average for the Humber Estuary **6,452**	0	6 (0.093%)	0	0	0	42 (0.651%)	0	0
Outside of the Draft Order Limits								
Little egret	2	2	6	4	0	0	0	0
Greenshank	1	0	1	0	0	0	0	0
Greylag goose	0	184	36	64	0	0	22	1
Golden plover	0	3	20	0	1	0	0	0
Lapwing	54	48	28	12	27	66	29	2
Mallard	49	57	28	30	8	63	47	2
Pink-footed goose	0	1120	0	668	14	0	0	0
Teal	3	4	5	18	8	9	6	2

* Single large flock spread across four fields (1,600, 1,400, 84 and 9 birds) showing large flock of 3,133 birds

3.3.6 Other notable waterbirds recorded during the non-breeding bird surveys and are not considered part of the SPA wider assemblage, include gull species (black-headed, common, herring, lesser black-backed and greater black-backed), cormorant, Canada goose, Egyptian goose, gadwall, goosander, grey heron, mute swan and tufted duck.

3.3.7 Schedule 1 species recorded within the Draft Order Limits also include barn owl, merlin and peregrine, where a single bird was recorded during the surveys. Marsh harrier (peak count of one individual), an SPA qualifying species were also recorded within the Draft Order Limits foraging, as well as outside of the Draft Order Limits.

3.3.8 Several species exceeded the 1% threshold of their WeBS 5-year mean within the Draft Order Limits, indicating potential use of Functionally Linked Land (FLL). Notably, greylag goose, lapwing, mallard, and pink-footed goose regularly surpassed this threshold across multiple months, while green sandpiper exceeded it in January due to a low baseline.

3.3.9 Fields 17 and 18 appeared to support the following qualifying species, greylag goose, pink-footed goose, lapwing and mallard in numbers close to or exceeding the 1% threshold. Field 17 showed significant exceedances, especially in autumn, with high counts for both Greylag Goose (210 individuals in mid-September and 27 in early October) and Pink-footed Goose (1440 individuals, mid-September). Lapwing numbers (up to 100 in February) also approached the threshold here, highlighting this site's consistent value for multiple species.

3.3.10 Field 18 similarly demonstrated considerable importance, notably for Lapwing with high counts recorded in late September (371 individuals) and again in late November (147 individuals), exceeding the WeBS 1% thresholds. Greylag Goose was recorded at 157 individuals in late September. Mallard numbers were particularly notable, peaking at 29 in September and 125 birds in October.

3.3.11 Field 16 appeared to support geese during September, greylag (135) and pink-footed goose (1600).

3.3.12 See below for a summary of field usage and 1% threshold exceedance of SPA qualifying features and the wider assemblage.

- Field 8: mallard in November (17 individuals);

- Field 11: lapwing (111 in September) and pink-footed goose (1530 in January).
- Field 16: Key site for geese in September—Greylag (135) and Pink-footed (1600).
- Field 17: greylag goose (210, 27) and pink-footed goose (1440).
- Field 18: lapwing (371, 147), greylag goose (157), and mallard (125, 29).
- Field 37: Green Sandpiper (1), exceeding its threshold) in October.
- Field 86: Important mallard (78) in early October.
- Field 115: Notable mallard site during winter (49, 28 individuals in Jan-Feb).
- Field 168: pink-footed goose (620) and greylag goose (38).
- Field 253: mallard (33, 37).
- Field 280: mallard (37 in March).
- Field 281: lapwing site (220).
- Field 289: Important greylag goose area (57 in September).
- Field 291 & 292: lapwing during September (129 and 257 respectively).
- Field 402: greylag goose (76 in December).

3.4 Vantage Point Flight Activity Survey Results

3.4.1 Over the six surveys undertaken from each of the six vantage points between September 2023 and March 2024, species associated with the Humber Estuary SPA and Ramsar site included golden plover, pink-footed goose lapwing and marsh harrier. Additional IOFs comprised common crane.

3.4.2 Flocks that exceeded 100 birds included pink-footed goose (eight flocks of between 107 and 220 birds between September 2023 and November 2023) and lapwing (six flocks of between 130 and 310 birds in October 2023, January 2024 and February 2024). Observations generally involved flocks flying over the Draft Order Limits, with the exception of two flocks of lapwing (127 birds in October 2023 and 156 birds in January 2024) seen to land and/or be present feeding on the ground throughout the survey, which is located outside of the Draft Order Limits.

3.4.3 Birds recorded during the vantage point flight activity surveys both on the ground and in flight are summarised in **Table 3.3**. Full survey effort is shown in **Annex 2** with the details of each flight observation shown in **Annex 4**.

Table 3.3: Vantage point flight activity survey results during 2023/24

Vantage Point	Species	No. Observations	No. Birds	On Ground?	Fields
1	Pink-footed goose	4	223	No	Flew over the Draft Order Limits and study area in flocks of up to 148 birds
	Golden plover	1	23	No	Flew over the Draft Order Limits
	Marsh harrier	5	5	No	Hunting over fields
2	Pink-footed goose	5	143	No	Flew over the Draft Order Limits in flocks of up to 47 birds
	Lapwing	3	384	No	Flew over the Draft Order Limits in
	Marsh harrier	4	4	No	Hunting over fields

Vantage Point	Species	No. Observations	No. Birds	On Ground?	Fields
3	Pink-footed goose	7	376	No	Flew over the Draft Order Limits in flocks of up to 141 birds
	Common crane	1	2	No	Flew from the adjacent Hatfield Moors SSSI
	Lapwing	1	2	No	Flew over the Draft Order Limits
	Marsh harrier	2	2	No	Hunting over fields.
4	Pink-footed goose	304	11	Yes/No	Flew over the Draft Order Limits in flocks of up to 107 birds and birds foraging on the ground of up to 7 birds.
	Lapwing	855	7	Yes/No	Flew over the Draft Order Limits in flocks of up to 310 birds and birds foraging on the ground of up to 127 birds.
	Marsh harrier	3	3	No	Hunting over fields
5	Pink-footed goose	9	607	No	Flew over the Draft Order Limits in flocks of up to 220 birds
	Marsh harrier	4	4	No	Hunting over fields
6	Pink-footed goose	15	611	No	Flew over the Draft Order Limits in flocks of up to 140 birds
	Marsh harrier	4	4	No	Hunting over fields

ANNEX 1: DESK STUDY RESULTS

Table A1.1 provides a list of the species returned from the desk study from DLRC and GLNP.

Table A1.1: Desk study results provided by GLNP and DLRC.

Common name	No. of records	Source	Most recent record
Barn owl	22	GLNP	2022
	2	DLRC	2015
Bittern	3	GLNP	2021
Black Tern	1	DLRC	2018
Black stork	2	GLNP	2014
Black-headed gull	15	DLRC	2020
Black-necked grebe	1	GLNP	2018
Bullfinch	14	GLNP	2021
	15	DLRC	2018
Cetti's warbler	27	GLNP	2022
	7	DLRC	2021
Common gull	7	DLRC	2018
Corn bunting	4	GLNP	2021
	3	DLRC	2018
Common crane	1	DLRC	2019
Cuckoo	35	GLNP	2022
	3	DLRC	2021
Curlew	7	GLNP	2021
	6	DLRC	2018
Dunnock	1	GLNP	2021
	9	DLRC	2018
Fieldfare	25	GLNP	2022
	16	DLRC	2020
Gadwall	9	GLNP	2017
	16	DLRC	2018
Garganey	3	GLNP	2015
Golden oriole	1	GLNP	2018
Goldeneye	1	DLRC	2018
Golden plover	7	DLRC	2018
Goosander	11	DLRC	2021
Grasshopper warbler	7	GLNP	2020
Great white egret	1	DLRC	2018
Green sandpiper	2	GLNP	2014
	4	DLRC	2018
Greenland white-fronted goose	1	GLNP	2017

Common name	No. of records	Source	Most recent record
Greenfinch	5	DLRC	2018
Grey partridge	10	GLNP	2022
Grey wagtail	2	DLRC	2020
Greylag goose	34	GLNP	2022
	11	DLRC	2018
Hawfinch	1	DLRC	2014
Hen harrier	10	GLNP	2020
Herring gull	4	DLRC	2020
Hobby	25	GLNP	2022
Honey buzzard	2	GLNP	2015
House sparrow	15	GLNP	2021
	3	DLRC	2019
Kestrel	30	DLRC	2020
Kingfisher	2	GLNP	2021
Lapwing	14	GLNP	2022
	17	DLRC	2020
Lesser black-backed gull	2	DLRC	2018
Lesser redpoll	24	GLNP	2021
	14	DLRC	2018
Linnet	27	GLNP	2022
	9	DLRC	2021
Little egret	1	GLNP	2022
	1	DLRC	2021
Little ringed plover	2	DLRC	2018
Mallard	20	DLRC	2019
Marsh harrier	37	GLNP	2022
	10	DLRC	2018
Meadow pipit	16	DLRC	2018
Merlin	1	GLNP	2020
	5	DLRC	2018
Mistle thrush	6	DLRC	2020
Mute swan	6	DLRC	2021
Nightjar	21	GLNP	2017
	81	DLRC	2021
Oystercatcher	1	DLRC	2019
Peregrine	2	GLNP	2014
Pink-footed goose	13	DLRC	2018
Pochard	4	DLRC	2018
Quail	1	GLNP	2013

Common name	No. of records	Source	Most recent record
Red kite	1	GLNP	2014
Red-necked grebe	2	DLRC	2012
Redshank	7	DLRC	2018
Redwing	21	GLNP	2021
	13	DLRC	2018
Reed bunting	43	GLNP	2022
	11	DLRC	2018
Ring ouzel	4	GLNP	2015
Ringed plover	1	DLRC	2018
Rook	2	DLRC	2020
Shelduck	7	DLRC	2018
Short-eared owl	1	DLRC	2012
Shoveler	13	DLRC	2018
Skylark	27	GLNP	2021
	9	DLRC	2018
Snipe	10	GLNP	2021
	11	DLRC	2018
Song thrush	24	GLNP	2022
	9	DLRC	2018
Sparrowhawk	9	DLRC	2018
Spotted flycatcher	4	GLNP	2021
Starling	23	GLNP	2022
	11	DLRC	2018
Stock dove	3	DLRC	2018
Swift	32	GLNP	2020
Teal	20	DLRC	2018
Tree pipit	23	GLNP	2022
	3	DLRC	2014
Tree sparrow	20	GLNP	2020
	1	DLRC	2018
Tufted duck	12	DLRC	2018
Turtle dove	14	GLNP	2020
Water pipit	2	DLRC	2021
Whitethroat	2	DLRC	2018
Whooper swan	6	GLNP	2022
	9	DLRC	2021
Wigeon	6	DLRC	2018
Willow tit	8	DLRC	2018
Willow warbler	2	DLRC	2018
Woodcock	4	DLRC	2018

Common name	No. of records	Source	Most recent record
Woodlark	6	GLNP	2015
Woodpigeon	10	DLRC	2020
Wren	10	DLRC	2018
Yellow wagtail	2	GLNP	2014
Yellowhammer	44	GLNP	2022
	12	DLRC	2018
Yellow-legged gull	1	DLRC	2018

ANNEX 2: NON-BREEDING BIRD SURVEY EFFORT AND METADATA

Table A2.1: Survey Conditions Criteria

Wind Speed		**W-Direction**	**Rain**		**Cloud Cover**		**Cloud Height**	
Calm	0	Use 16 point Compass	None	0	In eighths e.g.	3/8	<150m	0
Light air	1		Drizzle/Mist	1			150-500m	1
Light breeze	2	N	Light showers	2			>500m	2
Mod. breeze	4	NE	Heavy showers	4				
Fresh breeze	5	ENE	Heavy showers	4				
Strong breeze	6	E						
Mod. gale	7	Etc	**Visibility**		**Snow**		**Frost**	
Fresh gale	8		Poor	0	None	0	None	0
Strong gale	9		< 1km	1	On site	1	Ground	1
Whole gale	10		>1km	2	High ground	2	All day	2
Storm	11							

Table A2.2: Non-Breeding Bird Survey Effort 2022/23

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow	Notes
19/09/2022	CG/TJ	06:45	14:45	1	WNW	1	2	8	2	0	0	Light showers
20/09/2022	CG/TJ	06:45	14:45	1	W	0	2	6	2	0	0	
21/09/2022	CG/TJ	07:00	15:00	2	S	0	2	6	2	0	0	
22/09/2022	CG/TJ	07:00	12:45	2	S	0	2	4	2	0	0	
26/09/2022	CG/TJ	06:30	14:30	3	NW	0	2	6	2	0	0	
27/09/2022	CG/TJ	07:00	14:00	2	W	0	2	6	2	0	0	
28/09/2022	CG/TJ	07:00	14:00	2	NW	1	2	6	2	0	0	Light showers
29/09/2022	CG/TJ	07:00	14:00	1	N	0-2	2	6	2	0	0	Showers
30/09/2022	CG/TJ	10:00	18:00	3-4	S	2-4	2	8	2	0	0	Heavy showers and heavy rain.
13/10/2022	GT	09:00	14:00	0	-	0	-	-	2	0	0	
14/10/2022	GT	09:00	14:00	2	SW	0	2	1	2	0	0	
15/10/2022	GT	09:00	14:00	4	SW	0	2	3	2	0	0	
19/10/2022	GT	09:00	14:00	3	E	0	2	4	2	0	0	
21/10/2022	GT	09:00	14:00	4	E	2	2	8	2	0	0	Showers
25/10/2022	GT	09:00	14:00	3	SW	0	2	3	2	0	0	
26/10/2022	GT	09:00	14:00	5	SW	0	2	5	2	0	0	
27/10/2022	GT	09:00	14:00	2	S	1	2	8	2	0	0	Showers
28/10/2022	GT	09:00	14:00	3	S	2	2	7	2	0	0	Heavy showers
30/10/2022	GT	09:00	14:00	4	SW	0	2	7	2	0	0	
11/11/2022	GT	09:00	14:00	6	SW	0	2	6	1	0	0	
13/11/2022	GT	09:00	14:00	0	-	0	2	8	1	0	0	Fog
14/11/2022	GT	09:00	14:00	0	-	0	2	8	1	0	0	Fog
17/11/2022	GT	09:00	14:00	4	SW	3	2	8	1	0	0	Heavy rain
20/11/2022	GT	09:00	14:00	3	SW	0	2	8	1	0	0	
24/11/2022	GT	09:00	14:00	3	SE	0	2	8	2	0	0	
26/11/2022	GT	09:00	14:00	4	S	0	2	4	2	0	0	
27/11/2022	GT	09:00	14:00	4	S	0	2	8	2	0	0	
28/11/2022	GT	09:00	14:00	2	S	0	2	8	2	0	0	Misty
29/11/2022	GT	09:00	14:00	1	S	0	2	8	2	0	0	Misty
07/12/2022	GT/AH	17:00	00:00	2	SW	0	-	0	2	1	0	
08/12/2022	GT/AH	17:00	00:00	2	NW	0	2	7	2	0	0	
09/12/2022	GT/AH	17:00	01:30	0	-	0	-	0	1	1	0	Foggy
15/12/2022	GT	09:00	16:00	2	NW	0	-	0	2	1	0	
16/12/2022	GT	09:00	16:00	1	S	0	2	4	2	1	0	
19/12/2022	GT	09:00	16:00	5	SW	0	2	7	2	0	0	
29/12/2022	GT	09:00	16:00	6	SW	2	2	4	2	0	0	Heavy showers

12/01/2023	GT	09:00	16:00	5	SW	0	2	8	2	0	0	
13/01/2023	GT	09:00	16:00	3	N	0	2	1	2	1	0	
18/01/2023	GT	09:00	16:00	2	N	0	2	2	2	1	0	
20/01/2023	GT	09:00	16:00	3	W	0	-	0	2	0	0	
24/01/2023	GT	17:00	23:00	0	-	0	-	0	2	0	0	
25/01/2023	GT	17:00	00:00	3	NW	0	-	0	2	0	0	
27/01/2023	GT	17:00	23:00	3	SW	0	2	8	2	0	0	
30/01/2023	GT	17:00	00:00	3	W	0	2	5	2	0	0	
10/02/2023	GT	10:00	15:30	3	S	0	2	8	2	0	0	
14/02/2023	GT	09:45	15:15	0	N/A	0	2	8	2	0	0	Foggy
15/02/2023	GT	09:00	15:30	1	SW	0	2	5	2	0	0	
20/02/2023	GT	09:00	12:45	4	W	0	2	8	2	0	0	
22/02/2023	GT	18:00	23:45	2	N	3	2	8	2	0	0	
23/02/2023	GT	20:15	23:30	2	N	0	2	8	2	0	0	
26/02/2023	GT	18:30	22:45	4	NE	0	2	4	2	0	0	
27/02/2023	GT	18:00	23:00	4	NE	0	2	4	2	0	0	
05/03/2023	GT	09:00	13:00	2	W	0	2	8	2	0	0	
07/03/2023	GT	10:00	17:00	4	N	0	2	1	1	0	0	
09/03/2023	GT	09:00	15:30	3	E	0	2	8	2	0	1	Sleet
10/03/2023	GT	09:00	13:45	6	N	0	2	8	2	0	1	Flurry
29/03/2023	GT	11:00	17:30	3	SW	2	2	8	2	0	0	
31/03/2023	GT	09:15	16:15	3	NE	4	2	8	1	0	0	
01/04/2023	GT	10:00	16:30	2	NE	0	2	8	2	0	0	
02/04/2023	GT	09:30	13:45	1	E	0	2	4	2	0	0	

Table A2.3: Non-Breeding Bird Survey Effort 2023/24

Start Date	End Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow	Notes
13/09/2023	18/09/2023	GT	N/R	N/R	4/4/2/3/4	NE/NE/SW/E/E	3/0/2/0/0	8/6/8/8/3	2/2/2/2/2	2/2/2/2/2	0/0/0/0/0	0/0/0/0/0	
25/09/2023	29/09/2023	GT	N/R	N/R	4/3/3/6/4	SW/SW/S/SW/W	0/0/0/0/0	2/4/5/8/3	2/2/2/2/2	2/2/2/2/2	0/0/0/0/0	0/0/0/0/0	
01/10/2023	06/10/2023	GT	N/R	N/R	4/5/4/3/5	S/W/SW/SW/SW	3/0/0/0/4	8/3/8/8/8	2/2/2/2/2	2/2/2/2/1	0/0/0/0/0	0/0/0/0/0	
23/10/2023	27/10/2023	GT	N/R	N/R	1/2/1/4/1	NE/NE/SE/SE/SE	0/4/0/3/0	8/8/8/8/3	0/1/2/2/2	0/2/2/2/2	0/0/0/0/0	0/0/0/0/0	
05/11/2023	09/11/2023	GT	N/R	N/R	4/3/5/3/2	NW/W/W/SE/SW	3/2/0/3/0	8/8/8/8/3	2/2/2/1/2	2/2/2/2/2	0/0/0/0/0	0/0/0/0/0	
24/11/2023	30/11/2023	GT	N/R	N/R	7/5/2/2/4	NW/W/NW/NW/NW	0/4/0/0/2	8/8/1/1/5	2/1/2/2/2	2/1/2/2/2	0/0/0/2/0	0/0/0/0/0	
08/12/2023	14/12/2023	GT	N/R	N/R	3/3/1/3/4	SW/W/SW/N/SW	0/0/0/0/0	8/6/8/5/8	2/2/1/2/2	2/2/1/2/2	0/0/0/0/0	0/0/0/0/0	Misty
20/12/2023	29/12/2023	GT	N/R	N/R	5/5/2/4/5	W/N/W/SE/SW	0/0/0/2/0	7/5/3/8/6	2/2/2/2/2	2/2/2/2/2	0/0/0/0/0	0/0/0/0/0	
05/01/2024	11/01/2024	GT	N/R	N/R	1/3/3/4	NE/E/E/NW	1/0/0/0	8/5/6/4	1/2/2/2	2/2/2/2	0/0/0/0	0/0/0/0	
16/01/2024	20/01/2024	GT	N/R	N/R	4/1/2/4	SW/W/W/SW	0/0/0/0	8/0/0/8	1/-/-/2	1/2/2/2	2/2/2/0	1/0/0/0	Light snow flurries
05/02/2024	09/02/2024	GT	N/R	N/R	4/3/1/6/1	W/W/E/E/SW	0/0/0/2/0	8/8/2/8/8	2/2/2/2/2	2/2/2/2/2	0/0/0/0/0	0/0/0/0/0	
19/02/2024	24/02/2024	GT	N/R	N/R	4/5/4/2	W/SW/W/SW	0/3/0/0	7/8/4/2	2/1/2/2	2/2/2/2	0/0/0/0	0/0/0/0	
03/03/2024	08/03/2024	GT	N/R	N/R	2/3/4/4/5	SW/E/SE/E/E	0/0/1/1/0	3/5/8/8/3	2/2/1/2/2	2/2/1/2/2	0/0/0/0/0	0/0/0/0/0	
25/03/2024	31/03/2024	GT	N/R	N/R	3/3/4/5/4	NE/E/S/SE/SE	0/0/0/0/0	6/3/1/3/4	2/2/2/2/2	2/2/2/2/2	0/0/0/0/0	0/0/0/0/0	

Table A2.4: Nocturnal Bird Survey Effort 2023/24

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow	Notes
28/09/2023	GT	19:30	23:30	6	SW	0	2	2	-	0	0	
29/09/2023	GT	19:30	00:30	2	W	1	8	2	-	0	0	
30/09/2023	GT	19:15	22:45	1	W	0	0	-	2	0	0	
10/10/2023	GT	N/R	N/R	2	SW	0	2	2	0	0	0	
11/10/2023	GT	N/R	N/R	4	SW	0	9	2	0	0	0	
12/10/2023	GT	N/R	N/R	4	SW	0	8	2	0	0	0	
13/11/2023	GT	N/R	N/R	5	S	0	5	2	2	0	0	
14/11/2023	GT	N/R	N/R	3	W	0	3	2	2	0	0	
15/11/2023	GT	N/R	N/R	5	W	0	8	2	2	0	0	
16/11/2023	GT	N/R	N/R	2	SE	0	8	2	2	0	0	
17/11/2023	GT	N/R	N/R	2	SW	0	8	2	2	0	0	
11/12/2023	GT	N/R	N/R	3	W	0	8	2	1	0	0	
12/12/2023	GT	N/R	N/R	1	SW	1	8	1	0	0	0	Foggy
13/12/2023	GT	N/R	N/R	3	N	0	0	0	2	0	0	
16/01/2024	GT	N/R	N/R	4	SW	0	2	2	2	2	1	Light snow flurries
17/01/2024	GT	N/R	N/R	1	W	0	0	-	2	2	0	
18/01/2024	GT	N/R	N/R	2	W	0	0	-	2	2	0	
06/02/2024	GT	N/R	N/R	4	W	0	8	2	2	0	0	
07/02/2024	GT	N/R	N/R	2	E	0	2	2	2	0	0	
13/02/2024	GT	N/R	N/R	4	SW	0	7	2	2	0	0	
11/03/2024	GT	N/R	N/R	4	NE	1	8	1	2	0	0	
12/03/2024	GT	N/R	N/R	3	SE	0	3	2	2	0	0	
13/03/2024	GT	N/R	N/R	5	SW	0	6	2	2	0	0	

Table A2.5: Vantage Point Survey Effort 2023/24

Start Date	Vantage Point	Surveyor	Start Time (24 hrs)	End time (24 hrs)	VP Hours	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow
27/09/2023	1	GT	12:40	15:40	3	4/4/4	SE/SE/SE	0/0/0	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
23/09/2023	2	GT	15:00	18:00	3	2/1/1	SW/SW/SW	0/0/0	6/6/6	2/2/2	2/2/2	0/0/0	0/0/0
30/09/2023	3	GT	12:00	15:00	3	3/3/3	SW/SW/SW	0/3/4	7/8/8	2/2/2	2/2/2	0/0/0	0/0/0
25/09/2023	4	GT	16:00	19:00	3	3/2/1	SW/SW/SW	0/0/0	7/6/7	2/2/2	2/2/2	0/0/0	0/0/0
29/09/2023	5	GT	13:40	16:40	3	4/4/3	W/W/W	0/0/0	2/3/2	2/2/2	2/2/2	0/0/0	0/0/0
28/09/2023	6	GT	15:30	18:30	3	4/4/4	SW/SW/SW	0/0/0	8/7/8	2/2/2	2/2/2	0/0/0	0/0/0
15/10/2023	1	GT	10:30	13:30	3	2/3/3	W/W/W	0/0/0	0/0/0	-/-/-	2/2/2	0/0/0	0/0/0
16/10/2023	2	GT	13:10	16:10	3	0/0/1	-/-/E	0/0/0	7/3/3	2/2/2	2/2/2	0/0/0	0/0/0
26/10/2023	3	GT	08:30	11:30	3	1/2/2	SE/SE/SE	0/1/4	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
15/10/2023	4	GT	14:05	17:05	3	1/1/1	W/W/W	0/0/0	0/0/0	-/-/-	2/2/2	0/0/0	0/0/0
30/10/2023	5	GT	12:05	15:05	3	4/3/3	E/E/E	0/1/1	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
13/10/2023	6	GT	15:30	18:30	3	1/1/1	NW/NW/NW	3/0/0	8/4/0	2/2/2	2/2/2	0/0/0	0/0/0
14/11/2023	1	GT	13:00	16:00	3	2/3/3	W/W/SW	0/2/0	6/8/7	2/2/2	2/2/2	0/0/0	0/0/0
05/11/2023	2	GT	08:55	11:55	3	2/2/2	SE/SE/SE	0/0/0	4/2/2	2/2/2	2/2/2	0/0/0	0/0/0
27/11/2023	3	GT	10:00	13:00	3	4/4/4	NW/NW/NW	4/3/0	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
27/11/2023	4	GT	13:10	16:10	3	4/3/3	NW/NW/NW	0/0/0	8/6/6	2/2/2	2/2/2	0/0/0	0/0/0
23/11/2023	5	GT	10:50	13:50	3	5/5/5	SW/SW/SW	1/1/1	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
16/11/2023	6	GT	13:10	16:10	3	0/0/1	0/0/E	0/0/0	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
24/12/2023	1	GT	08:40	11:40	3	5/5/5	SW/SW/SW	0/0/0	8/6/6	2/2/2	2/2/2	0/0/0	0/0/0
26/12/2023	2	GT	08:40	11:40	3	2/3/3	W/W/W	0/0/0	0/0/0	-/-/-	2/2/2	0/0/0	0/0/0
18/12/2023	3	GT	13:00	16:00	3	4/5/5	SW/SW/SW	0/0/0	6/6/8	2/2/2	2/2/2	0/0/0	0/0/0
18/12/2023	4	GT	09:45	12:45	3	3/3/3	SW/SW/SW	0/0/0	6/8/7	2/2/2	2/2/2	0/0/0	0/0/0
24/12/2023	5	GT	12:05	15:05	3	6/6/6	W/W/W	0/0/0	5/6/4	2/2/2	2/2/2	0/0/0	0/0/0
03/12/2023	6	GT	13:00	16:00	3	3/3/3	N/N/N	0/0/0	4/5/4	2/2/2	2/2/2	0/0/0	0/0/0
14/01/2024	1	GT	13:00	15:00	3	2/2/2	NW/NW/NW	0/0/0	7/6/7	2/2/2	2/2/2	0/0/0	0/0/0
14/01/2024	2	GT	09:45	12:45	3	2/2/2	NW/NW/NW	0/0/0	1/3/6	2/2/2	2/2/2	1/0/0	0/0/0
31/01/2024	3	GT	11:00	14:00	3	4/4/4	SW/SW/SW	0/0/0	8/7/7	2/2/2	2/2/2	0/0/0	0/0/0
20/01/2024	4	GT	12:45	15:45	3	4/4/4	SW/SW/SW	0/1/4	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
22/01/2024	5	GT	09:20	12:20	3	5/5/5	SW/SW/SW	0/0/0	2/2/3	2/2/2	2/2/2	0/0/0	0/0/0
30/01/2024	6	GT	10:50	13:50	3	3/3/3	NW/NW/NW	0/0/0	6/5/6	2/2/2	2/2/2	0/0/0	0/0/0
26/02/2024	1	GT	12:50	15:50	3	4/4/4	N/N/N	0/0/2	2/6/8	2/2/2	2/2/2	0/0/0	0/0/0
26/02/2024	2	GT	09:40	12:40	3	4/5/4	N/N/N	3/2/0	5/3/6	2/2/2	2/2/2	0/0/0	0/0/0
23/02/2024	3	GT	10:45	13:45	3	4/4/4	W/SW/SW	0/0/0	4/2/3	2/2/2	2/2/2	0/0/0	0/0/0
11/02/2024	4	GT	10:20	13:20	3	2/2/3	W/W/W	0/0/0	7/5/5	2/2/2	2/2/2	0/0/0	0/0/0
11/02/2024	5	GT	13:35	16:35	3	3/4/4	W/NW/NW	0/0/0	1/1/5	2/2/2	2/2/2	0/0/0	0/0/0
19/02/2024	6	GT	12:00	15:00	3	5/5/6	W/W/W	0/0/0	4/5/2	2/2/2	2/2/2	0/0/0	0/0/0
22/03/2024	1	GT	11:55	14:55	3	5/5/6	W/W/W	0/0/0	4/4/8	2/2/2	2/2/2	0/0/0	0/0/0
31/03/2024	2	GT	11:30	14:30	3	4/4/4	SE/SE/SE	0/0/0	4/4/3	2/2/2	2/2/2	0/0/0	0/0/0
26/03/2024	3	GT	15:30	18:30	3	4/4/4	NE/NE/NE	0/0/0	8/8/8	2/2/2	2/2/2	0/0/0	0/0/0
22/03/2024	4	GT	08:45	11:45	3	4/4/5	W/W/W	0/0/0	6/6/4	2/2/2	2/2/2	0/0/0	0/0/0
12/03/2024	5	GT	15:00	18:00	3	3/3/4	SW/SW/SW	0/0/0	6/7/8	2/2/2	2/2/2	0/0/0	0/0/0
27/03/2024	6	GT	11:20	14:20	3	5/5/5	S/SW/SW	0/0/2	7/8/8	2/2/2	2/2/2	0/0/0	0/0/0

ANNEX 3: BIRD SPECIES RECORDED DURING 2022/23 AND 2023/24

Table A3.1: Bird species Recorded within the Draft Order Limits during the 2022/2023 walk over surveys. Note that this includes diurnal and nocturnal walk-over surveys

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
1	**Mallard**	4	-	-	-	-	-	-	-	-	-	-	-	-	-
4	**Mallard**	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Grey heron	2	-	-	-	-	-	-	-	-	-	1	-	-	-
	Snipe	1	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Little owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
8	**Lapwing**	-	-	-	-	-	-	-	-	-	-	-	-	**1**	-
	Little owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
10	Mute swan	8	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mallard	-	-	-	-	-	-	-	-	-	-	-	-	4	1
	Little grebe	2	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Mute swan	-	-	-	6	-	-	-	2	-	-	-	-	1	1
	Pink-footed goose	-	-	**156**	-	-	-	-	-	-	-	-	-	-	-
	Grey heron	-	-	-	-	-	-	-	1	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	-	-	-	-	-	-	**32**	-
	Marsh harrier	-	-	-	-	-	-	-	-	-	-	**(1)**	-	-	-
	Peregrine	-	-	1	-	-	-	-	-	-	-	-	-	-	-
12	**Pink-footed goose**	**(22)**	-	-	-	-	-	-	-	-	-	-	-	-	-
15	**Lapwing**	-	-	-	-	-	-	-	-	-	-	-	**20**	-	-

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
	Curlew	-	-	-	-	-	-	-	-	-	-	-	-	**2**	-
16	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	1	4	-
17	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	2	-
	Lapwing	-	-	-	-	-	-	-	-	-	-	-	-	**2**	-
18	Mute swan	-	-	-	-	9	-	-	-	-	-	-	-	-	-
	Mallard	-	-	-	-	-	-	-	-	-	-	-	1	-	2
	Lapwing	-	-	-	**23**	**31**		**2**	**19**	**64**	-	-	-	-	-
	Golden plover	-	-	-	-	-	-	-	-	**11**	-	-	-	-	-
	Snipe	-	-	-	-	-	-	10	-	-	-	-	-	-	-
	Marsh harrier	**(1)**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barn owl	-	-	-	-	-	-	1	-	-	-	-	-	-	-
20	**Mallard**	92	-	-	-	-	-	-	-	-	-	-	-	-	-
	Grey heron	-	-	-	-	-	1	-	-	-	-	-	-	-	-
21	**Lapwing**	-	**26**	-	-	-	-	-	-	-	-	-	-	-	-
22	Woodcock	-	-	-	-	-	2	-	-	-	-	-	-	-	-
24	**Lapwing**	**94**	**24**	-	-	-	-	-	-	-	-	-	-	-	-
26	Barn owl	-	-	-	-	-	-	1	-	-	-	-	-	-	-
29	**Pink-footed goose**	-	-	**6**	-	-	-	-	-	-	-	-	-	-	-
30	**Marsh harrier**	-	-	**(2)**	-	-	-	-	-	-	-	-	-	-	-
31	**Pink-footed goose**	-	-	**360**	**1**	-	-	-	-	-	-	-	-	-	-

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
34	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	1	-
35	Mute swan	-	-	-	-	-	2	-	-	2	-	2	-	-	-
	Whooper swan	-	-	-	-	-	-	-	-	-	-	23	-	35	-
	Mallard	-	-	-	-	-	-	-	-	-	-	7	-	-	-
	Lapwing	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
36	**Lapwing**	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
39	**Pink-footed goose**	-	**(475)**	-	-	-	-	-	-	-	-	-	-	-	-
	Golden plover	-	**53**	-	-	-	-	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	2	-	-	-	-
41	Woodcock	-	-	-	-	-	-	-	-	-	1	-	-	-	-
42	**Pink-footed goose**	-	**330**	-	-	-	-	-	-	-	-	-	-	-	-
	Golden plover	-	**27**	-	-	-	-	-	-	-	-	-	-	-	-
43	**Pink-footed goose**	-	**135**	-	-	-	-	-	-	-	-	-	-	-	-
50	**Green sandpiper**	-	**1**	-	-	-	-	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	2	-	-	-	-
	Marsh harrier	-	-	-	-	-	-	-	**1**	-	-	-	-	-	-
61	**Pink-footed goose**	**(1)**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mallard	-	2	-	-	-	-	-	-	-	-	-	-	-	-
	Grey heron	1	-	-	-	-	-	-	-	-	-	-	-	-	-
63	**Green sandpiper**	-	**1**	-	-	-	-	-	-	-	-	-	-	-	-

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
64	**Little egret**	**(1)**	-	-	-	-	-	-	-	-	-	-	-	-	-
65	Grey heron	3	-	-	-	-	-	-	-	-	17	-	-	-	-
	Lapwing	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Red kite	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-
69	**Lapwing**	-	-	-	-	-	-	**14**	-	-	-	-	-	-	-
70	Barn owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
73	**Golden plover**	-	**12**	-	-	-	-	-	-	-	-	-	-	-	-
	Marsh harrier	-	-	-	-	-	-	-	-	-	-	-	-	-	**(1)**
74	Grey heron	-	1	-	-	-	-	-	-	-	-	-	-	-	-
75	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Snipe	-	-	-	-	-	-	1	-	-	-	-	-	-	-
76	**Teal**	-	-	-	-	-	-	-	-	-	**4**	-	-	-	-
	Snipe	-	-	-	-	-	-	-	-	-	1	-	-	-	-
	Jack snipe	-	-	-	-	-	-	-	-	-	1	-	-	-	-
79	**Lapwing**	-	**19**	-	-	-	-	-	-	-	-	-	-	-	-
81	Barn owl	-	-	-	-	-	-	-	-	-	2	-	-	-	-
83	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	-	1
84	**Little egret**	-	-	-	-	-	**1**	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	**53**	-	-	-	-	-	-	-
86	**Lapwing**	-	-	-	-	-	-	**18**	-	-	-	-	-	-	-

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
87	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**12**	**-**	**-**	**-**	**-**	-	-
92	Woodcock	-	-	-	-	-	-	1	-	-	-	-	-	-	-
93	**Pink-footed goose**	**-**	**(1)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Peregrine	1	1	-	-	-	-	-	-	-	-	-	-	-	-
94	Grey heron	-	1	-	-	-	-	-	-	-	-	-	-	-	-
95	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	Grey heron	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	1
	Marsh harrier	**-**	**(1)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
	Barn owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
98	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**9**	**-**	**-**	**-**	**-**	-	-
100	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	2	-
	Grey heron	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	2	-	-	-	-	-	-	-
103	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	-	-
	Golden plover	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	-	-
104	**Mallard**	-	-	-	9	-	-	-	-	-	-	-	-	-	-
	Teal	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**	**-**	**-**	**-**	**-**	**4**	-
105	**Pink-footed goose**	**(36)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Grey heron	-	-	3	-	-	-	-	-	-	-	-	-	-	-

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
106	**Greylag goose**	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
	Mallard	-	-	12	-	-	-	-	-	-	27	-	-	-	3
	Teal	-	-	**2**	-	-	-	-	-	-	**6**	-	-	-	-
	Shoveler	-	-	-	-	-	-	-	-	-	2	-	-	-	-
	Grey heron	-	-	-	1	-	-	-	-	-		-	-	-	-
	Lapwing	-	-	-	-	-	-	-	-	-	**112**	-	**32**	-	-
113	**Pink-footed goose**	-	**(1)**	-	-	-	-	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	5	-	-	3	-	-	-	-
114	Grey heron	-	1	-	-	-	-	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	2	-	-	9	-	-	-	-
115	Mute swan	-	-	-	-	-	-	2	-	-	-	-	-	-	-
	Mallard	-	-	-	24	-	-	12	-	-	-	-	-	-	2
	Teal	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
	Woodcock	-	-	-	-	-	-	1	-	-	-	-	-	-	-
116	Woodcock	-	-	-	-	-	-	-	-	-	3	-	-	-	-
	Peregrine	-	-	-	-	-	-	-	-	-	-	1	-	-	-
	Barn owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
117	Mute swan	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mallard	-	-	-	-	-	-	3	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	1	-	-	-	-

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
118	**Golden plover**	-	-	-	-	-	-	-	-	-	**21**	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
	Hen harrier	-	-	-	-	-	-	-	**(1)**	-	-	-	-	-	-
	Marsh harrier	-	**(1)**	-	-	-	-	-	-	-	-	-	-	-	-
119	**Lapwing**	-	-	-	-	-	-	-	**3**	-	-	-	-	-	-
	Snipe	-	-	-	-	-	-	-	2	-	-	-	-	-	-
120	**Mallard**	-	-	-	-	-	-	4	-	-	-	1	-	-	-
	Little egret	-	-	-	-	-	-	-	-	-	-	-	-	**1**	-
	Golden plover	**17**	**3**	-	-	-	-	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	4	-	-
121	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
129	**Green sandpiper**	-	-	**1**	-	-	-	-	-	-	-	-	-	-	-
130	**Lapwing**	-	-	**25**	-	-	-	-	-	-	-	-	-	-	-
132	Grey heron	-	-	-	2	-	-	-	-	-	-	-	-	-	-
135	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
136	**Pink-footed goose**	-	-	**(209)**	-	-	-	-	-	-	-	-	-	-	-
	Snipe	-	-	-	-	-	-	-	-	-	-	-	1	-	-
137	**Grey plover**	**(17)**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Snipe	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-
	Marsh harrier	**(1)**	-	-	-	-	-	-	-	-	-	-	-	-	-

Field No	Species	Survey Visits													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
175	**Greylag goose**	**7**	-	-	-	-	-	-	-	-	-	-	-	-	-
252	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	2	-
275	**Lapwing**	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
282	Whooper swan	-	-	-	-	-	-	-	-	-	-	-	-	8	-
	Pink-footed goose	-	-	-	-	-	**(320)**	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	-	**16**	-	-	-	-	-	-
284	**Lapwing**	-	-	-	-	-	-	-	-	-	-	-	-	**14**	**2**
285	Woodcock	-	-	-	-	-	-	-	-	-	-	-	4	-	-
288	**Lapwing**	-	-	-	-	-	-	-	-	-	**9**	-	-	**13**	-
290	**Mallard**	-	8	-	-	-	-	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	-	-	-	-	-	**2**	-	9
	Woodcock	-	-	-	-	-	-	2	-	-	-	-	2	-	-
497	**Pink-footed goose**	**32**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	**78**	**77**	-	**32**	-	-	-	-
	Golden plover	-	-	-	-	-	-	-	**11**	-	-	-	-	-	-
	Barn owl	-	-	-	-	-	-	1	-	-	-	-	-	-	-
498	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	1	-	-
	Lapwing	-	**390**	-	-	-	-	-	-	-	**7**	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
	Osprey	1	-	-	-	-	-	-	-	-	-	-	-	-	-

Field No	Species	Survey Visits						
		Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Species associated with the Humber Estuary SPA recorded in **bold** '-' means that the species was not recorded during that visit. Those in brackets were recorded in flight only.								

Table A3.2: Bird species Recorded within the Wider Survey Area 2022/23. Note that this includes diurnal and nocturnal walk-over surveys

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
58	**Golden plover**	**-**	**-**	**23**	**480**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
59	**Lapwing**	-	-	-	-	-	-	-	-	-	-	-	-	**2**	-
66	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	-	-
124	Grey heron	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
125	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	4	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	3	-	-
140	Barn owl	-	-	-	-	-	-	-	-	-	(1)	-	-	-	-
144	**Marsh harrier**	**-**	**(1)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
149	**Lapwing**	**9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
	Golden plover	**16**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
158	**Pink-footed goose**	**5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
164	**Pink-footed goose**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**9**	**-**	**-**
	Goose (*Anser*) sp	-	-	-	-	-	-	-	-	-	49	-	-	-	-
	Mallard	-	-	-	-	-	-	-	-	-	-	-	-	7	-
	Woodcock	-	-	-	-	-	-	-	-	-	1	-	-	-	-
168	Mute swan	-	-	-	-	-	-	-	-	-	-	2	-	-	-
	Pink-footed goose	**(26)**	**-**	**(752)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Grey heron	-	-	-	-	1	-	-	-	-	-	1	-	-	-

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
	Little egret	-	-	-	**1**	-	-	-	-	-	-	-	-	-	-
169	Mute swan	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	Whooper swan	-	-	-	-	8	8	-	-	-	-	-	-	-	-
	Pink-footed goose	**(23)**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Greylag goose	-	-	-	-	**19**	-	-	-	-	-	-	-	-	-
	Mallard	-	-	-	-	-	-	-	-	-	-	-	2	-	-
	Grey heron	-	-	-	-	-	1	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	**96**	-	**5**	**2**	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
	Hen harrier	-	-	-	-	-	-	-	**(1)**	-	-	-	-	-	-
173	**Lapwing**	-	-	-	-	-	-	**127**	-	-	-	-	-	-	-
	Barn owl	-	-	-	-	-	-	-	-	-	1	-	-	-	-
182	Mute swan	-	-	-	-	-	-	-	-	-	-	-	-	3	-
	Common crane	-	-	3	-	-	-	-	-	-	-	-	-	-	-
185	Grey heron	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lapwing	-	-	**136**	-	-	-	-	-	-	-	-	-	-	-
187	Woodcock	-	-	-	-	-	-	-	-	-	-	-	2	-	-
191	**Mallard**	60	-	-	-	-	-	-	-	-	-	-	-	-	-
194	**Pink-footed goose**	-	-	**(251)**	-	-	-	-	-	-	-	-	-	-	-

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
195	**Pink-footed goose**	-	-	**(234)**	-	-	-	-	-	-	-	-	-	-	-
216	**Pink-footed goose**	**24**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mallard	5	-	-	-	-	-	-	-	-	-	-	-	-	-
	Grey heron	-	-	-	1	-	-	-	-	-	-	-	-	-	-
217	**Mallard**	-	-	-	-	-	-	-	-	-	-	8	-	6	-
	Lapwing/Golden Plover	-	-	-	-	-	-	-	-	-	**6**	-	-	-	-
220	**Mallard**	40	-	-	-	-	-	-	-	-	-	-	-	-	-
221	Barn owl	-	-	-	-	-	-	-	-	-	1	-	-	-	-
222	**Pink-footed goose**	**46**	**67**	-	-	-	-	-	-	-	-	-	-	-	-
	Greylag goose	**375**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mallard	16	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hen harrier	-	-	**(1)**	-	-	-	-	-	-	-	-	-	-	-
	Tawny owl	-	-	-	-	-	1	-	-	-	-	-	-	-	-
223	**Hen harrier**	-	-	**(1)**	-	-	-	-	-	-	-	-	-	-	-
224	**Hen harrier**	-	-	**(1)**	-	-	-	-	-	-	-	-	-	-	-
	Pink-footed goose	-	-	-	**(19)**	-	-	-	-	-	-	-	-	-	-
	Mallard	-	-	2	-	-	-	-	-	-	-	-	-	-	-
225	**Pink-footed goose**	-	-	**42**	-	-	-	-	-	-	-	-	-	-	-
	Hen harrier	-	-	**(1)**	-	-	-	-	-	-	-	-	-	-	-

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
226	**Pink-footed goose**	-	-	-	**(73)**	-	-	-	-	-	-	-	-	-	-
	Mallard	-	-	-	-	-	-	-	-	-	-	-	-	1	2
229	**Common crane**	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	Snipe	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hen harrier	-	-	**(1)**	-	-	-	-	-	-	-	-	-	-	-
230	**Pink-footed goose**	-	-	-	**(16)**	-	-	-	-	-	-	-	-	-	-
238	**Little egret**	-	-	-	-	-	-	-	-	**1**	-	-	-	-	-
242	**Pink-footed goose**	-	**217**	-	-	-	-	-	-	-	-	-	-	-	-
243	**Pink-footed goose**	-	**48**	-	-	-	-	-	-	-	-	-	-	-	-
249	Mute swan	-	-	-	-	-	-	-	2	-	-	-	-	-	-
250	Mute swan	-	-	-	-	-	-	-	-	-	-	4	-	-	-
264	Whooper swan	-	-	-	-	5	-	-	-	-	-	-	-	-	-
265	Mute swan	-	-	-	-	2	-	-	-	-	-	-	-	-	-
277	**Lapwing**	-	-	-	-	-	-	-	-	-	**12**	-	-	-	-
	Golden plover	-	-	**43**	-	-	-	-	-	-	-	-	-	-	-
278	Woodcock	-	-	-	-	-	-	-	-	-	-	-	3	-	-
279	**Lapwing**	-	-	-	-	-	-	-	-	**3**	-	-	-	-	-
286	**Greylag goose**	-	-	-	-	-	-	-	-	-	-	-	-	**2**	-
	Lapwing	-	-	-	-	-	-	-	-	**14**	-	-	-	-	-

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
287	**Greylag goose**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
	Mallard	-	-	-	-	3	-	-	-	-	-	-	-	-	-
291	**Pink-footed goose**	**-**	**(3000)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Mallard	-	4	-	-	-	-	-	-	-	-	-	-	-	-
292	**Lapwing**	**17**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
293	**Common crane**	-	-	(2)	-	-	-	-	-	-	-	-	-	-	-
304	**Little egret**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
309	**Lapwing**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
319	**Greylag goose**	**(20)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Mallard	-	-	-	-	-	-	-	-	-	-	-	-	3	-
323	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14**	**-**	**-**	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
325	Woodcock	-	-	-	-	-	-	-	-	-	5	-	-	-	-
340	Barn owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
358	Grey heron	-	-	2	-	-	-	-	-	-	-	-	-	-	-
361	Woodcock	-	-	-	-	-	-	1	-	-	-	-	-	-	-
363	Barn owl	-	-	-	-	-	-	-	-	-	1	-	-	-	-
366	Barn owl	-	-	-	-	-	-	(1)	-	-	-	-	-	-	-
	Golden plover	**-**	**38**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
367	**Golden plover**	**-**	**23**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
368	Mute swan	-	-	-	-	-	-	-	-	-	-	7	-	-	-
	Mallard	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	Golden plover	**-**	**-**	**-**	**-**	**8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Snipe	-	-	-	-	-	-	1	-	-	-	-	-	-	-
369	**Little egret**	**-**	**-**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Golden plover	**-**	**14**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
370	Grey heron	-	-	-	-	-	-	1	-	-	-	-	-	-	-
371	**Golden plover**	**-**	**76**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
372	Mallard	-	-	-	-	(1)	-	-	-	-	-	-	-	-	-
	Golden plover	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**
373	**Mallard**	-	22	-	-	-	-	-	-	-	-	-	-	-	-
	Shoveler	-	1	-	-	-	-	-	-	-	-	-	-	-	-
	Grey heron	-	-	-	1	-	-	-	-	-	-	-	-	-	-
	Lapwing	**-**	**-**	**37**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
376	Woodcock	-	-	-	-	-	-	-	-	-	1	-	-	-	-
378	Grey heron	2	-	-	-	-	-	-	-	-	-	-	-	-	-
380	**Golden plover**	**-**	**(130)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Snipe	1	-	-	-	-	-	-	-	-	-	-	-	-	-
382	**Pink-footed goose**	**-**	**(160)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Little egret	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
383	**Mallard**	5	-	-	-	-	-	-	-	-	-	-	-	-	-
384	**Pink-footed goose**	**-**	**-**	**-**	**12**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Mallard	-	-	-	-	-	5	-	-	-	-	-	-	10	-
	Teal	-	-	-	-	-	-	-	-	-	-	-	-	**9**	-
	Grey heron	-	-	-	-	-	-	-	-	-	-	1	-	-	-
	Little egret	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Lapwing	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
	Golden plover	**25**	**43**	**-**	**-**	**21**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
	Jack snipe	-	-	-	-	-	-	1	-	-	-	-	-	-	-
385	**Mallard**	-	-	-	-	-	-	-	-	21	-	-	-	-	-
	Teal	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**23**	**-**	**-**	**-**	-	-
386	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	3	-
	Teal	-	-	-	-	-	-	-	-	-	-	-	-	**8**	-
387	**Mallard**	-	16	-	-	-	-	-	22	-	18	17	12	-	-
	Teal	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**2**	-	-
	Grey heron	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	Golden plover	**-**	**-**	**-**	**-**	**-**	**12**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
388	**Mallard**	-	9	-	-	-	-	31	-	-	-	-	-	-	-
390	**Golden plover**	**-**	**-**	**-**	**-**	**-**	**-**	**20**	**-**	**-**	**-**	**-**	**-**	-	-
	Little owl	-	-	-	-	-	-	1	1	-	-	1	-	-	-

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
391	Mute swan	-	-	-	-	-	-	-	-	9	-	11	-	2	-
398	**Mallard**	-	-	-	-	-	-	-	42	-	-	-	-	-	-
	Grey heron	-	-	-	-	-	1	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	1	-	-	-	-	-	-	-
416	**Golden plover**	-	-	-	-	-	-	-	**37**	-	-	-	-	-	-
417	**Lapwing**	-	-	-	-	-	-	-	-	-	-	-	**6**	-	-
428	Barn owl	-	-	-	-	-	-	(1)	-	-	-	-	-	-	-
429	Woodcock	-	-	-	-	-	-	-	-	-	2	-	1	-	-
431	**Pink-footed goose**	**(190)**	**(216)**	-	-	-	-	-	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
436	Snipe	-	-	-	-	-	-	-	-	-	1	-	1	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	-	-	2	-	-
	Marsh harrier	-	**(2)**	-	-	-	-	-	-	-	-	-	-	-	-
443	**Pink-footed goose**	-	-	**2**	-	-		-	-	-	-	**21**	-	-	-
	Greylag goose	-	-	-	-	-	-	-	-	-	-	**155**	-	-	**34**
	Lapwing	-	-	-	-	-	-	**71**	-	-	-	-	-	-	-
444	**Greylag goose**	-	-	-	-	-	-	-	-	-	-	-	-	**34**	-
450	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	Snipe	-	-	-	-	-	-	-	-	-	2	-	-	-	-
464	Barn owl	-	-	-	-	-	-	1	-	-	-	-	-	-	-

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
465	Little owl	-	-	-	-	-	-	-	-	-	1	-	-	-	-
466	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**4**	-	-
	Snipe	-	-	-	-	-	-	-	-	-	-	-	1	-	-
476	**Little egret**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**
485	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**16**	**-**	**-**	-	-
	Golden plover	-	-	-	-	-	-	-	-	-	-	-	-	**38**	-
486	Peregrine	-	-	-	-	1	-	-	-	-	-	-	-	-	-
488	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
	Barn owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
489	**Lapwing**	**-**	**19**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**	**-**	-	-
490	Woodcock	-	-	-	-	-	-	-	-	-	-	-	2	-	-
492	**Lapwing**	**21**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
493	**Lapwing**	**(4)**	**8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
494	**Lapwing**	**(17)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
496	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**37**	**-**	**260**	**27**	**-**	**-**	-	-
	Woodcock	-	-	-	-	-	-	1	-	-	-	-	-	-	-
501	**Pink-footed goose**	**700**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Greylag goose	**150**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Mallard	30	-	-	-	-	-	-	-	-	-	-	-	-	-
504	**Greylag goose**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**

Field №	Species	*Survey Visits*													
		Sep 2022		Oct 2022		Nov 2022		Dec 2022		Jan 2023		Feb 2023		Mar 2023	
	Grey heron	-	-	-	-	-	-	-	1	-	-	-	-	-	-
	Lapwing	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6**	-	-
505	**Lapwing**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	-	-
	Woodcock	-	-	-	-	-	-	1	-	-	-	-	-	-	-
506	Woodcock	-	-	-	-	-	-	-	-	-	-	-	1	-	-
507	**Pink-footed goose**	**13**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
508	**Pink-footed goose**	**36**	**22**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
509	Osprey	1	-	-	-	-	-	-	-	-	-	-	-	-	-
511	**Mallard**	-	-	-	-	-	-	-	-	-	-	-	-	-	1
512	Woodcock	-	-	-	-	-	-	-	-	-	1	-	-	-	-
514	**Lapwing**	**-**	**53**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-
	Woodcock	-	-	-	-	-	-	2	-	-	-	-	-	-	-
515	Mute swan	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	2	-
	Lapwing	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14**	**-**	**-**	-	-
516	Woodcock	-	-	-	-	-	-	1	-	-	-	-	1	-	-
	Barn owl	-	-	-	-	-	-	(1)	-	-	-	-	-	-	-
518	**Pink-footed goose**	**-**	**(1)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
519	**Pink-footed goose**	**-**	**49**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
521	Mute swan	-	-	-	1	-	-	-	-	2	-	-	-	-	-
	Greylag goose	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**

Field №	Species	*Survey Visits*													
		Sep 2022		**Oct 2022**		**Nov 2022**		**Dec 2022**		**Jan 2023**		**Feb 2023**		**Mar 2023**	
	Mallard	-	-	-	-	-	-	-	-	-	-	64	-	-	-
	Grey heron	-	-	1	-	-	-	-	-	1	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	**45**	**8**	-	-	-	-	-	-
	Green sandpiper	-	-	-	-	**1**	**1**	-	-	**1**	-	-	-	-	-
	Snipe	-	-	-	-	-	-	3	-	-	-	-	-	-	-
	Jack snipe	-	-	-	-	-	-	1	-	-	-	-	-	-	-
	Woodcock	-	-	-	-	-	-	-	-	-	1	-	-	-	-
	Tawny owl	-	-	-	-	-	-	-	-	-	1	-	-	-	-
523	Tawny owl	-	-	-	-	-	-	-	-	-	-	-	1	-	-
545	Woodcock	-	-	-	-	-	-	-	-	-	-	-	4	-	-
546	**Lapwing**	-	-	-	-	-	-	**7**	-	-	**1**	-	-	-	-
548	**Green sandpiper**	-	-	-	-	-	-	-	**1**	-	-	-	-	-	-
550	**Marsh harrier**	-	-	-	-	-	-	-	**(2)**	-	-	-	-	-	-
553	**Common crane**	-	-	-	-	-	-	-	-	-	-	-	-	**2**	-

Species associated with the Humber Estuary SPA recorded in **bold**

'-' means that the species was not recorded during that visit.

Those in brackets were recorded in flight only.

Table A3.3: Bird species Recorded within the Draft Order Limits 2023/24. Winter walk-over (WWO) refers to diurnal surveys and "NOC" denotes nocturnal walk-over surveys. Numbers in brackets denote flying over.

		13/09/2023	25/09/2023	28/09/2023	01/10/2023	10/10/2023	23/10/2023	05/11/2023	13/11/2023	24/11/2023	08/12/2023	11/12/2023	20/12/2023	05/01/2024	16/01/2024	16/01/2024	05/02/2024	06/02/2024	19/02/2024	03/03/2024	11/03/2024	25/03/2024	16/04/2024	25/04/2024
		Sep	Sep	Sep	Oct	Oct	Oct	Nov	Nov	Nov	Dec	Dec	Dec	Jan	Jan	Jan	Feb	Feb	Feb	Mar	Mar	Mar	Apr	Apr
Field	Species Name	WWO	WWO	NOC	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	WWO
1	Buzzard																1							
2	Buzzard																							1
	Grey Partridge																2							
	Mallard																					2		1
	Peregrine							1																
	Pink-footed Goose						56																	
	Woodcock											1												
4	Buzzard										1													
	Canada Goose						14																	
	Greylag Goose						1																	9
	Mallard																4						10	
	Mute Swan																			3		1		
	Woodcock														1									
5	Grey Partridge							6																
	Partidge sp.											10												
6	Buzzard							2																
7	Fieldfare									74														
8	Lapwing																				11	2	4	2
	Mallard											4						17				1	4	2

	Partidge sp.														8									
	Pink-footed Goose						28																	
	Woodcock														1									
9	Lesser Black-backed Gull																						2	
10	Buzzard		1											1										1
	Fieldfare										110													
	Grey Partridge																		2					
	Mallard																						1	4	3
	Partidge sp.														4									
	Redwing										175													
	Woodcock																					2		
11	Barn Owl																	(1)						
	Buzzard																1							
	Canada Goose						17																	
	Curlew																						1	2
	Fieldfare										70													
	Greylag Goose						13																	
	Lapwing								111															
	Mallard	(12)																						2
	Pink-footed Goose						84												1530					
12	Black-headed Gull						172																	
	Buzzard						1															1		
	Common Gull						15																	
	Lapwing						38											26						

	Lesser Black-backed Gull						18																	
	Mallard																					2		
13	Lapwing																					4		
	Mallard																	4						
15	Buzzard						1																	
	Curlew																							2
	Fieldfare						430																	
	Lapwing																							2
	Mallard																							2
16	Black-headed Gull						88																	
	Curlew																						1	
	Greylag Goose						135				12													
	Kestrel																					1		
	Lapwing																					2	4	
	Mallard										11							6	4			2	6	
	Pink-footed Goose						1600																	
	Woodcock																	1						
17	Black-headed Gull							47																
	Buzzard																		1					
	Canada Goose						70																	
	Chaffinch																6							
	Fieldfare										140						85							
	Greylag Goose						210												27					
	Kestrel																			2				
	Lapwing																	100						

	Mallard			2			8														8			
	Marsh Harrier							(1)																
	Pink-footed Goose						1440																	
	Redwing																10							
	Starling																32							
18	Black-headed Gull						412	257		89	491		169	125			248		94	31				
	Buzzard																					1		
	Common Gull						52	9		4	4						1							
	Cormorant							1																
	Curlew																					2		
	Dunlin						6	27		13														
	Egyptian Goose										1													
	Fieldfare																			19				
	Golden Plover													66										
	Great Black-backed Gull						9																	
	Greylag Goose							157											14		76			
	Herring Gull						49																	
	Kestrel		2																					
	Lapwing							371		36	53			79			147				6			
	Lesser Black-backed Gull						41	4																
	Mallard						4	29			15		125				3	92	6		11			
	Mute Swan													4										

	Oystercatcher																			2		2		
	Pink-footed Goose						9	4																
	Teal										1													
	Wigeon						6																	
19	Buzzard																1							
20	Lapwing																	9						
	Mallard											4						5						
	Snipe											5												
21	partridge sp.			5																				
22	Mallard																		4					
23	Kestrel																					1		
	Mallard																	2						2
	Woodcock																	2						
24	Mallard																	5						
26	Buzzard																					1		
28	Kestrel							1																
31	Black-headed Gull									22														
	Common Gull									3														
	Pink-footed Goose		(11)																					
35	Great Black-backed Gull						3																	
	Herring Gull						6																	

	Lesser Black-backed Gull						1																	
	Starling										85													
37	Black-headed Gull										27		17	33								2		
	Green Sandpiper												1											
	Mallard																	2			2			
	partridge sp.											8												
	Woodcock																				1			
39	Fieldfare						390																	
	Kestrel																					1		
41	Woodcock																				1			
45	Golden Plover															6								
	Lapwing									24						47								
46	Barn Owl														1									
	Lapwing																				1			
	Woodcock																	6			1			
47	Kestrel																							(1)
	Mallard																				1			
	Woodcock																	1						
50	Black-headed Gull																							37
	Kestrel		1																					
	Lapwing														47								2	
	Mallard																							1
	partridge sp.																				4			
	Red-legged Partridge														5									

	Woodcock														1						6			
51	Lapwing									16														
52	Black-headed Gull						21																	
	Golden Plover								1															
	Great Black-backed Gull						4																	
	Herring Gull						9																	
	Lapwing						3					23												
	Woodcock														1						1			
53	Barn Owl														(1)									
54	Black-headed Gull										60												2	
	Buzzard																			1				
	Common Gull										4											3		
	Greylag Goose																							8
	Lapwing					63									17						6		1	
	Partidge sp.								4			6												
	Woodcock																				1			
62	Black-headed Gull		1																					
	Great Black-backed Gull		5																					
	Herring Gull		1																					

63	Black-headed Gull																	20					
64	Buzzard																	1					
67	Fieldfare																	64					
	Redwing																	44					
	Starling																	30					
69	Buzzard						2																
70	Buzzard	1					2							1									
	Fieldfare																		60				
	Kestrel																		1				
	Starling																		80				
71	Buzzard						1																
72	Fieldfare						47																
	Woodcock																			1			
73	Black-headed Gull																	2					
	Lapwing								8														
	Skylark																		1				
	Starling													80									
75	Kestrel																				(1)		
	Mallard						2																
	partridge sp.			7																			
77	Buzzard									1													
79	Buzzard																		1				
	Fieldfare														8			26					
	Lapwing/ Golden plover								23														
	Merlin																				(1)		
	partridge sp.														2								

80	Fieldfare															82								
	Partidge sp.			7																				
81	Fieldfare																210							
	Starling																275							
82	Fieldfare															163								
	Goosander																					4		
83	Chaffinch								40															
	Fieldfare															20								
	Reed Bunting								25															
	Skylark															6								
	Sparrowhawk																					(1)		
	Yellowhammer								36															
84	Chaffinch															6								
	Fieldfare																			49				
	Greenfinch															2								
	Lapwing										12													
	Reed Bunting															10								
	Skylark								4															
	Starling								30											80				
	Yellowhammer															4								
85	Stonechat								2															
86	Barn Owl																	1						
	Black-headed Gull				129		11																	
	Caspian Gull				2																			
	Chaffinch															40								
	Common Gull						38																	

	Great Black-backed Gull																					2		
	Herring Gull				199		41																	
	Lapwing					6		26			44													
	Lesser Black-backed Gull				82		13																	
	Mallard								78												7			
	Woodcock																				2			
87	Buzzard									1														
	Mallard																						2	1
88	Woodcock								1									1						
89	Skylark																			2				
91	Skylark									2		4						1						
92	Fieldfare															2								
	Kestrel										1													
	Mallard																							1
	Partidge sp.																	2						
	Skylark					1														2				
93	Black-headed Gull							53		89	117													
	Buzzard							1																
	Common Gull							4		14	6													
	Herring Gull							2																
	Woodcock																	1						
94	Buzzard																1							
	Chaffinch													15										
	Fieldfare																82							

	Starling													17										
	Stonechat									2			1								2			
	Yellowhammer													36									6	
95	Brambling										1													
	Chaffinch										15													
	Kestrel												(1)				1		1					
	Linnet																		16					
	Starling									26														
	Stonechat															2	1							
	Yellowhammer										10													
96	Buzzard							1																
	Fieldfare															3								
	Kestrel						1																	
	Little Egret																			1				
	Mallard																	4						
	Peregrine										1													
	Woodcock																				1			
97	Mallard								9															
	Starling										120													
	Woodcock								2															
98	Black-headed Gull										29													
	Fieldfare															10								
	Starling															130								
99	Buzzard	1																						
100	Herring Gull	11																						
	Lesser Black-backed Gull	190																						

101	Buzzard				1																			
103	Buzzard						1									3								
	Lapwing															12								
	Starling																320							
	Stonechat															1								
104	Fieldfare																		37					
	Golden Plover																				6			
	Jack Snipe																				1			
	Linnet				120																		1	
	Mallard											6						13	2		3	2		
	Pied Wagtail																						1	
	Redwing																		2					
	Starling												180											
	Wheatear																						1	1
	Woodcock																	3			4			
105	Black-headed Gull		151		211		132	160								71								
	Buzzard															2	1							
	Caspian Gull				1																			
	Common Gull						30	8								43	20							
	Golden Plover													7										
	Great Black-backed Gull						10																	
	Herring Gull		233		144		31	37																
	Lapwing					2																		
	Lesser Black-		34		14		4	2																

	backed Gull																							
	Marsh Harrier																						(1)	
	Woodcock								1						1									
	Yellow-legged Gull						1																	
106	Fieldfare													12										
	Linnet																		18					
	Mallard				2														2		2, 1	2		
	Marsh Harrier		(1)																					
	Skylark											2												
	Teal																			2				
113	Black-headed Gull							47		84				36						84				
	Buzzard							1		5	2		2	4						1		1		
	Common Gull	1						47		15				182						9				
	Fieldfare															46								
	Golden Plover											2				79								
	Great Black-backed Gull							1																
	Grey Heron							2																1
	Herring Gull	8						27																
	Lapwing			5																				
	Lesser Black-backed Gull	175						1																
	Little Egret						1																	
	Skylark																		1		1			
	Woodcock											7						3						

	Yellow Wagtail																							1
114	Black-headed Gull									131														
	Buzzard							2		4														
	Common Gull									46														
	Golden Plover														78									
	Woodcock											4												
115	Buzzard				2						1								1	1				
	Grey Heron										1													
	Kestrel				1																			
	Mallard												8		49	28				2		5	1	
	Meadow Pipit									12														
	Pink-footed Goose												(51)											
	Teal															12				2				
	Woodcock																				3			
116	Black-headed Gull									138														
	Buzzard																1							
	Common Gull									12														
	Fieldfare															5								
	Grey Heron						1																	
	Herring Gull	4								24														
	Kestrel				(1)											1								
	Lesser Black-backed Gull	34																						
	Mallard																			2				

	Peregrine													1										
	Skylark																				2			
	Stonechat									2														
117	Black-headed Gull						204																	
	Buzzard																1		1					
	Common Gull						68																	
	Great Black-backed Gull						1																	
	Herring Gull	15			65		50																	
	Lesser Black-backed Gull	39			14		8																	
	Skylark																	2						
	Stonechat										1													
	Woodcock								2															
	Yellow-legged Gull	1			1																			
118	Black-headed Gull							13																
	Buzzard				1																	1		
	Common Gull							25																
	Herring Gull							31																
	Lesser Black-backed Gull							2																
	Merlin				1																			
	Woodcock											2												
	Buzzard																		1					

119	Jack Snipe								2		1							2			3			
	Snipe										3														
120	Black-headed Gull									10	126														
	Buzzard									1	1								1	1			1		
	Common Gull									36	198						3								
	Fieldfare															53									
	Golden Plover																				1				
	Grey Heron											1			1	2									
	Herring Gull										6														
	Mallard											4													
	partridge sp.														6										
	Redwing															30									
	Skylark																				1		1		
	Starling						300																		
	Tawny Owl			1																					
	Teal																								1
	Woodcock								2			16						5			1				
122	Barn Owl											(1)													
	Woodcock								10			4									6				
129	Woodcock											1													
130	Buzzard						1	1																	
	Pink-footed Goose	(1)		(6)	154																				
	Woodcock																				2				
132	Black-headed Gull															340									

	Lapwing															17								
	Starling															110								
134	Black-headed Gull																5							
	Golden Plover															20								
	Marsh Harrier							(1)																
	Meadow Pipit															1								
	Snipe															4								
	Woodcock																	1						
135	Black-headed Gull													14										
136	Mallard				5																			
	Skylark							2																
	Woodcock											1												
137	Pink-footed Goose				3																			
	Skylark															8	3							
138	Common Gull						3																	
	Golden Plover															38								
	Lapwing											1												
	Mallard				3																			
	Skylark																1							
	Woodcock														1									
141	Black-headed Gull																54		18	40			2	
	Common Gull																5			2				
	Woodcock																	1						

168	Black-headed Gull						39							6										
	Common Gull						1																	
	Greylag Goose						38																	
	Mallard																						3	
	Pink-footed Goose							620			194													
169	Barn Owl					(1)																		
	Kestrel				1																			
	Lesser Black-backed Gull	76																						
	Mallard																				2	6		
	Mistle Thrush													4										
	Mute Swan																3		3	3		3		
	Red-legged Partridge																				2			
	Tufted Duck																					2		
	Woodcock																				2			
170	Kestrel							1																
171	Gadwall																						2	
	Mallard						2													16			6	
	Marsh Harrier													(1)										
172	Pink-footed Goose		(32)																					
173	Black-headed Gull																		368					

	Mallard																						1	
175	Buzzard																					1		
	Herring Gull						1																	
	Lesser Black-backed Gull						28																	
217	Lapwing																2							
	Mallard	2															9			2				
	Mute Swan																		2					
	Teal																2							
220	Fieldfare							40																
	Mallard									22		2	26		4									
	Teal												2											
221	Fieldfare															14								
	Hobby	(1)																						
222	Kestrel	1			(1)																			
	Mallard	(3)																						
	Skylark				6																			
249	Lapwing									33														
	Pink-footed Goose															1								
253	Black-headed Gull							198					380	101									93	11
	Buzzard																						1	
	Common Gull												21											
	Fieldfare																		91					
	Lapwing																8							
	Mallard				33												37			8	5			
	Mute Swan																				2	2	2	

	Pied Wagtail												31											
	Starling											220												
275	Starling												44											
279	Black-headed Gull																	193						
	Mallard																			2				
	Snipe																			2				
	Woodcock																			1				
280	Gadwall																7							
	Lapwing								32															
	Mallard																37	6				2		
281	Lapwing				220										39									
282	Black-headed Gull				4		219	102			58		3	43							2			
	Common Gull						3	2																
	Golden Plover							16																
	Herring Gull				4								1											
	Lapwing				3		41	53		5		27												
	Lesser Black-backed Gull				76																			
	partridge sp.			6																				
	Starling						230																	
283	Barn Owl											(1)												
	Lapwing								2											5				
	Linnet				40																			
	Mallard																			9				

285	Woodcock														4									
289	Greylag Goose						57																	
	Mallard																				2			
290	Black-headed Gull																						3	
	Fieldfare												19											
	Greylag Goose																						2	2
	Lapwing											9					1				4		2		1
	partridge sp.														2									
	Redwing												10											
	Woodcock					1						2												
291	Black-headed Gull							94			72						49							
	Buzzard																				1		1	
	Golden Plover									82														
	Herring Gull							37																
	Kestrel									(1)														
	Lapwing									129				43	3	25								
	Marsh Harrier	(1)																						
292	Black-headed Gull									7	38		33	46			6							
	Buzzard															1			1					
	Fieldfare															12								
	Great Black-backed Gull							5																
	Lapwing							257		29	48		12			1								

	Lesser Black-backed Gull							16																
	Mallard											4	6											
	Starling										197													
402	Black-headed Gull	12					245	14			49		22				1							
	Buzzard							4									1							
	Common Gull						61	1			4		49				32			141				
	Golden Plover															9								
	Great Black-backed Gull						6	1																
	Herring Gull						44										9							
	Lesser Black-backed Gull						20																	
	Woodcock											1			1									
413	Fieldfare																			41				
	Starling																			65				
416	Fieldfare									4														
	Lapwing									72														
436	Barn Owl											(1)												
	Black-headed Gull							49		12			26											
	Buzzard							1		1										2				
	Common Gull							84		39			41											
	Golden Plover															84								

	Great Black-backed Gull							1																
	Grey Heron											1												
	Herring Gull							60																
	Linnet																		2					
	Marsh Harrier																							(1)
	Skylark																		2		1			
	Wheatear																					1		
	Woodcock					1			12			12			1			12			3			
	Yellowhammer									26														
437	Black-headed Gull							22																
	Grey Heron							2																
	Herring Gull							2																
	Mallard																	2						
	Peregrine												(1)											
	Pied Wagtail																					1		
	Wheatear																					1		
	Woodcock											13						2			2			
	Yellowhammer										32													
496	Lapwing						4					19												
	Woodcock											3									1			
497	Black-headed Gull									9														
	Buzzard																2							
	Fieldfare															10								
	Lapwing														1									

	Mallard				(8)																1			
	Partidge sp.																2							
	Reed Bunting							2																
	Skylark															2								
	Woodcock													20			6			6				
	Yellowhammer							25					40		25									
498	Golden Plover									22														
	Starling						120																	
499	Mallard									(1)														
521	Buzzard		1		1		1						1											
	Grey Heron	1					1																	
	Greylag Goose																					2		
	Mallard																2						2	
	Sparrowhawk		(1)																					
563	Gadwall																			1				
	Greenfinch												8											
	Greylag Goose																			6	2			
	Kestrel																				1			
	Lapwing									8														
	Mallard																			2				
	Wigeon																42							
570	Black-headed Gull						86																	

A3.4: Bird species Recorded within the Wider Survey Area 2023/24. Numbers in brackets denote flying over.

		Sep	Sep	Sep	Oct	Oct	Oct	Nov	Nov	Nov	Dec	Dec	Dec	Jan	Jan	Jan	Feb	Feb	Feb	Mar	Mar	Mar	Apr	Apr
Field	**Species Name**	WWO	WWO	NOC	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	NOC	WWO	WWO	WWO
14	Mallard																					4		
36	Black-headed Gull												50											
	Common Gull												11											
	Fieldfare							48																
	Grey Heron						1																	
	Herring Gull												8											
	Lapwing											6												
	Starling							105																
	Woodcock																	2						
56	Black-headed Gull																							12
	Lapwing																						2	
	Snipe			1																				
58	Mute Swan																		2	2				
59	Black-headed Gull	2					77	22		72	31			63						1				3
	Buzzard						1				1													
	Common Gull						6	3			2		2	1		6								
	Golden Plover								12															
	Great Black-backed Gull	13					4	11																
	Grey Partridge													3										
	Herring Gull	6					11	4						1										
	Lapwing						48			8														

	Lesser Black-backed Gull	3					1																	
	Mallard						47														4			2
	Mute Swan																							2
	Patridge sp.			5, 6		8						10									2			
65	Buzzard																1							
	Common Gull							4																
	Marsh Harrier																							1
66	Black-headed Gull																		6				2	
	Green Sandpiper																		1					
	Woodcock																	5						
109	Buzzard												1											
112	Buzzard										1													
	Grey Heron								1															
	Woodcock								4															
121	Woodcock											6												
123	Buzzard	1									1													
	Fieldfare										41													
	Grey Heron															1								
124	Woodcock											19									12			
125	Marsh Harrier									1														
126	Buzzard		1																					
	Woodcock																	5						
127	Kestrel		1																					
128	Kestrel						1																	
	Little Egret						2																	
	Marsh Harrier	(1)																						
	Sparrowhawk							(1)																(1)
	Tawny Owl			(1)																				
131	Marsh Harrier				(1)																			
139	Skylark								1											2				

	Woodcock																	5						
140	Jack Snipe								2															
	Skylark								1															
	Woodcock														2									
149	Yellowhammer							30																
156	Snipe																	1						
160	Canada Goose												84											
	Greylag Goose												64											
	Pink-footed Goose												47 6											
163	Black-headed Gull							87																
	Common Gull							6																
164	Black-headed Gull						17							69										
	Lapwing																	8						
	Pink-footed Goose											2												
165	Black-headed Gull													20										
	Buzzard																			1				
	Mallard																			2				
166	Black-headed Gull												6											
	Buzzard							1																
177	Black-headed Gull															52 2								
	Lapwing															27								
181	Black-headed Gull																			47				
182	Black-headed Gull																			11		2		
	Green Sandpiper																					1		
	Mallard																					2		
	Mute Swan																						1	
184	Buzzard																						1	
185	Buzzard										1					1								
	Grey Heron						1																	
	Sparrowhawk																					1		

	Yellowhammer																46								
186	Buzzard																			1					
	Fieldfare															76									
	Red-legged Partridge							15								19									
	Redwing															5									
	Reed Bunting																			2					
	Yellowhammer																			6					
188	Linnet																80								
191	Teal															8									
193	Woodcock										1														
195	Marsh Harrier				(1)																				
196	Pink-footed Goose				480																				
207	Mallard																						1		
	Teal																						2		
209	Mallard																				5				
	Teal																					6			
223	Lapwing										11														
	Mallard																				2				
224	Buzzard							1																	
	Marsh Harrier				(1)																				
	partridge sp.								5		6														
	Skylark				38																				
	Starling									140															
225	Buzzard						1																		
227	Pink-footed Goose				56																				
228	Kestrel						1																		
	Linnet									80															
229	Greylag Goose											51													
	Patridge sp.								7																
	Pink-footed Goose											668													

	Skylark				17																			
230	Buzzard										1													
	Mallard	(6)																	2					
	Starling									195														
231	Black-headed Gull									19														
	Mallard																			2				
232	Mallard																					2		
	Sparrowhawk									(1)														
233	Buzzard															1								
	Woodcock																				1			
238	Kestrel															(1)								
	Woodcock																				2			
241	Woodcock																	7						
242	Black-headed Gull									36														
	Common Gull									4														
251	Lapwing										5													
252	Barn Owl																	(1)						
	Lapwing/ Golden plover								37															
	Woodcock																	10			1			
259	Black-headed Gull										125													
261	Little Owl																	1						
262	Black-headed Gull																					2		
	Mallard																						2	
263	Mute Swan														4		5							
265	Lapwing																	21						
	Mute Swan																		4	4				
277	Black-headed Gull										95													
	Kestrel														1		1							
	Mallard																						2	

	Patridge sp.								5			9												
	Starling										40													
286	Mallard																					2		
	Marsh Harrier																(1)							
287	Barn Owl					(1)																		
	Buzzard						1																	
	Mallard																3							
	Moorhen					(2)																		
288	Barn Owl			(1)																	1			
	Black-headed Gull						74	287			26		68	41										5
	Buzzard									1				1										
	Common Gull						1																	
	Golden Plover															1								
	Greylag Goose								36															
	Herring Gull						7						1											
	Kestrel																1							
	Lapwing								23					6		11	12	24	66	29	19	2		
	Lesser Black-backed Gull						5																	
	Little Egret							6			4		1											
	Mallard																	3						
	Woodcock								2						1									
306	Buzzard				1																			
308	Great Black-backed Gull						5																	
	Herring Gull						7																	
309	Black-headed Gull		1																					
	Great Black-backed Gull		1																					
	Herring Gull		5																					
	Patridge sp.																				2			
	Woodcock														1									

310	Black-headed Gull																						4	
	Woodcock								1															
312	Black-headed Gull																						2	
316	Black-headed Gull		26																					
	Great Black-backed Gull		6																					
	Herring Gull		1																					
317	Lapwing											12												
318	Buzzard									1														
	Common Gull																					2		
	Great Black-backed Gull		6																					
	Herring Gull		1																					
	Lapwing		32	54																				
	Mallard																	31						
319	Black-headed Gull																12			3				
	Buzzard																2		1					
	Skylark																			4				
	Woodcock					1																		
320	Lapwing								28															
322	Skylark																			2				
323	Black-headed Gull						118				22		6						11	1				9
	Common Gull						1				2		1						3					
	Crane																					(3)		
	Great Black-backed Gull						6																	
	Herring Gull						2																	
	Mallard						18																	1
	Partidge sp.											9												
	Skylark																			2				

325	Great Black-backed Gull							4															
	Lesser Black-backed Gull							2															
	Patridge sp.											7					2						
	Woodcock			1																			
338	Black-headed Gull												1						3				
	Kestrel										1		(1)										
340	Black-headed Gull										48												
	Common Gull										1												
343	Barn Owl											(1)											
345	Black-headed Gull												22										
355	Barn Owl														1								
	Black-headed Gull																			11		3	
	Greylag Goose																				22		
	Lapwing																6				16		
	Mallard												16				7	63	2	47			1
	Snipe																12						
358	Black-headed Gull		18																				
	Common Gull		1																				
	Herring Gull		30																				
	Lesser Black-backed Gull		25																				
359	Lapwing								11														
361	Black-headed Gull							59															28
	Common Gull							2															
	Fieldfare																			70			
	Herring Gull							8															
	Lesser Black-backed Gull							6															
	Starling																			210			

363	Mallard																							1
365	Woodcock																	2						
366	Black-headed Gull						87	8																
	Common Gull							3																
	Golden Plover						3																	
	Great Black-backed Gull						2	2																
	Herring Gull						12																	
367	Lapwing											10												
	Woodcock																	3						
368	Black-headed Gull						14																	
	Buzzard													1										
	Fieldfare															94								
	Kestrel										1													
	Snipe								1															
369	Lapwing								3															
	Snipe								1															
370	Black-headed Gull																						2	
	Great Black-backed Gull							1																
	Grey Partridge																4							
	Woodcock											3												
371	Barn Owl																	1						
	Black-headed Gull						24			14														
	Common Gull									1														
	Great Black-backed Gull						2																	
	Lapwing								6															
	Little Egret		2																					
	Mallard						9																	
	Mute Swan						6												2					
	Snipe														2									

372	Little Egret												1											
373	Black-headed Gull						9			10													17	
	Common Gull									1														
375	Barn Owl			1																				
376	Kestrel																1							
383	Little Egret									1														
	Mallard					6				28														
	Moorhen					2																		
	Teal									1														
384	Barn Owl														(1)									
	Buzzard				1																			
	Common Gull										4													
	Herring Gull										19													
	Jack Snipe																				1			
	Kestrel																					(1)		
	Mallard							18										6			2			
	Teal							2																
385	Lapwing														2									
	Mallard													8			36	2					1	
	Snipe																	3						
	Teal													1		2	9							
	Woodcock														5			2						
386	Fieldfare													8										
	Woodcock														4									
387	Mallard	49		5	6		57						30					3	17	5		4		2
	Moorhen			3																				
	Teal	3					4						18						1	3		6		1
388	Barn Owl											1												
389	Teal									5			4											
390	Black-headed Gull													1										
	Common Gull													4										
	Fieldfare							13																

	Herring Gull													25										
	Mallard													6		2	6	3				1	1	
	Snipe														14									
	Starling																320							
	Teal																2			2	1			
	Woodcock														1									
391	Chaffinch						12																	
	Fieldfare						120																	
	Mallard																				2			
	Starling						50																	
396	Mallard																	4						
397	Black-headed Gull							28																
	Mallard		31			4	4																	
	Yellowhammer												12											
398	Fieldfare													83										
	Mallard											5									3			1
	Mistle Thrush													2										
	Patridge sp.			8																				
	Redwing													16										
	Sparrowhawk							(1)																
	Woodcock			1														2						
400	Black-headed Gull							27			46		17						4					
	Common Gull																		7					
	Sparrowhawk												(1)											
401	Black-headed Gull							28			22		11						31	10	1			
	Common Gull							3											71					
	Mallard																	2						
	Woodcock																	2						
417	Buzzard									1														
	Fieldfare															2								

	Lapwing															19								
	Stonechat												1											
419	Little Egret										2													
421	Kestrel															1								
428	Buzzard												1											
	Common Gull																			1				
	Fieldfare															20								
	Herring Gull																			2				
	Woodcock											1												
429	Fieldfare															12								
	Kestrel																					2		
430	Buzzard	(1)																						
431	Buzzard																						1	
448	Pink-footed Goose															14								
	Tawny Owl																	1						
450	Greylag Goose																			2				
	Little Egret				1																			
	Patridge sp.														6									
	Snipe																	9						
451	Buzzard															1								
	Snipe															1					10			
460	Reed Bunting							4																
	Yellowhammer							17																
466	Barn Owl					1																		
	Meadow Pipit																			38				
	Skylark							1	1															
467	Green Sandpiper								1															
	Skylark								1									2		2				
	Woodcock																	1						
468	Jack Snipe																	1						
	Kestrel				1			1									1							
	Little Egret							1																

	Skylark								1															
469	Linnet																		9					
475	Starling																			260				
476	Linnet																					4		
	Reed Bunting							8																
	Skylark																			1				
479	Kestrel															(1)								
	Skylark							2																
480	Lapwing																				12			
	Woodcock										8													
483	Lapwing																			2				
	Snipe																	8						
	Woodcock													6										
484	Skylark															2								
485	Green Sandpiper			1																				
	Kestrel						1																	
	Little Owl																				2			
	Mallard										8													1
	Skylark							4									1							
	Snipe																	6						
	Teal													1										
	Woodcock										1							1						
486	Golden Plover									20														
	Lapwing																				2			
487	Jack Snipe																				2			
	Snipe																				15			
	Woodcock										1													
488	Barn Owl																	(1)						
	Grey Partridge																		2					
	Skylark						8						2		4			1						
	Woodcock										1										2			

489	Black-headed Gull							24																
	Common Gull							2																
	Pied Wagtail																	76						
490	Black-headed Gull						34			6				5										
	Common Gull						3																	
	Skylark						2																	
492	Black-headed Gull							27		13				20										
	Greylag Goose																				2			
	Mallard																				2			
494	Black-headed Gull									3				27										
502	Marsh Harrier									(1)														
504	Buzzard				1																			
	Skylark				6																			
506	Barn Owl								1															
507	Greylag Goose																						1	
508	Grey Heron									1														
	Kestrel				1																			
	Skylark				4																			
510	Kestrel							1																
512	Skylark							2																
514	Barn Owl											(1)												
	Buzzard																			1				
	Peregrine												1											
515	Caspian Gull	1																						
	Herring Gull	16																						
	Lesser Black-backed Gull	325																						
	Starling															200								
	Woodcock																	3			1			
	Yellow-legged Gull	6																						
516	Black-headed Gull							194																

	Buzzard												1											
	Common Gull							50																
	Herring Gull							9																
	Lapwing				30																			
	Lesser Black-backed Gull							6																
	Marsh Harrier	(1)																						
	Reed Bunting							24									3							
	Skylark							1																
	Starling							1000																
	Stonechat																1							
517	Woodcock														1									
519	Kestrel							1																
	Pink-footed Goose				1120																			
523	Buzzard																		2					
524	Buzzard																		2					
531	Kestrel																						(1)	
534	Black-headed Gull						264	235		80			194				102							
	Common Gull						12	2		19			8				9							
	Herring Gull						2			6			4											
	Kestrel															1								1
	Linnet																		17					
	Mallard						6					4	2					4			8		1	
	Starling						170												9					
	Woodcock																	1						
535	Black-headed Gull																39							
	Mallard																				3			
	Woodcock											1												

536	Common Gull									2															
545	Buzzard																					1			
	Greylag Goose																				7	3			
	Lapwing														2										
	Skylark				27		5																		
	Woodcock														1										
546	Barn Owl														1										
	Lapwing														4										
	Meadow Pipit															22									
	Patridge sp.														4										
	Woodcock																				1				
547	Black-headed Gull																						2		
548	Black-headed Gull																						1		
	Buzzard															1									
	Grey Partridge																					2			
	Jack Snipe																	1							
	Kestrel																			1					
	Linnet																			30					
	Mallard																								1
	Snipe														1			4							
	Woodcock																	10							
550	Marsh Harrier									(1)															
	Pink-footed Goose					1000																			
553	Pink-footed Goose				420																				
555	Marsh Harrier							(1)																	
566	Black-headed Gull																					2			
	Greylag Goose						184																		
	Marsh Harrier							(1)																	

ANNEX 4: VANTAGE POINT SURVEY DATA 2023/24

Table A4.1: Vantage Point Survey Data 2023/24

Date	VP	Flight/ Perched	Species	Number	Start time	Duration	HT 1 (0-10m)	HT 2 (10-50m)	HT 3 (50m+)
27/09/2023	1	F	Pink-footed goose	148	12:47	65	0	0	65
27/09/2023	1	F	Grey heron	1	13:20	12	12	0	0
27/09/2023	1	F	Marsh harrier	1	14:04	20	20	0	0
23/09/2023	2	F	Marsh harrier	1	15:24	120	120	0	0
23/09/2023	2	F	Pink-footed goose	46	15:47	75	0	0	75
23/09/2023	2	F	Marsh harrier	1	16:06	110	110	0	0
30/09/2023	3	F	Pink-footed goose	27	12:36	110	0	0	110
30/09/2023	3	F	Greylag goose	1	12:56	230	0	230	0
30/09/2023	3	F	Greylag goose	11	13:52	75	0	30	45
25/09/2023	4	F	Pink-footed goose	16	18:52	35	0	15	20
25/09/2023	4	F	Sparrowhawk	1	18:55	20	20	0	0
29/09/2023	5	F	Marsh harrier	1	13:56	110	15	95	0
29/09/2023	5	F	Pink-footed goose	220	14:17	150	30	75	45
29/09/2023	5	F	Pink-footed goose	58	14:30	95	20	30	45
29/09/2023	5	F	Marsh harrier	1	14:40	270	0	270	0
29/09/2023	5	F	Peregrine	1	15:01	170	45	125	0
29/09/2023	5	F	Pink-footed goose	6	15:42	82	22	15	45
29/09/2023	5	F	Pink-footed goose	31	16:04	60	15	15	30
29/09/2023	5	F	Pink-footed goose	7	16:11	50	20	30	0
29/09/2023	5	F	Peregrine	1	16:22	35	0	35	0
28/09/2023	6	F	Pink-footed goose	62	15:44	140	0	0	140
28/09/2023	6	F/P	Grey heron	1	16:37	15	15	0	0
28/09/2023	6	F/P	Grey heron	1	17:02	10	10	0	0
28/09/2023	6	F/P	Grey heron	1	18:01	35	35	0	0
28/09/2023	6	F/P	Grey heron	2	18:03	20	20	0	0
28/09/2023	6	F/P	Grey heron	1	18:08	25	25	0	0
16/10/2023	2	F	Pink-footed goose	37	14:16	120	0	120	0
16/10/2023	2	F	Lapwing	81	14:40	300	45	255	0
26/10/2023	3	F	Pink-footed goose	31	08:42	50	0	0	50
26/10/2023	3	F	Pink-footed goose	6	08:50	35	0	0	35
26/10/2023	3	F	Pink-footed goose	76	09:17	80	0	0	80
26/10/2023	3	F	Pink-footed goose	141	09:43	60	0	0	60
26/10/2023	3	F	Grey heron	1	10:50	25	25	0	0
15/10/2023	4	P	Lapwing	127	14:07	10,800	0	0	0
15/10/2023	4	F/P	Grey heron	1	14:21	20	20	0	0
30/10/2023	5	F	Marsh harrier	1	12:27	80	0	80	0
30/10/2023	5	F	Pink-footed goose	132	12:30	300	0	0	300
30/10/2023	5	F	Pink-footed goose	99	12:59	145	0	0	145
30/10/2023	5	F	Golden plover	9	13:45	75	0	0	75
30/10/2023	5	F	Snipe	1	13:49	135	0	0	135
30/10/2023	5	F	Great white egret	2	14:06	60	0	0	60
13/10/2023	6	P	Grey heron	1	15:30	10,800	0	0	0
13/10/2023	6	F	Pink-footed goose	18	15:36	30	0	0	39
13/10/2023	6	F	Pink-footed goose	14	16:04	150	30	30	90
13/10/2023	6	F	Pink-footed goose	21	16:05	150	30	60	60
13/10/2023	6	F	Grey heron	1	16:20	25	25	0	0

13/10/2023	6	F	Marsh harrier	1	16:30	65	65	0	0
14/11/2023	1	F	Kestrel	1	13:00	75	75	0	0
14/11/2023	1	F	Pink-footed goose	1	13:13	135	0	0	135
14/11/2023	1	F	Pink-footed goose	6	13:29	140	0	0	140
14/11/2023	1	F	Marsh harrier	1	14:48	150	150	0	0
14/11/2023	1	F	Marsh harrier	1	15:11	45	15	30	0
16/11/2023	6	F	Peregrine	1	13:54	40	0	40	0
16/11/2023	6	F	Pink-footed goose	88	14:20	150	0	0	150
16/11/2023	6	F	Pink-footed goose	43	14:22	150	0	0	150
16/11/2023	6	F	Pink-footed goose	3	14:31	60	0	60	0
16/11/2023	6	F	Pink-footed goose	140	14:49	120	0	0	120
16/11/2023	6	F	Pink-footed goose	106	14:57	150	0	0	150
16/11/2023	6	F	Marsh harrier	1	15:23	30	0	30	0
16/11/2023	6	F	Pink-footed goose	26	15:49	100	0	0	100
16/11/2023	6	F	Grey heron	2	16:04	75	75	0	0
05/11/2023	2	F/P	Greylag goose	75	09:04	65	65	0	0
05/11/2023	2	F	Pink-footed goose	3	10:20	85	0	85	0
05/11/2023	2	F	Pink-footed goose	47	10:21	40	0	40	0
05/11/2023	2	F	Marsh harrier	1	10:48	120	0	60	60
05/11/2023	2	F	Pink-footed goose	10	10:57	140	0	0	140
27/11/2023	3	F	Pink-footed goose	83	11:17	90	0	0	90
27/11/2023	4	F	Greylag goose	28	13:11	20	20	0	0
27/11/2023	4	P	Greylag goose	71	13:10	10,800	0	0	0
27/11/2023	4	P	Pink-footed goose	7	13:10	10,800	0	0	0
27/11/2023	4	F	Golden plover	73	13:49	105	45	60	0
27/11/2023	4	F	Pink-footed goose	109	13:51	90	0	0	90
27/11/2023	4	F	Pink-footed goose	9	14:03	60	30	30	0
27/11/2023	4	F	Pink-footed goose	8	14:10	45	0	45	0
27/11/2023	4	F	Golden plover	6	15:01	40	0	0	40
27/11/2023	4	F	Pink-footed goose	33	15:16	150	0	0	150
27/11/2023	4	F	Pink-footed goose	107	15:23	120	0	0	120
27/11/2023	4	F	Lapwing	60	15:29	120	0	0	60
27/11/2023	4	F	Pink-footed goose	11	15:37	135	0	0	135
27/11/2023	4	F	Barn owl	1	16:00	45	45	0	0
23/11/2023	5	F	Whooper swan	4	12:11	75	0	75	0
23/11/2023	5	F	Pink-footed goose	15	12:17	125	0	0	125
23/11/2023	5	F	Pink-footed goose	39	13:09	45	0	45	0
24/12/2023	1	F	Golden plover	23	09:57	45	0	45	0
24/12/2023	1	F	Peregrine	1	10:27	40	40	0	0
24/12/2023	1	F	Pink-footed goose	68	11:08	120	0	0	120
18/12/2023	4	F	Marsh harrier	1	10:31	135	135	0	0
18/12/2023	4	F/P	Pink-footed goose	2	12:01	105	45	60	0
18/12/2023	4	P	Lapwing	12	09:45	10,800	0	0	0
24/12/2023	5	F	Greylag goose	9	14:04	80	0	0	80
03/12/2023	6	F	Grey heron	1	13:56	45	45	0	0
03/12/2023	6	F	Pink-footed goose	90	14:50	120	0	120	0
03/12/2023	6	F	Marsh harrier	1	15:00	210	210	0	0
14/01/2024	1	F	Marsh harrier	1	14:17	180	0	0	180
14/01/2024	2	F	Lapwing	147	11:28	100	0	100	0
14/01/2024	2	F/P	Lapwing	156	11:50	60	60	0	0
14/01/2024	2	F	Little egret	1	12:14	20	20	0	0
14/01/2024	2	F	Marsh harrier	1	12:35	60	60	0	0

31/01/2024	3	F	Common crane	2	12:04	135	0	0	135
22/01/2024	4	F	Marsh harrier	1	09:26	110	0	110	0
22/01/2024	4	F	Pintail	1	09:51	50	0	50	0
22/01/2024	4	F	Marsh harrier	1	10:29	40	0	40	0
22/01/2024	4	F	Lapwing	130	11:06	60	30	30	0
26/02/2024	1	F	Marsh harrier	1	13:12	270	90	180	0
26/02/2024	1	F	Snipe	1	14:30	70	0	0	70
23/02/2024	3	F	Peregrine	1	10:45	180	0	180	0
23/02/2024	3	F	Marsh harrier	1	10:54	170	170	0	0
23/02/2024	3	F	Mute swan	6	11:22	75	75	0	0
23/02/2024	3	F	Marsh harrier	1	11:50	480	0	90	390
23/02/2024	3	F	Lapwing	2	12:23	100	0	100	0
11/02/2024	4	F	Lapwing	180	10:38	330	0	0	330
11/02/2024	4	F	Lapwing	310	11:26	480	0	0	480
11/02/2024	4	F	Pink-footed goose	1	11:36	75	0	75	0
11/02/2024	4	F	Pink-footed goose	1	11:59	90	0	0	90
11/02/2024	4	F	Lapwing	36	12:17	140	50	60	30
11/02/2024	4	F	Golden plover	30	12:25	75	30	30	15
11/02/2024	5	F	Marsh harrier	1	14:06	90	0	90	0
11/02/2024	5	F	Wigeon	6	15:29	45	0	0	45
26/03/2024	3	F	Mute swan	1	16:10	60	60	0	0
26/03/2024	3	F	Grey heron	1	16:54	95	0	0	95
26/03/2024	3	F	Pink-footed goose	12	17:31	160	0	0	160
22/03/2024	4	F	Oystercatcher	2	11:20	90	45	45	0
22/03/2024	4	F	Grey heron	1	11:26	135	0	135	0
12/03/2024	5	F	Gadwall	1	16:11	40	0	40	0
27/03/2024	6	F	Marsh harrier	1	11:52	90	90	0	0

ANNEX 5: FIGURES

MAP 1

MAP 2

MAP 3

MAP 4

MAP 5

MAP 6

THORNE CP

Humberhead Peatlands National Nature Reserve

Thorne Waste or Moors

Crowle Waste or Moors

Swinefleet and Reedness Waste or Moors

Crowle Common

CROWLE AND EALAND

Crowle

Thorne

Moorends

Hatfield Chase

Tween Bridge Moors

Dirtness Levels

Low Levels

Legend

Site

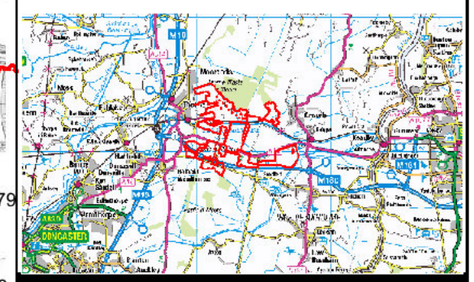
Survey area

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TWEEN BRIDGE

WINTER BIRD SURVEY OVERVIEW PLAN

avian ecology

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WA4 4PG
Tel: 0843 506 5116
www.avianecology.co.uk

0 1
kilometres

N
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Legend

Site

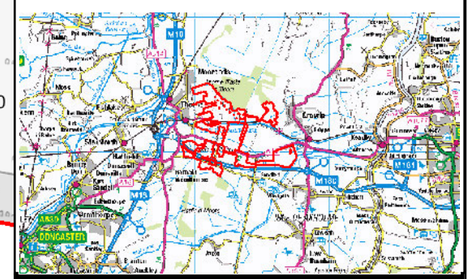
Survey area

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WINTER BIRD SURVEY PLAN (MAP 1)

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0 400

metres

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Legend

Site

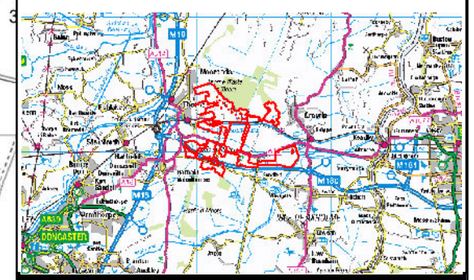
Survey area

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TWEEN BRIDGE

WINTER BIRD SURVEY PLAN (MAP 2)

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0 400

metres

N E S W

Legend

Site

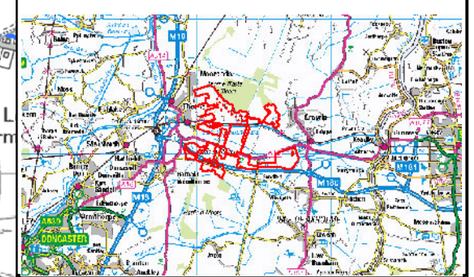
Survey area

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TWEEN BRIDGE

WINTER BIRD SURVEY PLAN (MAP 3)

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0 400
metres

N W E S

Legend

Site

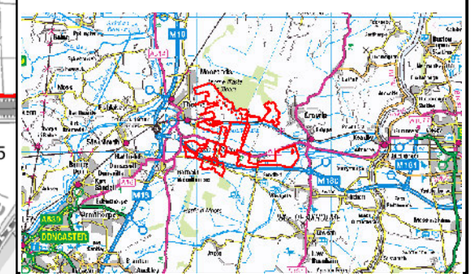
Survey area

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TWEEN BRIDGE

WINTER BIRD SURVEY PLAN (MAP 4)

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0 400
metres

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S

Legend

Site

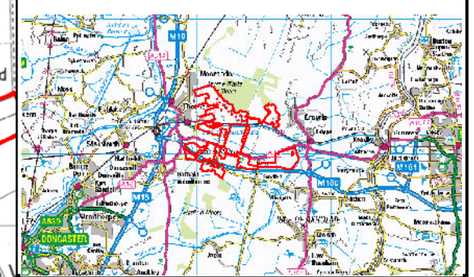
Survey area

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TWEEN BRIDGE

WINTER BIRD SURVEY PLAN (MAP 5)

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0 400

metres

N W E S

Legend

Site

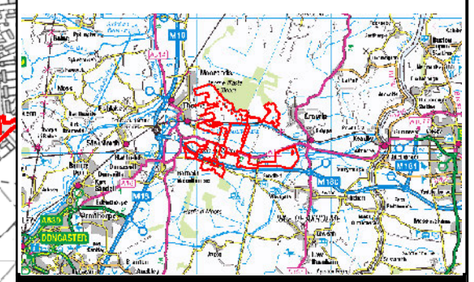
Survey area

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TWEEN BRIDGE

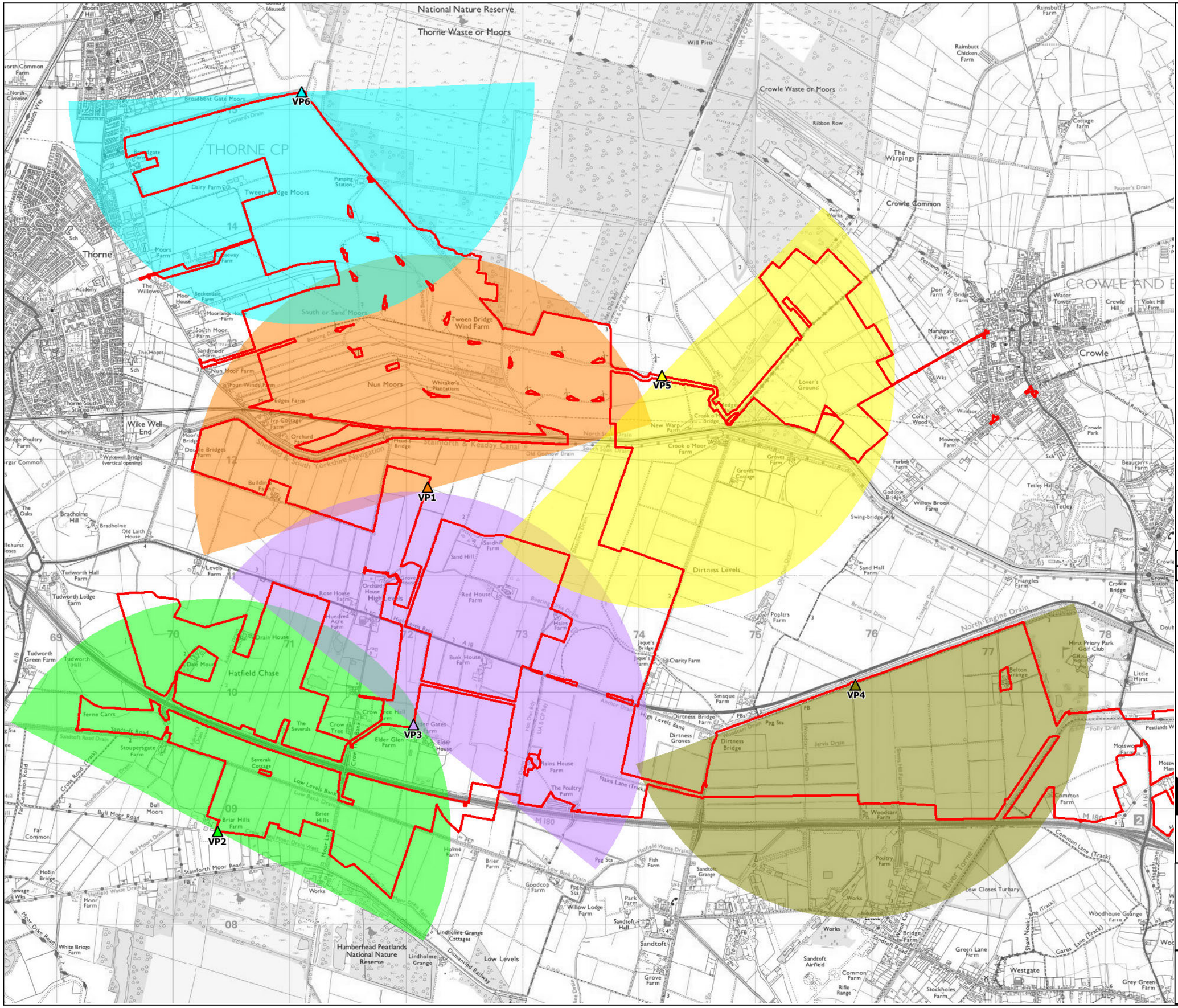
WINTER BIRD SURVEY PLAN (MAP 6)

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0 400
metres

N W E S



Legend

Site

Vantage Point (VP)

- VP1 - SE7218011755
- VP2 - SE7037708799
- VP3 - SE7205909720
- VP4 - SE7585810057
- VP5 - SE7419512713
- VP6 - SE7109915154

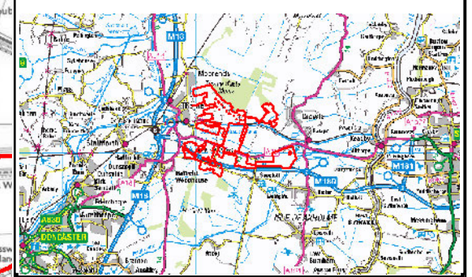
- Viewshed 1
- Viewshed 2
- Viewshed 3
- Viewshed 4
- Viewshed 5
- Viewshed 6

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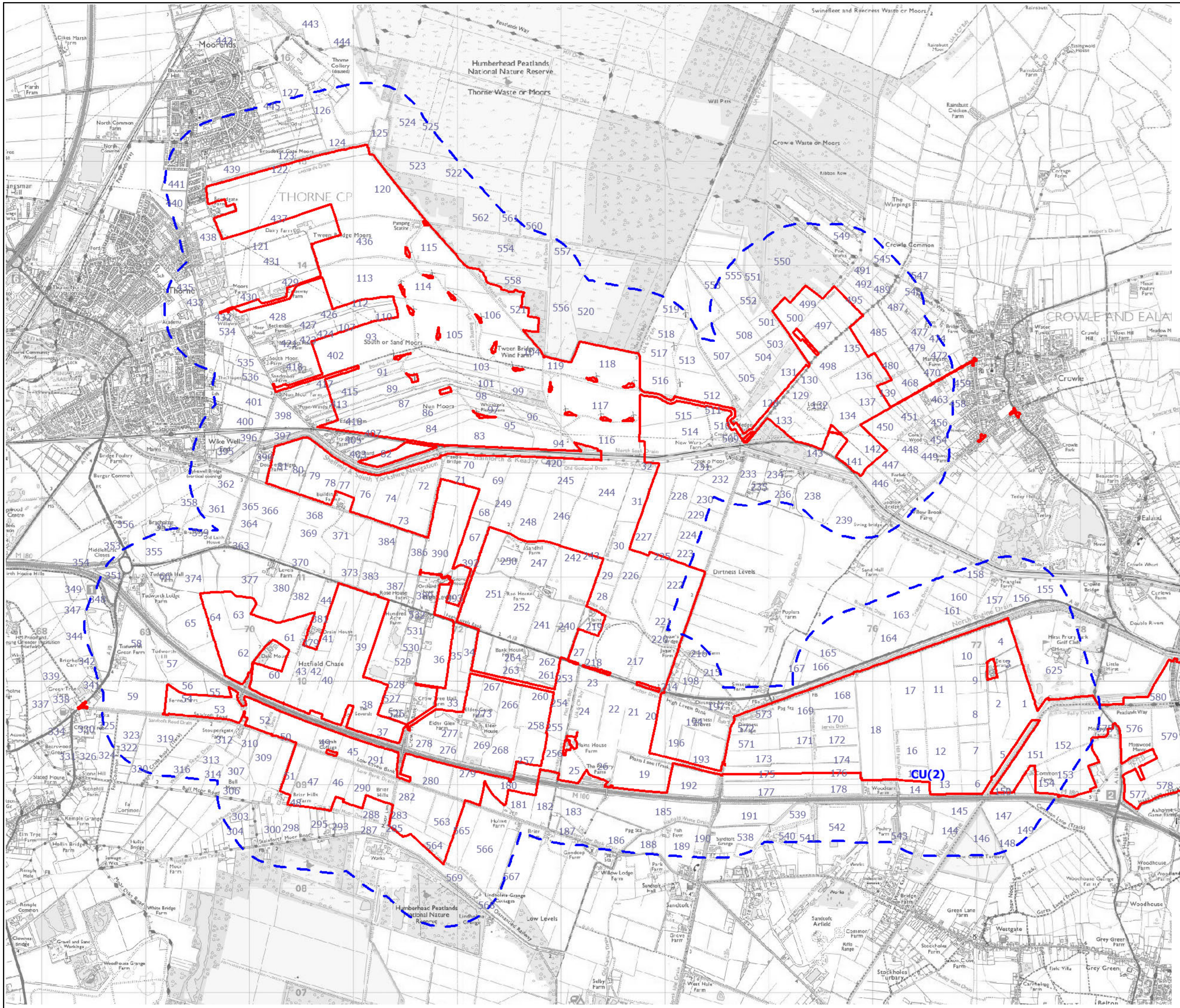
VANTAGE POINT LOCATION PLAN

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0 1 kilometres

N W E S



Legend

Site

Survey Area

Target Species

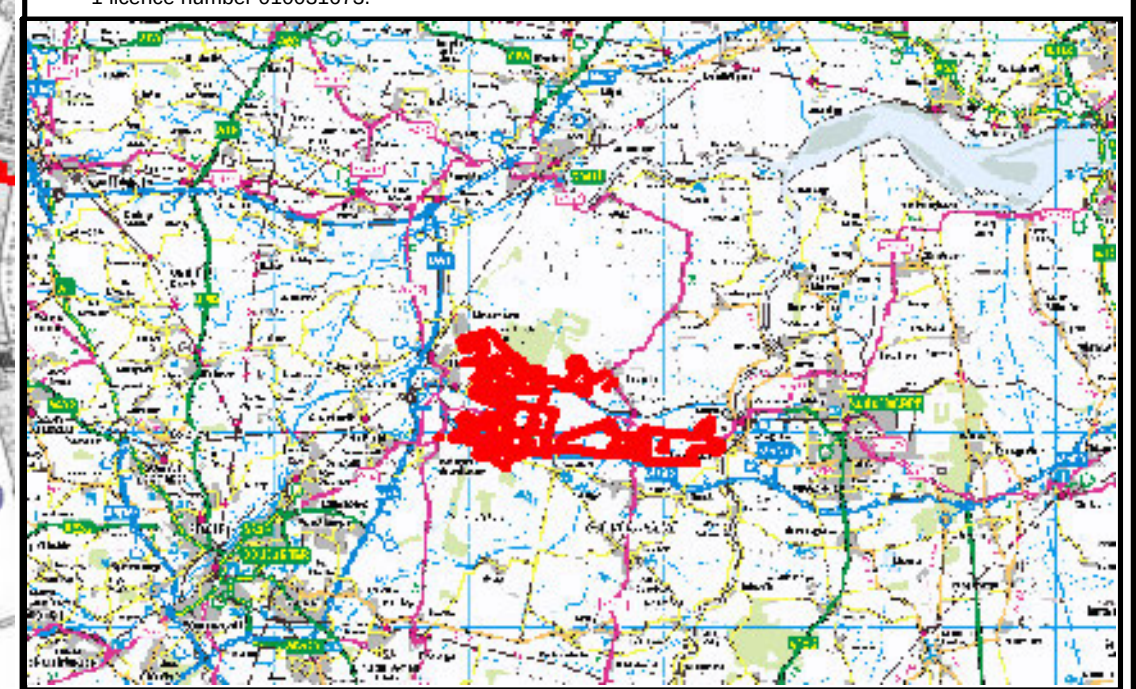
Curlew (CU)

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TWEEN BRIDGES NSIP

WINTERING BIRD SURVEY RESULTS - 2022 TO 2023 (CURLEW)

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0 1
kilometres

N W E S

Legend

Site

Survey Area

Target Species

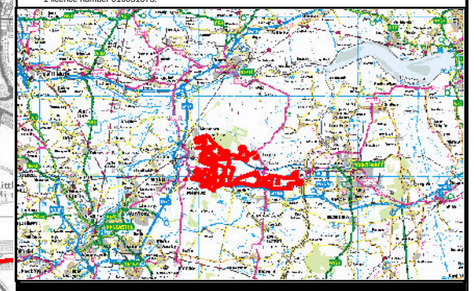
Golden plover (GP)

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WINTERING BIRD SURVEY RESULTS - YEAR 1 (GOLDEN PLOVER)

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0 1 kilometres

N W E S

Legend

Site

Survey Area

Target Species

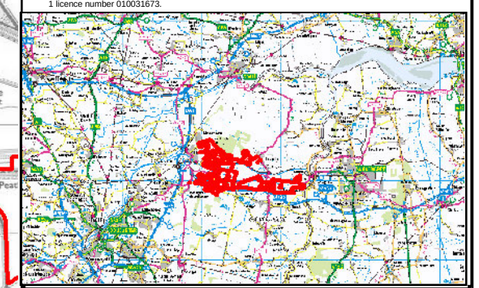
Green Sandpiper (GE)

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WINTERING BIRD SURVEY RESULTS - 2022 TO 2023 (GREEN SANDPIPER)

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kilometres

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Legend

Site

Survey Area

Target Species

Grey plover (GV)

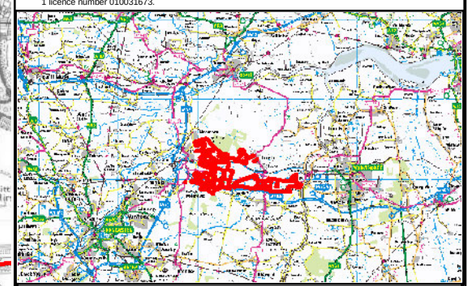
GV (17)

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TWEEN BRIDGES NSIP

WINTERING BIRD SURVEY RESULTS - YEAR 1 (GREY PLOVER)

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WA4 4PG
Tel: 0843 506 5116
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0 1

kilometres

N W E S

Legend

Site

Survey Area

Target Species

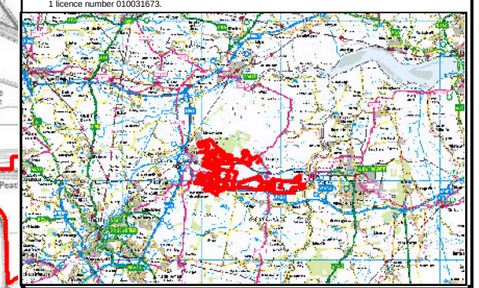
Greylag goose (GJ)

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TWEEN BRIDGES NSIP

WINTERING BIRD SURVEY RESULTS - 2022 TO 2023 (GREYLAG GOOSE)

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WA4 4PG
Tel: 0843 506 5116
www.avianecology.co.uk

0 1
kilometres

N W E S

Legend

Site

Survey Area

Target Species

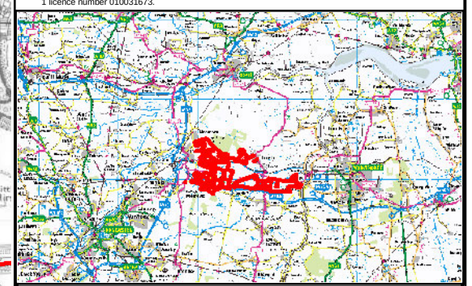
Hen harrier (HH)

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TWEEN BRIDGES NSIP

WINTERING BIRD SURVEY RESULTS - YEAR 1 (HEN HARRIER)

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WA4 4PG
Tel: 0843 506 5116
www.avianecology.co.uk

0 1
kilometres

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Legend

Site

Survey Area

Target Species

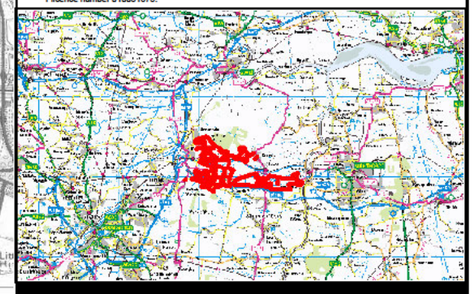
Lapwing (L.)

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WINTERING BIRD SURVEY RESULTS - YEAR 1 (LAPWING)

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WA4 4PG
Tel: 0843 506 5116
www.avianecology.co.uk

0 1

kilometres

N W E S

Legend

Site

Survey Area

Target Species

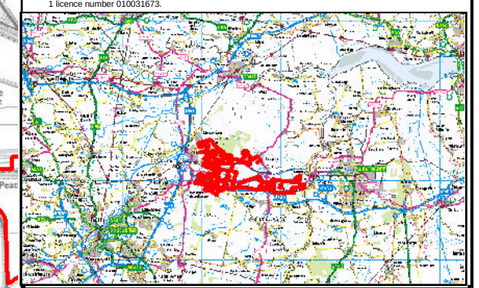
Little egret (ET)

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WINTERING BIRD SURVEY RESULTS - 2022 TO 2023 (LITTLE EGRET)

avian ecology

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WA4 4PG
Tel: 0843 506 5116
www.avianecology.co.uk

0 1 kilometres

N W E S

Legend

Site

Survey Area

Target Species

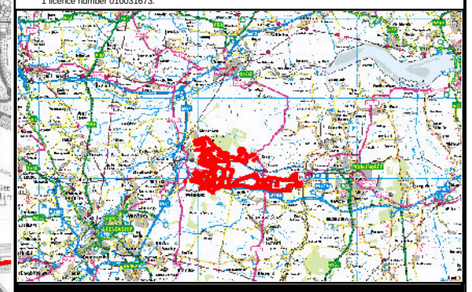
Marsh harrier (MR)

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00	10/07/2025		ZH	HD

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TWEEN BRIDGES NSIP

WINTERING BIRD SURVEY RESULTS - YEAR 1 (MARSH HARRIER)

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0 1
kilometres

N
W E
S

Legend

Site

Survey Area

Target Species

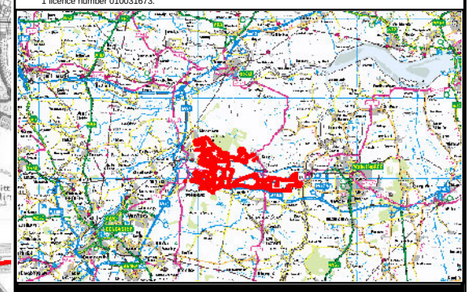
Pink-footed goose (PG)

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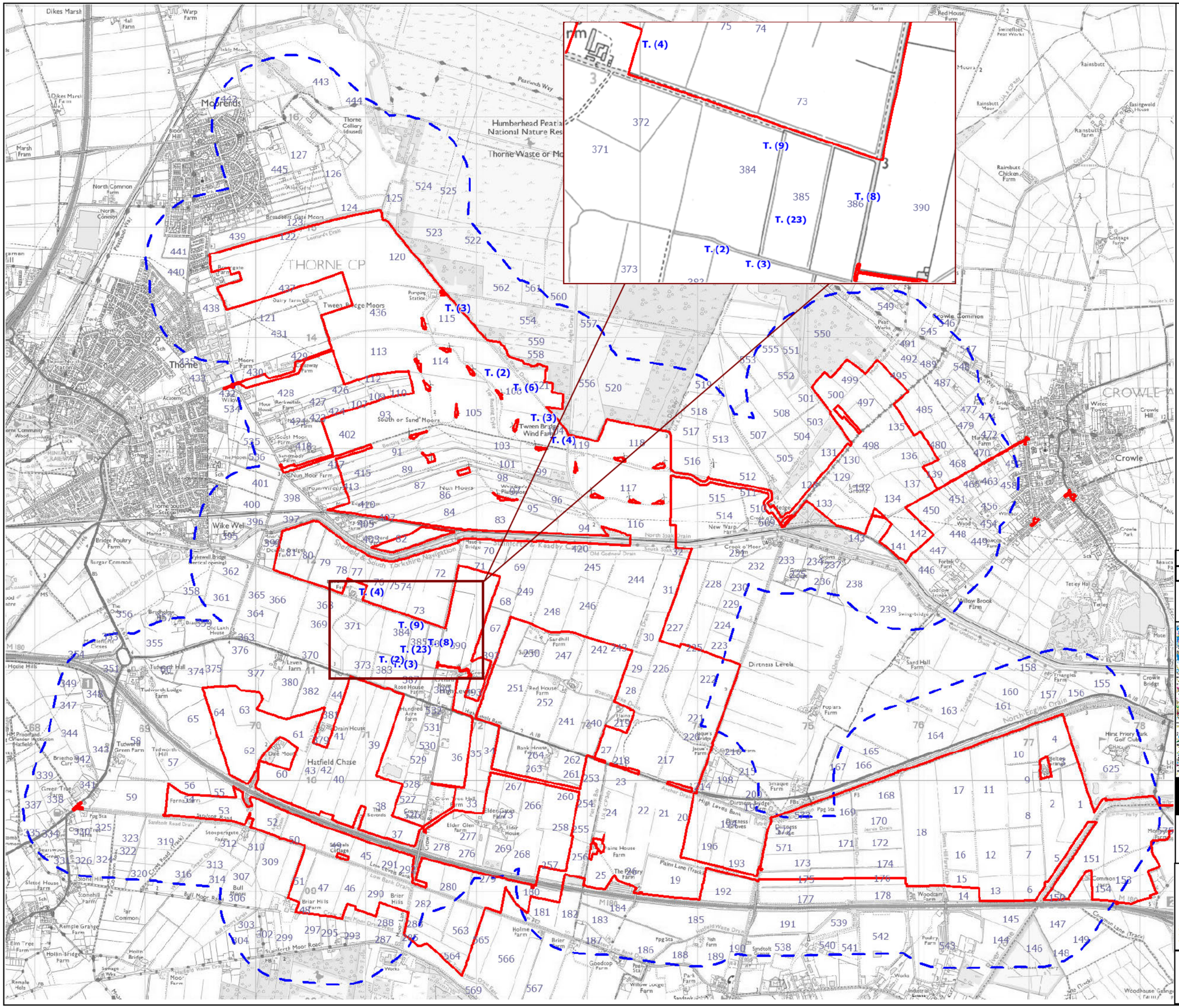
WINTERING BIRD SURVEY RESULTS - YEAR 1 (PINK-FOOTED GOOSE)

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0 1
kilometres

N W E S



Legend

Site

Survey Area

Target Species

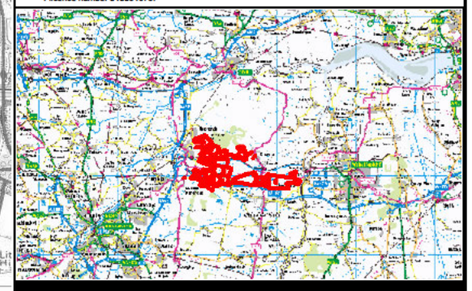
Teal (T.)

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WINTERING BIRD SURVEY RESULTS - YEAR 1 (TEAL)

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0 1

kilometres

N W E S

Legend

Site

Survey Area

Target Species

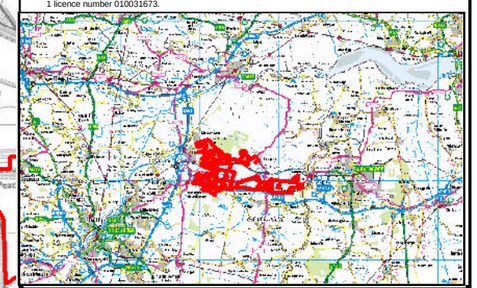
Curlew (CU)

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WINTERING BIRD SURVEY RESULTS - 2023 TO 2024 (CURLEW)

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WA4 4PG
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0 1

kilometres

N W E S

Legend

Site

Survey Area

Target Species

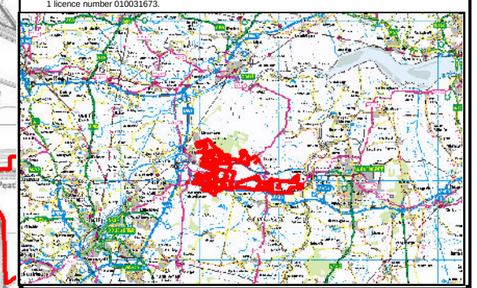
Dunlin (DN)

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WINTERING BIRD SURVEY RESULTS - 2023 TO 2024 (DUNLIN)

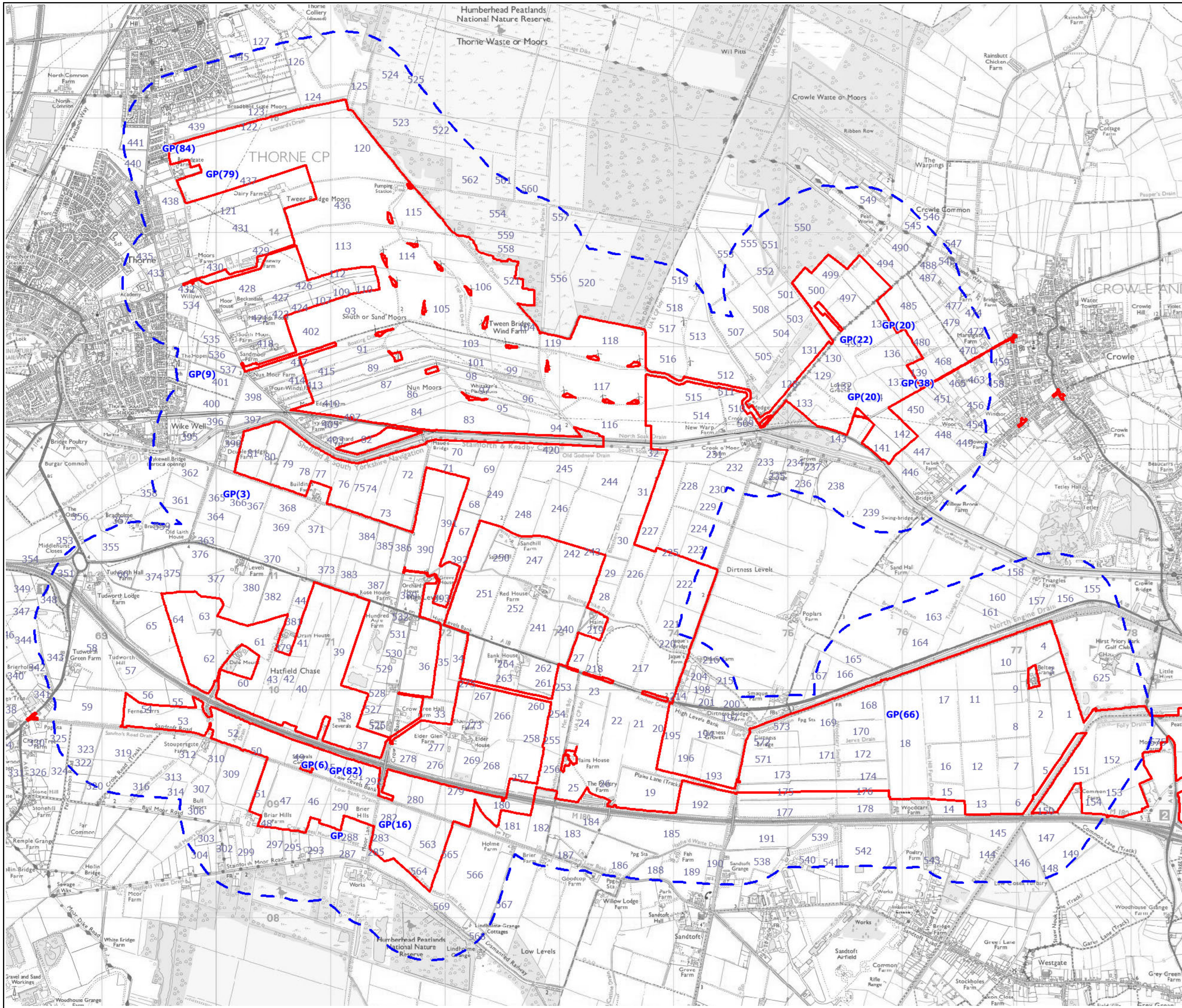
avian ecology

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WA4 4PG
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0 1

kilometres

N W E S



Legend

Site

600m Site Buffer

Target Species

Golden plover (GP)

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WINTERING BIRD SURVEY RESULTS - 2023 TO 2024 (GOLDEN PLOVER)

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WA4 4PG
Tel: 0843 506 5116
www.avianecology.co.uk

0 1

kilometres

Legend

Site

Survey Area

Target Species

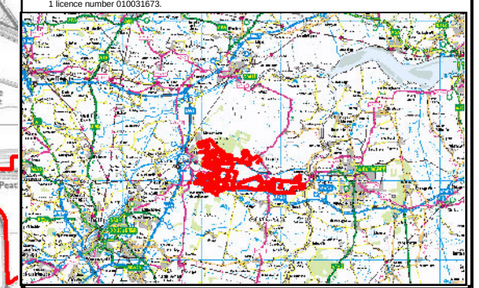
Green sandpiper (GE)

Rev	Date	Description	De	App
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WINTERING BIRD SURVEY RESULTS - 2023 TO 2024 (GREEN SANDPIPER)

avian ecology

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WA4 4PG
Tel: 0843 506 5116
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0 1
kilometres

N W E S

Legend

Site

Survey Area

Target Species

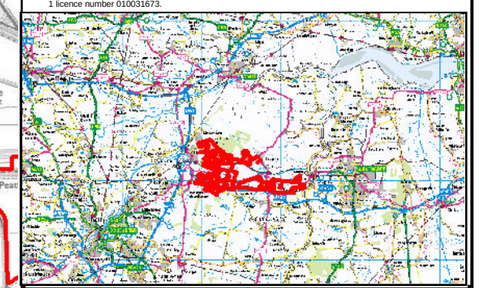
Greylag goose (GJ)

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TWEEN BRIDGES NSIP

WINTERING BIRD SURVEY RESULTS - 2023 TO 2024 (GREYLAG GOOSE)

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WA4 4PG
Tel: 0843 506 5116
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0 1
kilometres

N W E S

Legend

Site

Survey Area

Target Species

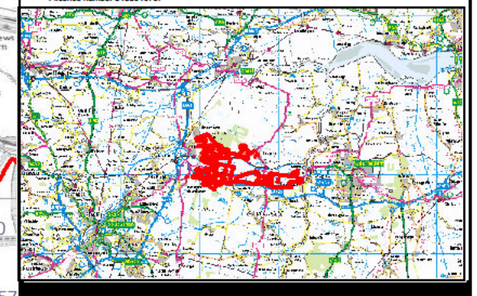
Lapwing (L.)

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WINTERING BIRD SURVEY RESULTS - 2023 TO 2024 (LAPWING)

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0 0.45 kilometres

N W E S

Legend

Site

Survey Area

Target Species

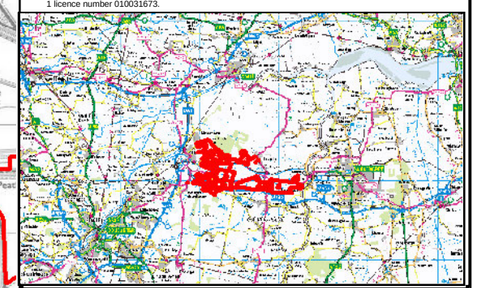
Little egret (ET)

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WINTERING BIRD SURVEY RESULTS - 2023 TO 2024 (LITTLE EGRET)

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0 1
kilometres

N W E S