

APPENDIX 9.5
OVERWINTERING BIRD SURVEY REPORT

APPENDIX 9.5
(WINTERING BIRDS SURVEY REPORT)
TO
CHAPTER 9 OF THE ENVIRONMENTAL STATEMENT

ALLESTON SOLAR FARM, PEMBROKESHIRE

carried out by



commissioned by

ALLESTON CLEAN ENERGY LIMITED

SEPTEMBER 2024



WINTERING BIRDS SURVEY REPORT

ALLESTON SOLAR FARM, PEMBROKESHIRE

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The information, data and advice which has been prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report and its contents remain the property of Clarkson and Woods Ltd. until payment has been made in full.



1 INTRODUCTION

- 1.1.1 Clarkson and Woods Ltd. was commissioned by the Applicant to carry out wintering bird surveys of fields at the land at Alleston Farm, Lower Lamphey Road, Lamphey, Pembrokeshire, hereafter referred to as 'the Site'.
- 1.1.2 The Development comprises the installation of approximately a 30MW ground mounted photovoltaic solar farm together with associated equipment, infrastructure and ancillary works.
- 1.1.3 A series of wintering bird surveys were carried out by Clarkson and Woods Ltd between November 2022 and January 2024. Surveys followed survey methodology aligned with the British Trust for Ornithology (BTO) Common Bird Census.
- 1.1.4 Unless the client indicates to the contrary, information on the presence of species collected during the surveys will be passed to the county biological records centre to augment their records for the area. This is in line with the CIEEM code of professional conduct¹.

1.2 Survey and Report Objectives

- 1.2.1 Given the proposed changes to land use, wintering bird surveys were recommended to ascertain a baseline of the wintering bird assemblage across a Survey Area chosen to encompass all long-term development zones within the Development. This report details the methods and results of the surveys together with an evaluation of the Site for the various species recorded. It also provides a brief overview of the potential impacts that could result from the proposals, so as to inform the layout of the Development. This information will then be used within the eventual Alleston Solar Farm Project Environmental Statement to identify and characterise the impacts on wintering birds considered likely to result from the Development in the light of avoidance, mitigation and enhancement measures adopted by the proposals.

1.3 Description of the Survey Area

- 1.3.1 The Site is located on land at Alleston Farm, Pembrokeshire and is bound to the north by Lower Lamphey Road and agricultural fields, and to the east by further fields. Watery Lane forms the western and south-western boundaries of the Site (see **Figure 1** overleaf). The southern boundary follows an existing area of woodland in a south-easterly direction. In addition, there are a small number of residential properties located adjacent to the north and west of the Site boundary.
- 1.3.2 The residential dwellings of Pembroke are 190m northwest of the Site whilst the village of Lamphey is located in 370m to the north-eastern corner of the Site.
- 1.3.3 Land use in the surrounding area of the Site is predominantly agricultural, with scattered farmhouses as well as residential developments associated with Pembroke and Lamphey. The West Wales Line railway line, which connects Pembroke and Lamphey, runs approximately 40m north of the Site. Pembroke train station is located 680m north-east of the Site and Lamphey train station is located 415m east of the Site.
- 1.3.4 The Site encompasses approximately 96 hectares (ha) and comprises of several agricultural fields separated by rows of mature hedgerows. This is with the exception of Alleston Farmhouse, a Grade II Listed building, and the associated buildings which are located within the centre of the Site, accessed from the north along Lower Lamphey Road and West along Watery Lane, both along unnamed tracks. Within the eastern region of the Site a collection of fields is currently used for equestrian activities, which will continue, whilst an area of mature trees and vegetation are located within the south-western region of the Site and run into the central region of the Site, this collection of trees are known as Alleston Wood.

1.4 Quality Assurance

- 1.4.1 All ecologists employed directly by Clarkson and Woods are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the Institute's Code of Professional Conduct² when undertaking ecological work.

¹ Code of Professional Conduct. CIEEM, January 2019.

² CIEEM (February 2022). *Code of Professional Conduct*. <https://cieem.net/resource/code-of-professional-conduct/>

1.4.2 This report has been prepared in accordance with the relevant British Standard: *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*³. It has been prepared by an experienced ecologist who is a member of CIEEM. The report has also been subject to a two-stage quality assurance review by appropriately experienced ecologists who are full members of CIEEM.



Figure 1: Extent of the Survey Area

³ The British Standards Institution (2013). *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*. BSI Standards Ltd.



2 METHODOLOGY

2.1 Desk Study

Designated Site

- 2.1.1 Statutory designated sites focussed on wintering birds within the proximity of the Site (10km for International Sites, 5km for National Sites and 2km for Local Sites) were identified using the Defra web-based MAGIC database (<https://magic.defra.gov.uk/>) and National Resources Wales GIS database.
- 2.1.2 Non-statutory designated sites focussed on wintering birds within 2km of the application Site were identified from the Aderyn Record Centre data search.

Local Conservation Strategies

- 2.1.3 Relevant Local Authority plans and strategies with a biodiversity focus were consulted for aspects relevant to birds, including priority species listed under Section 7 of the Natural Environment and Environment (Wales) Act (2016).

Landscape-scale Conservation Strategies, Initiatives and Records

- 2.1.4 The Birds of Conservation Concern (BoCC) Red List⁴ was also consulted. This provides a categorisation of bird species according to their conservation status, based on the assessment criteria. It considers both temporal and spatial trends across their distribution ranges and incorporates the use of a simple traffic light system, with red, amber or green categories used to illustrate risk levels. Red-listed species of high conservation concern are most at risk, reducing to amber and then green.
- 2.1.5 The Aderyn Record Centre was consulted for records of bird species within 2km of Alleston Solar Farm.

General

- 2.1.6 Where relevant, Ordnance Survey maps (1:25,000) and online aerial images of the Site were examined online to assess habitat connectivity (e.g. <https://www.google.com/maps>).
- 2.1.7 The data presented within this report constitutes a summary of the data obtained from the local records centre. Should additional detail be required on any of the records described within this report Clarkson and Woods Ltd. should be contacted.

2.2 Field Surveys

- 2.2.1 The Site was surveyed on four separate occasions between November and February, as detailed in **Table 1** below.
- 2.2.2 All surveys were only carried out in favourable weather conditions, avoiding strong winds (excess of Beaufort 4/moderate breeze), rain more than a light drizzle, or where visibility was compromised by low cloud/foggy conditions. Detailed weather conditions of each survey have also been included within **Table 1**.
- 2.2.3 Surveys typically commenced in the morning, approximately 1hr after sunrise, and were completed within 4 hours. Strict limits on the survey timings were not imposed due to the behaviour of wintering birds being less constrained by time of day, as opposed to breeding birds.
- 2.2.4 During each visit, surveys covered the entirety of the red line boundary shown in Figure 1 above. Given the size of the Site, it was subdivided into separate survey sections (north and south parcels) to enable coverage by multiple surveyors in a single visit. On one occasion (survey visit #4), the survey was undertaken by a single surveyor across two consecutive mornings. These separate areas were indicated on a key plan to ensure no doubling up of survey effort between surveyors.
- 2.2.5 The surveys broadly followed British Trust for Ornithology (BTO) Common Birds Census guidelines and the methodology recommended by the Bird Survey Guidelines committee (<http://birdsurveyguidelines.org>), where experienced bird surveyors systematically walked through the survey area, ensuring that all locations

⁴ Birds of Conservation Concern 5 (Stanbury et. Al, 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: 723-747.



were visited to within 50m. Surveyors would periodically stop to scan habitats of particular interest, such as trees, field margins or ditches, as well as opportunistically throughout each field. In some instances, the observation distance was increased above 50m (e.g., within large fields >20 hectares), but not above 100m. This allowed for the increased distances at which ground nesting birds, such as skylark, are likely to be disturbed and recorded.

2.2.6 The location and behaviour of all birds and flocks of birds seen or heard was noted on A3 Ordnance Survey maps at 1:10,000 resolution. Standard BTO Common Birds Census symbology and species codes were used to create a survey map for each individual visit. All surveyors were equipped with binoculars to aid identification.

Personnel

2.2.7 The following surveyors conducted wintering bird surveys across the survey period. All surveyors are highly experienced bird surveyors able to identify all British species by sight and sound. All surveyors were assessed by Clarkson & Woods as experienced ornithologists and competent to complete the survey.

- Anna Sutcliffe MCIEEM
- Steve Sutcliffe
- Harry Fox BSc MCIEEM
- Joel Wright MSc MCIEEM
- Chris Orsman

2.2.8 **Table 1** provides detail of the survey dates, weather conditions and surveyor(s).

Table 1: Survey Dates, Weather Conditions & Surveyor Details

Survey Visit No.	Date	Weather Conditions (Cloud 0-8, Wind 1-12, Precipitation, Temperature °C)	Surveyors (Initials)
1	24/11/2023	Cloud 3, Wind 3, Dry, 6-8°C	AS, SS
2	04/01/2024	Cloud 7, Wind 1, Dry, 6-10°C	AS / SS
3	14/02/2024	Cloud 8, Wind 2, Dry, 11°C	HF, JW
4	26-27/02/2024	Cloud 1, Wind 5, Dry, 7-10°C	CO

2.3 Data Interpretation

2.3.1 Data were digitised using QGIS software, to allow interpretation of the distribution of different species and to create distribution maps for species of interest.

2.3.2 Data were collated for interpretation in tables within Microsoft Excel, allowing the number of individuals of each species to be enumerated for each survey visit, and for different habitats within the Site.

2.3.3 Species not of conservation concern/ non-notable species were not enumerated as they would not be included as Important Ecological Features in the impact assessment. A list of these species is provided.

2.3.4 To enable assessment of impacts, each species was categorised based on its primary ecology requirements and habitat use recorded on Site during the wintering season, as follows:

- Open habitats, including use of open, arable, fallow or grassland/pasture fields;
- Boundary habitats, including hedgerow/scrub, arable margins etc. *This includes species that rely on such boundary habitats in combination with adjacent farmland (e.g. yellowhammers utilising field margins and the open arable fields);*
- Waterbodies, such as ponds, rivers, and ditches; and
- Woodlands and mature trees.



- 2.3.5 It is acknowledged that many species are associated with more than one category of habitat. Such species were allocated to the habitat considered to have the greatest risk of being adversely impacted, to ensure appropriate ecological assessment.

2.4 Ecological Assessment

- 2.4.1 To enable assessment of the Development within the associated Environmental Statement on any given wintering bird species, and to measure scale of impacts resulting from loss or change to their habitats, the ecological importance of each species was defined. This was achieved through consideration of the species' national and local conservation status; conservation value in a geographical context; results of the completed surveys (local scale context); and application of professional judgment (which may increase or decrease the ecological importance, based on local knowledge).
- 2.4.2 The national conservation status of any given species was established by their categorisation on the Birds of Conservation Concern (BoCC) Red List and whether they are a Species of Principal Importance under the NERC Act. Their local conservation status was determined through their listing on the Local BAP, local bird group data, and consideration of local records.
- 2.4.3 The ecological importance of each species was determined by applying the criteria provided within the CIEEM guidelines for Ecological Impact Assessment (2018)⁵. This enabled the ecological importance of each species to be established and considered within a geographical context. This ensures the appropriate assessment of potential cumulative impacts of the proposals at a landscape scale.
- 2.4.4 The results of the wintering bird surveys provided local contextual information which, combined with professional judgement and local knowledge, enabled reassessment of each species' importance where appropriate.

2.5 Limitations

Field Surveys

- 2.5.1 It is possible that the presence of certain species has been missed due to their being present in low numbers, or due their cryptic nature. However, the survey methodology ensures that all land is visited to within 50m and so the likelihood of under-recording species is reduced.
- 2.5.2 The surveys offer only 'snapshots' of wintering birds' usage of the Site, and it is possible that over the course of the winter period the abundance and species of birds using the Site varies slightly from that recorded by the surveys. However, four separate visits have been conducted, spread across the full winter period, which allows for a representative baseline to be established.

⁵ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal*, Sept 2018. Chartered Institute of Ecology and Environmental Management. www.cieem.net



3 RESULTS

3.1 Desk Study Information

Designated Sites

Castlemartin Coast Special Protection Area (SPA)

- 3.1.1 Located approximately 4.5km south-west of the Site at its closest point, this site is designated as a linear strip of outstanding maritime habitats with a significant breeding population of chough *Pyrrhocorax pyrrhocorax*.
- 3.1.2 The following sites designed for their nature conservation importance were revealed by the desk study. However, since none of the sites are designed for their bird interest, they will not be considered further within this report.

Pembrokeshire Marine Special Area of Conservation (SAC)

- 3.1.3 This site is situated approximately 1.7km south-east of the Site. It is designated for its coastal and marine habitats and non-avian species associated with marine environments.

Bristol Channel Approaches SAC

- 3.1.4 This site is situated approximately 1.9km south-east of the Site. It is designated for population of harbour porpoise *Phocoena phocoena*.

Pembrokeshire Bat Sites and Bosherton Lake SAC

- 3.1.5 This site is situated approximately 3.9km southwest of the Site and is designated for its freshwater habitats and the presence of otters and important bat roosts. Furthermore, the site covers multiple associated Sites of Special Scientific Interest (SSSIs) that fall within 5km of Alleston Farm, including:
- Stackpole SSSI; 3.9km southwest
 - Stackpole Courtyard Flats and Walled Garden SSSI; 3.9km southwest
 - Carew Castle SSSI; 4.8km northeast
 - Orielton Stable Block and Cellars SSSI; 4.3km west
 - Park House Outbuildings SSSI; 3.9km southwest

Pembroke Mill Ponds LNR and Wildlife Trust Reserve (WTR)

- 3.1.6 This site is situated approximately 1.0km north-west of the Site. It is designated as priority ponds with developing reed bed and carr, and adjoining woodland, formerly part of a tidal creek.

Freshwater East Local Nature Reserve (LNR)

- 3.1.7 This site is situated approximately 1.2km south of the Site. It is designated for habitats including dune grassland, woodland and reed marsh, which support a good diversity of botanical species.

Freshwater East Cliffs to Shrinkle Haven SSSI

- 3.1.8 This site is situated approximately 1.7km south-east of the Site. It is designated for geological features and coastal cliff habitats and species that it supports.

Stackpole Quay to Trewent Point SSSI

- 3.1.9 This site is situated approximately 1.9km south-east of the Site. It is designated for geological features and coastal cliff habitats and species that it supports.

Local Policy

- 3.1.10 Farmland birds are listed on the Pembrokeshire Local Biodiversity Action Plan (LBAP). This covers the following species which overwinter in the UK and are potentially relevant to the Site: barn owl *Tyto alba*, kingfisher



Alcedo atthis, short-eared owl *Asio flammeus*, peregrine falcon *Falco peregrinus*, green woodpecker *Picus viridus*, *Larus fuscus* lesser black-backed gull, Cetti's warbler *Cettia cetti*, and water rail *Rallus aquaticus*.

Local Records

- 3.1.11 Various species were recorded by the data search within 2km of the Development, including passerines, raptors, waders and wildfowl. All records pertained to locations >500m outside the red line boundary (or undetermined). **Table 2** below includes bird species of conservation importance which overwinter in the UK and were recorded by the data search.
- 3.1.12 Those species listed under Section 7 of the Environment (Wales) Act 2016 are highlighted in **bold**, those protected from disturbance when nesting under Schedule 1 of the Wildlife & Countryside Act (WCA) are underlined, and those recognised as Red or Amber listed species of conservation concern by the British Trust for Ornithology are also highlighted by colour.

Table 2: Bird Species Records Returned within 2km of the Site

Species	No. of Records	Distance of Nearest Record	Year of Most Recent Record
Barn owl <i>Tyto alba</i>	<u>5</u>	<u>0.4km</u>	<u>2009</u>
Black-headed gull <i>Chroicocephalus ridibundus</i>	8	0.5km	2021
<u>Black Redstart <i>Phoenicurus ochruros</i></u>	<u>1</u>	<u>1.5km</u>	<u>2019</u>
Bullfinch <i>Pyrrhula pyrrhula</i>	10+	0.1km	2018
<u>Cetti's warbler <i>Cettia cetti</i></u>	<u>10+</u>	<u>0.8km</u>	<u>2021</u>
Common Gull <i>Larus canus</i>	10+	0.8km	2021
Curlew <i>Numenius arquata</i>	5	0.8km	2020
Dunnock <i>Prunella modularis</i>	10+	0.4km	2021
<u>Fieldfare <i>Turdus pilaris</i></u>	<u>10+</u>	<u>0.5km</u>	<u>2021</u>
<u>Firecrest <i>Regulus ignicapilla</i></u>	<u>8</u>	<u>0.5km</u>	<u>2018</u>
Great Black-backed Gull <i>Larus marinus</i>	5	0.8km	2021
Goldcrest <i>Regulus regulus</i>	10+	0.4km	2020
Herring Gull <i>Larus argentatus</i>	10+	0.4km	2021
House Sparrow <i>Passer domesticus</i>	10+	0.4km	2021
Kestrel <i>Falco tinnunculus</i>	5	2.0km	2020
<u>Kingfisher <i>Alcedo atthis</i></u>	<u>10+</u>	<u>0.8km</u>	<u>2021</u>
Lapwing <i>Vanellus vanellus</i>	6	0.8km	2020
Lesser Black-backed Gull <i>Larus fuscus</i>	10+	0.4km	2021
Lesser Spotted Woodpecker <i>Dryobates minor</i>	1	0.5km	2007
Linnet <i>Linaria cannabina</i>	10+	0.4km	2019
Long-tailed Tit <i>Aegithalos caudatus</i>	10+	0.4km	2021
Mallard <i>Anas platyrhynchos</i>	10+	0.4km	2021
Marsh Tit <i>Poecile palustris</i>	7	0.8km	2018
Meadow Pipit <i>Anthus pratensis</i>	10+	0.4km	2019
Mistle Thrush <i>Turdus viscivorus</i>	10+	0.4km	2021



Species	No. of Records	Distance of Nearest Record	Year of Most Recent Record
Oystercatcher <i>Haematopus ostralegus</i>	2	0.8km	2018
Peregrine <i>Falco peregrinus</i>	<u>5</u>	<u>1.4km</u>	<u>2018</u>
Red Kite <i>Milvus milvus</i>	4	0.5km	2021
Redshank <i>Tringa totanus</i>	10+	0.8km	2021
Redwing <i>Turdus iliacus</i>	<u>10+</u>	<u>0.4km</u>	<u>2021</u>
Reed Bunting <i>Emberiza schoeniclus</i>	10+	0.8km	2017
Skylark <i>Alauda arvensis</i>	10+	0.4km	2018
Snipe <i>Gallinago gallinago</i>	3	0.8km	2021
Song Thrush <i>Turdus philomelos</i>	10+	0.5km	2021
Starling <i>Sturnus vulgaris</i>	10+	0.4km	2021
Whimbrel <i>Numenius phaeopus</i>	<u>5</u>	<u>1.1km</u>	<u>2018</u>
Woodcock <i>Scolopax rusticola</i>	10	0.4km	2021
Yellowhammer <i>Emberiza citrinella</i>	10+	0.4km	2021

3.2 Field Survey Results

- 3.2.1 A summary of the notable species recorded by the surveys is shown in **Table 4** overleaf, which gives the number of visits (out of four) in which each species was recorded at the Development, as well as the peak count of each species within a single visit.
- 3.2.2 **Table 5** shows a list of the additional non-notable species recorded by the surveys.
- 3.2.3 **Table 6** shows the number of birds of each species recorded on site by survey visit. To aid assessment of the impacts of the proposed development, each species has been categorised into the principal habitat type they are associated with during the winter season.
- 3.2.4 The conservation status of each species given in these tables is denoted according to the abbreviations given in **Table 3** below.

Table 3: Key to Conservation Status Abbreviations

Abbreviation	Meaning
S.7	Section 7 species under the Environment (Wales) Act 2016
Sch.1	Schedule 1 species under the Wildlife & Countryside Act 1981 (as amended)
	'Red listed' species according to BTO/RSPB Birds of Conservation Concern 5 (2021)
	'Amber listed' species according to BTO/RSPB Birds of Conservation Concern 5 (2021)
	'Green listed' species according to BTO/RSPB Birds of Conservation Concern 5 (2021)
LBAP	Listed under the Pembrokeshire Local Biodiversity Action Plan

Species Diversity

- 3.2.5 Across the Site, a total of 47 species were recorded. Of these, 22 were species of conservation concern/notable species, comprising ten red-listed and 12 amber-listed species (national status). Of the red and amber-listed species, ten were also 'Species of Principal Importance' (SPIs). These species are listed under Section 7 of the Environment (Wales) Act 2016, and so are capable of being material considerations within the planning process.



- 3.2.6 A total of two species were listed under the Pembrokeshire LBAP.
- 3.2.7 In addition, three species were also listed under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended). This confers special protection when breeding. Whilst this designation is not directly relevant to wintering birds, the designation is given to species which, in the main, are nationally scarce and therefore notable. Furthermore, some of these species are residents and therefore may also be present during the breeding season.
- 3.2.8 No chough (bird species for which Castlemartin Coast SPA is designated) were recorded during the surveys and the habitat suitability of the Site for this species is poor.

Table 4: Abundance of Each Species of Conservation Concern Recorded Across All Visits

Species	Conservation Status	No. of surveys species found (/4)	Peak count* on any single visit
Birds predominantly associated with open arable/grassland fields			
Fieldfare	Sch.1	4	44
Great Black-backed Gull		2	5
Herring Gull	S.7	4	124
Meadow Pipit		3	25
Peregrine	Sch.1, LBAP	1	1
Rook		4	194
Skylark	S.7	4	89
Starling	S.7	4	106
Woodpigeon		4	63
Birds predominantly associated with arable field margins and hedgerows/scrub boundaries			
Bullfinch	S.7	3	6
Dunnock	S.7	4	69
Greenfinch		1	3
House Sparrow	S.7	3	40
Linnet	S.7	2	27
Mistle Thrush		2	2
Redwing	Sch.1	3	114
Song Thrush	S.7	4	33
Wren		4	29
Yellowhammer	S.7	1	6
Birds predominantly associated with ditches, waterbodies and associated habitats			
Mallard		3	6
Snipe		4	28
Teal		1	10
Water Rail	LBAP	1	1
Birds predominantly associated with mature trees/woodland			
Marsh Tit	S.7	2	2

Table 5: List of Additional Species (not of Conservation Concern) Recorded by All Surveys across both Survey Areas

Species		
Blackbird	Goldfinch	Pied Wagtail
Blue Tit	Great-spotted Woodpecker	Raven
Buzzard	Great Tit	Red-legged Partridge



Species		
Carrion Crow	Jackdaw	Robin
Chaffinch	Jay	Treecreeper
Chiffchaff	Long-tailed Tit	
Collared Dove	Magpie	
Feral Pigeon	Nuthatch	
Goldcrest	Pheasant	

Table 6: Abundance of Each Species of Conservation Concern Recorded During each Visit (peak in bold)

Species	Conservation Status	Visit No.			
		1	2	3	4
Birds predominantly associated with open arable/grassland fields					
Fieldfare	Sch.1	34	4	15	44
Great Black-backed Gull		2	0	0	5
Herring Gull	S.7	1	124	3	9
Meadow Pipit		13	0	25	5
Peregrine	Sch.1, LBAP	0	0	1	0
Rook		50	194	16	34
Skylark	S.7	169	32	40	18
Starling	S.7	106	10	54	16
Woodpigeon		63	19	41	20
Birds predominantly associated with arable field margins and hedgerows/scrub boundaries					
Bullfinch	S.7	6	4	0	5
Dunnock	S.7	24	23	19	69
Greenfinch		0	0	0	3
House Sparrow	S.7	40	11	0	4
Linnet	S.7	0	0	6	27
Mistle Thrush		2	0	0	2
Redwing	Sch.1	36	0	28	114
Song Thrush	S.7	1	20	10	33
Wren		14	14	25	29
Yellowhammer	S.7	6	0	0	0
Birds predominantly associated with ditches, waterbodies and associated habitats					
Mallard		0	3	6	4
Snipe		18	2	28	12
Teal		0	0	0	10
Water Rail	LBAP	0	1	0	0
Birds predominantly associated with mature trees/woodland					
Marsh Tit	S.7	0	2	2	0



Distribution & Abundance by Habitat Type

- 3.2.9 The main habitats utilised by wintering birds across the Site included:
- Open, arable or grassland/pasture fields
 - Arable field margins/ hedgerows and scrub
 - Ditches, waterbodies and associated habitats
 - Mature trees and woodland
- 3.2.10 Species associated with each of these broad habitat types are discussed in turn in the text below. Species recorded in low numbers on a limited number of survey visits are generally not discussed, as it is unlikely that the Site is of particular importance to these species.
- 3.2.11 A general summary of the findings across the Site is given and the distribution of key species is discussed in detail.
- 3.2.12 It is important to note that many species range widely to forage in the winter and use different locations sporadically. Both the frequency of recording and the abundance of each species must be considered, and this data put into context with regard to local and national populations and the availability of similar habitats in the surrounding landscape.
- 3.2.13 Where data shows a species to have been consistently recorded rarely or in low numbers, this could imply that the Site is not a significant contributor to their survival over the winter. However, the detectability of such species should be considered, as some are elusive / cryptic and may have been missed by the survey. The rarity of certain species may also mean that recording just a few individuals is significant.
- 3.2.14 Conversely, where a species was recorded regularly and in consistently significant numbers at the Site, this could imply a greater level of importance of the Site to this species. However, again, this must be contextualised.

Open, arable or grassland/pasture fields

- 3.2.15 The second greatest diversity of species of conservation concern (9) was associated primarily with open habitats. These species also constituted the greatest abundance of birds recorded by the surveys.
- 3.2.16 A total of six species associated with open habitats were recorded at all four visits, with these species tending to be 'core' farmland species, including skylark, starling and woodpigeon. Additional species recorded at all four visits included fieldfare which is a species more dependent on arable and grassland habitats over the winter months rather than year-round.
- 3.2.17 Fieldfare were recorded on each visit and the peak count was 44 birds in February which represents only a small to moderate sized flock. This species forages both in pasture, arable fields and boundary habitats. The greatest numbers were recorded in the southern parcel of the Site.
- 3.2.18 Skylark were consistently recorded in modest numbers, but there was a large peak of 169 birds in November. For its size, the Site supported moderately good numbers of skylarks over the winter. The greatest numbers were recorded in the southern parcel of the Site. The variability of the counts by visit indicate the mobility of the local population and the usage of the site as a component of the overall patchwork of arable field foraging resources locally.
- 3.2.19 Meadow pipit were recorded on 3/4 visits in fairly moderate numbers and were mostly recorded to the eastern half of the whole Site.
- 3.2.20 Rook were recorded on each visit in modest flocks, peaking at 194 birds. The southern parcel of the Site supported the majority of birds. The Site supported reasonable numbers of this newly amber-listed species.
- 3.2.21 Rarely recorded notable species included peregrine (one bird on one occasion); and great black-backed gull (small numbers of birds on two occasions). These species could have been recorded on migratory passage or may range widely in the winter; hence the Site is unlikely to be critical to their survival.



Arable field margins/ hedgerow and scrub boundaries

- 3.2.22 The greatest diversity of notable species (10) was associated primarily with the boundary habitats. These species also constituted the greatest abundance of birds recorded by the surveys. These habitats also supported a high abundance of birds.
- 3.2.23 Redwing were recorded in particularly high numbers with a peak of 114 birds in February.
- 3.2.24 Three species associated with boundary habitats were recorded at all four visits, including dunnock, song thrush and wren.
- 3.2.25 Species recorded in relatively large numbers included: dunnock, house sparrow and redwing.
- 3.2.26 Linnet were recorded on 2/4 visits in fairly low numbers (peak 27).
- 3.2.27 Song thrush were present on 3/4 visits, with a peak of 33 birds in late February. These numbers are relatively high as song thrush are not typically gregarious and were recorded chiefly as individuals or pairs.
- 3.2.28 Yellowhammer were only recorded in Visit 1 in low numbers (six birds)
- 3.2.29 Bullfinch were recorded on three occasions, with a peak of six birds in November. These birds are likely to be taking advantage of seasonal berry resources in the hedgerows.

Ditches, waterbodies and associated habitats

- 3.2.30 Just four notable species were primarily associated with waterbodies and associated habitats, reflecting the greater degree of specialisation to this habitat type, as well as perhaps the paucity of this habitat across the Site. The abundance of these species was also generally low, with higher numbers only recorded when a flock of wildfowl or waders was present.
- 3.2.31 The only species recorded on all four visits was snipe.
- 3.2.32 Mallard were present on three survey visits in low numbers, with a peak of six individuals. They were recorded in the ponds in the Site centre between the two Site's parcels, as well as on the ditch which dissect the north-western most field of the Site.
- 3.2.33 Snipe were present on each survey visit in low to moderate numbers, with a peak of 28 individuals was recorded in February being unexpectedly high. They were chiefly recorded in the southern parcel of the Development. Again, the variability in numbers of snipe by visit indicates their mobility within the local landscape and the usage of the Survey Area as a component of the local sheltering and foraging resource.
- 3.2.34 Teal were recorded on one visit with ten individuals in the central pond.
- 3.2.35 Rarely recorded notable species included water rail (one bird on one occasion), a LBAP species.

Mature trees and woodland

- 3.2.36 Mature trees and woodland were a scarce habitat within the Development with Alleston Wood adjacent to the red line boundary and a couple of mature trees within a field.
- 3.2.37 The only species associated principally with woodland was marsh tit, which was recorded on two occasions, with two individuals each visit. This is a rare and shy species which is likely to be present in low numbers.

Summary of Distribution of Key Species

- 3.2.38 Considering all species of conservation concern together, the key areas of the Site are discussed below.
- 3.2.39 Several species were widely distributed across the Site, but the arable fields, Fields 9 and 11 (Figure 1 - PEA report, Clarkson and Woods March 2024, refers), were of comparative importance for snipe, skylark, meadow pipit, rook and linnet. The single peregrine was also recorded here.
- 3.2.40 The north-eastern field was comparatively important to fieldfare, and also meadow pipit and rook.
- 3.2.41 The central pond also supported mallard and teal.

Non-notable Species/ Species not of Conservation Concern

- 3.2.42 Additional non-notable species were generally common and widespread residents. The only migratory species recorded was chiffchaff, a summer visitor which is increasingly being recorded in winter.



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- 3.2.43 The majority of species were passerines associated with hedgerows and woodland. Farmland species included goldfinch, pheasant and red-legged partridge. The one typically urban species was feral pigeon. Species not conforming to these broad habitat specifications included raven.
- 3.2.44 The assemblage is fairly typical of the habitats present within the Site and local area.

Overview of Potential Impacts

- 3.2.45 The species considered to be the at most risk of impacts are those associated with open habitats and which typically require open sightlines in order to select sites for winter foraging or shelter, or which have a strong dependency on the provision and management of arable crops (including arable field margins and winter stubbles). Construction of the solar arrays will result in the loss of open sightlines and the cessation of arable management, which may result in the exclusion of species with such dependencies. This includes gulls and waders (in this case, snipe).
- 3.2.46 Other species like linnet, meadow pipit, skylark and yellowhammer may also have foraging opportunities slightly reduced. However, it is expected that these species would utilise the newly created grassland habitats amongst the arrays, which will provide a far richer diversity of seeds and invertebrates on which to feed.
- 3.2.47 The installation of arrays should have limited impacts on boundary habitats, waterbodies and woodland, which are expected to be retained almost in their entirety. It is understood that a small number of new gaps in existing hedgerows will be required to facilitate construction access and operational management. While the quantity of habitat loss is very small, direct impacts (killing and injury) during construction activities will need to be appropriately avoided and mitigated for.



4 ECOLOGICAL EVALUATION

- 4.1.1 This section provides an analysis of the value of ecological features (in this case wintering birds) identified as occurring within or in proximity of the Site. The valuation of the feature reflects the rarity and conservation status of each species as well as its relative abundance and activity levels on Site.
- 4.1.2 **Table 7** below provides the status of each notable bird species recorded and also the importance of the Site to each species based on the combined survey results.
- 4.1.3 The County status is based on information provided by the 2023 Pembrokeshire Bird List (Pembrokeshire Bird Group).

Table 7: Ecological Evaluation

Species	Conservation Status	County status	Abundance and Distribution within the Site	Ecological Importance
Birds predominantly associated with open arable/grassland fields				
Fieldfare	Sch.1	Common passage migrant & winter visitor	Recorded throughout the winter in Low to moderate numbers (peak 44).	Site
Great Black-backed Gull		Common passage migrant & winter visitor	Small numbers of birds recorded on two occasions.	Site
Herring Gull	S.7	Common passage migrant & winter visitor	Regularly recorded in low numbers excluding peak of 124 during visit 2.	Site
Meadow Pipit		Common resident, passage migrant & winter visitor	Regularly recorded in modest numbers (peak 25).	Site
Peregrine	Sch.1, LBAP	Scarce resident	Single bird on one occasion.	Local
Rook		Scarce resident	Modest flocks recorded regularly.	Local
Skylark	S.7	Scarce breeder, common winter visitor & passage migrant	Moderate numbers recorded (peak 169).	Local
Starling	S.7	Common winter visitor & migrant. Scarce breeding resident	Modest numbers (max 106); consistently recorded.	Local
Woodpigeon		Common resident, passage migrant & winter visitor	Consistently recorded (peak 63).	Site
Birds predominantly associated with arable field margins and hedgerows/scrub boundaries				
Bullfinch	S.7	Common resident	Low numbers.	Site
Dunnock	S.7	Common resident	Modest numbers.	Local
Greenfinch		Uncommon resident & passage migrant	Low numbers.	Site



Species	Conservation Status	County status	Abundance and Distribution within the Site	Ecological Importance
House Sparrow	S.7	Common resident	Low numbers.	Site
Linnet	S.7	Common resident & passage migrant	Fairly low numbers.	Local
Mistle Thrush		Common resident & passage migrant	Low numbers.	Site
Redwing	Sch.1	Common passage migrant & winter visitor	Regularly recorded in modest numbers (peak 114).	Local
Song Thrush	S.7	Common resident, passage migrant & winter visitor	Consistency recorded in relatively high numbers (peak 33).	Local
Wren		Common resident	Modest numbers.	Site
Yellowhammer	S.7	Uncommon & declining resident	Low numbers.	Site
Birds predominantly associated with ditches, waterbodies and associated habitats				
Mallard		Common resident	Regularly recorded low numbers (peak 6) in ponds, and ditches.	Local
Snipe		Common passage migrant & winter visitor	Consistently recorded in moderate numbers (peak 28).	Local
Teal		Common winter visitor – occasional breeder	Recorded on one occasion and in low number.	Local
Water Rail	LBAP	Scarce breeding resident, passage migrant & winter visitor	Single bird on one occasion.	Local
Birds predominantly associated with mature trees/woodland				
Marsh Tit	S.7	Thinly distributed resident	Two individuals on two occasions. May be under-recorded.	Local



5 SUMMARY

- 5.1.1 In total, 47 bird species were recorded across the Site by the surveys. Of these, 22 were species of conservation concern / notable species, comprising ten red-listed and 12 amber-listed species; with ten also being Species of Principal Importance. In addition, three species were listed under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) and two species were listed under the Pembrokeshire LBAP.
- 5.1.2 In combination, the Site was considered to be of **Local importance** to wintering birds as an assemblage. The species considered to be at most risk of impacts are those associated with open habitats and which require open sightlines, or which have a strong dependency on the provision and management of arable crops (including arable field margins). Construction of the solar arrays will result in the loss of open sightlines and the cessation of arable management, which may result in the exclusion of species with such dependencies. This includes gulls and waders (snipe).
- 5.1.3 Other species like linnet, meadow pipit, skylark, rook, starling and yellowhammer may also have reduced foraging opportunities, although are expected to utilise the newly created grassland habitats amongst the arrays to forage.
- 5.1.4 The installation of arrays should have limited impacts on boundary habitats, waterbodies and woodland, which will be retained, save for a small number of newly proposed access gaps to be created in hedgerows to facilitate construction and operational maintenance. The risk of killing and injury remains during these activities and avoidance and mitigation procedures should be followed.
- 5.1.5 This information is intended to inform the Environmental Statement to be prepared in support of the development. The Environmental Statement will contain a full discussion of avoidance, mitigation and compensation measures, together with a complete ecological impact assessment.