



Craig y Perthi Solar Farm

Environmental Statement

Chapter 07 Ornithology

Prepared for



JBM Solar Projects 25 Limited

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7.0 ORNITHOLOGY

7.1 Introduction

7.1.1 This ornithological assessment was prepared by Colin Hicks BSc (Hons), a Member of the Chartered Institute of Ecology and Environmental Management with 25 years' experience as a professional ecologist, and James Gilroy BSc (Hons), MSc, a professional ecologist with over 5 year's experience and ornithological expertise.

7.1.2 This chapter of the Environmental Statement assesses the likely significant effects from the construction, operation and decommissioning of the Proposed Development (as described in Chapter 4) on the following environmental receptors and/or resources:

- i) Nature conservation sites designated for ornithological interest features.
- ii) Wintering and passage birds.
- iii) Breeding birds.

7.2 Methodology and Scope of Assessment

Nature Conservation Legislation

*Convention on Wetlands of International Importance especially as Waterfowl Habitat
1971*

7.2.1 Known as the Ramsar Convention, or the Convention on Wetlands, its aim is to stem the progressive encroachment on, and loss of wetlands, now and in the future through international treaty. It provides the only international mechanism for protecting sites of global importance and is thus of key conservation significance. The UK ratified the Ramsar Convention and designated its first Ramsar sites in 1976. Wales currently has 10 Ramsar sites designated as 'Wetland of International Importance'.

7.2.2 The Severn Estuary Ramsar is approximately to the south 4.1 km of the Site.

European Red Data lists (IUCN, 2000)

7.2.3 International Union for Conservation of Nature (IUCN) and the European Commission have been working together on an initiative to assess around 6,000 European species according to IUCN regional Red Listing Guidelines. Through this



process they have produced a European Red List identifying those species which are threatened with extinction at the European level so that appropriate conservation action can be taken to improve their status.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

7.2.4 This Act is the primary legislation that protects animals, plants and certain habitats in the UK. This includes the designation and protection of some of the best areas of natural environmental as Sites of Special Scientific Interest (SSSI). The following SSSI with ornithological interest are within the zone of influence:

- i) Magor Marsh SSSI.
- ii) Severn Estuary SSSI.
- iii) Newport Wetlands SSSI.

The Conservation of Habitats and Species Regulations 2017

7.2.5 The Conservation of Habitats and Species Regulations 2017 consolidate all the various amendments made to the Conservation (Natural Habitats, & c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

7.2.6 The Regulations place a duty on the Secretary of State to propose a list of sites that are important for either habitats or species. These sites form a network termed Natura 2000 and include Special Protection Areas (SPA).

7.2.7 The Severn Estuary SPA lies 4.1 km to the south of the Assessment site.

The Countryside and Rights of Way (CRoW) Act 2000

7.2.8 The CRoW Act 2000 increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation.

Circular 06/2005 Biodiversity and geological conservation – statutory obligations and their impact within the planning system

7.2.9 This circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements the



national planning policy in the National Planning Policy Framework and the Planning Practice Guidance.

Natural Environment and Rural Communities (NERC) Act 2006

- 7.2.10 The NERC Act 2006 made amendments to both the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way (CRoW) Act 2000. For example, it extended the CRoW biodiversity duty to public bodies and statutory undertakers.

Biodiversity Strategies

UK Post-2010 Biodiversity Framework, 2012

- 7.2.11 The UK Post-2010 Biodiversity Framework, published in July 2012, succeeds the UK BAP and ‘Conserving Biodiversity – the UK Approach’, and is the result of a change in strategic thinking.

The natural choice: securing the value of nature (2011) (Natural Environment White Paper)

- 7.2.12 This White Paper outlines the Government’s vision for the future of landscape and ecosystem services.

Environment (Wales) Act 2016

- 7.2.13 Part 1 of the Environment Act sets out Wales’ approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory “*principles of sustainable management of natural resources*” defined within the Act.

- 7.2.14 Section 6 of the Act places a duty on public authorities to “*seek to maintain and enhance biodiversity’ so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to ‘promote the resilience of ecosystems*”. The duty replaces the section 40 duty in the NERC Act 2006, in relation to Wales, and applies to those authorities that fell within the previous duty.

- 7.2.15 Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

- 7.2.16 Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales,



which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

- 7.2.17 The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.
- 7.2.18 Linnet, reed bunting, herring gull, house sparrow, dunnoek, bullfinch, starling, skylark song thrush, Bewick's swan and lapwing are all included on the biodiversity lists and were recorded within the Assessment Site.

County Level biodiversity strategies

- 7.2.19 Newport City Council's Local Biodiversity Action Plan (LBAP) has a list of special habitats and species in the area and outlines how, in partnership, they plan to protect and enhance them.
- 7.2.20 Coastal and floodplain grazing marsh is included in the LBAP for its value to bird species, including lapwing.

Birds of Conservation Concern (BoCC)

- 7.2.21 Commonly referred to as the UK Red List for birds, this is the fifth review of the status of birds in the UK, Channel Islands and Isle of Man, and updates the last assessment in 2015. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird NGOs and assigned to the Red, Amber or Green lists of conservation concern.
- 7.2.22 Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.
- 7.2.23 Amber list species are those with an unfavourable conservation status in Europe.
- 7.2.24 Species on the Green List fulfil none of the above criteria and are of least conservation concern.

Assessment Methodology

Preliminary Ecological Appraisal



- 7.2.25 A Preliminary Ecological Appraisal was completed by an experienced ecologist and managed by a Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). This is presented in Appendix 6.1.
- 7.2.26 Habitats were classified using the Phase 1 Habitat Survey methodology developed by the Joint Nature Conservation Committee (JNCC, 2010) and modified by the Institute of Environmental Assessment (IEA, 1995). The main plant species were recorded, and broad habitat types mapped. Habitats encountered are described within the Results section, with a map included within the report. Plant species were identified according to Stace (1997).
- 7.2.27 During this survey, any obvious evidence of protected species was noted, and site habitats were assessed for their potential to support notable or protected species.

Desktop survey

- 7.2.28 The desktop survey collated existing ornithological records within the local area and identified any nature conservation sites that may be affected by the proposals. This comprises an important part of the assessment process, providing information on ecological issues that may not be apparent during the site survey. Consultees for the data search included:
- i) South East Wales Biodiversity Records Centre – records of birds and non-statutory nature conservation sites within 2 km of the centre of the site and non-statutory nature conservation sites within 4 km of the centre of the site.
 - ii) Natural Resources Wales datasets – location of statutory nature conservation sites within 5 km of the centre of the site.
- 7.2.29 Species data was examined for protected and notable species records. An assessment was then made, based on known habitat preferences, as to whether these species might be present within the site and how they might be affected by the proposal.
- 7.2.30 The location of nature conservation sites was examined to determine their ecological and landscape relationships with the proposed site. An assessment was then made of how the sites may be affected by the Proposed Development, taking into account these relationships, and the species and/or habitat types for which the nature conservation site was chosen.



- 7.2.31 In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided.

Breeding bird surveys

- 7.2.32 Breeding bird surveys involving lowland breeding wader and common bird consensus methodologies were undertaken of the Site undertaken during the breeding seasons of 2021, 2022 and 2023. The 2021 survey comprised 5 early morning visits covering the entire site between May to July. In 2022, a breeding bird survey comprising 3 survey visits between May to July was undertaken which focused on an additional land parcel (then proposed as a mitigation area, but now included within the development footprint). A full suite of 6 early morning survey visits, covering the entire site were undertaken between March to July 2023. The 2023 surveys are currently on-going at the time of writing.
- 7.2.33 Lowland breeding wader surveys were completed in line with O'Brien and Smith (1992).
- 7.2.34 Other Breeding Birds were recorded using a methodology based upon a combination of methodologies, devised by the British Trust for Ornithology (BTO), and the national Breeding Bird Survey (BBS) techniques, jointly devised by the BTO, Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
- 7.2.35 Target species included wetland birds in particular waders, wildfowl, and gulls as well as Schedule 1 raptors and owls. Records were made of other notable species which were determined based on current conservation status, determined using Birds of Conservation Concern (BoCC) 5 Red and Amber lists, and those species listed as species of principal importance (Section 7 of the Environment (Wales) Act 2016).

Wintering and passage bird surveys

- 7.2.36 Wintering and passage walk over surveys were completed adopting the 'look-see' methodology described by Gilbert et al. (1998).
- 7.2.37 Autumn passage bird surveys were completed in October and November 2020. A full suite of passage and wintering bird surveys were completed the following year between October 2021 to March 2022 and then October 2022 to March 2023.
- 7.2.38 These surveys comprised the following:



- i) Two, daytime survey visits in each of the months of November, December, January and February, with each visit comprising a walked transect across the site; and
- ii) A nocturnal survey completed each month from December 2021 to March 2022 to determine the use of the Assessment Site by birds during the hours of darkness.

7.2.39 These surveys were completed by an experienced ornithologist, recording birds that were active within the Site and adjacent areas. Although all bird species were recorded, the prime targets were passage and overwintering birds that are interest features of statutory nature conservation sites associated with the Severn Estuary.

Assessment of Significance / Assessment Criteria

7.2.40 The assessment of impacts has been carried out in accordance with the principles described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).

7.2.41 The ornithological feature or resource that is affected by an impact is referred to as the receptor. Impacts are considered in terms of the value of the receptor in the context of nature conservation, and the character of the impact. From these, the significance of the impact is determined.

7.2.42 As part of the impact assessment, the available means to avoid, minimise or mitigate for adverse impacts are incorporated into the design, so that the final impact assessment identifies the residual (net) impacts that are predicted. The consequences for development control, policy guidance and legislative compliance can then be identified.

Method for valuation of receptors

7.2.43 The nature conservation value, or potential value, of an ecological receptor is determined within the following geographic context:

- i) International importance (e.g., internationally designated sites such as Special Protection Areas, Ramsar sites).
- ii) National importance (e.g., nationally designated sites such as Sites of Special Scientific Interest or species populations of importance in the context of Wales or the UK).



- iii) County importance (e.g., SNCI, habitats and species populations of importance in the context of Newport).
- iv) Local importance (e.g., important ecological features such as old hedges, woodlands, ponds).
- v) Site importance (e.g., habitat mosaic of grassland and scrub which may support a diversity of common wildlife species).
- vi) Negligible importance. Usually applied to areas such as built development or areas of intensive agricultural land.

7.2.44 The examples are not exclusive and are subject to further professional ecological judgment.

Impact Assessment Criteria

7.2.45 The assessment of potential impacts arising due to the development considers on-site impacts (i.e., within the footprint of the works) and those that may occur to adjacent and more distant ornithological features.

7.2.46 Potential effects on valued receptors, adverse or positive, are identified for both the construction, operational and decommissioning phases. The effects are then assessed and characterised according to the following criteria:

- i) Direction (positive, adverse, or neutral).
- ii) Magnitude of impact.
- iii) Spatial extent over which the impact would occur.
- iv) The temporal duration of the impact.
- v) Permanence.
- vi) Frequency and timing.
- vii) Potential for cumulative effects.

7.2.47 The assessment identifies any information gaps and any uncertainties that may be material in the confidence of predicting effects. Confidence levels are assigned following the CIEEM (2016) scale. Confidence in predictions is given as:

- i) Certain/near-Certain: probability estimated at 95% chance or higher.
- ii) Probable: probability estimated above 50% but below 95%.
- iii) Unlikely: probability estimated above 5% but less than 50%.
- iv) Extremely Unlikely: probability estimated at less than 5%.



7.2.48 The precautionary principle is applied whenever there is substantial doubt. The impact timescale is given as:

- i) Acute, immediate, and discrete.
- ii) Short-term: 0-3 years.
- iii) Medium term 3-10 years.
- iv) Long term: >10 years.

7.2.49 Effects include, but are not restricted to:

- i) Loss or change of habitat.
- ii) Disturbance during construction, operation, and decommissioning.
- iii) Chemical effects from airborne pollutants.
- iv) Contravention of legal status or protection (including where the receptor would not meet or exceed the value threshold).

7.2.50 The assessment identifies those positive and negative impacts that would be significant, based on the integrity and the conservation status of the ornithological feature. Impacts are unlikely to be significant where features of local value or sensitivity are subject to small scale or short-term impacts. However, where there are several small-scale impacts that are not significant alone, it may be that, cumulatively, these may result in an overall significant impact.

7.2.51 For the purposes of this assessment, the significance of the effect is determined using the matrix in Table 9.1 where the scale of the effect is measured against the value of the receptor.

Table 7.1 Matrix for assessment of significance of effect

Scale of Effect	Evaluation of nature conservation receptor				
	Very high/ International	High/ national	Medium/ regional	Low/ local	Negligible/site only
Major positive effect	Very large positive	Large/ very positive	Moderate/large positive	Moderate positive	Slight positive
Intermediate positive effect	Large/ very large positive	Moderate/large positive	Moderate positive	Moderate positive	Moderate positive
Minor positive effect	Slight positive	Slight positive	Slight positive	Slight positive	Slight positive
Minor negative effect	Slight adverse	Slight adverse	Slight adverse	Slight adverse	Neutral
Intermediate negative effect	Large/very large adverse	Moderate/large adverse	Moderate adverse	Slight adverse	Neutral
Major negative effect	Very large adverse	Large/very large adverse	Moderate or large adverse	Slight adverse	Neutral

7.2.52 An ecologically significant impact is defined as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area. For the purposes of this assessment the effects that are identified in shaded cells are significant.

European Protected Sites- definition of significance of effect

7.2.53 For a European Protected Site, such as SPA, the integrity of a site is:

‘The coherence of the ecological structure and function across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.’

7.2.54 Disturbance should not have a significant effect on the integrity of a European Protected Site.

Mitigation

7.2.55 Where there is potential that the Proposed Development would have a significant effect on a valued ecological feature of nature conservation interest, recommendations for mitigation are made based on the mitigation hierarchy detailed in Paragraph: 018 Reference ID: 8-018-20140306 of National Planning Practice Guidance;

- i) Avoidance –significant harm to wildlife species and habitats should be avoided through design;



- ii) Mitigation – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations; and
- iii) Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity.

Enhancement

- 7.2.56 Enhancements are additional to any mitigation measures that are necessary to deal with potential impacts on site. They are an opportunity to provide new benefits for biodiversity as a consequence of the development being implemented.
- 7.2.57 Define how you have determined impact magnitude, receptor sensitivity and how these relate to the overall level of effect. It is vital that you describe your assessment criteria and how this enables you to make your judgement of whether the effect is deemed to be significant or not. The methodology you have set out should be followed within your effects assessment.

Limitations

- 7.2.58 All areas of the development site were readily accessible due to the open, flat nature of this landscape. The majority of adjacent areas within the 250m buffer were included within the survey by observation from Public Rights of Way.
- 7.2.59 Nocturnal surveys relied on flushing birds as night vision equipment was not suitable. This proved successful in providing presence or absence data, but it was not easy to formalise an accurate picture of numbers, as it is not likely that all birds in a flock will utter alarm calls. In addition, species that will not easily flush would be under-recorded. As the main target for these nocturnal surveys were Lapwing, which are relatively easy to flush, this is not considered a significant constraint.
- 7.2.60 These surveys, although comprehensive, will only ever provide a snapshot of the bird communities here. However, a significant survey effort has been made and we are confident that these surveys provide sufficient data to support any decisions to be made in relation to this application.



Scope of Assessment – Assessment Site and Zone of Influence

- 7.2.61 The Assessment Site includes all areas within the planning application boundary and any adjacent areas that may be affected by the Proposed Development.
- 7.2.62 The Zone of Influence is the area encompassing all predicted negative ornithological effects from the Proposed Development, both those which would occur as a result of land-take and habitat loss, and those which would occur through disturbance, such as noise or human presence.
- 7.2.63 The study area for the biological records search provided by South East Wales Biodiversity Records Centre (SEWBReC) in Cardiff is 2 km radius centred on the site. The data will identify and locate records of birds recorded in the search area over the last 50 years and will identify sensitive ecological receptors.
- 7.2.64 The Zone of Influence for ornithological receptors during the construction, operation and decommissioning phases is detailed in Table 7.2.

Table 7.2 Solar farm zone of influence on ornithological receptors (construction, operation and decommissioning)

Ecological feature	Zone of influence - Construction	Zone of influence - Operation	Zone of influence – Decommissioning
Breeding birds	Site area plus 100 m buffer	Site area	Site area plus 100 m buffer
Winter and passage birds	Site area plus 200 m buffer	Site area	Site area plus 200 m buffer
Internationally designated sites	5 km	5 km	5 km
Nationally designated sites	5 km	5 km	5 km
Local Sites of importance for nature conservation	1 km	1 km	1 km

7.3 Baseline

Desktop Survey

Ornithological record search

- 7.3.1 The biological record search identified 2,510 bird records from South East Wales Biodiversity Records Centre within 5 km. These are detailed in Table 7.3.



Table 7.3 Bird Records within 5 km of the Site

Common name	Conservation status	Number of records
Arctic Tern	BDir1, Bern, WBR(RSPB), LBAP (ANG, CON, GWY), UKBAm(RSPB)	2
Avocet	BDir1, WCA1.1, Bern, WBAm(RSPB), UKBAm(RSPB)	6
Bar-headed Goose	WCA9, INNS	5
Barnacle Goose	BDir1, WCA9, Bern, UKBAm(RSPB), INNS	6
Bar-tailed Godwit	BDir1, BDir22, S7, WBR(RSPB), LBAP (BBNP, CON, GWY, VOG), UKBAm(RSPB)	9
Bearded Reedling	WCA1.1, Bern, LBAP (CON, POW), WBAm(RSPB)	3
Bewick's Swan	BDir1, WCA1.1, S7, Bern, WBR(RSPB), LBAP (CON, GWY, POW, VOG), UKBAm(RSPB)	2
Black Guillemot	LBAP (ANG, GWY), WBAm(RSPB)	1
Black Redstart	WCA1.1, Bern, LBAP (GWY, VOG), WBAm(RSPB), UKBR(RSPB)	5
Black Tern	BDir1, WCA1.1, Bern	3
Black-headed Gull	BDir22, S7, WBR(RSPB), LBAP (GWY, VOG), UKBAm(RSPB)	36
Black-necked Grebe	WCA1.1, Bern, WBAm(RSPB), UKBAm(RSPB)	1
Black-tailed Godwit	BDir22, WCA1.1, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)	9
Black-winged Stilt	BDir1, WCA1.1, Bern	2
Brambling	WCA1.1, LBAP (CON), WBAm(RSPB)	8
Canada Goose	BDir21, WCA9, INNS	36
Cetti's Warbler	WCA1.1, LBAP (ANG, PEM, VOG)	58
Common Firecrest	WCA1.1, Bern, LBAP (BRG, CON, GWY, POW), WBAm(RSPB), LI(VC43)	3
Common Gull	BDir22, WBR(RSPB), UKBAm(RSPB)	22
Common Loon	BDir1, WCA1.1, Bern, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	1
Common Murre	LBAP (CON, PEM), WBAm(RSPB), UKBAm(RSPB)	2
Common Reed Bunting	S7, Bern, LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), WBAm(RSPB), UKBAm(RSPB)	44
Common Ringed Plover	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, CRM, GWY, VOG), UKBR(RSPB)	13
Common Sandpiper	WBR(RSPB), UKBAm(RSPB)	19
Common Scoter	BDir22, WCA1.1, S7, LBAP (ANG, BBNP, CER, CON, CRM, DEN, FLI, GWY, PEM, VOG), WBAm(RSPB), UKBR(RSPB)	4
Cormorant	LBAP (CON, GWY, POW), WBAm(RSPB)	27
Crane	BDir1, WCA9, Bern, CITES, UKBAm(RSPB)	8
Cuckoo	S7, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, VOG), UKBR(RSPB)	28
Curlew	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, VOG), LI(VC43),	19
Curlew Sandpiper	Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	6
Dark-bellied Brent Goose	S7, LBAP (VOG), WBAm(RSPB)	1
Dipper	Bern, LBAP (BRG, CLY, CON, MTR, POW, RCT, TRA), WBAm(RSPB), UKBAm(RSPB)	1
Dunlin	Bern, WBR(RSPB), LBAP (CON, GWY, POW), LI(VC43), UKBAm(RSPB)	14
Dunnock	S7, Bern, LBAP (CON, POW, VOG), UKBAm(RSPB)	82
Egyptian Goose	WCA9, INNS	5

Common name	Conservation status	Number of records
Eider	BDir22, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	1
Eurasian Bittern	BDir1, WCA1.1, S7, Bern, LBAP (ANG, BBNP, CER, CON, GWY, POW, VOG), WBAm(RSPB), UKBAm(RSPB)	3
Eurasian Bullfinch	S7, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, TRF, VOG), UKBAm(RSPB)	45
Eurasian Coot	BDir21, LBAP (BRG), WBAm(RSPB)	35
Eurasian Skylark	BDir22, S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG), WBAm(RSPB)	28
Eurasian Stone-curlew	BDir1, WCA1.1, Bern, UKBAm(RSPB)	3
Eurasian Whimbrel	BDir22, WCA1.1, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)	17
European Green Woodpecker	Bern, LBAP (CLY, CON, DEN, FLI, GWY, PEM, POW, SNP), WBAm(RSPB)	37
European Herring Gull	BDir22, S7, WBR(RSPB), LBAP (CON, GWY, POW, VOG), UKBR(RSPB)	46
European Pied Flycatcher	S7, WBR(RSPB), LBAP (CON, GWY, POW, SNP, VOG), UKBR(RSPB)	2
European Storm Petrel	BDir1, Bern, LBAP (GWY, PEM), WBAm(RSPB), UKBAm(RSPB)	2
Fieldfare	BDir22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)	37
Fulmar	Bern, LBAP (VOG), WBAm(RSPB), UKBAm(RSPB)	1
Gadwall	BDir21, LBAP (CON, GWY), UKBAm(RSPB)	23
Gannet	LBAP (CON, GWY, PEM), WBAm(RSPB), UKBAm(RSPB)	1
Garganey	BDir21, WCA1.1, CITES, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	9
Goldcrest	Bern, LBAP (CON, POW), WBAm(RSPB)	42
Golden Plover	BDir1, BDir22, S7, WBR(RSPB), LBAP (BBNP, CON, CRM, FLI, GWY, POW, SNP, VOG), LI(VC43)	9
Goldeneye	BDir22, WCA1.2, LBAP (CON, POW), UKBAm(RSPB)	4
Goshawk	WCA1.1, WCA9, CITES, LBAP (CLY, CON, POW, VOG)	4
Grasshopper Warbler	S7, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)	15
Great Black-backed Gull	BDir22, WBR(RSPB), UKBAm(RSPB)	18
Green Sandpiper	WCA1.1, Bern, LBAP (CON, VOG), WBAm(RSPB), UKBAm(RSPB)	15
Greenfinch	Bern, LBAP (CON, POW), WBAm(RSPB)	33
Greenland Greater White-fronted Goose	BDir1, S7, WBR(RSPB), LBAP (BBNP)	2
Greenshank	BDir22, WCA1.1, LBAP (CON, POW), UKBAm(RSPB)	10
Grey Heron	LBAP (BRG, RCT), WBAm(RSPB)	60
Grey Partridge	BDir21, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, DEN, FLI, GWY, POW, TRF, VOG), LI(VC43), UKBR(RSPB)	5
Grey Plover	BDir22, WBR(RSPB), LBAP (CON, GWY), UKBAm(RSPB)	7
Grey Wagtail	Bern, LBAP (CLY, CON, POW, TRA), WBAm(RSPB), UKBR(RSPB)	28
Hawfinch	S7, Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB), UKBR(RSPB)	4

Common name	Conservation status	Number of records
Hen Harrier	BDir1, WCA1.1, S7, CITES, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, SNP, VOG), LBAP (BBNP, DEN)	9
Hobby	WCA1.1, Bern, CITES, LBAP (CON, GWY, POW, VOG), LI(VC43)	15
House Sparrow	S7, LBAP (CLY, CON, FLI, GWY, VOG), WBAm(RSPB), UKBR(RSPB)	50
Jack Snipe	BDir21, LBAP (CON, POW), WBAm(RSPB)	8
Kestrel	S7, Bern, CITES, WBR(RSPB), LBAP (ANG, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), LI(VC43), UKBAm(RSPB)	53
Kingfisher	BDir1, WCA1.1, Bern, LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA), WBAm(RSPB), UKBAm(RSPB)	29
Knot	BDir22, WBR(RSPB), LBAP (BBNP, CON, GWY), UKBAm(RSPB)	8
Lapwing	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRF, VOG),	59
Leach's Storm Petrel	BDir1, WCA1.1, Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	1
Lesser Black-backed Gull	BDir22, LBAP (CON, GWY, PEM, POW, SNP), WBAm(RSPB), UKBAm(RSPB)	34
Lesser Redpoll	S7, LBAP (CON), LBAP (DEN, POW, VOG), WBAm(RSPB), UKBR(RSPB)	11
Lesser Spotted Woodpecker	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)	6
Lesser Whitethroat	LBAP (BRG, CON, DEN, FLI, POW)	33
Light-bellied Brent Goose	BDir22, LBAP (CON, GWY), UKBAm(RSPB)	1
Limosa limosa limosa	BDir22, WCA1.1, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)	1
Linnet	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, DEN, FLI, PEM, VOG), LBAP (CON, GWY), UKBR(RSPB)	33
Little Gull	BDir1, WCA1.1, Bern, LBAP (CON), WBAm(RSPB)	3
Little Ringed Plover	WCA1.1, Bern, LBAP (CON, POW, VOG), LI(VC43)	16
Little Tern	BDir1, WCA1.1, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY), UKBAm(RSPB)	1
Long-tailed Tit	WBAm(RSPB)	67
Mallard	BDir21, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	77
Manx Shearwater	Bern, LBAP (CON, GWY, PEM), WBAm(RSPB), UKBAm(RSPB)	3
Marsh Tit	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)	11
Marsh Warbler	WCA1.1, UKBR(RSPB)	3
Meadow Pipit	Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	38
Mediterranean Gull	BDir1, WCA1.1, Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	6
Merlin	BDir1, WCA1.1, Bern, CITES, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, POW), LI(VC43), UKBR(RSPB)	16
Mistle Thrush	BDir22, Bern, WBAm(RSPB), UKBR(RSPB)	36
Oystercatcher	BDir22, LBAP (CON, GWY), WBAm(RSPB), LI(VC43), UKBAm(RSPB)	16

Common name	Conservation status	Number of records
Parasitic Jaeger	LBAP (CON), WBAm(RSPB), UKBR(RSPB)	1
Peregrine	BDir1, WCA1.1, Bern, CITES, LBAP (ANG, CLY, CON, GWY, PEM, POW, TRF, VOG), LI(VC43)	24
Pink-footed Goose	BDir22, Bern, UKBAm(RSPB)	1
Pintail	BDir21, WCA1.2, CITES, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	12
Pochard	BDir21, WBR(RSPB), LBAP (CON, POW), UKBR(RSPB)	11
Pomarine Jaeger	WBAm(RSPB)	2
Purple Sandpiper	WCA1.1, Bern, LBAP (CON, VOG), WBAm(RSPB), UKBAm(RSPB)	2
Red Crossbill	WCA1.1, Bern, LBAP (CON, POW), LI(VC43)	4
Red Kite	BDir1, WCA1.1, WCA9, CITES, LBAP (CON, CRM, GWY, POW), WBAm(RSPB)	14
Red-crested Pochard	BDir22, WCA9, INNS	1
Red-necked Phalarope	BDir1, WCA1.1, Bern, UKBR(RSPB)	2
Redshank	BDir22, LBAP (ANG, CON, GWY, POW), WBAm(RSPB), UKBAm(RSPB)	15
Redstart	Bern, LBAP (CON, GWY, POW, SNP), WBAm(RSPB), UKBAm(RSPB)	11
Redwing	BDir22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)	34
Ring Ouzel	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)	2
Ruddy Duck	WCA9, INNS	2
Ruddy Shelduck	BDir1, WCA9, Bern, INNS	1
Ruff	BDir1, BDir22, WCA1.1, LBAP (CON), WBAm(RSPB), UKBR(RSPB)	7
Sand Martin	Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB)	17
Sanderling	Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	4
Sandwich Tern	BDir1, Bern, LBAP (ANG), LBAP (ANG, CON, GWY), WBAm(RSPB), UKBAm(RSPB)	3
Scaup	BDir22, WCA1.1, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)	1
Shag	Bern, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)	1
Shelduck	Bern, LBAP (CON, GWY, VOG), WBAm(RSPB), UKBAm(RSPB)	28
Short-eared Owl	BDir1, Bern, CITES, WBR(RSPB), LBAP (CON, DEN, GWY, PEM, POW), LI(VC43), UKBAm(RSPB)	13
Shoveler	BDir21, CITES, LBAP (ANG, CON, GWY, POW), WBAm(RSPB), UKBAm(RSPB)	24
Slavonian Grebe	BDir1, WCA1.1, Bern, WBR(RSPB), UKBR(RSPB)	1
Smew	BDir1, Bern, WBAm(RSPB), UKBAm(RSPB)	1
Snipe	BDir21, LBAP (ANG, CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBAm(RSPB)	35
Snow Goose	WCA9, INNS	2
Song Thrush	BDir22, S7, Bern, LBAP (ANG, BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG, WRE), WBAm	61
Spoonbill	BDir1, WCA1.1, Bern, CITES, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	6
Spotted Crane	BDir1, WCA1.1, Bern, LBAP (CON, GWY, POW), WBAm(RSPB), UKBAm(RSPB)	1

Common name	Conservation status	Number of records
Spotted Flycatcher	S7, Bern, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), UKBR(RSPB)	14
Spotted Redshank	BDir22, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	8
Starling	BDir22, S7, Bern, WBR(RSPB), LBAP (BBNP, CON, FLI, GWY, VOG), UKBR(RSPB)	42
Swallow	Bern, LBAP (ANG, CON, GWY, POW, VOG), WBAm(RSPB)	64
Swift	LBAP (BRG, RCT, VOG), WBAm(RSPB), UKBAm(RSPB)	30
Teal	BDir21, CITES, LBAP (ANG, CON, DEN, FLI, GWY), LBAP (ANG, DEN, FLI), WBAm(RSPB), LI(VC43), UKBAm(RSPB)	29
Temminck's Stint	WCA1.1, Bern	2
Tree Pipit	S7, Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB), UKBR(RSPB)	5
Tree Sparrow	S7, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, VOG), LI(VC43), UKBR(RSPB)	12
Tufted Duck	BDir21, LBAP (CON, POW, VOG), WBAm(RSPB)	17
Turnstone	Bern, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	10
Turtle Dove	BDir22, S7, CITES, WBR(RSPB), LBAP (BBNP, CON, GWY, MON, POW), UKBR(RSPB)	5
Water Pipit	Bern, UKBAm(RSPB)	4
Western Barn Owl	WCA1.1, WCA9, Bern, CITES, LBAP (ANG, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, VOG, WRE)	41
Western Marsh Harrier	BDir1, WCA1.1, CITES, LBAP (CON), WBAm(RSPB), UKBR(RSPB), UKBAm(RSPB)	12
Western Osprey	BDir1, WCA1.1, CITES, LBAP (GWY), WBAm(RSPB), UKBAm(RSPB)	4
Western Yellow Wagtail	S7, Bern, WBR(RSPB), LBAP (CON, DEN, FLI, POW, TRA, VOG), LI(VC43), UKBR(RSPB)	17
Wheatear	Bern, LBAP (BRG, CON, POW), WBAm(RSPB)	22
Whinchat	Bern, WBR(RSPB), LBAP (BRG, CON, DEN, FLI, GWY, PEM, POW, RCT), UKBR(RSPB)	8
White-fronted Goose	BDir22, S7, Bern, WBR(RSPB), LBAP (BBNP), UKBR(RSPB)	5
Whitethroat	WBR(RSPB), LBAP (CON, POW)	49
Whooper Swan	BDir1, WCA1.1, Bern, LBAP (CON, GWY, POW), UKBAm(RSPB)	4
Wigeon	BDir21, CITES, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	20
Willow Tit	S7, Bern, WBR(RSPB), LBAP (BBNP, DEN, FLI, POW, VOG), LBAP (CON, GWY), LI(VC43), UKBR(RSPB)	2
Willow Warbler	WBR(RSPB), LBAP (CON), UKBAm(RSPB)	36
Wood Sandpiper	BDir1, WCA1.1, Bern, LBAP (CON), UKBAm(RSPB)	4
Wood Warbler	S7, WBR(RSPB), LBAP (CON, GWY, SNP, VOG), UKBR(RSPB)	3
Woodcock	BDir21, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, POW), LI(VC43), UKBR(RSPB)	7
Wryneck	WCA1.1, Bern	1
Yellowhammer	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, VOG), UKBR(RSPB)	7

Common name	Conservation status	Number of records
Yellow-legged Gull	UKBAm(RSPB)	1

Key to Conservation status

UKBAP = UK Biodiversity Action Plan Priority Species
 UKBAP (R) = UK Biodiversity Action Plan Priority Species (Research only species)
 BDir1 = EC Birds Directive Annex 1 Species
 BDir21 = EC Birds Directive Annex 2.1 Species
 BDir22 = EC Birds Directive Annex 2.2 Species
 Bern = The Bern Convention on the Conservation of European Wildlife and Natural Habitats
 Bonn = The Bonn Convention on the Conservation of Migratory Species of Wild Animals Species
 CITES = Convention on International Trade in Endangered Species
 EPS = European Protected Species
 HDir = EU Habitats Directive Species
 NRW = Natural Resources Wales Priority Species
 RD1 (Wales) = Welsh Red Data Book listing based on IUCN guidelines
 RD1 (UK) = UK Red Data Book listing based on IUCN guidelines
 RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce)
 WBR (RSPB) = RSPB Welsh Red listed birds (not based on IUCN criteria)
 WBA (RSPB) = RSPB Welsh Amber listed birds (not based on IUCN criteria)
 UKBR (RSPB) = RSPB UK Red listed birds (not based on IUCN criteria)
 UKBA (RSPB) = RSPB UK Amber listed birds (not based on IUCN criteria)
 S42 = Natural Environment and Rural Communities Act 2006 (Section 42)
 WCA1.1 = Wildlife and Countryside Act Schedule 1 Part 1 Species
 WCA5 = Wildlife and Countryside Act Schedule 5 Species
 WCA8 = Wildlife and Countryside Act Schedule 8 Species
 WCA9 = Wildlife and Countryside Act Schedule 9 Species
 WSG.P = Guidelines for the Selection of Wildlife Sites in South Wales - Primary species
 WSG.C = Guidelines for the Selection of Wildlife Sites in South Wales - Contributory species
 LBAP (xxx) = Local Biodiversity Action Plan Species (see key below)
 LI (SEWBRc) = Locally Important Species (as identified by local specialists) in SEWBRc area.
 LI (BIS) = Locally Important Species (as identified by local specialists) in BIS* area.
 LI (BRYO-MON) = Locally or nationally scarce or rare bryophyte in Monmouthshire.
 LI (VC##) = Locally Important Species (as identified by local specialists) in Vice County ##
 LI (VC##, LS) = Locally Scarce in Vice County ##
 LI (VC##, LR) = Locally Rare in Vice County ##
 LI (VC##, EX) = Extinct in Vice County ##
 LI (VC##, UR) = Under Recorded in Vice County ##
 * BIS = Biodiversity Information Service for Powys and Brecon Beacons National Park

Statutory Nature Conservation Sites

Magor Marsh SSSI

7.3.2 Magor Marsh SSSI is located approximately 1.7 km to the south-east of the Assessment Site (at the closest point) and was selected for the following ornithological features:

“breeding ground for water and marsh birds including Cetti’s Warbler, Reed Warbler, Coot, Moorhen, Water Rail and Little Egret.”

7.3.3 The receptor evaluation of the Magor Marsh SSSI is of National (UK) value.



Severn Estuary SSSI

- 7.3.4 The Severn Estuary SSSI is 4.1 km to the south of the Assessment Site (at the closest point) and was selected for the following ornithological features:

*“The SSSI is of international importance for wintering and passage wading birds, with total winter populations averaging about 44,000 birds. Numbers can be considerably higher during severe winters when, owing to its mild climate, the Severn supports wader populations that move in from the colder coasts of Britain. The SSSI holds most of the estuary’s internationally important Curlew *Numenius arquata* and Redshank *Tringa totanus* populations, and most of its nationally important Ringed Plover *Charadrius hiaticula* and Grey Plover *Pluvialis squatarola* populations. Other waders which occur in significant numbers within the SSSI are Common Snipe *Gallinago gallinago*, Knot *Calidris canutus*, Whimbrel *Numenius phaeopus* and Turnstone *Arenaria interpres*.*

- 7.3.5 The SSSI is internationally important for Dunlin *Calidris alpina* and supports about 7.5% of the British wintering population of this species. The estuary as a whole supports about 10.5% of the British wintering population and is the single most important wintering ground of Dunlin in Britain.

- 7.3.6 In late winter and early spring the SSSI supports nationally important numbers of Shelduck *Tadorna tadorna*, following the partial dispersal from their moulting grounds in Bridgwater Bay. There are also significant numbers of Wigeon *Anas penelope*.

- 7.3.7 Receptor evaluation: Severn Estuary SSSI is of National (UK) value.

Newport Wetlands SSSI

- 7.3.8 Newport Wetlands SSSI lies 3.7 km to the south west of the Site (at the closest point), while the cable route is associated with a section of highway that runs through this site. Newport Wetlands SSSI selected for the following ornithological features:

*“In winter, Newport Wetlands support nationally (UK) important numbers of shoveler *Anas clypeata* and black-tailed godwit *Limosa limosa*. Other over-wintering species that use the site include gadwall *A. strepera*, wigeon *A. penelope*, shelduck *Tadorna tadorna*, dunlin *Calidris alpina*, redshank *Tringa totanus*, whimbrel *Numenius phaeopus* and curlew *N. arquata*. During the summer, the wet grasslands, saline*



*lagoons and reedbeds on the site support an exceptional variety of breeding birds, including nationally (UK) important breeding populations of avocet *Recurvirostra avosetta*, redshank, Lapwing *Vanellus vanellus*, water rail *Rallus aquaticus*, Cetti's warbler *Cettia cetti* and bearded tit *Panurus biarmicus*. In addition, breeding populations of ringed plover *Charadrius hiaticula* and little ringed plover *C. dubius* are also present."*

- 7.3.9 Receptor evaluation: Newport Wetlands SSSI is of National (UK) value.

Severn Estuary Ramsar

- 7.3.10 The Severn Estuary Ramsar lies 4.1 km to the south of the Site (at the closest point). This site was selected for the following ornithological features:

*"The estuary is also important for migratory birds during spring and autumn migrations. During the five year period 1987/88 to 1991/92, the estuary supported nationally important numbers of Common Ringed Plover *Charadrius hiaticula*, Dunlin *Calidris alpina*, Whimbrel *Numenius phaeopus*, and Common Redshank *Tringa totanus*. The site also regularly supports more than 20,000 waterfowl. In the five year period 1988/89 to 1992/93 the average peak count was 68,026 waterfowl, comprising 17,502 wildfowl and 50,524 waders. These included internationally important numbers of Greater White-fronted Goose *Anser albifrons albifrons* (3,002), Shelduck *Tadorna tadorna* (2,892), Gadwall *Anas strepera* (330), Dunlin *Calidris alpina* (41,683) and Common Redshank *Tringa totanus* (2,013). Several other species occur in nationally important numbers, including Lesser Black-backed Gulls."*

- 7.3.11 The receptor evaluation of the Severn Estuary Ramsar is of International value.

Severn Estuary SPA

- 7.3.12 The Severn Estuary SPA lies 4.1 km to the south of the Site (at the closest point). This area has been designated an SPA due to its importance during the spring and autumn migration periods for waders moving up the west coast of Britain, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders. This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

-
- i) Over winter: Bewick's Swan *Cygnus columbianus ssp. bewickii*, 280 individuals representing at least 4.0% of the wintering population in Great Britain (5-year peak mean 1991/2 - 1995/6)
- 7.3.13 This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:
- On passage;
- i) Curlew *Numenius arquata*, 3,903 individuals representing at least 1.1% of the wintering Europe - breeding population (5-year peak mean 1991/2 - 1995/6)
- ii) Dunlin *Calidris alpina alpina*, 44,624 individuals representing at least 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5-year peak mean 1991/2 - 1995/6)
- iii) Pintail *Anas acuta*, 599 individuals representing at least 1.0% of the wintering Northwestern Europe population (5-year peak mean 1991/2 - 1995/6)
- iv) Redshank *Tringa totanus*, 2,330 individuals representing at least 1.6% of the wintering Eastern Atlantic - wintering population (5-year peak mean 1991/2 - 1995/6)
- v) Shelduck *Tadorna tadorna*, 3,330 individuals representing at least 1.1% of the wintering North-western Europe population (5-year peak mean 1991/2 - 1995/6)
- 7.3.14 Assemblage qualification: A wetland of international importance: The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl.
- 7.3.15 Over winter, the area regularly supports 93,986 individual waterfowl (5-year peak mean 1991/2 - 1995/6) including: Gadwall *Anas strepera*, Shelduck *Tadorna tadorna*, Pintail *Anas acuta*, Dunlin *Calidris alpina alpina*, Curlew *Numenius arquata*, Redshank *Tringa totanus*, Bewick's Swan *Cygnus columbianus ssp. bewickii*, Wigeon *Anas penelope*, Lapwing *Vanellus vanellus*, Teal *Anas crecca*, Mallard *Anas platyrhynchos*, Shoveler *Anas clypeata*, Pochard *Aythya ferina*, Tufted Duck *Aythya fuligula*, Grey Plover *Pluvialis squatarola*, White-fronted Goose *Anser albifrons albifrons*, Whimbrel *Numenius phaeopus*.
- 7.3.16 Receptor evaluation: Severn Estuary SPA is of International (European) value.



Field surveys – passage and wintering bird survey summary

October to November 2020

- 7.3.17 Four target species were recorded within/adjacent the Site; lapwing (28 records), mallard (12 records), common snipe (18 records) and teal (20 records). Lapwing were recorded on both the November survey visits in flocks of 22 and 6 birds, associated with low lying arable fields containing cattle and short winter stubble. Common snipe were recorded mostly as individual birds flushed from damp grassland habitats or ditch margins. Teal were recorded in flocks during both survey visits and were associated with a large reed holding standing water along the south-eastern boundary. Mallard were recorded during one visit as a large flock, within the same reed as teal.

October 2021 to March 2022

- 7.3.18 A total of thirteen target species were recorded during the winter bird survey period, comprising black-headed gull, gadwall, herring gull, jack snipe, lapwing, lesser black-backed gull, mallard, pink-footed goose, pintail, common snipe, teal, oystercatcher and whooper swan. Five of these species (jack common snipe, pink-footed goose, pintail, oystercatcher and whooper swan) were only recorded in low numbers during single visits. Gadwall were recorded on one occasion, as a flock of 9 birds within land adjacent to the Site.
- 7.3.19 Black-headed gull (27 records), herring gull (70 records), lapwing (47 records), lesser black-backed gull (1 record), common snipe (224 records), mallard (29 records) and teal (29 records) were all recorded regularly on three or more visits.
- 7.3.20 The maximum number of lapwing present during a single survey visit was estimated to be 41 birds on 21 March, comprising a flock of 10 birds, and several smaller flocks of 3-5 birds and individuals. Lapwing were recorded on four of eleven visits and activity was strongly associated with low lying fields in the east and west of the Site. Lapwing were only associated with arable habitats when stubble/vegetation height was low. Lapwing were also recorded using fields immediately adjacent to the Site on during survey visits in February and March.
- 7.3.21 The maximum number of common snipe recorded during a single visit was 83 birds on 13 December. 82 birds were also recorded during the survey on 20 December. The majority of these birds were all flushed from the same field on both occasions,



where birds were day roosting within grassland. Common snipe were recorded on all survey visits during the winter period and were most frequently recorded in small groups of 1-3 birds, flushed from damp grassland or field margins.

7.3.22 Teal were recorded on two visits, with a peak count of 14 during a single survey and were always associated with a large wet ditch along the external south-eastern boundary. Mallard were also mostly associated with water holding ditches in the south-east and southern areas of the Site.

7.3.23 The three gull species were recorded mostly in small flocks with activity comprising foraging and loafing in arable/grassland fields.

November 2022 to March 2023

7.3.24 A total of 10 target species were recorded during the 2022/23 winter bird survey. Gadwall, lesser black-backed gull and pintail which were recorded the previous year were not recorded during this period, however kingfisher and curlew were recorded. Curlew and oystercatcher were recorded in low numbers (2-5 records) and only during single survey visits, with activity associated with arable and grazed fields in the eastern part of the site. Low numbers (<2 records) of jack snipe and pink-footed goose were each recorded on only two survey visits. Common snipe were also recorded on two survey visits but in relatively large numbers (11-16 records), although the peak count was much lower compared to the 2021/22 survey.

7.3.25 Lapwing (192 records), mallard (32 records) and teal (87 records) were all recorded regularly on at least four survey visits.

7.3.26 The maximum number of lapwing recorded within the site during a single visit was 60 birds, although a flock of approximately 85 birds was recorded on the same visit within a grass field adjacent to the site. It is likely that the 60 birds recorded within the site formed part of this larger flock. Lapwing were frequently recorded in relatively large numbers, with a count regularly exceeding 20. Lapwing activity was predominantly associated with arable fields (winter beet and cereal stubble), again showing a preference fields with short and open vegetation structure. Lapwing were also occasionally recorded using grassland habitats in the far western and eastern areas of the site.

7.3.27 Teal and mallard were predominantly recorded within reens holding water, exhibiting similar behaviour to the previous years.

7.3.28 Gull species were recorded in small flocks, foraging and loafing in arable and grass fields.

7.3.29 Four target species were recorded within the Site; Lapwing (28 records), Mallard (11 records), Snipe (18 records) and Teal (20 records). Lapwing were recorded on both the November survey visits in flocks of 22 and 6 birds, associated with low lying arable fields containing cattle and short winter stubble. Snipe were recorded mostly as individual birds flushed from damp grassland habitats or ditch margins. Teal were recorded in flocks during both survey visits and were associated with a large reed holding standing water along the south-eastern boundary. Mallard were recorded during one visit as a large flock, within the same reed as Teal.

Nocturnal survey summary - December 2021 to March 2022

7.3.30 During this period Lapwing were recorded in flocks of several birds with a similar distribution to day-time surveys; associated with low lying arable/grassland fields in south and south-east of the Site. Lapwing were recorded during nocturnal surveys in December and January when they were absent during daytime surveys. These results indicate that night-time use of the Site by Lapwing is somewhat independent from day-time use.

7.3.31 Snipe were also frequently recorded during the nocturnal surveys, however numbers involved mostly individuals. Snipe were recorded within the Site during both day and night-time surveys of the same period and were probably the same birds being recorded.

7.3.32 Mallard were recorded as individuals and were associated with standing water within reeds.

Passage bird species summary

7.3.33 No birds listed as “on passage” interest features of nearby statutory nature conservation sites were recorded here. This site is of negligible importance for these passage birds.

Wintering bird species summary

7.3.34 The following birds that are of wintering interest features of the nearby statutory nature conservation sites were recorded here during the 24 site visits:



- i) Common snipe.
- ii) Curlew.
- iii) Gadwall.
- iv) Lapwing.
- v) Lesser black-backed gull.
- vi) Mallard.
- vii) Pintail.
- viii) Teal.

Common snipe

7.3.35 Common snipe were recorded on 11 of the 15 survey visits with a maximum of 83 birds on 13 December 2021. 82 birds were also recorded during the following survey visit on 20 December. During both of these visits the majority of these birds (75 and 78) were recorded within a single field compartment. Common snipe are an interest feature of Severn Estuary SSSI. WeBs data annual peak (5-year average) for this wader within the Severn Estuary is 410 (Austin et al. 2023). These 83 birds would comprise approximately 20.24% of the estuary population. The cumulative average of 11.85 birds across the 2021/22-2022/23 surveys represents 2.89% of the SSSI population.

Snipe are of Amber conservation concern.

Curlew

7.3.36 Curlew were recorded on 1 of the 24 visits, in a flock of 5 birds. Curlew are an interest feature of the SPA Estuary SPA, and the WeBs data annual peak count (5-year average) within the Severn Estuary (Welsh counties) is 1075 (Austin et al. 2023). These birds would comprise 0.47% of the SPA population.

Gadwall

7.3.37 Gadwall were recorded on one survey visit with a maximum of 9 birds on 18th February 2022, as a single flock associated with agricultural grassland adjacent to the Site. Gadwall are an interest feature of Severn Estuary SPA & Ramsar, and Newport Wetlands SSSI. WeBs data annual peak (5-year average) for this duck within the Severn Estuary (Welsh counties) is 62 (Austin et al. 2023). These 9 birds would comprise 14.52% of the local population. However, the cumulative average of



0.43 birds across the 2021/22-2022/23 surveys represents 0.69% of the SPA population.

7.3.38 Gadwall are of Amber conservation concern.

Lapwing

7.3.39 Lapwing were recorded on 14 of the 24 survey visits, and a maximum count of 60 birds was recorded on 2nd March 2023. Lapwing are an interest feature of Severn Estuary SPA. WeBs data annual peak (5-year average) for this wader within the Severn Estuary (Welsh counties) is 1044 (Austin et al. 2023). These 60 birds would comprise 5.75% of the local population. However, the cumulative average of 12.52 birds across the 2021/22-2022/23 surveys represent 1.19% of the SPA population.

7.3.40 Lapwing are of Red conservation concern and listed under Section 7 of Environment (Wales) Act 2016.

Lesser black-backed gull

7.3.41 Lesser black-backed gull were recorded on 2 of the 24 visits, with a max count of 10. Lesser black-backed gull is an interest feature of the SPA Estuary Ramsar and the WeBs data annual peak count (5-year average) within the Severn Estuary (Welsh counties) is 287 (Austin et al. 2023). These birds would represent 3.48% of the Ramsar population. The cumulative average of 0.11 birds across the 2021/22-2022/23 surveys represent 0.18% of the SPA population.

Mallard

7.3.42 Mallard were recorded on 15 of the 24 site visits with a maximum count of 17 birds on 10 January 2023. Mallard are an interest feature of Severn Estuary SPA, and the WeBs data annual peak (5-year average) within the Severn Estuary (Welsh counties) is 807 (Austin et al. 2023). These birds would comprise 2.11% of the local population. The cumulative average of 2.29 birds across the 2021/22-2022/23 surveys represent 0.23% of the SPA population.

7.3.43 Mallard are of Amber conservation concern.



Pintail

- 7.3.44 Pintail were only recorded as 1 individual on a single visit on 18th February 2022. Pintail are an interest feature of the Severn Estuary SPA, and the WeBs data annual peak (5-year average) for Pintail within the Severn Estuary (Welsh counties) is 256 (Austin et al. 2023). 1 individual bird would comprise 0.39% of the estuary population, while the cumulative average of 0.05 birds across the 2021/22-2022/23 surveys represents <0.01% of the SPA population.
- 7.3.45 Pintail are of Amber conservation concern.

Teal

- 7.3.46 Teal were recorded on 9 of the 24 site visits, with a maximum of 18 birds on 7th February 2023. Teal are an interest feature of Severn Estuary SPA. The WeBs data annual peak (5-year average) within the Severn Estuary (Welsh counties) is 585 (Austin et al. 2023). These birds would comprise 3.08% of the local population. The cumulative average of 5.52 birds across the 2021/22-2022/23 surveys represent 0.94% of the SPA population.
- 7.3.47 Teal are of Amber conservation concern

Wintering species listed as interest features of statutory nature conservation sites

- 7.3.48 Based on the information above, the Site regularly supports >1% of wintering populations of the following species listed as interest features of the Severn Estuary SSSI/SPA/RAMSAR:
- i) Lapwing (1.19%).
 - ii) Common snipe (2.89%).
- 7.3.49 The site also regularly supports 0.94% of the teal population associated with the Severn Estuary SPA, which is also considered to be important.
- 7.3.50 Receptor evaluation: For an effect to be considered significant, it is generally accepted it should act on at least 1% of the protected site population on a regular basis. The Site is of County value for wintering lapwing, common snipe and teal populations associated with the Severn Estuary SSSI, SPA & RAMSAR sites.

Notable wintering species (not listed as interest features of statutory nature conservation sites)

- 7.3.51 Black-headed gull (Amber listed), herring gull (Red listed), oystercatcher (Amber listed), pink-footed goose (Amber listed), whooper swan (Amber listed) were all recorded during single survey visits only. These species are not interest features of the nearby Severn Estuary SSSI, SPA & RAMSAR, however are considered to be notable due to conservation status.
- 7.3.52 Oystercatcher, pink-footed goose and whooper swan were recorded in low numbers (1-3) and were recorded only on single survey visits. This shows that usage of the Site by these species is very limited, with habitats only likely to offer occasional foraging/roosting opportunities.
- 7.3.53 Herring gull and black headed gull were recorded frequently throughout the survey period, mostly in small flocks. Activity comprised loafing and foraging in the arable/grassland fields. These habitats are widespread in the local area and will likely provide opportunistic winter foraging for these species. The importance of the Site for these species is assessed as Site value.
- 7.3.54 Receptor evaluation: The Assessment Site is of Site value for notable wintering bird species.

Breeding birds survey summary 2021 survey results

- 7.3.55 A total of 59 species of birds were recorded during the breeding bird transects in the period May to July 2021. Of the species recorded, 31 species are declining and included in the BoCC Red or Amber lists, whilst 11 are listed as Priority species under Section 7, Environment (Wales) Act, 2016. The remainder were common and widespread passerines, corvids and water-fowl and are scoped out of this assessment.
- 7.3.56 Target species recorded here include black-headed gull, common gull, greater black-backed gull, herring gull, and lapwing. Notable ground nesting species which utilise the field interiors include meadow pipit and skylark.
- 7.3.57 The majority of other notable species activity was associated with the hedgerows, scrub, woodland and ditches which enclose the field compartments and will be outside the footprint of the proposed solar farm.



7.3.58 Lapwing were the only wader species recorded during the surveys undertaken. Lapwing were recorded on four out of the five survey visits, with a peak count of 42 on 29th May 2021.

7.3.59 As per O'Brian and Smith (1992), the number of breeding pairs is taken as the maximum number of birds seen on a single visit (between early April to late May), divided by two. The maximum recorded birds in late May was 42, which therefore provides an estimate of 21 breeding pairs associated with the site

2022 survey results

7.3.60 The 2022 survey focussed on an additional land parcel that was added to the development site, then proposed as a mitigation area (but since having been included within the development footprint). The focus of this survey was to identify if the proposed land would be suitable to support breeding lapwing displaced from the wider site.

7.3.61 No lapwing were recorded using this additional land parcel. A total of 10 lapwing were exhibiting breeding behaviour were recorded within land immediately adjacent to this parcel, that lies both within the Proposed Development footprint, and outside beyond its boundary.

2023 survey results

7.3.62 The 2023 surveys are currently on-going. Once the survey has been completed, this report will be updated.

Hedgerow nesting birds

7.3.63 A total of 15 BoCC Red/Amber or Priority species were recorded; bullfinch (peak count of 2), dunnock (17) greenfinch (8), house sparrow (9), kestrel (2), linnets (17), mistle thrush (2), song thrush (5), starling (33), stock dove (2), whitethroat (27), willow warbler (2), wood pigeon (12), wren (20) and yellowhammer (4). Of these, 4 species are also listed under Section 7 Environment (Wales) Act 2016 (bullfinch, dunnock, house sparrow, linnets, song thrush, starling and yellowhammer). bullfinch, dunnock, linnets and wren are assessed as confirmed breeders and the remaining are possible or probable breeders.

7.3.64 Bullfinch, dunnock and linnets are listed under Section 7 Environment (Wales) Act 2016.



7.3.65 Receptor evaluation: The Assessment Site is of Local value for hedgerow nesting birds. The 2023 breeding bird survey is currently on-going. This assessment will be revisited once the full results have been assessed.

Marshland and water nesting birds

7.3.66 Marshland and other water birds are likely nesting in association with reens. Cetti's warbler (peak count of 6), kingfisher (1), mallard (15), moorhen (6), reed bunting (3), sedge warbler (1), shelduck (3) were recorded during the breeding bird surveys. Most of these species are assessed as possible or probable breeder, with the exception of Shelduck which was assessed as a non-breeder

7.3.67 Kingfisher, mallard, reed bunting, sedge warbler and shelduck are either BoCC 5 Red/Amber listed. Cetti's warbler and kingfisher are also listed under Schedule 1 of Wildlife & Countryside Act (1981). Reed Bunting is listed under Section 7 Environment (Wales) Act 2016.

7.3.68 Breeding Cetti's warbler, reed warbler and moorhen are interest features of Magor Marsh SSSI, while Cetti's warbler is also an interest feature of Newport Wetlands SSSI.

7.3.69 Receptor evaluation: The Assessment Site is of Local value for marshland and water nesting birds. The 2023 breeding bird survey is currently on-going, this assessment will be revisited once the full results have been assessed.

Ground nesting birds

7.3.70 The site supports approximately 21 pairs of Lapwing during the breeding season. Breeding was confirmed through the observations of pairs with chicks, and a peak count of 9 pairs with chicks were observed during the survey visit on 29 May 2021. The majority of breeding lapwing activity was concentrated within 3 arable field compartments in the south-east of the site. Lapwing are of Red conservation concern and are listed under Section 7 of the Environment (Wales) Act 2016. Breeding lapwing are an interest feature of Newport Wetlands SSSI.

7.3.71 Skylark were recorded during all surveys, with activity associated with most field compartments. Skylark activity predominantly involved display flights and no evidence of successful breeding (such as carrying food/faecal sacks or presence of chicks) was observed. Numbers of Skylark noticeably declined during the surveys,

which reflects the documented poor suitability of agricultural habitats (particularly winter sown cereal, as is present within the Site) for successful multiple breeding attempts of Red conservation concern and are listed under Section 7 of the Environment (Wales) Act 2016.

7.3.72 Receptor evaluation: The Site is of Local value for ground nesting passerines, excluding Lapwing. The Site is assessed as County value for breeding waders (including Lapwing).

Gull species

7.3.73 Four gull species were recorded within the site; Black-headed gull (peak count of 4), common gull (2), great black-backed gull (12) and herring gull (32). Herring gull is a BoCC 5 Red list species and also listed as a Priority species under Section 7 Environment (Wales) Act 2016.

7.3.74 Gull species were recorded foraging/loafing within grassland fields and are very unlikely to breed within the site.

7.3.75 The site is assessed as Site value for gull species. The 2023 breeding bird survey is currently on-going. This assessment will be revisited once the full results have been assessed.

Evaluation of Receptors

7.3.76 The ornithological receptors to be considered for significant effects are given in Table 7.4. These are of local or higher value; those ecological receptors that have less than local value are not considered further unless they are European Protected Species and there is potential for them to be present (in which case the regulatory context i.e. the Habitats Regulations 2010 is considered), or they are the subject of national legislation (i.e. Wildlife and Countryside Act 1981).

Table 7.4 Ornithological receptors to be considered for significant effects

Receptor	Status	Valuation
Severn Estuary Ramsar	Ramsar Convention	International
Severn Estuary SPA	The Conservation of Habitats and Species Regulations 2017	International
Severn Estuary SSSI	Wildlife and Countryside Act 1981	National
Magor Marsh SSSI	Wildlife and Countryside Act 1981	National

Receptor	Status	Valuation
Newport Wetlands SSSI	Wildlife and Countryside Act 1981	National
Wintering and passage birds (Lapwing & Snipe)	Wildlife and Countryside Act 1981, Environment (Wales) Act 2016, Section 7	Local
Hedgerow nesting birds	Wildlife and Countryside Act 1981, Environment (Wales) Act 2016, Section 7	Local
Marshland and water nesting birds	Wildlife and Countryside Act 1981, Environment (Wales) Act 2016, Section 7	Local
Ground nesting birds - passerines	Wildlife and Countryside Act 1981, Environment (Wales) Act 2016, Section 7	Local
Ground nesting birds - waders	Wildlife and Countryside Act 1981, Environment (Wales) Act 2016, Section 7	County

7.4 Assessment of Effects

Embedded Mitigation

7.4.1 It is recognised that physical changes as a result of a solar park development in this location, such as changes in views or ground disturbance, would result from the proposal. These changes are referred to as impacts. The design and layout of the solar park has responded to the location's value and sensitivities in order to reduce the magnitude of such impacts through primary (embedded) mitigation, and are summarised below:

- i) All construction works (including decommissioning) will take place from Mid-July onwards, outside the core breeding season to minimise impacts to breeding birds.
- ii) Existing farm access tracks will be used wherever possible during construction, maintenance and decommissioning; improvements to these tracks including possible widening will be required. These will aim to utilise existing hedgerow gaps wherever possible and only very small scale hedgerow loss for one of the access routes will be required. This will minimise the loss of breeding habitat for birds.
- iii) Approximately 7 km of new native hedgerow will be planted as visual screening providing nesting and foraging habitat for nesting birds.

- iv) Existing watercourse crossing points will be used by construction traffic where possible to minimise potential impacts to reed bird habitats.
- v) Panels will be bolt anchored to a metal frame (table), which will be mounted on steel posts driven or secured into the ground (the pile driven sub-construction method). Solar panels will not be vertically aligned. No substantial areas of concrete construction will be required, with the exception of foundations for the inverters and transformer stations preventing unnecessary land take and impacts on semi-improved and improved grassland bird foraging and breeding habitats.
- vi) Solar arrays will be installed with significant clearance between rows and the arrays themselves are partially transparent, which will permit vegetation growth beneath and continue to provide bird foraging and potential nesting habitat.
- vii) By design solar panels will be positioned at an inclined angle and this, along with the large gaps between rows this will enable birds to distinguish the surface from a water body.
- viii) No land take of field margins will occur as a result of the scheme allow a diverse management.
- ix) During construction, operation and decommissioning 12.5 m from reens, and 7 m from ditches and hedgerows will be implemented in line with National Resources Wales (NRW) requirements.
- x) The proposed scheme has been designed so that there will be no obstructions to watercourses, therefore allowing any fauna to commute freely.
- xi) Stock fencing will be included in the design around the solar panel arrays for insurance purposes, but a minimum of 12.5m from reens, and 7m from ditches and hedgerow will be maintained from reens and ditches at all fields boundaries.
- xii) No new lighting regime will be introduced adjacent to any watercourses to prevent impacts to nocturnal fauna.

7.4.2 The design and layout of the solar park has responded to the location's value and sensitivities in order to reduce the magnitude of such impacts through primary (embedded) mitigation and are summarised below:

- i) Avoidance of construction in the accepted nesting season (March to August inclusive) in areas where nesting birds have been recorded.
- ii) Existing farm access tracks would be used wherever possible during construction, maintenance and decommissioning; improvements to these tracks including possible widening would be required. These would aim to utilise

- existing hedgerow gaps wherever possible. This would minimise the loss of breeding habitat for birds.
- iii) Existing watercourse crossing points would be used by construction traffic where possible to minimise potential impacts to reeN bird habitats.
 - iv) Solar panels would be bolt anchored to a metal frame (table), which would be mounted on steel posts driven or secured into the ground (the pile driven sub-construction method). Solar panels would not be vertically aligned. No substantial areas of concrete construction would be required, with the exception of foundations for the inverters and transformer stations preventing unnecessary land take and impacts on semi-improved and improved grassland bird foraging and breeding habitats.
 - v) Solar arrays would be installed with significant clearance between rows and the arrays themselves are partially transparent, which would permit vegetation growth beneath and continue to provide bird foraging and potential nesting habitat.
 - vi) By design solar panels would be positioned at an inclined angle and this, along with the large gaps between rows, would enable birds to distinguish the surface of panels from a water body.
 - vii) The Proposed Development would not require land take of field margins.
 - viii) During construction, operation and decommissioning 12 m buffers from the main reens would be implemented in line with National Resources Wales (NRW) requirements.
 - ix) The Proposed Development has been designed so that it there would be no obstructions to watercourses, therefore allowing any fauna to commute freely.
 - x) Stock fencing would be included in the design around the solar panel arrays, but a minimum of 12.5 m margins would be maintained from reens; and 7 metres from ditches and hedgerows.
 - xi) No new lighting regime would be introduced adjacent to any watercourses to prevent impacts to nocturnal fauna.

Construction Phase Effects

- 7.4.3 During the construction phase, there is predictable adverse effects that are generally unavoidable; many are temporary or short term and can be minimised as part of construction management, but some have the potential for more lasting effect. These include:

- i) Temporary habitat loss associated with temporary access routes, cable trenches, storage, and site buildings and site compounds.
- ii) Areas for plant maintenance and for storage of oils, fuels and chemicals.
- iii) Dust generation.
- iv) Environmental incidents and accidents.
- v) Acoustic disturbance and vibration from construction activities.
- vi) Ground excavation.
- vii) Horizontal directional drilling operations.
- viii) Removal of site offices and temporary compounds/tracks.
- ix) Vegetation clearance.

7.4.4 However, the permanent loss of habitat under the development is addressed as an operational effect.

7.4.5 The potential for adverse impacts has been minimised as far as possible through the application of good practice techniques and adherence to well-designed method statements. These would be managed through the Construction and Environment Management Plan (CEMP) (Appendix 4.1) and the Landscape and Environment Management Plan (LEMP) (Appendix 4.3) and are detailed as embedded and secondary mitigation.

Designated Sites

Magor Marsh SSSI

7.4.6 The Proposed Development is located approximately 1.7 km to the south east of the Site (at the closest point) and is of National (UK) value for its breeding birds including Cetti's Warbler, Reed Warbler and Moorhen that were present within the Site during the breeding season.

7.4.7 The primary pathway of effect would be disturbance whilst birds associated with Magor Marsh SSSI were breeding. Due to separation distances, it is extremely unlikely that any birds within this SSSI would be directly impacted during the construction phase. Furthermore, the Cetti's Warbler and Moorhen do not range over large distances and birds nesting within this SSSI are unlikely to be actively foraging within the Assessment Site during the construction phase.

7.4.8 No significant effect on this receptor during the construction phase is predicted.



Severn Estuary SSSI

- 7.4.9 The Proposed Development is located 4.1 km to the north of the Severn Estuary SSSI which is of National (UK) value for its wintering and passage birds, of which common snipe were frequently recorded within the Site.
- 7.4.10 The primary pathway of effect on common snipe would be temporary loss of wintering habitat (supplementary to the SSSI) and disturbance to construction activities during the wintering season affecting interest feature birds at this site.
- 7.4.11 The Site regularly supports moderate numbers of snipe (<20) and occasionally supports birds in large numbers (peak counts of 83 & 82 on two occasions). For the most part, snipe numbers are reflective of a site of this size, however during the two occasions where large numbers were recorded it is possible that wintering populations associated with the SSSI were utilising the Site.
- 7.4.12 The provision of the mitigation area over the winter period (October to March) would ensure habitat availability is maintained during the construction phase, and that the Site can continue to occasionally support wintering birds associated with the SSSI.
- 7.4.13 The wintering mitigation area would be instated prior to the first wintering season (October to March) within the construction phase, allowing it to support any displaced birds from the construction areas. Given the large number of snipe occasionally recorded within the development site, the mitigation area will be specifically managed to ensure suitable sward conditions for roosting/foraging snipe. The total mitigation area covers approximately 12 ha, compared to the single field of approximately 3.5 ha where these large numbers of snipe were twice recorded and so will provide a sufficient area of habitat capable of occasionally supporting high numbers of snipe over the winter period.
- 7.4.14 The adverse effect on the Severn Estuary SSSI would be temporary, minor and negative.

Newport Wetlands SSSI

- 7.4.15 Newport Wetlands SSSI lies 3.7 km to the south west of the main development site at the closest point with the cable route passing along its edge. This site is of National Importance for overwintering and breeding birds. Of these, the following interest



- features were recorded within the Assessment Site; curlew (wintering), gadwall (wintering), Cetti's warbler (breeding) and lapwing (breeding).
- 7.4.16 Due to separation distance no effect is predicted during the construction of solar array, although the primary pathway of effect during cabling would be disturbance.
- 7.4.17 Embedded mitigation would require construction to take place outside of the core breeding season. Cabling will have a negligible effect on breeding birds associated with this receptor during the construction phase.
- 7.4.18 The cable route would pass along a two-lane highway on the edge of this SSSI and birds within the SSSI would be screened from works by tall hedgerows. Due to the limited scale of the cable works wintering birds within the SSSI are unlikely to be disturbed as they will normalised to vehicle movements and noise, whilst they are also unlikely to roost or feed close the tall hedgerows along the highway.
- 7.4.19 It is near-certain that there would be a negligible effect on this receptor during the construction phase. Any adverse effect if it was to occur would be minor and temporary, and associated with the cable route and wintering birds within the SSSI boundary.

Severn Estuary Ramsar

- 7.4.20 The Site is located 4.1 km to the north of the Severn Estuary Ramsar which is of International value for its wintering and passage birds. Of these interest features gadwall and lesser black-backed gull were the only species recorded here.
- 7.4.21 The primary pathway of effect would be temporary disturbance and habitat loss to construction activities during the wintering season affecting interest feature birds that are active within the Assessment Site.
- 7.4.22 Gadwall was seldom recorded within the Proposed Development area and any birds that may be occasionally displaced during the construction phase could make use of wintering bird mitigation area which will be in place prior to the first wintering season (October to March) within the construction period.
- 7.4.23 Lesser black-backed gull were recorded on two survey visits in relatively low numbers and associated with arable/grassland habitats. Foraging opportunities would remain available for any birds that may be occasionally displaced from the

Assessment Site during the construction phase as these habitats are widespread in the local area.

- 7.4.24 It is near certain there would be a negligible effect on this receptor during the construction phase.

Severn Estuary SPA

- 7.4.25 The Severn Estuary SPA lies 4.1 km to the south of the Site and is of International value for its wintering and passage birds. Of these interest features curlew, gadwall, lapwing, mallard, pintail and teal were recorded within the Site.
- 7.4.26 The primary pathway of effect would be temporary habitat loss and disturbance to construction activities during the wintering season affecting SPA interest feature species that are active within the Assessment Site.
- 7.4.27 Pintail were recorded on one occasion with a maximum of 1 bird, mallard were recorded on 15 of 24 occasions with a maximum of 17 birds, and teal were recorded on 9 occasions with a maximum of 18 birds. These species were predominantly recorded within ditches/reens associated with the Assessment Site and would therefore unlikely to be displaced during the construction phase, given the exclusion zone which will be in place to protect these features.
- 7.4.28 Lapwing were recorded on 15 occasions with a maximum of 60 birds. Curlew were recorded on 1 occasion in a small flock of 5 birds, while gadwall were recorded on 1 occasion with a maximum of 9 birds. Both these species were recorded foraging within the open field compartments, however Gadwall were outside of the Proposed Development footprint.
- 7.4.29 The provision of the mitigation area during the winter period (October to March) will ensure availability of a similar extent of winter foraging habitat is maintained during the construction phase, which will be viable for the interest feature species recorded here.
- 7.4.30 Lapwing and teal were regularly recorded in numbers that would represent $\geq 1\%$ of the Severn Estuary SPA populations.
- 7.4.31 Teal activity was always associated with reens at the eastern boundary of the Site, and would not be displaced during the construction phase.

- 7.4.32 A cumulative average of 1.19% of the Lapwing population associated with the SPA population were recorded using the Site. The provision of the mitigation area over the winter period (October to March) will ensure habitat availability is maintained during the construction phase, and that the site can continue to support wintering birds associated with the SPA.
- 7.4.33 The wintering mitigation area will be instated prior to the first wintering season (October to March) within the construction phase, allowing it to support any displaced birds from the construction areas. The mitigation area will be specifically managed to ensure suitable sward conditions for roosting/foraging Lapwing.
- 7.4.34 The adverse effect the on the interest features of the Severn Estuary SPA would be temporary and minor.

Species Groups

Notable wintering species (not listed as interest features of statutory nature conservation sites)

- 7.4.35 The Assessment Site is of Local value for wintering and passage birds; with one bird species listed under Section 7 of Environment (Wales) Act 2016 frequently present during winter, while the site occasionally supports winter populations of bird species (snipe) associated with nearby statutory nature conservation sites.
- 7.4.36 The primary pathway of effect during the construction phase would be disturbance and temporary habitat loss during the wintering season.
- 7.4.37 The provision of the mitigation area over the winter period will ensure adverse effect due to habitat loss on these birds is negligible. Any effect would be associated with disturbance or displacement would be a minor adverse effect for the period of construction

Hedgerow nesting birds

- 7.4.38 The Assessment Site is of Local value for hedgerow nesting birds with 15 Red/Amber listed bird species recorded, of which three species listed under Section 7 of Environment (Wales) Act 2016 are confirmed to be breeding here.
- 7.4.39 The primary pathway of effect during the construction phase would be disturbance and damage or abandonment of nests if works are undertaken during the breeding



season. However, embedded mitigation would require construction to take place outside of the core breeding season, while boundary habitats would be protected with exclusion zones demarcated by suitable temporary fencing.

- 7.4.40 This would ensure it is near-certain that there would be a negligible effect on this receptor during the construction phase.

Marshland and water nesting birds

- 7.4.41 The Assessment Site is of Local value for marshland and water nesting birds with 2 species (Kingfisher and Cetti's Warbler) listed under Schedule 1 of Wildlife & Countryside Act (1981) and one species (Reed Bunting) under Section 7 Environment (Wales) Act 2016, assessed as possibly or probably breeding at this site.

- 7.4.42 The primary pathway of effect during the construction phase would be disturbance and damage or abandonment of nests if works are undertaken during the breeding season. However, embedded mitigation would require construction to take place outside of the core breeding season, while boundary habitats would be protected with exclusion zone demarcated by suitable temporary fencing would ensure it is near-certain that there would be a negligible effect on this receptor during the construction phase.

Ground nesting birds

- 7.4.43 The Assessment Site is of Local value for ground nesting passerines such as Skylark and Yellow Wagtail, both of which are listed under Section 7 of Environment (Wales) Act 2016 and recorded here, but without any observable breeding success largely due to agricultural practices. The Assessment Site is of County value for ground nesting waders such as Lapwing, which is listed under Section 7 of Environment (Wales) Act 2016 and recorded successfully breeding here.

- 7.4.44 The primary pathway of effect during the construction phase would be disturbance and damage to, or abandonment, of nests if works are undertaken during the breeding season. However, embedded mitigation would require construction to take place outside of the core breeding season, and therefore is unlikely to impact ground nesting bird species.



7.4.45 Any food items (such as soil invertebrates) exposed during construction in the nesting period would be a positive effect. No significant effects, positive or adverse, are predicted.

Operational Phase Effects

7.4.46 During the operational phase, effects may arise from:

- i) Maintenance.
- ii) Changes in land-management.
- iii) Loss of habitat and habitat fragmentation.
- iv) Displacement.

7.4.47 The potential for adverse impacts have been minimised as far as possible through the application of good practice techniques and adherence to well-designed method statements. These would be managed through the LEMP and are detailed as embedded and secondary mitigation.

Designated Sites

Magor Marsh SSSI

7.4.48 The SSSI is located approximately 1.7 km to the south-east of the Site (at the closest point) and is of National (UK) value for its breeding birds including Cetti's Warbler and Moorhen that were present within the Assessment Site during the breeding season.

7.4.49 The primary pathway of effect would be disturbance during maintenance operations, although due to separation distances it is unlikely that any birds within the SSSI would be directly impacted during the operational phase. Furthermore, the Cetti's Warbler and Moorhen do not range over large distances and birds nesting within this SSSI are unlikely to be actively foraging within the Assessment Site during the operational phase.

7.4.50 No effects are predicted on this receptor



Severn Estuary SSSI

- 7.4.51 The Site is located 4.1 km to the north of the Severn Estuary SSSI, which is of National (UK) value for its wintering and passage birds including snipe that were present within the Assessment Site.
- 7.4.52 The Site regularly supports moderate numbers of snipe (<20) but occasionally supports birds in large numbers (peak counts of 83 & 82 on two occasions). For the most part, snipe numbers are reflective of a site of this size, however during the two occasions where large numbers were recorded it is possible that wintering populations associated with the SSSI were utilising this site.
- 7.4.53 The primary pathway of effect would be permanent change of land use and habitat degradation for interest feature birds of this SSSI.
- 7.4.54 It is predicted that snipe would still be able to use solar array fields, in the buffer zones and rides between solar panels in the same habitat, although carrying capacity for occasional large flocks within individual fields may be reduced.
- 7.4.55 The wintering mitigation area would be instated prior to the first wintering season (October to March), allowing it to support occasional large flocks of displaced birds from the solar park. The mitigation area would be specifically managed to ensure suitable sward conditions for roosting/foraging snipe. The total mitigation area covers approximately 15 ha, compared to the single field of approximately 3.5 ha where these large numbers of snipe were twice recorded and so would provide a sufficient area of habitat capable of supporting high numbers of snipe over the winter period.
- 7.4.56 Any effect upon the Severn Estuary SSSI during the operational phase would be minor and adverse. Embedded mitigation would provide suitable wintering habitat such that any effect upon the Severn Estuary SSSI bird species during the operational phase would be negligible.

Newport Wetlands SSSI

- 7.4.57 Newport Wetlands SSSI lies 3.7 km to the south-west (at the closest point) of the Site and is of National Importance for overwintering and breeding birds. Of these interest features Cetti's Warbler (breeding) and Lapwing (breeding) were recorded within the Assessment Site.

7.4.58 Due to separation distance, it is unlikely that breeding birds associated with the SSSI rely on habitats within the Assessment Site.

7.4.59 No impacts are predicted for the cable route and therefore no effects are predicted on this receptor

Severn Estuary Ramsar

7.4.60 The Site is located 4.1 km to the north of the Severn Estuary Ramsar, which is of International value for its wintering and passage birds. Gadwall were the only interest features recorded here.

7.4.61 The primary pathway of effect would be permanent degradation/loss of habitat used by interest feature birds of this SSSI.

7.4.62 Any Gadwall present here are likely to be associated with the Ramsar site. Based on the survey results, the Site therefore provides very occasional foraging opportunities for this species. It is not anticipated that siting of solar arrays within field interiors would prevent Gadwall from foraging here. Furthermore, the wintering mitigation habitat will also provide suitable winter foraging opportunities of a similar nature to that within the site.

7.4.63 Lesser Black-backed Gull were recorded on two survey visits in relatively low numbers and associated with arable/grassland habitats. Foraging/loafing opportunities would remain available within the Site during the operational phase, within created grassland areas within the development footprint. Furthermore, agricultural habitats are widespread in the local area and any adverse impact to this lesser black-backed gull population is not predicted to be likely.

7.4.64 It is therefore near certain there will be a negligible effect on this receptor during the operational phase and no significant effect is predicted.

Severn Estuary SPA

7.4.65 The Severn Estuary SPA lies 4.1 km to the south of the Site and is of International value for its wintering and passage birds. Of these interest features Gadwall, Lapwing, Mallard, Pintail and Teal were recorded within the Site.

7.4.66 The primary pathway of effect would be permanent degradation/loss of habitat and displacement for interest feature birds of this SPA.



- 7.4.67 Pintail were recorded on one occasion with a maximum of 1 bird, Mallard were recorded on 9 of 15 occasions with a maximum of 11 birds, and Teal were recorded on 5 occasions with a maximum of 17 birds. These species were predominantly recorded within ditches/reens associated with the Site and would therefore unlikely to be displaced during the operational phase, given the ditch buffer zone which will be in place to protect these features, for the operational life of the Proposed Development.
- 7.4.68 Lapwing were recorded on 15 occasions with a maximum of 60 birds and Gadwall were recorded on 1 occasion with a maximum of 9 birds. Both these species were recorded foraging within the open field compartments, however Gadwall were recorded outside of the Proposed Development footprint.
- 7.4.69 Lapwing and teal were recorded in numbers that would represent $\geq 1\%$ of the Severn Estuary SPA populations.
- 7.4.70 Teal activity was always associated with reens at the eastern boundary of the Site, and will not be displaced during the operational phase, given the ditch buffer zone which will be in place for the operational life time of the Proposed Development.
- 7.4.71 A cumulative average of 1.19% of the Lapwing population associated with the SPA population were recorded using the Assessment Site. The provision of the mitigation area over the winter period (October to March) will ensure habitat availability is maintained during the operational phase, and that the site can continue to support wintering birds associated with the SPA.
- 7.4.72 The wintering mitigation area will be instated prior to the first wintering season (October to March) within the construction phase, allowing it to support any displaced birds from the construction areas. The mitigation area will be specifically managed to ensure suitable sward conditions for roosting/foraging Lapwing.
- 7.4.73 Adverse effect the on the Severn Estuary SPA would therefore be minor negative.

Species Groups

Notable wintering species (not listed as interest features of statutory nature conservation sites)

- 7.4.74 The Assessment Site is of Site value for notable wintering birds; with one bird species listed under Section 7 of Environment (Wales) Act 2016 frequently present during



winter (herring gull), while the Site also occasionally supports small numbers of Amber listed species (black-headed gull, pink-footed goose, whooper swan and oystercatcher)

7.4.75 The primary pathway of effect during the operational phase would be habitat degradation/loss and displacement during the wintering season.

7.4.76 The provision of the mitigation area over the winter period will ensure adverse effect due to habitat loss on these birds is unlikely, while adverse effect due to displacement would be minor adverse.

Hedgerow nesting birds

7.4.77 The Assessment Site is of Local value for hedgerow nesting birds with 15 Red/Amber listed bird species recorded, of which three species listed under Section 7 of Environment (Wales) Act 2016 are confirmed to be breeding here.

7.4.78 The primary pathway of effect during the operational phase would be disturbance and damage to, or abandonment, of nests during maintenance visits and increased food items associated with changes in land management.

7.4.79 All boundary habitats would be protected with a buffer zone, which would be maintained through the operational phase of the development.

7.4.80 This would ensure it is near-certain that there would be a negligible effect on this receptor during the operational phase and therefore is unlikely to impact hedgerow nesting bird species. Increased foraging opportunities associated with the creation and management of permanent grassland habitats would provide a minor positive effect.

Marshland and water nesting birds

7.4.81 The Assessment Site is of Local value for marshland and water nesting birds with two species (Kingfisher and Cetti's Warbler) listed under Schedule 1 of Wildlife & Countryside Act (1981) and one species (Reed Bunting) under Section 7 Environment (Wales) Act 2016, assessed as possibly or probably breeding at this site.



- 7.4.82 The primary pathway of effect during the operational phase would be disturbance and damage or abandonment of nests during maintenance visits and increased food items associated with changes in land management.
- 7.4.83 All boundary habitats would be protected with buffer zone which would be maintained through the operational phase of the development.
- 7.4.84 This would ensure it is near-certain that there would be a negligible effect on this receptor during the operational phase and therefore is unlikely to impact marshland and water nesting bird species. Increased foraging opportunities associated with the creation and management of permanent grassland habitats will provide a minor positive effect.

Ground nesting birds

- 7.4.85 The Assessment Site is of Local value for ground nesting passerines such as Skylark and Yellow Wagtail, both of which are listed under Section 7 of Environment (Wales) Act 2016 and recorded here, but without any observable breeding success largely due to agricultural practices. The Assessment Site is of County value for ground nesting waders such as Lapwing, which is listed under Section 7 of Environment (Wales) Act 2016 and recorded successfully breeding here.
- 7.4.86 The primary pathway of effect would be permanent habitat loss during the breeding season.
- 7.4.87 Skylark have been documented nesting within boundary habitats to solar farms and would include these areas in their territories . An increase in the diversity of the swards associated with changes in grazing and grassland creation during the operational phase should increase the invertebrate numbers providing skylarks and their broods with more food. Taking into account the abundance of similar habitat comprising large open fields in the adjacent landscape, the low potential for the existing agricultural habitats for successful nesting, and the potential benefits to a wide variety of bird species, the operational phase of the proposed solar farm would have a minor negative impact on ground nesting passerines.
- 7.4.88 A total of 21 breeding pairs of Lapwing were recorded within the Assessment Site. Lapwing require open vista, short sward habitats for nesting and it is anticipated that these birds would not use the site for breeding during the operational phase. A mitigation area (15 ha), located adjacent to current breeding areas would be

managed specifically for breeding Lapwing for the entirety of the operational phase. This would provide an area of sufficient size and suitability to support displaced birds. Birds have been recorded breeding in adjacent fields outside of the Site therefore the mitigation area would ensure that the locality can continue to support breeding lapwing populations. This is likely to result in a long-term positive gain for this species by providing a consistent, secure breeding area where nesting success rates are likely to be higher compared to the existing agricultural land.

- 7.4.89 Taking the mitigation into account, no adverse effect is predicted for breeding Lapwing.

Cumulative Effects

- 7.4.90 Cumulative impacts are those additional changes caused by a proposed development in conjunction with similar developments, or as the combined effect of several developments taken together.

- 7.4.91 An assessment of the cumulative impact arising from the solar park development at this site requires that the relevant information relating to the individual impact of adjacent developments is available.

- 7.4.92 Approved developments that have the potential for a cumulative impact, and with sufficient data available within the public domain, are considered here.

- 7.4.93 Cumulative impacts arising from two or more developments may be:

- i) Additive - effects are summed
- ii) Antagonistic – the cumulative impacts are less than their summed values
- iii) Synergistic – the cumulative impact is greater than the summed impact.

Rush Wall Solar Park

- 7.4.94 The application for the Rush Wall Solar Park undertook a full ornithological impact assessment and found there to be no significant effects upon all receptors. This scheme secured 22 ha of land to be specifically managed for breeding lapwing.

- 7.4.95 The combined total (Rush Wall and the Proposed Development) would result in 34 ha of land managed specifically for breeding lapwing, which would likely provide a large positive benefit for local populations.



Magor Net Zero

- 7.4.96 This application is for a solar and wind power facility at a location south of the brewery including ground-mounted solar PV, wind turbine, hydrogen electrolysers, hydrogen and energy storage and ancillary and associated infrastructure and cabling.
- 7.4.97 No formal assessments have been made and this project cannot be objectively considered in this assessment.

Magor Brewery Newport Road Magor Caldicot

- 7.4.98 The application description is for the erection of sixteen fermentation vessels, enclosed supporting structure and external stairs; extension of existing high level access walkway; earth works; and temporary works including re-use of existing car park as vessel assembly site, creation of two temporary replacement car parks, temporary site roads and walkways, and associated works.
- 7.4.99 Following adoption of mitigation, no significant impacts were predicted for statutory nature conservation sites, habitats or species. Cumulative effects are unlikely.

Monmouthshire County Council application DM/2019/01937 Land At Vinegar Hill Vinegar Hill Undy Monmouthshire

- 7.4.100 The application description is: Hybrid planning application - Outline planning application for up to 155 dwellings, associated open space and infrastructure with all matters excluding access reserved, of which full planning permission is sought for 72 dwellings, associated open space and infrastructure.
- 7.4.101 Following adoption of mitigation, no significant impacts were predicted for statutory nature conservation sites, habitats or species. Cumulative effects are unlikely.

Monmouthshire County Council application DC/2016/00883 Rockfield Farm, The Elms, Undy, Caldicot, Monmouthshire, NP26 3EL

- 7.4.102 The application description is: Master planned development of 13.8 hectares of land for residential use and employment use; up to 266 Proposed residential units and approximately 5575 square meters of B1 floor space.



7.4.103 No formal assessment of impacts has been made. NRW have made no objection indicating that impacts on protected species and designated sites is unlikely. Cumulative effects are unlikely.

Newport City Council application 06/0471 Glan Llyn Development Site - Queensway Llanwern Newport South Wales

7.4.104 This is a complex application that has been running for nearly two decades. In the initial ES it is stated that:

- i) Providing all site works are undertaken in accordance with best practice guidance the Proposed Development will not have an impact upon any sites designated for their nature conservation value.
- ii) Specialist surveys were undertaken for otter, water vole, reptiles, amphibians and invertebrates. The surveys did not identify any current or historic use of the site by any of these species. The ecological assessment concluded that there was no evidence to indicate the presence of any other protected or notable wildlife in and adjacent to the site.

Land At Vinegar Hill Vinegar Hill, Undy, Monmouthshire

7.4.105 The application description is for a hybrid planning application - Outline planning application for up to 155 dwellings, associated open space and infrastructure with all matters excluding access reserved, of which full planning permission is sought for 72 dwellings, associated open space and infrastructure.

7.4.106 Following adoption of mitigation, no significant impacts were predicted for statutory nature conservation sites, habitats or species. Cumulative effects are unlikely.

Rockfield Farm, The Elms, Undy, Monmouthshire

7.4.107 The application description is for a master planned development of 13.8 hectares of land for residential use and employment use; up to 266 Proposed residential units and approximately 5575 square meters of B1 floor space.

7.4.108 Following adoption of mitigation, no significant impacts were predicted for statutory nature conservation sites, habitats or species. Cumulative effects are unlikely.



7.5 Mitigation

- 7.5.1 Mitigation, enhancement and monitoring is proposed for valued receptors. This is detailed fully within the accompanying LEMP, and it is expected that this would be secured through a pre-commencement planning condition requiring the LEMP to be approved by NCC and NRW.
- 7.5.2 The LEMP includes further detail of the mitigation areas discussed below and outlines specific management objectives that would be required to achieve the desired condition in order to mitigate the impacts on receptors previously detailed.

Lapwing breeding mitigation area

- 7.5.3 Mitigation for loss of breeding Lapwing habitats would comprise targeted management of 12 ha of land within close proximity (~200m) to where Lapwing were recorded breeding during the surveys (within the same landownership). Further details of this are contained in the Breeding Bird Report, Figure 4.1 Illustrative Landscape Masterplan and the LEMP.
- 7.5.4 The mitigation area would provide optimal habitat for this bird, immediately adjacent to current breeding areas, and so minimising displacement and ensuring the current population can continue to breed within the locality.
- 7.5.5 This area would be fully instated prior to commencement of construction, and would only cease to be managed for Lapwing upon completion of the decommissioning, thereby maintaining habitat availability for the duration of the Proposed Development.
- 7.5.6 Further details of the Lapwing breeding mitigation area and associated targeted management are contained the LEMP.

Wintering bird mitigation area

- 7.5.7 Mitigation for the displacement of occasional flocks of Snipe, and loss of winter foraging habitat for Lapwing would comprise targeted management of the mitigation area detailed above, but over the winter months (October to March).
- 7.5.8 This area would be instated prior to commencement of construction and would only cease to be managed for wintering birds upon completion of the decommissioning.



- 7.5.9 Snipe and Lapwing require relatively similar conditions for winter foraging and roosting. Targeted management would create suitable conditions for both species, which would also provide opportunities for other wintering birds detailed in this report, such as Gadwall and Mallard.
- 7.5.10 Further details of the wintering bird mitigation area and associated targeted management are contained the LEMP.
- 7.5.11 The mitigation area should be secured and delivered through legal agreements or other suitably robust methods and relevant consultees should be made aware of the measures proposed.

Opportunities for Enhancement

- 7.5.12 Enhancement is improved management of ecological features or provision of new ecological features, resulting in a net benefit to biodiversity, which is unrelated to a negative impact or is 'over and above' that required to mitigate/compensate for an impact.
- 7.5.13 Enhancement measures should be designed to deliver biodiversity objectives that are specified in relevant policy documents, and evidence should be provided to support the likelihood of delivering the predicted benefit. They should be incorporated into scheme design and assessed within the EclA. To ensure that enhancements are enduring, their delivery and management should normally be guaranteed through a legal obligation.
- 7.5.14 New nesting opportunities for passerines would be created comprising bird nesting boxes fixed to suitable trees on the field boundaries (further details contained in the LEMP).
- 7.5.15 However, the most important enhancement for the majority of birds would be gained through changes in land management, and the creation of wide buffers to boundary features. Although these are not primarily designed to provide ecological enhancement of the site for birds, these actions would indirectly benefit bird populations.

Monitoring

- 7.5.16 Monitoring should be agreed with consultees, to include wintering/passage and ground nesting birds associated with mitigation areas.



7.6 Residual Effects and Conclusions

7.6.1 Assuming all mitigation (embedded and secondary) is implemented as detailed in the LEMP, adverse residual impacts on the ornithological interest of the application area would be limited to the displacement of breeding and wintering lapwing and wintering snipe.

7.6.2 Overall, the positive, long-term impacts of proactive habitat creation and management for wildlife including reed management are considered to be significant beneficial for birds at the local level and would benefit a number of Section 7 species including Amber and Red-listed birds of conservation concern. The Proposed Development may result an enhancement of grassland botanical diversity that could result in a significant beneficial effect to birds at a Local level.

Assessment Summary

7.6.3 The ornithological assessment has shown that a suite of bird species utilize the site throughout the year, both for breeding and winter foraging, shelter and roosting. This includes some species associated with statutory nature conservation sites and species of conservation concern.

7.6.4 The assessment concludes that the application area does not form a core area for any SPA/Ramsar species, with no significant numbers of any individual species identified.

7.6.5 The construction of the arrays would not impact on the integrity of the nearby SSSIs. Although snipe have been recorded occasionally using single field compartments, the residual effect upon the Seven Estuary SSSI is not considered to be significant.

7.6.6 The majority of ornithological interest on the application site is of site or local value and the Proposed Development would not result in significant effects.

7.6.7 A number of land management proposals associated with the development can result in positive impacts for both wintering and breeding species.



Table 7.5 Summary of Effects and mitigation

Receptor	Phase	Impact	Embedded Mitigation	Assessment	Proposed Mitigation	Residual Effect	Monitoring requirements
Magor Marsh SSSI (breeding Cetti's Warbler, Reed Warbler and Moorhen)	Construction & decommissioning	No impact predicted	None	Negligible	None required	Not significant	None required
	Operation	No impact predicted		Negligible			
Severn Estuary SSSI (wintering snipe)	Construction & decommissioning	Some displacement of large flocks from individual fields	None	Minor adverse	Management of 12ha of local land as wintering bird habitat	Not significant	Monitoring of land managed for wintering Lapwing and Snipe will occur on an annual basis, during winter months, for the first five years following construction
	Operation	Habitat loss		Minor adverse			
Newport Wetlands SSSI (wintering curlew & gadwall; breeding Cetti's warbler and lapwing)	Construction & decommissioning	Disturbance of nesting birds (cable route)	Construction and decommissioning to avoid core breeding season	Negligible	None	Not significant	None required
	Operation		None	Negligible	None	Not significant	
Severn Estuary Ramsar (wintering gadwall & lesser black-backed gull)	Construction & decommissioning	Temporary disturbance and reduction in land availability	Buffer zones to boundary habitat	Negligible	Management of 12ha of local land as wintering bird habitat	Not significant	Monitoring of land managed for wintering lapwing and snipe will occur on an annual basis, during winter

Receptor	Phase	Impact	Embedded Mitigation	Assessment	Proposed Mitigation	Residual Effect	Monitoring requirements
	Operation	Habitat degradation for interest feature species	Buffer zones to boundary habitat	Negligible			months, for the first five years following construction
Severn Estuary SPA (wintering curlew, gadwall, lapwing, mallard, pintail and teal)	Construction & decommissioning	Temporary disturbance and habitat degradation for interest feature species such as lapwing	Buffer zones to boundary habitat	Minor adverse	Management of 12ha of local land as wintering bird habitat	Not significant	Monitoring of land managed for wintering lapwing and snipe will occur on an annual basis, during winter months, for the first five years following construction
	Operation	Habitat degradation for interest feature species such as lapwing	Buffer zones to boundary habitat	Minor adverse			
Notable wintering species (not listed as interest features of statutory nature conservation sites)	Construction & decommissioning	Disturbance and displacement	None	Minor adverse	Management of 12ha of local land as wintering bird habitat	Not significant	Monitoring of land managed for wintering lapwing and snipe will occur on an annual basis, during winter months, for the first five years following construction
	Operation	Habitat degradation/loss and displacement	Buffer zones to boundary habitat	Minor adverse			
Hedgerow nesting birds	Construction & decommissioning	Disturbance and damage or abandonment of nests during breeding season	Buffer zones to boundary habitat Construction and decommissioning to avoid core breeding season	Negligible/ Minor positive	None required	Not significant	None required

Receptor	Phase	Impact	Embedded Mitigation	Assessment	Proposed Mitigation	Residual Effect	Monitoring requirements
	Operation	No impact predicted	Buffer zones to boundary habitat				
Marshland and water nesting birds	Construction & decommissioning	Disturbance and damage or abandonment of nests during breeding season	Buffer zones to boundary habitat Construction and decommissioning to avoid core breeding season	Negligible	None required	Not significant	None required
	Operation	No impact predicted	Buffer zones to boundary habitat	Minor positive			
Ground nesting birds – passerines	Construction & decommissioning	Disturbance and damage or abandonment of nests during breeding season	Construction and decommissioning to avoid core breeding season	Negligible	Management of 12ha of local land as lapwing breeding habitat will provide breeding habitat for skylark. Grassland creation within the development will provide improved foraging opportunities for local skylark populations	Not significant	Monitoring of land managed for breeding lapwing will occur on a two-monthly basis for the first six months following creation
	Operation	Habitat degradation/loss and displacement	Buffer zones to boundary habitat	Minor adverse			
Ground nesting birds – waders	Construction & decommissioning	Disturbance and damage or abandonment of nests during breeding season	Buffer zones to boundary habitat Construction and decommissioning	Negligible	Management of 12ha of local land as lapwing breeding habitat	Not significant	Monitoring of land managed for breeding Lapwings will occur on a two-monthly basis for

Receptor	Phase	Impact	Embedded Mitigation	Assessment	Proposed Mitigation	Residual Effect	Monitoring requirements
			to avoid core breeding season				the first six months following creation
	Operation	Habitat degradation/loss and displacement	None	Moderate adverse			



**Appendix 7.1 – Wintering Bird Survey
Report**

**Appendix 7.2 – Breeding Bird Survey
Report**



