



Appendix A





Appendix A



Ballydonagh Solar Farm
Wintering Bird Survey Map - December
Figure 2.1



Key

Development Boundary

50m ESA

Behaviour

Alarm Calling

Calling

Foraging

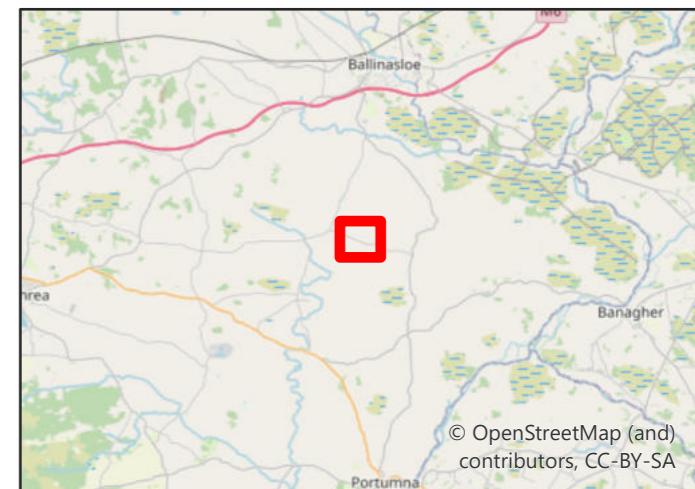
Perching

Singing

Flying Over

BTO Code	Name
WP	Woodpigeon
ST	Song Thrush
B.	Blackbird
BF	Bullfinch
WR	Wren
CH	Chaffinch
GC	Gold Crest
BT	Blue Tit
R.	Robin
HC	Hooded Crow
PW	Pied Wagtail
MG	Magpie
HS	House Sparrow
RE	Redwing
D.	Dunnock
GT	Great Tit
RO	Rook
GO	Goldfinch
M.	Mistle Thrush
GL	Grey Wagtail
SG	Starling
GR	Greenfinch
WK	Woodcock
SH	Sparrow Hawk
SN	Common Snipe
PH	Pheasant

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Ballydonagh Solar Farm
Wintering Bird Survey Map - January
Figure 2.2



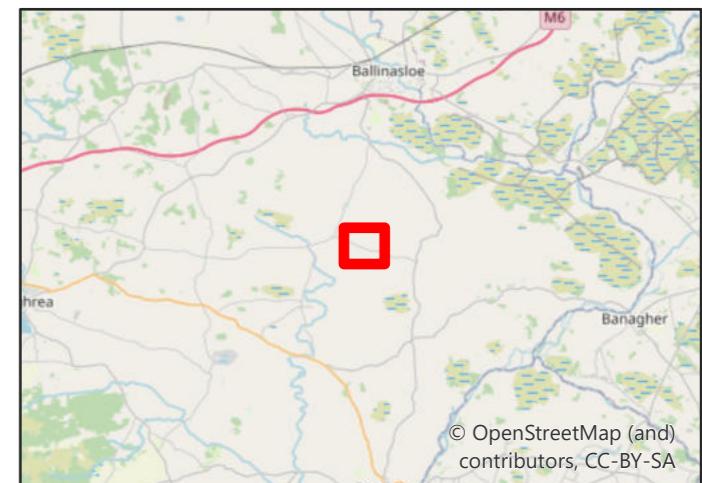
Key

BTO Code	Name
SG	Starling
GT	Great Tit
B.	Blackbird
WP	Woodpigeon
SH	Sparrowhawk
RE	Redwing
R.	Robin
CH	Chaffinch
GO	Goldfinch
M.	Mistle Thrush
ST	Song Thrush
BF	Bullfinch
CT	Coal Tit
TS	Tree Sparrow
MG	Magpie
HC	Hooded Crow
WR	Wren
FF	Fieldfare
PH	Pheasant
BT	Blue Tit
RO	Rook
D.	Dunnock
L.	Lapwing
SN	Common Snipe

Behaviour

- Alarm Calling
- Calling
- Foraging
- Perching
- Singing
- Flying Over

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Ballydonagh Solar Farm
Wintering Bird Survey Map - February
Figure 2.3



Key

Development Boundary

50m ESA

Behaviour

Alarm Calling

Calling

Foraging

Perching

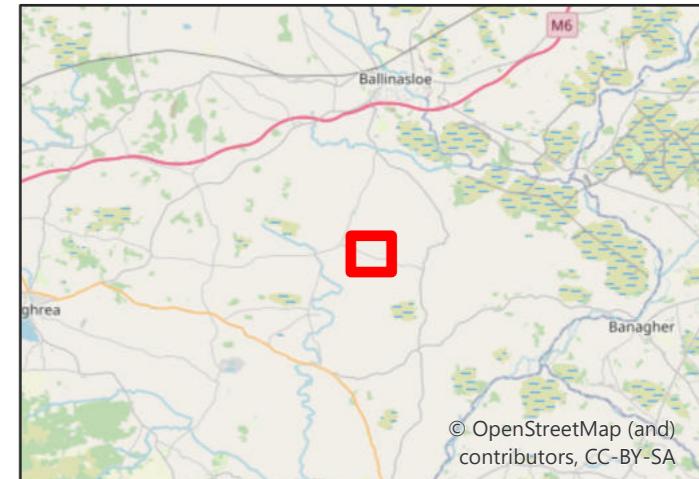
Singing

Territorial Calling

Flying Over

BTO Code	Name
GT	Great Tit
WR	Wren
R.	Robin
ST	Song Thrush
CH	Chaffinch
B.	Blackbird
WP	Woodpigeon
BF	Bullfinch
BT	Blue Tit
RO	Rook
RE	Redwing
CT	Coal Tit
M.	Mistle Thrush
FF	Fieldfare
RB	Reed Bunting
GC	Goldcrest
JD	Jackdaw
MG	Maggie
SG	Starling
BZ	Buzzard
D.	Dunnock
HC	Hooded Crow
MA	Mallard
GO	Gold Crest
PW	Pied Wagtail
LI	Linnet
HS	House Sparrow
SN	Common Snipe
SH	Sparrow Hawk
HG	Herring Gull

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Date: 03/04/2023
Drawn By: Louis Maloney
Scale (A3): 1:8500
Drawing No: NEO0874/034IA



Ballydonagh Solar Farm Wintering Bird Survey Map - March Figure 2.4

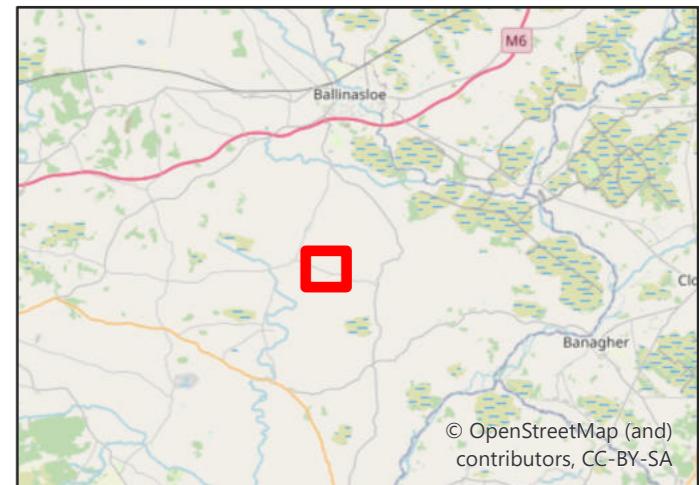
Key

BTO Code	Name
SG	Starling
B.	Blackbird
GT	Great Tit
HC	Hooded Crow
CH	Chaffinch
BF	Bullfinch
WR	Wren
M.	Mistle Thrush
S.	Skylark
ST	Song Thrush
R.	Robin
WP	Woodpigeon
BT	Blue Tit
BZ	Buzzard
RO	Rook
MG	Magpie
D.	Dunnock
WK	Woodcock
SH	Sparrow Hawk
SN	Common Snipe
JD	Jackdaw

Behaviour

- ⊕ Alarm Calling
- ◆ Calling
- ★ Foraging
- ★ Perching
- ▲ Singing
- ◆ Territorial Calling
- Flying Over

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Appendix 2B: Wintering Bird Survey Report

31/08/2023



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1. INTRODUCTION

BACKGROUND

Neo Environmental Ltd has been appointed by Renewable Energy Systems (RES) Ltd to undertake wintering bird surveys for a proposed solar development (c. 81.9ha) (the “Proposed Development”) within the townlands of Ballydonagh, Cloonineen, Skecoor, Kiltormer East and Graveshill, Co. Galway (the “Application Site”).

1.1.

Development Description

The proposed solar farm will consist of the construction of PV panels mounted on metal frames, new access tracks, underground cabling, inverter substations, watercourse crossings,

1.2. perimeter fencing with CCTV cameras and access gates, a substation, temporary construction compounds and all ancillary grid infrastructure and associated works.

Site Description

1.3. The Application Site is located in a rural setting, approximately 9.5km south of Ballinasloe, 33km east of Athenry and 21km northeast of Loughrea. The area of the proposed Development lies at an elevation of approximately 71 – 96m AOD and covers a total area of c. 81.9 hectares. It is centred at approximate Irish Grid Reference (ITM) X 583549 Y 720440 and is located c. 7km northeast of the N65 and 8.4km south of the M6.

1.4.

Comprising of 26 agricultural fields (31 were surveyed in total, however fields 1, 5, 9, 10 and 11 have since been removed from the proposed development boundary), the site is currently being used for pastoral farming. The fields are bound by a mixture of trees, hedgerows and post-and-wire fencing.

1.5. Access to both parcels of land is gained from existing access points off the L4301 which dissects the site.

Statement of Authority

This bird survey and assessment was carried out by Neo Environmental Senior Ecologist, Louis Maloney.

Louis Maloney has five years of professional ecological experience. This includes terrestrial and marine surveys covering a wide range of fauna and flora such as bird (2 years' of surveying), mammal and vegetative surveys. In addition, Louis has been involved in the management of large variety of projects involving: Environmental Impact Assessment ("EIA"), Natura Impact Statement ("NIS"), Ecological Impact Assessment ("EcIA"), Biodiversity Management Plan ("BMP") and Net Gain Assessment ("NGA") reports. He holds a BSc in Marine Science from the National University of Ireland, and an MSc in Conservation Behaviour – Marine and Terrestrial Science. Louis is in the process of applying for a Full level membership with CIEEM.

1.6.

1.7.

2. METHODOLOGY

DESKTOP STUDY

A pre-survey data search was conducted in order to collate existing information of ornithological interest from the footprint of the Proposed Development and its surrounding area. The data search utilised the following information sources:

2.1.

- Collation of bird atlas data and other known bird records from the National Biodiversity Data Centre (www.biodiversityireland.ie).
- Birdwatch Ireland (BWI) - <https://birdwatchireland.ie/> provides open access data for the Irish Wetland Bird Survey (I-WeBS). I-WeBS is an annual survey of wintering birds undertaken at a national level, focussing on wetland sites utilised by wintering birds. Bird count data for the two closest sites I-WeBS sites was accessed and has been presented in this report.
- Conservation objectives of the River Suck Callows SPA (004097), River Little Brosna Callows SPA (004086), Middle Shannon Callows SPA (004096) were accessed via - <https://www.npws.ie/>
- Review of Ordnance Survey mapping and aerial photography of the proposed scheme area and its environs.

FIELD SURVEY

2.2.

2.3.

Surveys were completed over 12 days. The entirety of the Application Site was covered on four occasions: 7th – 9th December, 24th – 26th January, 21st – 23rd February and 14th – 16th March. The wintering bird surveys consisted of walking transects parallel to all linear features on site.

The surveys aimed to determine whether the site is used as a winter roost by wildfowl, waders and migratory birds. During the surveys, all bird species heard or seen within and adjacent to the site were recorded. The surrounding fields were scanned from vantage points that gave unobstructed views over potentially suitable habitat for notable species. A note was also made of birds flying overhead.

All bird species were recorded using standard British Trust for Ornithology codes¹, and a note of the number of birds of each species present was made. The winter surveys were undertaken using Hontry 8x42 binoculars and ESSLNB Spotting Scope 25-75X70 spotting scope. As summarised in **Table 2.1**, surveys were undertaken in weather deemed appropriate for carrying out bird survey work, i.e. avoiding periods of high winds, heavy rainfall and poor visibility².

Table 2-1: Wintering bird survey details

Date	Survey Method	Survey – Time of Day	Weather
07/12/2022	Transect	Sunrise/morning	Temp: 2 - 4°C Precipitation: None Wind: 3 – 4 m/s Cloud cover: 2/8
08/12/2022	Transect	Sunrise/morning	Temp: 2 – 3 °C Precipitation: None Wind: 3 – 4 m/s Cloud cover: 1/8
09/12/2022	Transect	Sunrise/morning	Temp: -1 - 1°C Precipitation: None Wind: 2 m/s Cloud cover: 0/8
24/01/2023	Transect	Sunrise/morning	Temp: 7 - 9°C Precipitation: None Wind: 3 – 4 m/s Cloud cover: 4/8
25/01/2023	Transect	Sunrise/morning	Temp: 9 - 10°C Precipitation: None Wind: 4m/s Cloud cover: 4/8
26/01/2023	Transect	Sunrise/morning	Temp: 4 - 7°C Precipitation: light rain Wind: 3m/s Cloud cover: 4/8
21/02/2023	Transect	Sunrise/morning	Temp: 8 - 11°C Precipitation: None Wind: 4m/s Cloud cover: 8/8
22/02/2023	Transect	Sunrise/morning	Temp: 3 - 8°C Precipitation: None

¹ Available at: <https://www.bto.org/british-list>

² Bibby C.J., Burgess N.D., Hill D.A. & Mustoe S.H. (2000). Bird Census Techniques. Second Edition. Academic Press.

			Wind: 2m/s Cloud cover: 1/8
23/02/2023	Transect	Sunrise/morning	Temp: 3-9°C Precipitation: light rain Wind: 3 – 4 m/s Cloud cover: 4/8
14/03/2023	Transect	Sunrise/morning	Temp: 5 - 8°C Precipitation: None Wind: 2 - 5m/s Cloud cover: 7/8
15/03/2023	Transect	Sunrise/morning	Temp: 7 - 11°C Precipitation: Light Rain Wind: 4m/s Cloud cover: 8
16/03/2023	Transect	Sunrise/morning	Temp: 9 - 12°C Precipitation: Intermittent showers Wind: 3 – 6m/s Cloud cover: 4/8

3. RESULTS

DESK STUDY

Table 3-1 details bird species present in National Biodiversity Data Centre (NBDC) datasets for the 10km grid square within which the site is situated (M81 and M82).

3.1. **Table 3-1** also indicates species listed in Annex I of the EU Birds Directive and those listed in the Birds of Conservation Concern in Ireland (BoCCI) Amber or Red List³. Red-listed species are those of highest conservation priority and Amber-listed species are those which are of secondary priority.

3.2.

Table 3-1: NBDC records of wildlife act birds for 10km grid square M81 & M82

Common Name	Scientific Name	Annex I	BoCCI
Barn Owl	<i>Tyto alba</i>	No	Red
Barn Swallow	<i>Hirundo rustica</i>	No	Yellow
Black-billed Magpie	<i>Pica pica</i>	No	Green
Blackcap	<i>Sylvia atricapilla</i>	No	Green
Black-headed Gull	<i>Larus ridibundus</i>	No	Red
Blue Tit	<i>Cyanistes caeruleus</i>	No	Green
Brambling	<i>Fringilla montifringilla</i>	No	Green
Chaffinch	<i>Fringilla coelebs</i>	No	
Coal Tit	<i>Periparus ater</i>	No	
Common Blackbird	<i>Turdus merula</i>	No	Green
Common Bullfinch	<i>Pyrrhula pyrrhula</i>	No	
Common Buzzard	<i>Buteo buteo</i>	No	
Common Chiffchaff	<i>Phylloscopus collybita</i>	No	
Common Cuckoo	<i>Cuculus canorus</i>	No	Green
Common Grasshopper Warbler	<i>Locustella naevia</i>	No	Yellow
Common Kestrel	<i>Falco tinnunculus</i>	No	Red
Common Kingfisher	<i>Alcedo atthis</i>	Yes	Yellow
Common Linnet	<i>Carduelis cannabina</i>	No	Yellow

³ Gilbert G, Stanbury A and Lewis L (2021), "Birds of Conservation Concern in Ireland 2020 –2026"

Common Moorhen	<i>Gallinula chloropus</i>	No	Green
Common Pheasant	<i>Phasianus colchicus</i>	No	Green
Common Raven	<i>Corvus corax</i>	No	Green
Common Redshank	<i>Tringa totanus</i>	No	Red
Common Sandpiper	<i>Actitis hypoleucos</i>	No	Yellow
Common Snipe	<i>Gallinago gallinago</i>	No	Red
Common Starling	<i>Sturnus vulgaris</i>	No	Yellow
Common Swift	<i>Apus apus</i>	No	Red
Common Whitethroat	<i>Sylvia communis</i>	No	Green
Common Wood Pigeon	<i>Columba palumbus</i>	No	Green
Corn Crake	<i>Crex crex</i>	Yes	Red
Dunlin	<i>Calidris alpina</i>	Yes	Red
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	No	Green
Eurasian Curlew	<i>Numenius arquata</i>	No	Red
Eurasian Jackdaw	<i>Corvus monedula</i>	No	Green
Eurasian Jay	<i>Garrulus glandarius</i>	No	Green
Eurasian Siskin	<i>Carduelis spinus</i>	No	Green
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	No	Green
Eurasian Teal	<i>Anas crecca</i>	No	Yellow
Eurasian Treecreeper	<i>Certhia familiaris</i>	No	Green
Eurasian Wigeon	<i>Anas penelope</i>	No	Yellow
Eurasian Woodcock	<i>Scolopax rusticola</i>	No	Yellow
European Golden Plover	<i>Pluvialis apricaria</i>	Yes	Red
European Goldfinch	<i>Carduelis carduelis</i>	No	Green
European Greenfinch	<i>Carduelis chloris</i>	No	Green
European Robin	<i>Erithacus rubecula</i>	No	Green
Fieldfare	<i>Turdus pilaris</i>	No	Green
Goldcrest	<i>Regulus regulus</i>	No	Green
Great Cormorant	<i>Phalacrocorax carbo</i>	No	Yellow
Great Tit	<i>Parus major</i>	No	Green
Greater White-fronted Goose	<i>Anser albifrons</i>	Yes	Yellow

Greenland White-fronted Goose	Anser albifrons subsp. <i>flavirostris</i>	No	Yellow
Grey Heron	Ardea cinerea	No	Red
Grey Partridge	Perdix perdix	No	Yellow
Grey Wagtail	Motacilla cinerea	No	Red
Dunnock	Prunella modularis	No	Green
Hen Harrier	Circus cyaneus	Yes	Yellow
Herring Gull	Larus argentatus	No	Yellow
Hooded Crow	Corvus cornix	No	Green
House Martin	Delichon urbicum	No	Yellow
House Sparrow	Passer domesticus	No	Yellow
Jack Snipe	Lymnocryptes minimus	No	Green
Lesser Black-backed Gull	Larus fuscus	No	Yellow
Lesser Redpoll	Carduelis cabaret	No	Green
Little Egret	Egretta garzetta	Yes	Green
Little Grebe	Tachybaptus ruficollis	No	Yellow
Long-eared Owl	Asio otus	No	Green
Long-tailed Tit	Aegithalos caudatus	No	Green
Mallard	Anas platyrhynchos	No	Red
Meadow Pipit	Anthus pratensis	No	Red
Merlin	Falco columbarius	Yes	Yellow
Mistle Thrush	Turdus viscivorus	No	Green
Mute Swan	Cygnus olor	No	Yellow
Northern Lapwing	Vanellus vanellus	No	Red
Red Grouse	Lagopus lagopus	No	Red
Redwing	Turdus iliacus	No	Green
Reed Bunting	Emberiza schoeniclus	No	Green
Rock Pigeon	Columba livia	No	Green
Rook	Corvus frugilegus	No	Green
Sand Martin	Riparia riparia	No	Yellow
Sedge Warbler	Acrocephalus schoenobaenus	No	Green
Sky Lark	Alauda arvensis	No	Yellow

Song Thrush	Turdus philomelos	No	Green
Spotted Flycatcher	Muscicapa striata	No	Yellow
Stock Pigeon	Columba oenas	No	Yellow
Stonechat	Saxicola torquata	No	Green
Tufted Duck	Aythya fuligula	No	Yellow
Bewicks Swan	Cygnus columbianus	Yes	Red
Water Rail	Rallus aquaticus	No	Yellow
White Wagtail	Motacilla alba	No	Green
Whooper Swan	Cygnus cygnus	Yes	Yellow
Willow Warbler	Phylloscopus trochilus	No	Green
Winter Wren	Troglodytes troglodytes	No	Green
Yellowhammer	Emberiza citrinella	No	Red

3.3. Each winter volunteers, NPWS Rangers and BirdWatch Ireland staff monitor wintering waterbird populations at defined wetland sites across the Republic of Ireland to keep track of species trends.

3.4. The study area is not covered by an Irish Wetland Bird Survey (I-WeBS site). **Table 3-2** details survey data was available for the nearest I-WeBS sites (0R301 and 0E309). Two Subsites; Little Brosna Callows (code: 0R301) and River Suck Callows (code: 0E309).

Table 3-22: I-WeBS sites

Common Name	Scientific Name	Subsite	Recording Wintering	Annex I	BoCCI
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	River Suck (Aerial)	2011/12 – 2020/21	No	Red
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Little Brosna Callows	2011/12 – 2020/21	No	Red
Black-tailed Godwit	<i>Limosa limosa</i>	River Suck (Aerial)	2011/12 – 2020/21	No	Yellow
Black-tailed Godwit	<i>Limosa limosa</i>	Little Brosna Callows	2011/12 – 2020/21	No	Yellow
Coot	<i>Fulica atra</i>	Little Brosna Callows	2012/13 – 2013/14	No	Yellow

Cormorant	<i>Phalacrocorax carbo</i>	River Suck (Aerial)	2011/12 – 2015/16 & 2017/18 – 2020/21	No	Yellow
Cormorant	<i>Phalacrocorax carbo</i>	Little Brosna Callows	2011/12 – 2015/16 & 2017/18 – 2020/21	No	Yellow
Curlew	<i>Numenius arquata</i>	River Suck (Aerial)	2012/2013	No	Red
Curlew	<i>Numenius arquata</i>	Little Brosna Callows	2011/12 – 2013/14 & 2016/17 – 2020/21	No	Red
Dunlin	<i>Calidris alpina</i>	Little Brosna Callows	2011/12 – 2019/2020	Yes	Yellow
Gadwall	<i>Mareca strepera</i>	Little Brosna Callows	2011/12 – 2014/15 & 2017/18	No	Yellow
Golden Plover	<i>Pluvialis apricaria</i>	River Suck (Aerial)	2011/12 – 2012/13	Yes	Red
Golden Plover	<i>Pluvialis apricaria</i>	Little Brosna Callows	2011/12 – 2020/21	Yes	Red
Great Black-backed Gull	<i>Larus marinus</i>	Little Brosna Callows	2018/19	No	Yellow
Great Crested Grebe	<i>Podiceps cristatus</i>	Little Brosna Callows	2012/13 & 2019/20	No	Yellow
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>	River Suck (Aerial)	2012/13	Yes	Yellow
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>	Little Brosna Callows	2011/12 – 2019/20	Yes	Yellow
Greylag Goose	<i>Anser anser</i>	Little Brosna Callows	2017/18 – 2020/21	No	Yellow

Grey heron	<i>Ardea cinerea</i>	River Suck (Aerial)	2011/12 – 2012/13	No	
Grey heron	<i>Ardea cinerea</i>	Little Brosna Callows	2011/12 – 2020/21	No	
Herring Gull	<i>Larus argentatus</i>	Little Brosna Callows	2019/20	No	
Kingfisher	<i>Alcedo atthis</i>	Little Brosna Callows	2015/16 – 2016/17 & 2018/19 – 2019/20	Yes	
Lapwing	<i>Vanellus vanellus</i>	River Suck (Aerial)	2011/12 – 2012/13	No	
Lapwing	<i>Vanellus vanellus</i>	Little Brosna Callows	2011/12 – 2020/21	No	
Lesser Black-backed gull	<i>Larus fuscus</i>	Little Brosna Callows	2012/13 – 2014/15	No	
Little Egret	<i>Egretta garzetta</i>	River Suck (Aerial)	2011/12	Yes	
Little Egret	<i>Egretta garzetta</i>	Little Brosna Callows	2011/12 – 2016/17 & 2019/19	Yes	
Little grebe	<i>Tachybaptus ruficollis</i>	Little Brosna Callows	2011/12 – 2012/13 & 2019/20	No	
Mallard	<i>Anas platyrhynchos</i>	River Suck (Aerial)	2011/12 – 2012/13	No	
Mallard	<i>Anas platyrhynchos</i>	Little Brosna Callows	2011/12 – 2020/21	No	
Moorhen	<i>Gallinula chloropus</i>	Little Brosna Callows	2012/13 – 2012/14 & 2018/19 – 2020/21	No	
Mute Swan	<i>Cygnus olor</i>	River Suck (Aerial)	2011/12 – 2012/13	No	

Mute Swan	<i>Cygnus olor</i>	Little Brosna Callows	2011/12 – 2020/21	No	Yellow
Pink-footed Goose	<i>Anser brachyrhynchus</i>	Little Brosna Callows	2013/14	No	Green
Pintail	<i>Anas acuta</i>	Little Brosna Callows	2011/12 – 2020/21	No	Red
Pochard	<i>Aythya ferina</i>	Little Brosna Callows	2013/14 & 2015/16 & 2017/18 – 2019/2020	No	Yellow
Redshank	Redshank	Little Brosna Callows	2012/13 & 2018/19	No	Red
Ruff	<i>Philomachus pugnax</i>	Little Brosna Callows	2013/14	No	Green
Shelduck	<i>Tadorna tadorna</i>	Little Brosna Callows	2011/12 & 2017/18	No	Yellow
Shoveler	<i>Spatula clypeata</i>	Little Brosna Callows	2011/12 – 2020/21	No	Red
Snipe	<i>Gallinago gallinago</i>	Little Brosna Callows	2011/12 – 2012/13 7 2014/15 & 2016/17 & 2018/19 – 2020/21	No	Yellow
Teal	<i>Anas crecca</i>	River Suck (Aerial)	2011/12 – 2012/13	No	Yellow
Teal	<i>Anas crecca</i>	Little Brosna Callows	2011/12 – 2020/21	No	Yellow
Tufted Duck	<i>Aythya fuligula</i>	Little Brosna Callows	2011/12 – 2020/21	No	Yellow
Water Rail	<i>Rallus aquaticus</i>	Little Brosna Callows	2017/18	No	Yellow
Wigeon	<i>Anas penelope</i>	River Suck (Aerial)	2011/12 – 2012/13	No	Yellow
Wigeon	<i>Anas penelope</i>	Little Brosna Callows	2011/12 – 2020/21	No	Yellow

Whooper Swan	<i>Cygnus cygnus</i>	River Suck (Aerial)	2011/12 – 2012/13	Yes	
Whooper Swan	<i>Cygnus cygnus</i>	Little Brosna Callows	2011/12 – 2020/21	Yes	
Woodcock	<i>Scolopax rusticola</i>	Little Brosna Callows	2014/15	No	

FIELD SURVEY

A total of 37 species of bird were recorded at the Proposed Development Site. No Annex 1 listed species were observed during the surveys.

3.5. Of the species recorded, three red and nine amber species on the BoCCI were recorded. **Table 3-3** summarises the species recorded during the wintering bird surveys, along with their BoCCI status. Species recorded during each wintering bird survey (i.e. months December, January, February and March) are displayed in **Appendix 2E** of this report.

3.6.

Table 3-3: Bird species recorded during wintering bird surveys

Common Name	Scientific Name	BoCCI
Blackbird	<i>Turdus merula</i>	
Blue tit	<i>Parus caeruleus</i>	
Bullfinch	<i>Pyrrhula pyrrhula</i>	
Buzzard	<i>Buteo buteo</i>	
Chaffinch	<i>Fringilla coelebs</i>	
Coal tit	<i>Periparus ater</i>	
Common Snipe	<i>Gallinago gallinago</i>	
Dunnock	<i>Prunella modularis</i>	
Fieldfare	<i>Turdus pilaris</i>	
Goldcrest	<i>Regulus regulus</i>	
Goldfinch	<i>Carduelis carduelis</i>	
Great tit	<i>Parus major</i>	
Greenfinch	<i>Chloris chloris</i>	
Grey wagtail	<i>Motacilla cinerea</i>	
Herring gull	<i>Larus argentatus</i>	
Hooded Crow	<i>Corvus cornix</i>	
House Sparrow	<i>Passer domesticus</i>	
Jackdaw	<i>Corvus monedula</i>	
Linnet	<i>Linaria cannabina</i>	
Lapwing	<i>Vanellus vanellus</i>	
Magpie	<i>Pica pica</i>	
Mallard	<i>Anas platyrhynchos</i>	
Mistle thrush	<i>Turdus viscivorus</i>	
Pheasant	<i>Phasianus colchicus</i>	
Pied wagtail	<i>Motacilla alba</i>	
Redwing	<i>Turdus iliacus</i>	
Reed bunting	<i>Emberiza schoeniclus</i>	
Robin	<i>Erithacus rubecula</i>	
Rook	<i>Corvus frugilegus</i>	
Skylark	<i>Alauda arvensis</i>	
Song thrush	<i>Turdus philomelos</i>	
Sparrowhawk	<i>Accipiter nisus</i>	
Starling	<i>Sturnus vulgaris</i>	
Tree Sparrow	<i>Passer montanus</i>	
Woodcock	<i>Scolopax rusticola</i>	
Woodpigeon	<i>Columba palumbus</i>	
Wren	<i>Troglodytes troglodytes</i>	

DISCUSSION

The construction of the Proposed Development will occur over land which has been identified as mixed agricultural grassland, wet grassland, scrub, mixed trees and mature hedgerow with drainage ditches along some boundaries.

3.7. The wintering bird survey's primary objective is to assess whether the Proposed Development has the potential to support qualifying bird species from the surrounding SPAs, with particular focus on species that are known to occur in grassland habitats.

3.8. A total of 37 species of bird were recorded within, or immediately adjacent to, the proposed site during the four surveys undertaken from December 2022 to March 2023. Of these 19 were seen only in flight commuting over the site. The majority of the species recorded within the Application Site were common, green-listed bird species that are typical of farmland habitats. The woodland to the north creates a direct link to the site hedgerows so species such as sparrowhawk are present.

3.9. During the January 2023 wintering bird survey 33 Lapwing (red listed) were recorded foraging in wet grassland habitat within the Extended Survey Area ("ESA"), it is important to note that this area is not within the Proposed Development's boundary, see **Appendix 2E – Figure 2.2**. Lapwing are a qualifying feature of the River Suck Callows SPA (004097), River Little Brosna Callows SPA (004086), Middle Shannon Callows SPA (004096). Lapwing are subject to short term habitat displacement during the construction period, however the surrounding area provides ample habitat in the form of improved agricultural grassland and wet grassland for this species to be displaced to.

3.10. Areas of species-rich grassland have been proposed to be planted in replacement of the improved agricultural grassland on site. These areas of species-rich grassland will provide richer feeding areas for bird species such as Lapwing. Light intensity sheep grazing has also been proposed on site to maintain sward at a suitable height for nesting Lapwing. With the implementation of habitat enhancement measures it is considered that the Proposed Development will benefit local Lapwing populations.

3.11. Although the three SPAs are designated for wintering populations of Lapwing, Lapwing are also known to breed in Ireland during the summer. Lapwing's breeding habits have been closely considered, as precautionary measure pre-commencement checks of suitable habitat are recommended in the event that they are utilising the site during the summer months (March to August).

3.12. During the March 2023 wintering bird survey one woodcock (red listed) was flushed from an agricultural drainage ditch in the southern parcel of land of the Application Site, see **Appendix 2E – Figure 2.4**. These areas will be buffered from as part of the integral design, therefore these areas will be preserved for species such as woodcock and snipe (amber). In addition, species-rich grassland proposed will provide richer feeding areas for wildfowl species.

Grey wagtail (red listed) were recorded foraging in the southern parcel of land during the December 2023 wintering bird survey, see **Appendix 2E – Figure 2.1**. Species-rich grassland proposed on site will provide richer feeding areas for locally important species such as grey wagtail.

3.14. Skylark are on the amber list due to agricultural intensification leading to a loss of suitable nesting habitat and lack of winter and summer food. Six Skylark were observed during the March wintering bird survey foraging/perching within the site boundary, see **Appendix 2E – Figure 2.4**. It is recommended that open grassland for potential nesting birds is incorporated. In grassland then a sparse grass ley to hay meadow management scheme can provide a safe nesting habitat. Another option is to have grazed pasture with a tussocky sward of varying heights from 20-50cm with a low stock rate through the spring and summer can be beneficial. Providing a species rich grassland within the proposal will benefit local biodiversity by encouraging invertebrate prey which are key to the sole diet of skylark chicks and important to adults in the spring and summer months. With the implementation of habitat enhancement measures to the north it is considered that the Proposed Development will benefit local Skylark populations.

3.15. The majority of the other bird species are common generalist species which will adapt to change in the landscape and are seen within grasslands, hedgerows, woodlands and gardens. General good management of hedgerow will benefit them all with infilling any gaps, using just native species planting and a rich wildflower grassland mix to improve biodiversity.

3.16. There is potential for short-term disturbance to ground nesting species such as skylark, lapwing and snipe. Best-practice construction safeguards will be implemented to ensure disturbance is kept to a minimum and is not expected to result in any reduction in numbers.

4. CONCLUSION

The results of the four wintering bird surveys undertaken between December 2022 and March 2023 indicate that the proposed site predominantly supports common and widespread bird species typical of farmland habitats present.

- 4.1. Results from the wintering bird surveys also conclude that the site has the potential to support wader species such as Lapwing i.e. Lapwing were found using wet grassland habitat within ESA. The site supports small numbers of wildfowl (woodcock and common snipe). In addition, grey wagtail and red listed species was found foraging within the site boundary.
- 4.2. With the implementation of habitat enhancement measures it is considered that the Proposed Development is unlikely have negative effect on local bird species' populations. As the development will improve habitats for local bird species, there will likely be a positive effect on these as a result of the development.
- 4.3. Safeguards will be implemented to ensure any disturbance of such species is kept to a minimum.
- 4.4. Recommendations will be made in the Biodiversity Management Plan for the improvement of the land under the solar panels to ensure that important habitats are not lost.

5. REFERENCES

1. Gilbert G, Stanbury A and Lewis L (2021), "Birds of Conservation Concern in Ireland 2020 – 2026". Irish Birds 43: 1–22
2. Bibby C.J., Burgess N.D., Hill D.A. & Mustoe S.H. (2000). Bird Census Techniques. Second Edition. Academic Press.
3. Gilbert G, Stanbury A and Lewis L (2021), "Birds of Conservation Concern in Ireland 2020 – 2026". Irish Birds 9: 523—544
4. Gilbert, G., Gibbons, D.W. & Evans, J. (1998) Bird Monitoring Methods - a Manual of Techniques for Key UK Species. RSPB: Sandy.

6. APPENDIX 2E – FIGURES

- Figure 2.1 – November WBS Map
- Figure 2.2 – December WBS Map
- Figure 2.3 – January WBS Map
- Figure 2.4 - February WBS Map