

SP MANWEB

Reinforcement to the North Shropshire Electricity Distribution Network



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Reinforcement to the North Shropshire Electricity Distribution Network

on behalf of SP Manweb

Appendix 7.5: Ornithological Surveys

DCO Document 6.7.5



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The Planning Act 2008

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure)
Regulations 2009**

Regulation 5(2)(a)

Reinforcement to the North Shropshire Electricity Distribution Network

**Environmental Statement: Appendix 7.5 – Ecology and Biodiversity Ornithological
Survey**

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SP Manweb plc, Registered Office: 3 Prenton Way, Prenton, CH43 3ET. Registered in England No. 02366937

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1 INTRODUCTION

1.1 Background

1.1.1 This Appendix presents the results of ornithology field surveys, desk study and consultation undertaken to inform the Ecological Impact Assessment (EclA) for the Proposed Development.

1.2 Survey Area Overview

1.2.1 The survey areas were identified through an iterative process, drawing upon early route corridor option studies, professional judgement in relation to the extent and nature of the Proposed Development, standing advice published by Natural England¹ and consultation engagement with Shropshire Council, Natural England, RSPB, the Canal and Rivers Trust and Shropshire Wildlife Trust (**DCO Document 5.1**).

1.2.2 The survey area is largely dominated by open arable/pastoral farmland with woodland copses, networks of hedgerows and watercourses including the Rivers Roden and Perry, and the Montgomery Canal.

2 DESK STUDY

2.1 Methodology

2.1.1 An ornithological desk study was undertaken in 2016, updated in 2017 which sought to identify any known or likely bird populations occurring along and in proximity to the route corridor, their likely sensitivity to the Proposed Development and the requirements for detailed field surveys.

2.1.2 The desk sought to collate existing information on the presence of designated sites for nature conservation with ornithological interests and existing records of protected or notable bird species along the route corridor. The suitability of habitats present along the corridor to support sensitive species was also considered.

2.1.3 The following key sources were consulted:

- Multi-Agency Geographical Information for the Countryside (MAgic) <http://magic.defra.gov.uk/MagicMap.aspx>;
- Joint Nature Conservation Committee (JNCC) website <http://jncc.defra.gov.uk/>;
- Natural England website <https://designatedsites.naturalengland.org.uk/>; and,
- Wetland Bird Survey (WeBS) Report Online interface <https://blx1.bto.org/webs-reporting/> (Frost *et al.*, 2017).

2.1.4 In addition, the following key organisations were consulted:

¹<https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications#standing-advice-for-protected-species>

- Shropshire Ecological Data Network (SEDN);
- Royal Society for the Protection of Birds (RSPB);
- Shropshire Ornithological Society (SOS); and,
- British Trust for Ornithology (BTO).

2.1.5 Full details of consultations undertaken are provided in Chapter 4 ‘Consultation’ of the Environmental Statement.

2.1.6 Common bird species names are referred to within the main text of this Appendix. Annex AN7.5.2 provides a summary of all bird species referred to herein and within Chapter 7 ‘Ecology and Biodiversity’ of the ES (**DCO Document 6.7**), including both common and species names and a summary of their conservation status.

2.2 Results

Designated Sites for Nature Conservation

2.2.1 A review of MAGIC confirmed that the proposed route corridor does not intersect any statutory designated site for nature conservation with ornithological qualifying interests.

Existing Ornithological Records

SEDN

2.2.2 The Shropshire Wildlife Trust (Shropshire Environmental Data Network) returned records of the following species as breeding or potentially breeding within 2km of the Proposed Development:

Barn Owl	Magpie
Blackbird	Mallard
Blackcap	Marsh Tit
Black-headed Gull	Meadow Pipit
Blue Tit	Mistle Thrush
Brambling	Moorhen
Bullfinch	Mute Swan
Buzzard	Nuthatch
Canada Goose	Oystercatcher
Carrion Crow	Pheasant
Chaffinch	Pied Wagtail
Chiffchaff	Pintail
Coal Tit	Quail
Collared Dove	Raven
Coot	Red-legged Partridge
Cormorant	Redstart
Corn Bunting	Redwing
Cuckoo	Reed Bunting
Curlew	Reed Warbler
Duncock	Ringed Plover
Fieldfare	Robin
Garden Warbler	Rook

Garganey	Sand Martin
Goldcrest	Sedge Warbler
Golden Plover	Shelduck
Goldfinch	Siskin
Grasshopper Warbler	Skylark
Great Spotted Woodpecker	Snipe
Great Tit	Song Thrush
Green Sandpiper	Sparrowhawk
Green Woodpecker	Spotted Flycatcher
Greenfinch	Starling
Grey Heron	Stock Dove
Grey Partridge	Stonechat
Grey Wagtail	Swallow
Greylag Goose	Swift
Herring Gull	Tawny Owl
House Martin	Teal
House Sparrow	Tree Sparrow
Jackdaw	Treecreeper
Jay	Tufted Duck
Kestrel	Turtle Dove
Kingfisher	Wheatear
Lapwing	Whitethroat
Lesser Black-backed Gull	Willow Tit
Lesser Spotted Woodpecker	Willow Warbler
Lesser Whitethroat	Woodpigeon
Linnet	Wren
Little Egret	Yellow Wagtail
Little Owl	Yellowhammer
Long-tailed Tit	

RSPB

- 2.2.3 RSPB were consulted in August 2016 as part of the formal scoping and consultation process.
- 2.2.4 As part of their consultation response RSPB provided existing breeding lapwing records for the Baggy Moor area, which were collated by RSPB Midlands Region as part of the “Breeding Wader Survey of Shropshire Wetlands (Weald Moor and Baggy Moor). Subsequently a formal information request was submitted to RSPB to obtain details of existing breeding lapwing records along the route corridor. Several records were located within 500m of the proposed route corridor, and their general distribution is illustrated in Figure 7.6 (**DCO Document 6.14**).

SOS

- 2.2.5 The Shropshire Ornithological Society (SOS) was consulted in January 2017 as part of the formal scoping. At the time of consultation SOS advised that all their records were submitted to SEDN (already consulted) and as such no additional records were sought from the group.

BTO

- 2.2.6 The BTO were consulted in March 2017 to obtain existing records of heronries along and around the proposed route corridor.
- 2.2.7 Existing records included two heronries: Halston Hall and The Mere, Oteley Hall. A summary of Apparently Occupied Nests (AONs) for the most recent five-year period is provided in Table 7.5.1.

Table 7.5.1: Heronries records (BTO).

Site	Year	AON
Halston Hall	2011	12
	2012	11
	2013	8
	2014	10
	2015	11
The Mere, Oteley Hall	2011	12
	2012	11
	2013	15
	2014	13
	2015	13

WeBS Report Online Interface

- 2.2.8 The Wetland Bird Survey (WeBS²) monitors non-breeding waterbirds in the UK. A review of WeBS Core Count sites was undertaken to identify any existing waterbird count data within 1km of the Proposed Development.
- 2.2.9 No such sites fell within the study area and as such, no records were sought.

3 FIELD SURVEYS

- 3.1.1 Detailed information on bird population distributions and flight activity has been derived from field surveys.
- 3.1.2 The following ornithology surveys were completed between November 2016 and July 2017:

² WeBS is a partnership between the BTO, the RSPB and the Joint Nature Conservation Committee (the last on behalf of the statutory nature conservation bodies: Natural England, Natural Resources Wales and Scottish Natural Heritage and ¹ The Department of Agriculture, Environment and Rural Affairs, Northern Ireland) in association with the Wildfowl and Wetlands Trust (WWT).

- Wintering Bird Surveys;
- Vantage Point (VP) Surveys;
- Breeding Bird Survey;
- Grey heron surveys; and
- Kingfisher surveys.

3.1.3 The scope of surveys undertaken has been informed through desk study, the suitability of habitats to support sensitive species, consultation responses obtained from relevant stakeholder organisations and with reference to the following key pieces of guidance:

- *“Assessing the effects of onshore wind farms on birds* (Natural England, 2010);
- *Recommended bird survey methods to inform impact assessment of onshore wind farms* (Scottish Natural Heritage, 2014); and,
- *Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds* (SNH, 2016).

3.2 Target Species

3.2.1 Target species for which detailed knowledge upon their distribution and activity within the study area was sought, were identified on the basis of their likely sensitivity to the proposed development, legislative protection and conservation status.

3.2.2 Primarily, target species have therefore included those species included on/as:

- Annex 1 of the EC Birds Directive;
- Schedule 1 of the Wildlife & Countryside Act 1981;
- Red-listed Birds of Conservation Concern (Eaton *et al.*, 2015); and,
- Shropshire Biodiversity Action Plan (SBAP) species³.

3.2.3 Broadly this includes all waterfowl (including all wildfowl and waders), raptors, owls and game birds as relevant to the locale. Notable flocks of gulls were also recorded.

3.2.4 Passerines were not a focus for survey as they are not normally of concern for overhead line developments.

3.3 Field Survey Personnel

3.3.1 All field surveys were undertaken by Mr P. Antrobus (PA), Mr C. Davies MSc MCIEEM (CD) and Mr Z. Hinchcliffe BSc (ZH); all of whom are experienced ornithologists.

³ <https://new.shropshire.gov.uk/environment/biodiversity-ecology-and-planning/biodiversity-action-plan/>

3.4 Methodologies

Wintering Bird Surveys

- 3.4.1 Wintering Bird Surveys were undertaken between November 2016 and March 2017 and primarily aimed to record the presence of any regular and/or notable aggregations of waterfowl and non-breeding raptors along the route corridor.
- 3.4.2 Observations were undertaken by way of driven/windshield surveys and targeted walkover surveys along defined sections of the route corridor (i.e. those sections most likely to be used by target species on the basis of habitat suitability).
- 3.4.3 The study area included areas out to approximately 500m either side of the Proposed Development (Figure 7.1). Surveys were undertaken along the local road network and public rights of way and on private land with landowner consent.
- 3.4.4 Survey effort and coverage is summarised in Table 7.5.2 below.
- 3.4.5 Full details of all survey times, conditions and field surveyors are presented in Annex AN7.5.1.

Table 7.5.2: Wintering bird survey effort summary.

Date	Start	End
17/11/2016	11:30	15:30
18/11/2016	10:00	12:00
28/11/2016	09:00	11:00
29/11/2016	10:00	14:00
21/12/2016	08:30	12:30
22/12/2016	10:00	12:00
30/12/2016	11:00	13:00
10/01/2017	10:00	14:30
11/01/2017	11:00	15:00
07/02/2017	12:00	13:30
08/02/2017	10:30	15:00
15/03/2017	14:30	16:00
29/03/2017	13:15	15:00

Vantage Point (VP) Surveys

- 3.4.6 VP surveys were undertaken between November 2016 and March 2017 and aimed to record target species flight activity along the route corridor. The primary focus was to identify any notable movements of waterfowl across the route corridor and which may be susceptible to collision.
- 3.4.7 The VP survey methodology was undertaken with reference to SNH (2014 & 2016) and Natural England (2010) guidance. Three VP locations were established along the route corridor. Their locations are shown on Figure 7.5 (**DCO Document 6.14**) and

described in Table 7.5.3 below. Each VP gave a visual coverage of a 180° 2km wide viewshed along the surveyed area of the proposed route.

3.4.8 The locations of VPs were selected on the basis of habitat features identified through aerial imagery and the likelihood of target species activity occurring.

Table 7.5.3: VP survey locations

VP	Grid Reference	Radius	Description
1	SJ352289	2,000m	The area around the Montgomery Canal in Section 1
2	SJ391295	2,000m	Land around the River Perry in Section 2
3	SJ459278	2,000m	Land around Loppington in Section 3/4.

3.4.9 VP Survey effort completed between November 2016 and March 2017 is summarised in Table 7.5.4. Each VP survey session was up to 2 hours in duration.

Table 7.5.4: VP survey effort summary (hours)

VP	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total
1	15	6	6	6	8	41
2	12	6	6	6	6	36
3	12	6	6	6	4	34
Total	39	18	18	18	18	111

3.4.10 Survey times were dispersed throughout the day, but were generally concentrated on the periods around sunrise and sunset when bird activity is generally at its highest and to account for the potential flighting of geese and wader species. Surveys were completed in a range of weather conditions but all were conducive to survey.

3.4.11 Full details of all survey times, conditions and field surveyors are presented in **Annex A7.5.1**.

3.4.12 In accordance with the SNH guidance (2014), flight lines were mapped for all target species passing through the VP survey area. Details of species, number of birds, flight height (in bands), duration and direction were noted on standardised recording forms.

Breeding Bird Survey

3.4.13 A Breeding Bird Survey (BBS) was undertaken along the proposed route between March and June 2017. Areas for survey were identified on the basis of the likelihood of target species occurring, primarily breeding waders identified through desk study.

3.4.14 The survey methodology was based upon a scaled-down version of the Common Bird Census (CBC), as outlined in Gilbert *et al.* (1998), and comprised three staggered survey visits between April and June 2017. During each visit a standardised route was walked through the survey area and the locations and breeding behaviours of all target species encountered recorded.

3.4.15 Survey effort and coverage is summarised in Table 7.5.5 and illustrated in Figure 7.4 (DCO Document 6.14).

3.4.16 Full details of all survey times, conditions and field surveyors are presented in Annex AN7.5.1.

Table 7.5.5: BBS survey effort summary

Date	Start Time	End Time
30/03/2017	08:20	10:20
31/03/2017	08:20	10:30
26/04/2017	06:30	09:00
27/04/2017	06:00	08:30
12/05/2017	06:30	08:30
17/05/2017	05:30	07:30
07/06/2017	06:30	08:30
16/06/2017	06:30	08:30

Grey Heron Surveys

3.4.17 There are two heronries located to the north of the Proposed Development and increased levels of grey heron activity were recorded during winter VP and Wintering Bird Surveys, particularly near to VP1. As a result, additional species-specific VP surveys were conducted for grey herons during spring 2017 to gather further evidence of activity levels and potential risk in relation to the proposed overhead line.

3.4.18 The additional VP surveys were conducted in and around the area where elevated heron flights had been observed to the south of Halston Hall, one of their two known colonies, on Berghill Lane at grid reference SJ346302 (Figure 7.6 (DCO Document 6.14)).

3.4.19 Each survey lasted two hours, with a total of eight hours survey effort completed between May and June 2017. Survey effort was focused on peak activity times; grey heron activity leaving and entering the colony is greatest at dusk and dawn.

3.4.20 Survey effort is summarised in Table 7.5.6 below. Full details of all survey times, conditions and field surveyors are presented in Annex A7.5.1.

Table 7.5.6: Grey heron survey effort summary

Date	Start Time	End Time
10/05/2017	19:15	21.15
11/05/2017	06.30	08.30
06/06/2017	19.45	21.45
15/06/2017	19:45	21:45

Kingfisher surveys

3.4.21 In addition to the breeding bird surveys, further surveys for kingfisher were undertaken in July and August 2017 as a result of the extended Phase 1 habitat survey and desk

study, which identified sections of watercourse crossed by or in proximity to the Proposed Development with suitable habitat for this species. Incidental observations were also made during the wintering and breeding bird surveys. This information identified potentially suitable habitat for kingfisher within the survey area along the River Perry, west of Lower Hordley and east of Babbinswood. No suitable kingfisher nesting habitat was present where the Proposed Development crossed the Montgomery Canal or River Roden.

3.4.22 This potential for kingfisher to be present and breeding along sections of watercourse crossed by the Proposed Development was assessed through targeted surveys, along both banks of the River Perry approximately 100m up and downstream of proposed crossing points. This was considered to be an appropriate survey distance given that construction works in the vicinity of the watercourse were highly limited in duration and extent, maintaining an approximate 8m standoff from banksides and with no in-stream works.

3.4.23 Both banks upstream and downstream of proposed crossing points were walked by suitably experienced ornithologists, searching for evidence of kingfisher presence/breeding burrows and to assess the breeding habitat potential. Exposed earth banks or mud or sand were searched for evidence of presence and any possible burrows or excavations were noted.

3.5 Results

Wintering Bird Survey

Target species activity recorded during wintering bird surveys is summarised in Table 7.5.7. Birds recorded during surveys in flight are also summarised in Table 7.5.8.

Table 7.5.7: Wintering bird survey results – birds on the ground

Species	Number of Observations	Number of Birds
Black-headed gull	5	77
Buzzard	11	15
Canada goose	3	9
Common gull	8	131
Greylag goose	2	25
Golden plover	1	1
Grey heron	3	3
Lapwing	10	655
Mallard	7	35
Mute swan	1	5
Pintail	1	1
Redwing	1	10
Snipe	4	6
Shoveler	1	5
Teal	8	121
Tufted duck	1	1
Wigeon	4	240

Table 7.5.8: Wintering bird survey results – birds in flight

Species	Number of Observations	Number of Birds
Buzzard	18	20
Cormorant	1	1
Canada goose	1	2
Goosander	1	1
Greylag goose	1	2
Grey heron	5	5
Herring gull	1	3
Kestrel	6	6
Kingfisher	5	5
Lapwing	4	24
Lesser black-backed gull	2	5
Mallard	2	6
Mute swan	2	3
Peregrine	1	1
Pink-footed goose	1	100
Snipe	6	16
Teal	1	5
Wigeon	1	5

Vantage Point Surveys

3.5.1 Target species activity is summarised in Table 7.5.9. The total number of flights and birds per VP is presented.

Table 7.5.9: VP Results – target species flight activity.

Vantage Point	Species	No. Flights	N. Birds
VP1	Cormorant	2	2
	Goosander	1	3
	Greylag goose	1	1
	Grey heron	20	22
	Kingfisher	1	1
	Lapwing	3	14
	Marsh harrier	1	1
	Merlin	1	1
	Mute swan	2	4
	Snipe	4	13
	Teal	1	8
	Woodcock	2	2
VP2	Grey heron	10	10
	Snipe	1	1
	Shelduck	1	1
	Teal	1	3
VP3	Canada goose	1	20
	Goosander	1	1

	Greylag goose	1	3
	Grey heron	6	6
	Lapwing	1	16
	Mallard	1	4
	Peregrine	3	3
	Pink-footed goose	1	310
	Snipe	2	2
	Shelduck	1	7
	Shoveler	1	2
	Teal	4	54
	Wigeon	5	156
	Whooper swan	1	4

3.5.2 Table 7.5.10 summarises records of birds on the ground during VP surveys.

Table 7.5.10: VP Results – birds on ground

Vantage Point	Species	No. Observations	No. Birds
VP1	Canada goose	2	20
	Coot	2	3
	Greylag goose	2	30
	Grey heron	2	3
	Lapwing	1	12
	Mallard	2	10
	Snipe	1	3
VP2	Grey heron	1	1
VP3	Canada goose	2	39
	Goosander	1	1
	Greylag goose	1	3
	Mallard	1	4
	Shelduck	1	7
	Shoveler	1	8
	Teal	2	23
	Wigeon	1	75

Breeding Bird Survey

3.5.3 The majority of the survey area comprised relatively open arable and improved grassland fields bounded by hedgerows or post and wire fences, readily observable during the surveys. Around woodland copses, any target species that would breed in woodland were noted from aerial display nearby.

3.5.4 Target species recorded along the route corridor included a small range birds of prey, farmland waders, wildfowl and additional Schedule 1 listed species. Numbers of breeding territories recorded are detailed in Table 7.5.11.

3.5.5 Breeding surveys recorded 13 target species and an estimated 39-40 pairs in total.

3.5.6 A single fieldfare was recorded singing and displaying territorial behaviour on 26th April 2017, although the species was not subsequently seen and the likelihood of a breeding record within western England is limited. Fieldfare is listed as a Schedule 1 breeding species under the Wildlife and Countryside Act 1981, as well as red listed under BoCC.

Table 7.5.11: BBS survey results

Species	Territories	Species	Territories
Greylag goose	4	Grey Heron	2
Canada goose	9	Coot	1-2
Shelduck	3	Common Buzzard	4
Mallard	7	Lapwing	5-6
Teal	1	Kestrel	1
Cormorant	1	Fieldfare	0-1
Little Grebe	1		

3.5.7 Incidental observations during habitat and bat surveys also observed the following target species likely to be breeding in the area: common quail, barn owl and tawny owl. These were recorded as single birds close to the River Perry to the north of Rednal on 27th June 2017.

Grey Heron Survey

3.5.8 There are two heronries located to the north of the proposed route corridor. These are located at Halston Hall, Babbinswood, and Ellesmere (Figure 7.6 (**DCO Document 6.14**)). Additional heron observations were undertaken to determine the level of flights across the preferred line route in the vicinity of known heronries.

3.5.9 Grey heron flight activity and additional target species activity recorded during species specific VP surveys in spring 2017 is summarised in Table 7.5.12. Flight lines are illustrated in Figure 7.6 (**DCO Document 6.14**).

3.5.10 A total of seven heron flights were observed during survey with the majority of activity on the morning of 11th May 2017, to and from the Halston Hall colony. A single flight from what was presumed the Ellesmere heronry was also recorded on the 11th May flying along the Shropshire Union Canal.

3.5.11 All flight records of grey herons during the survey were above 15 metres and therefore above the proposed height of the overhead line.

3.5.12 Incidental observations were also recorded of other target species included greylag goose, red kite and lapwing. Greylag goose were recorded in small flocks flying to and from the fields around Halston Hall, lapwing was recorded flying south and over the fields near to Babbinswood and a single red kite observation was noted on 11th May 2017 hunting to the north west of Halston Hall before drifting south east.

Table 7.5.12: Grey heron survey results and additional species observations

Species	Number of flights				
	10/05/2017	11/05/2017	06/06/2017	15/06/2017	Total
Grey heron	0	5	2	0	7
Greylag goose	2	1	0	0	3
Red kite	0	1	0	0	1
Lapwing	2	1	0	0	3

Kingfisher Survey

Habitat identified as being potentially suitable for nesting kingfisher in proximity to the proposed Development is shown on Figure 7.6 (**DCO Document 6.14**). No suitable kingfisher nesting habitat was present where the Proposed Development crossed the Montgomery Canal or River Roden.

- 3.5.13 Although kingfishers were recorded flying along the River Perry during the breeding bird surveys, no breeding activity was observed and no kingfishers were observed during the additional surveys in July and August 2017. There was, however, suitable breeding habitat north of the Proposed Development to the east of Lower Hordley in exposed sandy banks along the River Perry. Several holes were observed within the cliff face that could have been excavated by Kingfisher. Alternatively these holes could have been created by Sand Martin *Riparia riparia* although this species was not observed during survey.
- 3.5.14 Where the preferred line route crosses the River Perry, there was thick Willow *Salix* scrub lining the banks and therefore these bankside areas did not provide suitable kingfisher habitat.
- 3.5.15 Kingfishers were also observed along the River Perry to the east of Babbinswood and north of the proposed route. The observed birds were likely a family group, suggesting local breeding.

ANNEX AN7.5.1

Table A7.5.1.1 VP Survey Effort

Date	VP	Surveyor	Start Time	Finish Time	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility
07/11/2016	1	PA	09.15	11.15	3	NE	0	6	1	2
07/11/2016	1	PA	13.30	14.30	4	N	0	4	1	2
19/11/2016	1	CD	15.15	17.15	3	SW	0	8/7	2	2
20/11/2016	1	CD	11.00	13.00	4	N/NW	0	8	2	2
23/11/2016	1	CD	07.30	09.30	3	N	0	8	2	2
25/11/2016	1	CD	14.30	16.30	1	NE	0	0	NA	2
26/11/2016	1	CD	11:00	13:00	NA	NA	0	0	NA	2
27/11/2016	1	CD	07:30	09:30	1	NE	0	8	2	1
24/12/2016	1	CD	14:00	16:00	5	SW	2	8/8	2	2
28/12/2016	1	CD	11:00	13:00	2	SW	0	4/8	2	2
29/12/2016	1	CD	08:00	10:00	2	SW	0	2/8	2	2
12/01/2017	1	CD	14:40	16:40	4	NW	3	8	2	1
23/01/2017	1	CD	10:30	12:30	2	SW	0	4	2	2
25/01/2017	1	CD	07:45	09:45	3	S	0	7	2	2
09/02/2017	1	CD	15:30	17:30	3	E	0-1	8	2	2-1
10/02/2017	1	CD	07:15	09:15	3	NE	0	8	2	2
24/02/2017	1	CD	11:00	13:00	3	SW	0	8	2	2
15/03/2017	1	ZH	12:00	14:00	2	W	0	0	NA	2

Date	VP	Surveyor	Start Time	Finish Time	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility
16/03/2017	1	ZH	05:50	07:50	2	W	0	7-8	2	2
16/03/2017	1	ZH	08:15	10:15	2	W	0	8	2	2
30/03/2017	1	ZH	18:15	20:15	2	S	0	3	2	2
19/11/2016	2	CD	07.30	09.30	2	SW	0/2	0/4/8	0/2	2
20/11/2016	2	CD	14.30	16.30	3	NW	0	4/1	2	2
23/11/2016	2	CD	11.00	13.00	3	NE	0	8	2	2
26/11/2016	2	CD	14:30	16:30	1	NA	0	2/8	2	2
27/11/2016	2	CD	11:00	13:00	1	NE	0	7/8	2	2
24/12/2016	2	CD	08:00	10:00	4	W	3	8/8	2	1
28/12/2016	2	CD	14:00	16:00	2	SW	0	8/8	2	2
29/12/2016	2	CD	11:00	13:00	2	SW	0	2/8	2	2
12/01/2017	2	CD	8:00	10:00	3	W	2	8	2	1
23/01/2017	2	CD	15:10	17:10	3	SW	0	8	2	2
25/01/2017	2	CD	10:30	12:30	3	S	0	0	NA	2
09/02/2017	2	CD	07:15	09:15	2	E	0	6	2	2
10/02/2017	2	CD	10:15	12:15	3		0	8	2	2
24/02/2017	2	CD	16:00	18:00	3	SW	0	8	2	2
29/03/2017	2	ZH	10:45	12:45	3	SSE	0	6-8	2	2
29/03/2017	2	ZH	18:00	20:00	2	S	1-3	8	1-2	1-2
31/03/2017	2	ZH	06:15	08:15	3		0	8	3	3
25/11/2106	2	CD	07:45	09:45	1	NE	0	0	NA	2
19/11/2016	3	CD	12.00	14.00	3	SW	0	6	2	2
20/11/2016	3	CD	07.15	09.15	4	N	3	8	2	2
23/11/2016	3	CD	14.30	16.30	3	NE	0	8	2	2
25/11/2016	3	CD	11:00	13:00	1	NE	0	0	NA	2

Date	VP	Surveyor	Start Time	Finish Time	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility
26/11/2016	3	CD	07:30	09:30	NA	NA	0	0	NA	1
27/11/2016	3	CD	14:30	16:30	2	NE	0	6/8	2	2
24/12/2016	3	CD	11:00	13:00	6	SW	0	7/8	2	2
28/12/2016	3	CD	08:00	10:00	2	SW	0	8/8	2	1
29/12/2016	3	CD	14:15	16:15	2	SW	0	4/8	2	2
12/01/2017	3	CD	11:00	13:00	3	W	3	8	2	2
23/01/2017	3	CD	07:45	09:45	2	SW	0	4	2	1
25/01/2017	3	CD	15:15	17:15	3	S	0	3	2	2
09/02/2017	3	CD	10:00	12:00	2-3	SE	0	6-8	2	2
10/02/2017	3	CD	15:45	17:45	3	NE	0	8	2	2-1
24/02/2017	3	CD	06:45	08:45	3	SW	0	8	2	2
15/03/2017	3	ZH	16:30	18:30	1	W	0	0	NA	2
30/03/2017	3	ZH	06:15	08:15	2	S	0-1	8	2	2

Table A7.5.1.2 Winter Walkover Survey Effort

Date	Surveyor	Start Time	Finish Time	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility
17/11/2016	CD	11:30	13:30	6	SW	3	6/8	2	2
17/11/2016	CD	14:00	15:30	6	SW	3	6/8	2	2
18/11/2016	CD	10:00	12:00	4	SW	2	4/8	2	2
28/11/2016	CD	09:00	11:00	1	SW	0	4/8	2	2
29/11/2016	CD	12:00	14:00	1	SW	0	2/8	2	2
29/11/2016	CD	10:00	12:00	0	NA	0	0	N/A	2
21/12/2016	CD	08:30	10:00	4	SW	0	7/8	2	2
22/12/2016	CD	10:00	12:00	2	W	0	0	N/A	2
21/12/2016	CD	11:00	12:30	4	SW	0	8/8	2	2
30/12/2016	CD	11:00	13:00	3	SW	0	2/8	2	2
10/01/2017	CD	10:00	12:00	4	NW	1	8	2/1	2
10/01/2017	CD	12:30	14:30	3	NW	1	8	2/1	2
11/01/2017	CD	11:00	13:00	6-7	NW	2	6	2	2
11/01/2017	CD	14:00	15:00	6-7	NW	0	6	2	2
08/02/2017	CD	13:00	15:00	2	SE	0	8/8	2	2
08/02/2017	CD	10:30	12:30	2	SE	0	8/8	2	2
07/02/2017	CD	12:00	13:30	2	SE	0	3/8	2	2
15/03/2017	ZH	14:30	16:00						
29/03/2017	ZH	13:15	15:00	2	S	1	8	2	2

Table A7.5.1.3 Breeding Bird Survey Effort

Date	Surveyor	Start Time	Finish Time	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility
30/03/2017	ZH	08:20	10:20	2	S	2	8	2	2
31/03/2017	ZH	08:20	10:30	2		0	7	2	2
26/04/2017	ZH	06:30	09:00	2	NE	0	0		2
27/04/2017	ZH	06:00	08:30	1		0	6	2	2
12/05/2017	ZH	06:30	08:30	1	N	1	7	2	2
17/05/2017	ZH	05:30	07:30	3	W	0	3	2	2
07/06/2017	ZH	06:30	08:30	3	W	0	3	2	2
16/06/2017	ZH	06:30	08:30	2	W	0	7	2	2

Table A7.5.1.4 Grey Heron Survey Effort

Date	Surveyor	Start Time	Finish Time	VP Hours	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility
10/05/2017	ZH	19:15	21:15	2	0		0	1	2	2
11/05/2017	ZH	06:30	08:30	2	1	NE	0	1	2	2
06/06/2017	ZH	19:45	21:45	2	3	W	0	5	2	2
15/06/2017	ZH	19:45	21:45	2	3		0	8	2	2

ANNEX AN7.5.2: Bird Species Names

Table A7.5.2.1 below provides a list of bird species referred to within this Appendix and Chapter 7 'Ecology and Biodiversity' of the ES (DCO Document 6.7). Common and species names are presented along with a summary of each species relevant conservation status using the following abbreviations:

- Annex 1 - species listed on Annex 1 of the Birds Directive;
- Schedule 1 - species listed on Schedule 1 of the Wildlife and Countryside 1981 Act;
- S41 – priority species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act;
- UK BAP - priority species listed of the UK Biodiversity Action Plan (UK BAP);
- BoCC - BoCCs as listed by leading bird conservation organisations in the UK, including the RSPB and BTO. Red and amber categories are given; and,
- LBAP – species for which a Shropshire Biodiversity Action Plan (SBAP) has been prepared⁴.

Table A7.5.2.1: Summary of bird species.

Common Name	Species Name	Conservation Status
Little grebe	<i>Tachybaptus ruficollis</i>	-
Cormorant	<i>Phalacrocorax carbo</i>	-
Grey heron	<i>Ardea cinerea</i>	-
Little egret	<i>Egretta garzetta</i>	Annex 1
Mute swan	<i>Cygnus olor</i>	BoCC-Amber
Whooper swan	<i>Cygnus cygnus</i>	Annex 1, S1, BoCC-Amber
Pink-footed goose	<i>Anser brachyrhynchus</i>	BoCC-Amber
Greylag goose	<i>Anser anser</i>	S1, BoCC-Amber
Canada goose	<i>Branta canadensis</i>	-
Shelduck	<i>Tadorna tadorna</i>	BoCC-Amber
Wigeon	<i>Anas penelope</i>	BoCC-Amber
Teal	<i>Anas crecca</i>	BoCC-Amber
Garganey	<i>Anas querquedula</i>	S1, BoCC-Amber
Mallard	<i>Anas platyrhynchos</i>	BoCC-Amber

⁴ A generic bird species actions and action plan for farmland birds has also been prepared for the SBAP.

Common Name	Species Name	Conservation Status
Pintail	<i>Anas acuta</i>	BoCC-Amber
Shoveler	<i>Anas clypeata</i>	BoCC-Amber
Tufted duck	<i>Aythya fuligula</i>	-
Goosander	<i>Mergus merganser</i>	-
Red kite	<i>Milvus milvus</i>	S1
Marsh harrier	<i>Circus aeruginosus</i>	Annex 1, S1, BoCC-Amber
Sparrowhawk	<i>Accipiter nisus</i>	-
Buzzard	<i>Buteo buteo</i>	-
Kestrel	<i>Falco tinnunculus</i>	BoCC-Amber
Merlin	<i>Falco columbarius</i>	Annex 1, S1, BoCC-Red
Peregrine	<i>Falco peregrinus</i>	Annex 1, S1
Grey partridge	<i>Perdix perdix</i>	S41, UKBAP, BoCC-Red
Common quail	<i>Coturnix coturnix</i>	S1, BoCC-Amber
Red-legged partridge	<i>Alectoris rufa</i>	-
Pheasant	<i>Phasianus colchicus</i>	-
Moorhen	<i>Gallinula chloropus</i>	-
Coot	<i>Fulica atra</i>	-
Oystercatcher	<i>Haematopus ostralegus</i>	BoCC-Amber
Ringed plover	<i>Charadrius hiaticula</i>	BoCC-Red
Golden plover	<i>Pluvialis apricaria</i>	Annex 1
Lapwing	<i>Vanellus vanellus</i>	S41, UKBAP, BoCC-Red, LBAP
Snipe	<i>Gallinago gallinago</i>	BoCC-Amber, LBAP
Woodcock	<i>Scolopax rusticola</i>	BoCC-Red
Curlew	<i>Numenius arquata</i>	S41, UKBAP, BoCC-Red, LBAP
Green sandpiper	<i>Tringa ochropus</i>	BoCC-Amber

Common Name	Species Name	Conservation Status
Black-headed gull	<i>Chroicocephalus ridibundus</i>	BoCC-Amber
Common gull	<i>Larus canus</i>	BoCC-Amber
Lesser black-backed gull	<i>Larus fuscus</i>	BoCC-Amber
Herring gull	<i>Larus argentatus</i>	S41, UKBAP, BoCC-Red
Stock dove	<i>Columba oenas</i>	BoCC-Amber
Woodpigeon	<i>Columba palumbus</i>	-
Collared dove	<i>Streptopelia decaocto</i>	-
Turtle dove	<i>Streptopelia turtur</i>	S41, UKBAP, BoCC-Red
Cuckoo	<i>Cuculus canorus</i>	S41, UKBAP, BoCC-Red
Barn owl	<i>Tyto alba</i>	S1, LBAP
Little owl	<i>Athene noctua</i>	-
Tawny owl	<i>Strix aluco</i>	BoCC-Amber
Swift	<i>Apus apus</i>	BoCC-Amber
Kingfisher	<i>Alcedo atthis</i>	Annex 1, S1, BoCC-Amber
Green woodpecker	<i>Picus viridis</i>	-
Lesser spotted woodpecker	<i>Dendrocopos minor</i>	S41, UKBAP, BoCC-Red
Great spotted woodpecker	<i>Dendrocopos major</i>	-
Skylark	<i>Alauda arvensis</i>	S41, UKBAP, BoCC-Red
Sand martin	<i>Riparia riparia</i>	-
House martin	<i>Delichon urbicum</i>	BoCC-Amber
Swallow	<i>Hirundo rustica</i>	-
Meadow pipit	<i>Anthus pratensis</i>	BoCC-Amber
Yellow wagtail	<i>Motacilla flava</i>	S41, UKBAP, BoCC-Red
Grey wagtail	<i>Motacilla cinerea</i>	BoCC-Red

Common Name	Species Name	Conservation Status
Pied wagtail	<i>Motacilla alba</i>	-
Wren	<i>Troglodytes troglodytes</i>	-
Dunnock	<i>Prunella modularis</i>	S41, UKBAP, BoCC-Amber
Robin	<i>Erithacus rubecula</i>	-
Redstart	<i>Phoenicurus phoenicurus</i>	-
Stonechat	<i>Saxicola torquatus</i>	-
Wheatear	<i>Oenanthe oenanthe</i>	-
Blackbird	<i>Turdus merula</i>	-
Fieldfare	<i>Turdus pilaris</i>	S1, BoCC-Red
Song thrush	<i>Turdus philomelos</i>	S41, UKBAP, BoCC-Red, LBAP
Redwing	<i>Turdus iliacus</i>	S1, BoCC-Red
Mistle thrush	<i>Turdus viscivorus</i>	BoCC-Red
Grasshopper warbler	<i>Locustella naevia</i>	UKBAP, BoCC-Red
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	-
Reed warbler	<i>Acrocephalus scirpaceus</i>	-
Lesser whitethroat	<i>Sylvia curruca</i>	-
Whitethroat	<i>Sylvia communis</i>	-
Garden warbler	<i>Sylvia borin</i>	S41
Blackcap	<i>Sylvia atricapilla</i>	-
Chiffchaff	<i>Phylloscopus collybita</i>	-
Willow warbler	<i>Phylloscopus trochilus</i>	-
Goldcrest	<i>Regulus regulus</i>	-
Spotted flycatcher	<i>Muscicapa striata</i>	S41, UKBAP, BoCC-Red
Long-tailed tit	<i>Aegithalos caudatus</i>	-
Marsh tit	<i>Poecile palustris</i>	S41, UKBAP, BoCC-Red
Willow tit	<i>Poecile montana</i>	S41, UKBAP, BoCC-Red
Coal tit	<i>Parus ater</i>	-
Blue tit	<i>Cyanistes caeruleus</i>	-
Great tit	<i>Parus major</i>	-

Common Name	Species Name	Conservation Status
Nuthatch	<i>Sitta europaea</i>	-
Treecreeper	<i>Certhia familiaris</i>	-
Jay	<i>Garrulus glandarius</i>	-
Magpie	<i>Pica pica</i>	-
Jackdaw	<i>Corvus monedula</i>	-
Rook	<i>Corvus frugilegus</i>	-
Carrion crow	<i>Corvus corone</i>	-
Raven	<i>Corvus corax</i>	-
Starling	<i>Sturnus vulgaris</i>	S41, UKBAP, BoCC-Red
House sparrow	<i>Passer domesticus</i>	S41, UKBAP, BoCC-Red
Tree sparrow	<i>Passer montanus</i>	S41, UKBAP, BoCC-Red
Chaffinch	<i>Fringilla coelebs</i>	-
Brambling	<i>Fringilla montifringilla</i>	S1
Greenfinch	<i>Carduelis chloris</i>	-
Goldfinch	<i>Carduelis carduelis</i>	-
Siskin	<i>Carduelis spinus</i>	-
Linnet	<i>Carduelis cannabina</i>	S41, UKBAP, BoCC-Red
Bullfinch	<i>Pyrrhula pyrrhula</i>	S41, UKBAP, BoCC-Amber
Yellowhammer	<i>Emberiza citrinella</i>	S41, UKBAP, BoCC-Red
Corn bunting	<i>Emberiza calandra</i>	S41, UKBAP, BoCC-Red
Reed bunting	<i>Emberiza schoeniclus</i>	S41, UKBAP, BoCC-Amber