



THE
ENVIRONMENT
PARTNERSHIP

Haweswater Aqueduct Resilience Programme

Chapter 9A - Appendix 9A.7

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Environmental Statement



Water for the North West



Haweswater Aqueduct Resilience Programme

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Contents

1. Birds Technical Appendix 1

1.1 Introduction 1

1.2 Summary of Findings..... 1

1.2.1 Desktop Records 1

1.2.2 Breeding Birds..... 1

1.2.2.1 Bonstone Compound..... 1

1.2.2.2 Braddup Compound..... 3

1.2.3 Wintering Birds 5

Appendix A. Appendix A. Bowland Ecology Breeding Bird Report

Appendix B. Bowland Ecology Wintering Birds Report

1. Birds Technical Appendix

1.1 Introduction

- 1) TEP was appointed by United Utilities to complete an Ecological Impact Assessment (EclA) for the Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section. The EclA is required to inform an Environmental Impact Assessment (EIA) and support production of the Environmental Statement (ES).
- 2) A series of ecological surveys was undertaken to complete the EclA. This Appendix is one of a series of Ecological Technical Reports (ETRs) produced to support the EclA. This ETR documents the methods and findings of the Breeding Bird and Wintering Bird surveys undertaken by Bowland Ecology.

1.2 Summary of Findings

1.2.1 Desktop Records

- 3) Records of the following notable bird species have been provided within 2 km of the Proposed Bowland Section:
 - curlew *Numenius arquata*
 - Lapwing *Vanellus vanellus*
 - Kingfisher *Alcedo atthis*
 - Tawny Owl *Strix aluco*
 - Barn owl *Tyto alba*

1.2.2 Breeding Birds

- 4) The breeding bird survey was carried out between April and June 2019 (Bonstone Compound) and between April and June 2020 (Braddup Compound) using a transect survey method. A wider area was surveyed than will be potentially impacted by the proposed works within the Marl Hill Section. Consequently only parts of the overall area surveyed by Bowland Ecology and presented within the following Technical Appendix will be used to inform the breeding bird assessment within the EclA.
- 5) The parts of the breeding bird survey area which will be used to inform the EclA include the Braddup Compound, Bonstone Compound and all related construction access areas, as well as land within 100 m of these locations. These reduced survey areas are presented at Figures 9A.12, 9A.13 and 9A.14. The parts of the wider survey area that contain the compounds and construction access form part of the areas referred to as 'TR4 North' (Bonstone Compound) and 'TR4 South' (Braddup Compound).

1.2.2.1 Bonstone Compound

- 6) Within 100m of the Bonstone Compound and temporary construction access area a total of 38 no. species were recorded during surveys. Sixteen of these are BoCC, including common gull (Amber), curlew (SPI, Red), lapwing (SPI, Red), linnets (SPI, Red), mallard (Amber), meadow pipit (Amber), oystercatcher (Amber), pied flycatcher (Red), redshank (Amber), redstart (Amber), snipe (Amber), spotted flycatcher (SPI, Red), starling (SPI, Red), stock dove (Amber), swift (Amber) and willow warbler (Amber). Of these 11 no. species were confirmed or probable breeders within the compound and buffer (curlew, lapwing, linnets, meadow pipit, oystercatcher, pied flycatcher, redshank, redstart, spotted flycatcher, starling and stock dove) and 3 no. were possible breeders (mallard, snipe and willow warbler).

Table 1. Breeding birds recorded at the Bonstone Compound

Bonstone Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Blackbird		N	Pr (1)
Blue tit		N	Pr (2)
Carrion crow		Po	Pr (1)
Chaffinch		N	Pr (2)
Coal tit		N	Po
Collared dove		N	Pr (1)
Common gull	BAm	N	N
Curlew	SPI BRd	Pr (2)	Pr (3)
Goldfinch	SPI BAm	Po	C (1) Pr (1)
Great spotted woodpecker		N	C (1)
Great tit	BAm	N	Pr (1)
Greenfinch		N	Po
Grey heron		N	N
Jackdaw		N	Pr (1)
Lapwing	SPI BRd	Pr (1)	C (2) Pr (1)
Linnet	SPI BRd	N	Pr (1)
Mallard	BAm	N	Po
Meadow Pipit	BAm	N	C (1) Pr (1)
Moorhen		N	C (1)
Nuthatch		N	C (1)
Oystercatcher	BAm	N	C (1)
Pheasant		N	Pr (3)
Pied flycatcher	BRd	N	C (1)
Pied wagtail		Po	C (1)
Red-legged partridge		Pr (2)	Pr (2)
Redshank	BAm	N	C (1)

Bonstone Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Robin		N	Po
Snipe	BAm	N	Po
Spotted flycatcher	SPI BRd	N	C (1)
Starling	SPI BRd	N	Pr (1)
Stock dove	BAm	N	Pr (1)
Swallow		N	C (1)
Swift	BAm	N	N
Treecreeper		N	C (1)
Willow warbler	BAm	N	Po
Woodpigeon		Po	Pr (1)
Wren		N	Pr (1)

C = confirmed breeding, Pr = Probable breeding, Po = Possible breeding, N = Not breeding

1.2.2.2 Braddup Compound

- 7) Within 100 m of the Braddup Compound and temporary construction access route, a total of 38 no. species were recorded during surveys. Of these, 12 BoCC species were recorded, including bullfinch (SPI, Amber), curlew (SPI, Red), dunnock (SPI, Amber), lesser black-backed gull (Amber), mallard (Amber), mistle thrush (Red), redstart (Amber), song thrush (SPI, Red), spotted flycatcher (SPI, Red), starling (SPI, Red), stock dove (Amber) and willow warbler (Amber). Of these seven no. were confirmed or probable breeders within the compound (curlew, mallard, mistle thrush, redstart, song thrush, stock dove and willow warbler) and four were possible breeders (bullfinch, dunnock, spotted flycatcher and starling).

Table 2. Breeding birds recorded at the Braddup Compound

Braddup Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Blackbird		Po	C (1) Pr (1)
Blackcap		N	Pr (2)
Blue tit		N	C (1) Pr (1)
Bullfinch	SPI BAm	N	Po
Buzzard		N	C (1)

Braddup Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Carrion crow		C (1)	C (2) Pr (3)
Chaffinch		N	Pr (4)
Chiffchaff		N	Pr (2)
Coal tit		N	Po
Curlew	SPI BRd	N	Pr (1)
Duncock	SPI BAm	N	Po
Goldcrest		N	Pr (2)
Goldfinch		Po	Pr (3)
Great spotted woodpecker		N	Po
Great tit		N	Pr (1)
Greenfinch		N	Pr (1)
Jackdaw		Po	Pr (3)
Jay		N	Pr (1)
Lesser black-backed gull	BAm	N	N
Long-tailed tit		N	Pr (1)
Magpie		N	Po
Mallard	BAm	Pr (1)	Pr (2)
Mistle thrush	BRd	N	C (1)
Nuthatch		N	Po
Pheasant		Po	Pr (1)
Pied wagtail		Pr (1)	Pr (1)
Raven		N	Pr (1)
Redstart	BAm	N	Pr (1)
Robin		N	Pr (5)
Song thrush	SPI BRd	N	Pr (1)
Sparrowhawk		N	Po

Braddup Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Spotted flycatcher	SPI BRd	N	Po
Starling	SPI BRd	N	Po
Stock dove	BAm	Pr (1)	Pr (2)
Swallow		N	N
Willow warbler	BAm	N	Pr (1)
Woodpigeon		N	Pr (3)
Wren	SPI BRd	N	C (1) Pr (5)

C = confirmed breeding, Pr = Probable breeding, Po = Possible breeding, N = Not breeding

1.2.3 Wintering Birds

- 8) The wintering bird survey was carried out between September 2019 and March 2020 using a transect survey method. A wider area was surveyed than will be potentially impacted by the proposed works within the Marl Hill Section. Consequently only parts of the overall area surveyed by Bowland Ecology presented within the following Technical Appendix will be used to inform the wintering bird assessment within the EclA.
- 9) The parts of the wintering bird survey area which will be used to inform the EclA include the Braddup Compound, the Bonstone Compound and all related construction access areas, as well as land within 100 m of these locations. These reduced survey areas are presented at Figures 9A.15 – 9A.21. The parts of the wider survey area that contain the compounds and construction access are referred to as TR4 North (Bonstone Compound) and TR4 South (Braddup Compound).
- 10) A total of 60 no. species were recorded for the Proposed Marl Hill Section at the two compounds, with 56 no. species recorded at the Bonstone Compound and surrounding 500 m buffer and 44 no. species recorded at the Braddup Compound and surrounding 500 m buffer.
- 11) Of these, 24 no. species are BoCC: black headed gull, common gull, greylag goose, house martin, kestrel, lesser black-backed gull, mallard, meadow pipit, redshank, snipe, stock dove and tawny owl (Amber), bullfinch, dunnoek, reed bunting (Amber and SPI), grey wagtail, mistle thrush (Red), fieldfare, redwing (Red and Schedule 1 breeding only), curlew, herring gull, lapwing, lesser redpoll, skylark, song thrush, spotted flycatcher and starling (Red and SPI). The wider assemblage was reported to be typical of the habitats present.
- 12) Fifty six species were recorded at the Bonstone Compound, including 26 BoCC species. Forty four species were recorded at the Braddup Compound, including 17 BoCC species.
- 13) Small numbers of waders were recorded at the Braddup Compound; a single snipe in November and two in January favouring the marshy grassland to the west of central survey area. A single curlew was recorded in wet grassland at the northern section of the site in February.
- 14) Two species of gull were recorded during the surveys at the Braddup Compound; however, numbers were very low with the only records in January comprising a single common gull and three lesser black-backed gulls.
- 15) Redwing was recorded regularly during the winter surveys at the Braddup Compound, feeding across the site with a peak count of 22 no. in October. Fieldfare was recorded in December, with 32 no. birds observed.

- 16) No wildfowl were recorded within habitats situated within the Braddup Compound.
- 17) Snipe was recorded using the numerous scrapes and marshy grassland habitats in the eastern half of the Bonstone Compound survey area, directly adjacent to the access track, with a maximum count of 16 no. in October.
- 18) Curlew, lapwing and redshank were present outside the core winter period as birds returned to their breeding territories. Curlew were present throughout the Bonstone Compound survey area in February and numbers reached six in March. Lapwing returned to wet grassland and scrapes at the eastern section of the area in February, peaking at 12 no. individuals in March, alongside two redshank.
- 19) Four species of gull were recorded at the Bonstone Compound during the surveys, however numbers were low and generally comprised of birds flying over the site, with a few birds feeding in the grassland in the northern section of the site.
- 20) Redwing and fieldfare were recorded regularly during the winter surveys at the Bonstone Compound feeding across the site. Peak counts for fieldfare comprised 30 individuals in October 2019 and 46 no. for redwing in November 2019.
- 21) Other than occasional mallard, no wildfowl were recorded within habitats situated within the Bonstone Compound.

Table 3. Wintering birds recorded at the Bonstone Compound

Bonstone Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Blackbird			4
Black-Headed Gull	BAm		6
Blue Tit		2	9
Brambling			1
Bullfinch	SPI BAm		1
Carrion Crow		2	3
Chaffinch		3	6
Chiffchaff			2
Coal Tit		1	5
Collard Dove			1
Common Gull	BAm	1	1
Curlew	SPI BRd	2	4
Dunnock	SPI BAm		1
Fieldfare	WCA1 BRd	1	30
Goldcrest		1	2
Goldfinch		3	24

Bonstone Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Great spotted woodpecker			2
Great Tit		4	4
Greenfinch			1
Grey Wagtail	BRd	1	1
Greylag Goose	BAm		2
Herring Gull	SPI BRd		3
House martin			3
Jackdaw		2	37
Kestrel	BAm	1	
Lapwing	SPI BRd		12
Lesser Black-backed Gull	BAm	6	4
Long-tailed Tit			6
Magpie			1
Mallard	BAm		2
Meadow Pipit	BAm	5	50
Mistle Thrush	BRd	1	1
Moorhen			2
Nuthatch			4
Pheasant		8	20
Pied Wagtail		1	1
Red-Legged Partridge		24	32
Redshank	BAm		2
Redwing	WCA1 BRd	46	4
Reed bunting	SPI BAm	1	1
Robin		1	5
Rook		18	
Siskin		3	1

Bonstone Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Skylark	SPI BRd	1	1
Snipe	BAm		16
Song Thrush	SPI BRd		2
Sparrowhawk			1
Spotted flycatcher	SPI BRd		3
Starling	SPI BRd	33	24
Stock Dove	BAm	12	4
Swallow			17
Tawny owl	BAm		2
Treecreeper			2
Wheatear		5	
Wood Pigeon			9
Wren		1	3

Table 4. Wintering birds recorded at the Braddup Compound

Braddup Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Blackbird		3	9
Blue Tit		2	7
Bullfinch	SPI BAm		1
Buzzard		1	3
Carrion Crow		9	50
Chaffinch			9
Coal Tit		2	4
Collard Dove			1
Common Gull	BAm		1

Braddup Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Curlew	SPI BRd		1
Dunnock	SPI BAm		1
Fieldfare	WCA1 BRd	3	32
Goldcrest			2
Goldfinch			7
Great spotted woodpecker			1
Great Tit			4
Greenfinch			2
Grey Wagtail	BRd		3
Heron	BAm		1
Jackdaw		28	55
Kestrel	BAm		1
Lesser Black-backed Gull	BAm		3
Lesser redpoll	SPI BRd		2
Long-tailed Tit			2
Magpie			1
Meadow Pipit	BAm		6
Mistle Thrush	BRd		1
Nuthatch			2
Pheasant		2	13
Pied Wagtail		1	3
Raven			1
Redwing	WCA1 BRd		22
Robin		1	7
Rook		27	1
Siskin			3
Snipe	BAm	1	2

Braddup Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Song Thrush	SPI BRd		2
Sparrowhawk			1
Starling	SPI BRd	140	190
Stock Dove	BAm		50
Tawny owl	BAm		1
Treecreeper			1
Wood Pigeon		8	31
Wren		2	5

Appendix A. Bowland Ecology Breeding Bird Report

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Mark Breaks, <i>Ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR4 Breeding Bird Survey Report 2019_Ver1 TR4 Breeding Bird Survey Report 2019_Ver2 TR4 Breeding Bird Survey Report 2019_Ver3	Date:	18/09/2019 10/07/2020 12/08/2020
2 Project Drawings			
TR4 Bird Survey Plans – April 2019		Sheet 1 of 2 – Sheet 2 of 2	
TR4 Bird Survey Plans – May 2019		Sheet 1 of 2 – Sheet 2 of 2	
TR4 Bird Survey Plans – June 2019		Sheet 1 of 2 – Sheet 2 of 2	
TR4 Bird Survey Plans – April 2020		Sheet 1 of 3 – Sheet 3 of 3	
TR4 Bird Survey Plans – May 2020		Sheet 1 of 3 – Sheet 3 of 3	
TR4 Bird Survey Plans – June 2020		Sheet 1 of 3 – Sheet 3 of 3	
Breeding Bird Survey Overview – TR4		Sheet 1 of 1	
3 Ecology Surveys			
Surveyors:	Mark Breaks BSc (Hons) – 2019 and 2020 Heather Whalley BSc (Hons) – 2019		
Survey Visits:	<p>TR4 north Visit 1: Date 09/04/2019 Start time 10:00 End time 11:00 Visit 2: Date 09/05/2019 Start time 06:30 End time 07:30 Visit 3: Date 21/06/2019 Start time 09:35 End time 10:30</p> <p>TR4 south Visit 1: Date 28/04/2020 Start time 07:40 End time 09:30 Visit 2: Date 18/05/2020 Start time 08:20 End time 10:05 Visit 3: Date 16/06/2020 Start time 07:35 End time 09:20</p>		
Survey Method:	<p>A modified breeding bird survey was conducted in line with the specifications detailed by the British Trust for Ornithology (Gilbert <i>et al.</i> 1998). This methodology follows that stated by Gilbert <i>et al.</i> (1998) for the Breeding Bird Survey (BBS) where a transect is walked through the survey area of previously highlighted habitats considered most suitable for bird species with high conservation status. The survey frequency comprised three visits throughout the breeding season. Mapping methodology comprised plotting the identity and activity of birds recorded within the survey area in line with the Common Bird Census (CBC) approach defined in Gilbert <i>et al.</i> (1998). The surveys were undertaken under appropriate weather conditions (avoiding heavy rain or strong wind).</p> <p>During the surveys, all birds showing signs of ‘confirmed’ or ‘probable’ breeding within the site boundary are mapped showing their location, along with ‘possible’ breeders and other birds that showed no signs of breeding being recorded.</p>		
Weather Conditions:	<p>TR4 north Visit 1: 4/8 cloud, F3 easterly wind, dry, approximately 10°C. Visit 2: 8/8 cloud, F2 north-easterly wind, light drizzle, approximately 8°C. Visit 3: 4/8 cloud, F2 westerly wind, dry, approximately 15°C.</p> <p>TR4 south Visit 1: 8/8 cloud, F1 easterly wind, dry, approximately 7°C. Visit 2: 8/8 cloud, F2 westerly wind, light drizzle, approximately 10°C. Visit 3: 8/8 cloud, F1 north-easterly wind, dry, approximately 14°C.</p>		

Limitations to the survey:	<p>Ecological surveys are limited by factors which affect the presence of birds such as the time of year and weather conditions. Therefore, the list of species that may potentially utilise the site may not be complete though the survey provides a good indication of the species present and a confident way of identifying the value of the area's bird community.</p> <p>The whole of the TR4 north survey area was accessible in 2019 and the weather during the surveys was optimal allowing for an adequate assessment of breeding birds present. However, no surveys were completed at TR4 south in 2019 due to no permitted land access being granted.</p> <p>TR4 south surveys were completed in 2020 and the weather during the surveys was optimal allowing for an adequate assessment of breeding birds present.</p>
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4 Existing data

No historic bird records were available at the time of writing this report.

Local knowledge at TR4 north:

- Four known breeding barn owl (Schedule 1) nest sites on or within 200m of the survey area.
- RSPB – breeding wader monitoring (farmland within east of survey area).
- BTO – nest box scheme and pied flycatcher RAS (Retrapping Adult Survival) ringing project scheme running within woodland and scattered trees where present throughout the survey area.

TR4 south:

- During Extended Phase 1 survey undertaken in 2019 by Bowland Ecology, a single barn owl was observed in a derelict barn adjacent to the survey area.

5 Habitat Description

		TR4 north: Farmland comprising unimproved grassland, marshy grassland, small waterbodies (scrapes), hedgerows, scattered trees/scrub and woodland.
		TR4 south: Farmland comprising improved and semi-improved grassland, marshy grassland scattered trees/scrub, mixed and broad-leaved woodlands.

6.1 Breeding bird survey results (TR4 north – number of territories)

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
blackbird (B.)	1	3			Pr
blue tit (BT)	2	2	1		Pr

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
carrion crow (C.)	1	1	1		Po
chaffinch (CH)	2	3	2		Pr
coal tit (CT)	1		1		Po
collared dove (CD)	1		1		C
common gull (CM)	0			A	N
common redstart (RT)		5	3	A	C
curlew (CU)	3	3	5	S41, R	C
goldfinch (GO)	1	2	2		C
great spotted woodpecker (GS)	1	1	1		C
great tit (GT)	2	2	1		Pr
greenfinch (GR)	1				Po
grey heron (H.)		0			N
jackdaw (JD)	0	1	1		Pr
lapwing (L.)	5	5	1	S41, R	C
lesser black- backed gull (LB)	0			A	N
linnet (LI)			1	S41, R	Po
mallard (MA)	2			A	Po
meadow pipit (MP)	3	2	1	A	C
mistle thrush (M.)	1			R	Po
moorhen (MH)	1		1		C
nuthatch (NH)	1		1		C
oystercatcher (OC)		1		A	C
pheasant (PH)	7	4			Pr
pie flycatcher (PF)		2	3	R	C
pie wagtail (PW)	2	2	2		C
red-legged partridge (RL)	3	2			Po
redshank (RK)	1		1	A	C
robin (R.)	3		1		Pr

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
snipe (SN)	1			A	Po
song thrush (ST)	2			S41, R	Pr
spotted flycatcher (SF)			1	S41, R	C
starling (SG)	2	1		S41	Pr
stock dove (SD)	2	1	2	A	Pr
swallow (SL)			2		C
swift (SI)			0	A	N
treecreeper (TC)	1	2			C
willow warbler (WW)		2		A	Pr
wood pigeon (WP)	2	1	1		Pr
wren (WR)	3	2	3		Pr

Key: C = Confirmed; Pr = Probable; Po = Possible; N = Not; R = Red List; A = Amber List;
Sch 1 = Schedule 1; S41 = NERC Act conservation priority species; Cons. = Conservation

6.2 Breeding bird survey results (TR4 south – number of territories)					
Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
blackbird (B.)	4	10	8		C
blackcap (BC)	3	5	3		Pr
blue tit (BT)	5	5	4		C
bullfinch (BF)		1	1	S41, A	Po
buzzard (BZ)		1	1		C
carrion crow (C.)	5	6	5		C
chaffinch (CH)	1	7	4		Pr
chiffchaff (CC)	2	2	2		Pr
coal tit (CT)	1	4	1		Pr
common redstart (RT)	3	3	2	A	C
curlew (CU)	4	3	2	S41, R	Pr
dunnock (D.)			3	S41, A	Po
garden warbler (GW)	1	1			Po
goldcrest (GC)	4	2	2		Pr
goldfinch (GO)		3	1		Pr

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
great spotted woodpecker (GS)		1	1		Po
great tit (GT)	1	3			Pr
greenfinch (GR)		1	2		Po
jackdaw (JD)	4	7	3		C
jay (J.)		1	1		Po
kestrel (K.)		1	1	A	C
lesser black-backed gull (LB)	(6 birds)	(4 birds)	(2 birds)	A	N
long-tailed tit (LT)	2	3			Pr
magpie (MG)			2		Po
mallard (MA)	3	(9 birds)	(6 birds)	A	Pr
meadow pipit (MP)			2	A	Po
mistle thrush (M.)	3	1	1	R	C
nuthatch (NH)		1	2		Pr
pheasant (PH)	(9 birds)	(3 birds)	(4 birds)		Pr
pie flycatcher (PF)		1		R	Po
pie wagtail (PW)	1	3	1		Pr
raven (RN)	1				C
robin (R.)	10	12	5		C
siskin (SK)	1	1			Po
song thrush (ST)	1	5	2	S41, R	Pr
sparrowhawk (SH)	1				Po
spotted flycatcher (SF)		2		S41, R	Po
starling (SG)	1			S41, R	Po
stock dove (SD)	3	2 (7 birds)	2	A	Pr
swallow (SL)	1	3	1		Pr
treecreeper (TC)	1	1	1		C
willow warbler (WW)	8	6	5	A	Pr
wood pigeon (WP)	4	7	7		Pr
wren (WR)	6	9	19		C

Key: C = Confirmed; Pr = Probable; Po = Possible; N = Not; R = Red List; A = Amber List;
Sch 1 = Schedule 1; S41 = NERC Act conservation priority species; Cons. = Conservation

7 Summary

TR4 north

A total of 41 bird species were recorded using TR4 north:

- 16 species were confirmed breeding as follows: collared dove, common redstart (Amber listed), curlew (S41, Red listed), goldfinch, great spotted woodpecker, lapwing (S41, Red listed), meadow pipit (Amber listed), moorhen, nuthatch, oystercatcher (Amber listed), pied flycatcher (Red listed), pied wagtail, redshank (Amber listed), spotted flycatcher (S41, Red listed), swallow and treecreeper;
- 13 species were identified to be probable breeding on site including: song thrush (S41, Red listed) starling(S41), stock dove (Amber listed) and willow warbler (Amber listed);
- Eight species were recorded as possible breeders on site including: linnet (S41, Red listed), mallard (Amber listed), mistle thrush (Red listed) and snipe (Amber listed); and
- Four species were sighted using the survey area, however, they were considered to be non-breeding, including, seven swifts (Amber listed) were recorded using the habitat for foraging.

TR4 south

A total of 44 bird species were recorded using the TR4 south:

- twelve species were confirmed breeding as follows: blackbird, blue tit, buzzard, carrion crow, common redstart (Amber listed), jackdaw, kestrel (Amber listed), mistle thrush (Red listed), raven, robin, treecreeper and wren;
- 18 species were identified to be probable breeding on site including: blackcap, chaffinch, chiffchaff, coal tit, curlew (S41, Red listed), goldcrest, goldfinch, great tit, long-tailed tit, mallard (Amber listed), nuthatch, pheasant, pied wagtail, song thrush (S41, Red listed), stock dove (Amber listed), swallow, willow warbler (Amber listed) and wood pigeon;
- 13 species were recorded as possible breeders on site including: bullfinch (S41, Amber listed), dunnock (S41, Amber listed), garden warbler, great spotted woodpecker, greenfinch, jay, magpie, meadow pipit (Amber listed), pied flycatcher (Red listed), siskin, sparrowhawk, spotted flycatcher (S41, Red listed) and starling (S41, Red listed); and
- One species (lesser black backed gull) was sighted using the site however, it was considered to be non-breeding.

8 Evaluation

Fuller (1980) devised a method of classifying the ornithological interest of sites for conservation based on three site attributes: population size, rarity and diversity. These criteria were followed in the evaluation of the results. The total number of confirmed, probable and possible breeding bird species recorded within a site also indicates its significance. Table 1 includes the breeding diversity criteria devised by Fuller (1980).

Table 1: Significance of the total number of breeding species recorded at a site

Local	County	Regional	National
25-49	50-69	70-84	85+

No significant breeding bird concentrations (i.e. 1% or more of the national breeding population) or nationally rare breeding bird species (i.e. between 1 and 1,000 breeding pairs; Musgrove *et al.*, 2013) were recorded during the survey.

TR4 north

Based on Fuller's criteria, the 37 confirmed, probable and possible breeding bird species recorded within the survey area indicates that it is of local significance for breeding birds. Weight is added to this evaluation by the presence of seven species of high (Red listed) conservation concern and eight species of medium (Amber listed) conservation concern within the site. **This site has great importance with confirmed presence of five breeding pairs of curlew, five breeding pairs of lapwing that are S41 priority species (NERC Act, 2006) and Red listed conservation concern species, that nest in open grassland areas and a breeding pair of spotted flycatcher that inhabit areas of broad-leaved woodland. The site is known to support confirmed nesting sites and rough grassland foraging habitat for four breeding pairs of barn owl, a Schedule 1 (Wildlife and Countryside Act, 1981 (as amended)) listed bird species. In addition, two probable**

breeding pairs of song thrush and a possible pair of linnet (S41 priority species and Red listed conservation concern species) were recorded.

TR4 south

Based on Fuller's criteria, the 43 confirmed, probable and possible breeding bird species recorded within the survey area indicates that it is of local significance for breeding birds. Weight is added to this evaluation by the presence of six species of high (Red listed) conservation concern and nine species of medium (Amber listed) conservation concern within the site. **This site has importance with confirmed presence of four probable breeding curlew and five song thrush territories, which are S41 priority species (NERC Act, 2006) and Red listed conservation concern species. The site is known to support barn owl, a Schedule 1 (Wildlife and Countryside Act, 1981 (as amended)) listed bird species. The woodlands on site also hold possible starling and two spotted flycatcher territories (S41 priority species and Red listed conservation concern species).**

9 References

Eaton, M. et al. 2015. Birds of Conservation Concern 4: The Population Status of Birds in the UK, Channel Islands and Isle of Man. *British Birds* 108: 708-746

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Musgrove, A., Aebischer, N., Eaton, M., Hearn, R., Newson, S., Noble, D., Parsons, M., Risely, K. and Stroud, D., 2013. Population estimates of birds in Great Britain and the United Kingdom. *British Birds*, 106, pp.64-100.

Appendix B. Bowland Ecology Wintering Birds Report

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Mark Breaks, <i>Ecologist</i>	Approved:	Claire Wilson, <i>Principal Ecologist</i> Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR4 Winter Bird Survey Report 2019-2020	Date:	21/04/2020
2 Project Drawings			
TR4 Bird Survey Plans – Sept 2019		Sheet 1 of 5 – Sheet 5 of 5	
TR4 Bird Survey Plans – Oct 2019		Sheet 1 of 5 – Sheet 5 of 5	
TR4 Bird Survey Plans – Nov 2019		Sheet 1 of 5 – Sheet 5 of 5	
TR4 Bird Survey Plans – Dec 2019		Sheet 1 of 5 – Sheet 5 of 5	
TR4 Bird Survey Plans – Jan 2020		Sheet 1 of 5 – Sheet 5 of 5	
TR4 Bird Survey Plans – Feb 2020		Sheet 1 of 5 – Sheet 5 of 5	
TR4 Bird Survey Plans – Mar 2020		Sheet 1 of 5 – Sheet 5 of 5	
Winter Bird Survey Overview – TR4		Sheet 1 of 1	
3 Ecology Surveys			
Surveyors:	Mark Breaks BSc (Hons) Matt Clifford MSc, BSc (Hons), ACIEEM Sophie King MSc, BSc		
Survey Visits:	<p>TR4 north Visit 1: Date 26/09/2019 Start time 09:00 End time 10:00 Visit 2: Date 24/10/2019 Start time 08:55 End time 09:45 Visit 3: Date 21/11/2019 Start time 08:50 End time 09:40 Visit 4: Date 19/12/2019 Start time 09:25 End time 10:25 Visit 5: Date 24/01/2020 Start time 10:00 End time 10:45 Visit 6: Date 24/02/2020 Start time 08:25 End time 09:30 Visit 7: Date 19/03/2020 Start time 08:30 End time 09:15</p> <p>TR4 south Visit 1: Date 26/09/2019 Start time 13:30 End time 14:45 Visit 2: Date 28/10/2019 Start time 11:30 End time 13:00 Visit 3: Date 21/11/2019 Start time 11:00 End time 12:20 Visit 4: Date 11/12/2019 Start time 09:20 End time 11:00 Visit 5: Date 24/01/2020 Start time 11:10 End time 12:40 Visit 6: Date 20/02/2020 Start time 14:30 End time 16:00 Visit 7: Date 19/03/2020 Start time 11:00 End time 12:20</p>		
Survey Method:	<p>A modified English Winter Bird Survey (EWBS) was conducted in line with the specifications detailed by the British Trust for Ornithology (www1, 2020). The EWBS methodology records all bird species seen or heard that are using and flying over the survey area whilst walking a defined transect route. Survey scoping encompassed all the ecological survey area as described at the time and included all habitats on site considered suitable for use by over wintering birds. An established transect route was outlined to allow a full assessment of the entire survey area. The survey frequency comprised seven monthly visits throughout the autumn passage and winter season, commencing September 2019 and finishing March 2020. Mapping methodology comprised recording the identity and quantity of birds observed within the survey area based on the Common Bird Census (CBC) approach, as defined in Gilbert <i>et al.</i> (1998). The surveys were undertaken under appropriate</p>		

	<p>weather conditions (avoiding heavy rain or strong wind) and avoiding the first hour (dawn) and final hour (dusk) of daylight.</p> <p>The TR4 survey area at the time of scoping comprised two transects that covered the entire site, based within the July 2019 modified development envelope. The area was split into two parcels of land, TR4 north (T04/A) and TR4 south (T04/B).</p>
<p>Weather Conditions:</p>	<p>TR4 north</p> <p>Visit 1: 7/8 cloud, F1 north westerly wind, dry, approximately 14°C. Visit 2: 8/8 cloud, F1 south westerly wind, dry, approximately 9°C. Visit 3: 7/8 cloud, F2 south easterly wind, dry, approximately 4°C. Visit 4: 5/8 cloud, F1 southerly wind, dry, approximately 6°C. Visit 5: 8/8 cloud, F1 westerly wind, dry, approximately 6°C. Visit 6: 4/8 cloud, F3 westerly wind, light showers, approximately 1°C. Visit 7: 5/8 cloud, F1 wind, dry, approximately 4°C.</p> <p>TR4 south</p> <p>Visit 1: 6/8 cloud, F1 north westerly wind, dry, approximately 14°C. Visit 2: 0/8 cloud, F2 north easterly wind, dry, approximately 6°C. Visit 3: 7/8 cloud, F2 south easterly wind, dry, approximately 4°C. Visit 4: 5/8 cloud, F1 southerly wind, dry, approximately 6°C. Visit 5: 8/8 cloud, F1 westerly wind, dry, approximately 6°C. Visit 6: 3/8 cloud, F3 westerly wind, light showers, approximately 5°C. Visit 7: 2/8 cloud, F1 wind, dry, approximately 5°C.</p>
<p>Limitations to the survey:</p>	<p>Ecological surveys are limited by factors that affect the presence of birds, such as the time of year and weather conditions. Therefore, whilst the list of species recorded may not be complete, the survey still provides a good indication of the range of species present and a confident way of identifying the value of the bird community within the area.</p> <p>Poor weather conditions occurred throughout the month of February 2020 due to a series of Atlantic storms. This may have adversely impacted on the detection of all wintering birds present during the survey. The survey results provided show a good coverage of species though numbers of small passerines and raptors are likely to be reduced due to birds sheltering out of sight where possible. Considering that only one of the seven surveys was undertaken in suboptimal weather conditions it is believed the quality of the data collated throughout the complete season gives a good representation of the wintering bird assemblage for the site.</p>
<p>4 Existing data</p>	
<p>No historic bird records were available at the time of writing this report.</p>	
<p>5 Habitat Description</p>	
	 <p>TR4 north: Farmland comprising unimproved grassland, marshy grassland, small waterbodies, hedgerows, scattered trees/scrub and woodland.</p>



TR4 south: Farmland comprising unimproved/improved grassland, marshy grassland, hedgerows, scattered trees/scrub and woodland.

6.1 Winter bird survey results (TR4 north – number of individual birds)

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
blackbird (B.)		3	4	3	2	1	2	-
bullfinch (BF)				1				S41, A
black-headed gull (BH)						6		A
brambling (BL)		1	1					Sch 1
blue tit (BT)	9	1	4	4	3	5	4	-
carrion crow (C.)	2	2	2	5	2	3	2	-
chiffchaff (CC)	2							-
collared dove (CD)							1	-
chaffinch (CH)	1	2	6	7	2	1	3	-
common gull (CM)						1	1	A
coal tit (CT)	5	1	5	2	2	3	3	-
curlew (CU)						3	6	S41, R
duncock (D.)		1	1		1	1	1	S41, A
fieldfare (FF)		100	1	20		30		Sch 1, R
goldcrest (GC)	3	2	2					-
greylag goose (GJ)					2			A
grey wagtail (GL)	1			1				R
goldfinch (GO)	24	2	3	2			1	-
greenfinch (GR)		1						-
great spotted woodpecker (GS)	2							-
great tit (GT)	5	1	5	1	2	7	1	-
herring gull (HG)					3			S41, R
house martin (HM)	3							A
jackdaw (JD)	26	8	4	37	3	16	1	-
kestrel (K.)						1		A
lapwing (L.)						3	12	S41, R
lesser black-backed gull (LB)						2	10	A
long-tailed tit (LT)	6						4	-
mistle thrush (M.)			1	1	1	1		R
mallard (MA)	1					2		A
magpie (MG)		1						-
moorhen (MH)							2	-
meadow pipit (MP)	52	4	6	1		1	10	A

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
nuthatch (NH)	4	1	1	1		1	1	-
pheasant (PH)	1	26	1	2	15	6	10	-
pied wagtail (PW)		1					2	-
robin (R.)	6	6	2	2	4	1	3	-
reed bunting (RB)	2	1					1	S41, A
redwing (RE)		11	46				4	Sch 1, R
redshank (RK)							2	A
red-legged partridge (RL)		8		7	34	34	5	-
rook (RO)					2	18		-
skylark (S.)	1					2		S41, R
stock dove (SD)	1	13	2	1	1	1	4	A
spotted flycatcher (SF)	3							S41, R
starling (SG)	15		33	6		24	4	S41, R
sparrowhawk (SH)					1			-
siskin (SK)		1			1		3	-
swallow (SL)	17							-
snipe (SN)	2	16	1	6	4		1	A
song thrush (ST)						2	1	S41, R
treecreeper (TC)	2	1		2				-
tawny owl (TO)			1	2	1	1		A
wheatear (W.)	5							-
wood pigeon (WP)	2	9	1	1	4	2		-
wren (WR)	1	4	1		1		1	-

Key: R = Red List; A = Amber List;

Sch 1 = Schedule 1; S41 = NERC Act conservation priority species; Cons. = Conservation

6.2 Winter bird survey results (TR4 south – number of individual birds)								
Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
blackbird (B.)		7	12	10	8	4	2	-
bullfinch (BF)	1							S41, A
blue tit (BT)	10	8	1	3	14	6	4	-
buzzard (BZ)	1	5	4	1	1	3	3	-
carrion crow (C.)	20	19	8	21	50	6	6	-
chiffchaff (CC)							1	-
collared dove (CD)				1	1			-
chaffinch (CH)		9	2	3	6	4	5	-
common gull (CM)					1			A
coal tit (CT)	4	6			3	1	6	-
curlew (CU)						1		S41, R
dunnock (D.)			1		1			S41, A
fieldfare (FF)				35				Sch 1, R
goldcrest (GC)		2	1				3	-
grey wagtail (GL)			3					R
goldfinch (GO)	1	7		3	3	5	1	-
greenfinch (GR)	1	2						-

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
great spotted woodpecker (GS)	1				1			-
great tit (GT)	5	1	2		7		2	-
grey heron (H.)					1			-
jay (J.)	1		2	1		1	3	-
jackdaw (JD)	22	9	6	29	55	28	28	-
kestrel (K.)		1			1		1	A
lesser black-backed gull (LB)					3			A
lesser redpoll (LR)							2	S41, R
long-tailed tit (LT)							4	-
mistle thrush (M.)			2		2			R
magpie (MG)						1	1	-
meadow pipit (MP)	1	1		7	1		3	A
nuthatch (NH)							2	-
pheasant (PH)	14	14	3	4	10		3	-
pie wagtail (PW)			1	3	1		2	-
robin (R.)	4	6	1	3	9	2	11	-
redwing (RE)		32	8	23	12	14		Sch 1, R
raven (RN)						1	1	-
rook (RO)					13	27		-
stock dove (SD)	25	14	50	3	1	10	7	A
starling (SG)	1			26	330			S41, R
sparrowhawk (SH)						1		-
siskin (SK)			4	3	38	3	1	-
snipe (SN)			1		2			A
song thrush (ST)			2				1	S41, R
treecreeper (TC)					1		1	-
tawny owl (TO)					1			A
wood pigeon (WP)	6	18	5	31	38	18	14	-
wren (WR)	3	6	4	6	6		7	-

Key: C = Confirmed; Pr = Probable; Po = Possible; N = Not; R = Red List; A = Amber List; Sch 1 = Schedule 1; S41 = NERC Act conservation priority species; Cons. = Conservation

7 Summary
<p><u>TR4 north</u></p> <p>A total of 56 species of bird were recorded during the surveys (Sep-Mar) using habitats within the survey area, or flying over the survey area:</p> <ul style="list-style-type: none"> • Three species listed under Schedule 1 of the Wildlife & Countryside Act (1981). Brambling, fieldfare and redwing; • Ten species listed under Section 41 (England) of the NERC Act (2006). Bullfinch, curlew, dunnock, herring gull, lapwing, reed bunting, skylark, spotted flycatcher, starling and song thrush; • Eleven species on the Red List of Birds of Conservation Concern (Eaton <i>et al.</i> 2015). Qualifying species for their non-breeding population/range decline – herring gull. Qualifying for their breeding population declines – curlew, fieldfare, grey wagtail, lapwing, mistle thrush, redwing, skylark, spotted flycatcher, starling and song thrush; and

- 15 species on the Amber List of Birds of Conservation Concern (Eaton *et al.* 2015). Qualifying species for their non-breeding population/range decline or international importance – black-headed gull, common gull, greylag goose, mallard and redshank. Qualifying species for their breeding population/range decline – bullfinch, dunnoek, house martin, kestrel, lesser black-backed gull, meadow pipit, reed bunting, stock dove, snipe and tawny owl.

The assemblage of species recorded within the study area was typical of the habitats present. Further detail in relation to species of conservation concern is detailed below:

Waders – Small numbers of four species were recorded.

- Snipe were recorded using the numerous scrapes and marshy grassland habitats in the eastern half of the survey area with a maximum count of 16 in October.
- Curlew, lapwing and redshank were present outside the core winter period as birds returned to their breeding territories (Bowland Ecology, 2019). Curlew were present throughout the survey area in February and numbers reached six in March. Lapwing returned to wet grassland and scrapes at the eastern section of the area in February, peaking at 12 individuals in March, alongside two redshank.

Gulls – Four species of gull were recorded during the surveys, however, numbers were low and generally comprised of birds flying over the site, with a few birds feeding in the grassland in the northern section of the site. Three herring gulls flew over the centre of the site heading to the southwest in January. All further records were recorded in February and March with peak counts of one common gull, six black-headed gull and lesser black-backed gulls.

Winter thrushes – redwing and fieldfare were recorded regularly during the winter surveys feeding across the site. Peak counts for fieldfare comprised 100 individuals in October 2019 and 46 for redwing in November 2019.

Farmland passerines and other noteworthy species –predominantly passerines associated with farmland, hedgerows, woodlands and gardens, the majority of which occurring in small numbers:

- A single brambling (Schedule 1 species) was encountered flying south over the centre of the survey area during both October and November;
- Eleven of the 19 farmland bird species on the UK farmland bird indicator (www2, 2020) were recorded.
- Species present throughout the majority of the survey period included jackdaw (peak count of 37), stock dove (peak count of 13), wood pigeon (peak count of nine), goldfinch (peak count of 24) and starling (peak count of 33) that were commonly found around the farmland; and
- Small numbers of reed bunting were recorded on three surveys with a peak count of two individuals frequenting hedgerows on site. Feeding rooks were recorded in January and peaked in February with 18 individuals skylark were recorded in September and February, one and two individuals respectively. A single greenfinch was recorded in October and a kestrel in February.

TR4 south

A total of 46 species of bird were recorded during the seven winter surveys (Sep-Mar) using features of the survey area, or flying over the survey area:

- Two species listed under Schedule 1 of the Wildlife & Countryside Act (1981). Fieldfare and redwing;
- Six species listed under Section 41 (England) of the NERC Act (2006). Bullfinch, curlew, dunnoek, lesser redpoll, starling and song thrush;
- Eight species on the Red List of Birds of Conservation Concern (Eaton *et al.* 2015). No species qualifying for their non-breeding population declines. Qualifying for their breeding population declines – curlew, fieldfare, grey wagtail, lesser redpoll, mistle thrush, redwing, starling and song thrush; and
- Nine species on the Amber List of Birds of Conservation Concern (Eaton *et al.* 2015). Qualifying species for their non-breeding population/range decline or international importance includes common gull. Qualifying species for their breeding population/range decline are bullfinch, dunnoek, kestrel, lesser black-backed gull, meadow pipit, stock dove, snipe and tawny owl.

The assemblage of species recorded within the study area was typical of the habitats present. Further detail in relation to species of conservation concern is given below:

Waders – Small numbers of two species were recorded; a single snipe in November and two in January favouring the marshy grassland to the west of central survey area. A single curlew was recorded in wet grassland at the northern section of the site in February.

Gulls – Two species of gull were recorded during the surveys; however, numbers were very low with the only records in January comprising a single common gull and three lesser black-backed gulls; the birds were observed in flight over the farmland toward the eastern section of the site.

Winter thrushes – Redwing were recorded regularly during the winter surveys feeding across the site with a peak count of 32 in October. fieldfare was recorded in December, with 35 birds observed.

Farmland passerines and other noteworthy species – predominantly passerines associated with farmland, hedgerows, woodlands and gardens, the majority of which occurred in small numbers:

- Eight of the 19 farmland bird species on the UK farmland bird indicator (www2, 2020) were recorded;
- Species present throughout the majority of the survey period included jackdaw (peak count of 55), stock dove (significant peak count of 50), wood pigeon (peak count of 38), goldfinch (peak count of seven) and starling (peak count of 330), commonly found within the surrounding farmland; and
- Small numbers of rook were recorded in January with a peak count of 27 in February, greenfinch were recorded in September and October, one and two individuals, respectively. A single kestrel was noted in October, January and March in the eastern, central section of the survey.

8 Evaluation

Fuller (1980) devised a method of classifying the ornithological interest of sites for conservation based on winter bird community species richness. The conservation importance of a site with respect to species richness is set against the criteria in Table 1.

Table 1: Species richness criteria recorded at a site

Local	County	Regional	National
25-54	55-84	85-114	115+

TR4 north

Total number of bird species sighted between Sep-Mar was 56 and during winter (Nov-Mar) was 48 in the survey area. Based on the Fuller’s criteria, the species richness of wintering bird species recorded within the survey area indicates that it is of high Local significance. Weight is added to this evaluation by the presence of 27 species of conservation concern:

- Three species listed under Schedule 1 of the Wildlife & Countryside Act (1981);
- Ten species listed under Section 41 (England) of the NERC Act (2006);
- Eleven species on the Red List of Birds of Conservation Concern (Eaton *et al.* 2015). One species qualifying for their non-breeding population/range decline and ten species for their breeding population declines; and
- 15 species on the Amber List of Birds of Conservation Concern (Eaton *et al.* 2015). Five species qualifying for their non-breeding population/range decline or international importance and ten species for their breeding population/range decline.

Most notable species recorded were winter migrant species within the county. The three species listed on Schedule 1 of the Wildlife and Countryside Act (1981), redwing, fieldfare and brambling, are abundant during the winter months throughout the county and regularly occur in large flocks.

The named winter qualifying species for the survey area; black-headed gull, common gull, greylag goose, herring gull, mallard and redshank appeared to use the site in relatively small numbers. Overall, the numbers of qualifying bird species recorded did not represent a significant proportion of the UK populations (<1% of total wintering population) (Frost *et al.*, 2019).

Marshy grassland, shallow scrapes and grass pasture habitat most notably in the eastern site area supported an assemblage of Red-listed farmland bird species were recorded including six curlew and twelve lapwing during March.

Grass pasture, hedgerows and woodland blocks supported an assemblage of common and widespread generalist species in addition to small numbers of farmland indicator birds including goldfinch, jackdaw, starling, stock dove and wood pigeon. Additional Red-listed bird species were recorded including grey wagtail, mistle thrush, skylark and song thrush. As with their associated habitats, these features are common in the landscape and were therefore considered to be of no more than Local nature conservation value for the generalist species recorded.

TR4 south

Total number of bird species sighted between Sep-Mar was 46 and during winter (Nov-Mar) was 44 in the survey area. Based on the Fuller's criteria, the species richness of wintering bird species recorded within the survey area indicates that it is of high Local significance. Weight is added to this evaluation by the presence of 17 species of conservation concern:

- Two species listed under Schedule 1 of the Wildlife & Countryside Act (1981);
- Six species listed under Section 41 (England) of the NERC Act (2006);
- Eight species on the Red List of Birds of Conservation Concern (Eaton *et al* 2015). No species qualifying for their non-breeding population declines; and
- Nine species on the Amber List of Birds of Conservation Concern (Eaton *et al* 2015). One species qualifying for their non-breeding population/range decline or international importance and eight species qualifying for their breeding population/range decline.

Most notable species recorded were winter migrant species within the county. The two species listed on Schedule 1 of the Wildlife and Countryside Act (1981), redwing and fieldfare, are abundant during the winter months throughout the county and regularly occur in large flocks.

The named winter qualifying species for the survey area; common gull, appeared to use the site in relatively small numbers. Overall, the numbers of qualifying bird species recorded did not represent a significant proportion of the UK populations (<1% of total wintering population) (Frost *et al.*, 2019).

Marshy grassland, grazed grass pasture, hedgerows and woodland blocks supported an assemblage of common and widespread generalist species in addition to small numbers of farmland indicator birds including goldfinch, jackdaw, starling, stock dove and wood pigeon. Additional Red-listed bird species were recorded including grey wagtail, lesser redpoll, mistle thrush and song thrush. As with their associated habitats, these features are common in the landscape and were therefore considered to be of no more than Local nature conservation value for the generalist species recorded.

50 stock dove were recorded during the November survey foraging on-site, this represent notable but not significant numbers in a county wide context.

9 References

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