



THE
ENVIRONMENT
PARTNERSHIP

Haweswater Aqueduct Resilience Programme

Chapter 9A - Appendix 9A.6

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Environmental Statement



Water for the North West



Haweswater Aqueduct Resilience Programme

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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 (EcIA) for the Haweswater Aqueduct Resilience Programme - Proposed Bowland Section. The EcIA 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 EcIA. This Appendix is one of a series of Ecological Technical Reports (ETRs) produced to support the EcIA. 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*
 - oystercatcher *Haematopus ostralegus*
 - meadow pipit *Anthus pratensis*
 - barn owl *Tyto alba*
 - Peregrine *Falco peregrinus*
 - Swallow *Hirundo rustica*
 - Mallard *Anas platyrhynchos*

1.2.2 Breeding Birds

- 4) The breeding bird survey was carried out between April and June 2019 (Lower Houses Compound and Newton-in-Bowland Compound) and between April and June 2020 (Newton-in-Bowland Construction Access area) using a transect survey method. A wider area was surveyed than will be potentially impacted by the proposed works within the Bowland 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 EcIA.
- 5) The parts of the breeding bird survey area which will be used to inform the EcIA include the Newton-in-Bowland Compound, the Lower Houses 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 LCC_RVBC-BO-FIG-009-01-10, LCC_RVBC-BO-FIG-009-01-11 and LCC_RVBC-BO-FIG-009-01-12. The parts of the wider survey area that contain the compounds and construction access form part of the areas referred to as 'TR3 North' (Lower Houses Compound) and 'TR3 South' (Newton-in-Bowland Compound).

1.2.2.1 Newton-in-Bowland Compound

- 6) Within 100m of the Newton-in-Bowland Compound and temporary construction access area a total of 51 no. species were recorded during surveys. Twenty four of these are BoCC, including black-headed gull (Amber), common gull (Amber), common sandpiper (Amber), curlew (SPI, Red), dunnoek (SPI, Amber), great black-backed gull (Amber), grey wagtail (Amber), herring gull (SPI, Red), house sparrow (SPI, Red), kingfisher (WCA1, SPI, Amber), lapwing (SPI, Red), lesser black-backed gull (Amber), mallard (Amber), meadow pipit (Amber), mistle thrush (Red), oystercatcher (Amber), redstart (Amber), song thrush (SPI, Red), spotted flycatcher (SPI, Red), starling (SPI, Red), stock dove (Amber), swift (Amber), tawny owl (Amber) and willow warbler (amber). Of these 13 no. species were confirmed or probable breeders within the compound and buffer (common sandpiper, curlew, dunnoek, grey wagtail, kingfisher, lapwing, mallard, oystercatcher, redstart, song thrush, spotted flycatcher, starling and stock dove) and 4 no. were possible breeders (house sparrow, meadow pipit, mistle thrush and willow warbler).

Table 1. Breeding birds recorded at the Newton-in-Bowland Compound

Newton-in-Bowland Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Blackbird		C (1) Pr (3)	C (1) Pr (4)
Blackcap		Po	Pr (1)
Black-headed gull	BAm	N	N
Blue tit		C (1)	C (4) Pr (1)
Carrion crow		C (2) Pr (1)	C (2) Pr (2)
Chaffinch		Pr (1)	Pr (2)
Collared dove		Pr (1)	Pr (1)
Common gull	BAm	N	N
Common sandpiper	BAm	N	Pr (1)
Curlew	S41 BRd	Pr (1)	Pr (2)
Dunnoek	S41 BAm	Po	Pr (1)
Goldfinch		Pr (1)	Pr (2)
Great black-backed gull	BAm	N	N
Great spotted woodpecker		Po	Po
Great tit		Pr (1)	C (1) Pr (1)
Greenfinch		N	Po
Grey wagtail	BRd	C (1)	C (1)
Herring gull	S41 BRd	N	N

Newton-in-Bowland Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
House sparrow	S41 BRd	Po	Po
Jackdaw		N	N
Kingfisher	WCA1 BAm	Po	C (1)
Lapwing	S41 BRd	Pr (2)	Pr (3)
Lesser black-backed gull	BAm	N	N
Long-tailed tit		Po	Po
Mallard	BAm	Pr (2)	C (1) Pr (3)
Meadow Pipit	BAm	Po	Po
Mistle thrush	BRd	Po	Po
Moorhen		N	Po
Nuthatch		N	C (2)
Oystercatcher	BAm	C (3)	C (3) Pr (2)
Pheasant		Pr (2)	Pr (3)
Pied wagtail		Pr (1)	Pr (2)
Raven		N	N
Red-legged partridge		Pr (1)	Pr (2)
Redstart	BAm	Pr (1)	C (1) Pr (1)
Robin		N	Pr (2)
Rook		N	N
Sand martin		Po	Pr (colony)
Siskin		Po	Po
Song thrush	S41 BRd	N	Pr (1)
Sparrowhawk		Po	Po
Spotted flycatcher	S41 BRd	Po	Pr (1)
Starling	S41 BRd	C (1)	C (1)
Stock dove	BAm	N	Pr (1)
Swallow		N	Po

Newton-in-Bowland Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Swift	BAm	N	N
Tawny owl	BAm	N	C (1)
Treecreeper		N	Po
Willow warbler	BAm	N	Po
Woodpigeon		Pr (1)	Pr (2)
Wren		Pr (2)	Pr (8)

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

1.2.2.2 Lower Houses Compound

- 7) Within 100 m of the Lower Houses Compound and temporary construction access route, a total of 15 no. species were recorded during surveys. Of these, ten BoCC species were recorded, including curlew (SPI, Red), greylag goose (Amber), lapwing (SPI, Red), lesser black-backed gull (Amber), mallard (Amber), meadow pipit (Amber), oystercatcher (Amber), reed bunting (SPI, Amber) and snipe (Amber). Of these 6 no. were confirmed or probable breeders within the compound (curlew, lapwing, mallard, oystercatcher, skylark and snipe) and two were possible breeders (meadow pipit and reed bunting).

Table 2. Breeding birds recorded at the Lower Houses Compound

Lower Houses Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Carrion crow		Po	Pr (1)
Curlew	SPI, BRd	Pr (1)	Pr (3)
Goldfinch		N	Po
Greylag goose	BAm	N	N
Jackdaw		N	N
Lapwing	SPI, BRd	N	C (3) Pr (1)
Lesser black-backed gull	BAm	N	N
Mallard	BAm	Pr (1)	Pr (1)
Meadow Pipit	BAm	N	Po
Oystercatcher	BAm	Pr (1)	Pr (3)
Reed bunting	SPI, BAm	N	Po

Lower Houses Compound – Breeding Birds			
Species	Conservation Status	Likely Breeding Status	
		Site	Site + 100 m buffer
Rook		N	N
Skylark	SPI, BRd	Po	Pr (1)
Snipe	BAm	N	Pr (1)
Woodpigeon		Po	Po

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 Bowland 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 Newton-in-Bowland Compound, the Lower Houses 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 LCC_RVBC-BO-FIG-009-01-13 through to LCC_RVBC-BO-FIG-009-01-19. The parts of the wider survey area that contain the compounds and construction access are referred to as 'North 1' (Lower Houses Compound) and 'South 2' (Newton-in-Bowland Compound).
- 10) A total of 50 no. species were recorded for the Proposed Bowland Section at the two compounds, with 44 no. species recorded at the Newton-in-Bowland Compound and surrounding 500 m buffer and 29 no. species recorded at the Lower Houses Compound and surrounding 500 m buffer.
- 11) Of these, 24 no. species are BoCC: black headed gull, common gull, greylag goose, kestrel, lesser black-backed gull, mallard, meadow pipit, oystercatcher, snipe, stock dove (Amber), dunnock, reed bunting (amber and SPI), fieldfare, grey wagtail, mistle thrush (Red), fieldfare, redwing (Red and Schedule 1 breeding only), curlew, herring gull, lapwing, lesser redpoll, skylark, song thrush and starling (Red and SPI). The wider assemblage was reported to be typical of the habitats present.
- 12) Forty four species were recorded at the Newton-in-Bowland Compound, including nineteen BoCC species. Thirty species were recorded at the Lower Houses Compound, including seventeen BoCC species.
- 13) Wader species recorded included low numbers of curlew, snipe and oystercatcher occasionally recorded at both compound areas. Curlew and oystercatcher were only recorded late in the season in March and were probably associated with birds arriving to set up territories to breed.
- 14) Oystercatcher were recorded in January and February at the Lower Houses Compound, with a peak count of 215 no. recorded outside of the compound area approximately 75 m north west from the site boundary.
- 15) The only wildfowl recorded were small numbers of mallard recorded at both compounds (peak count of 9 no. within Newton-in-Bowland Compound in December) and a single greylag goose recorded flying over the Newton-in-Bowland Compound in January.
- 16) A number of gull species were recorded to use the survey areas, including black headed gull, common gull, herring gull and lesser black-backed gull. Only low numbers were generally recorded, although 180 black headed gull and 114 lesser black backed gull were recorded at the Newton-in-Bowland Compound in March.

Table 3. Wintering birds recorded at the Newton-in-Bowland Compound

Newton-in-Bowland Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Blackbird		2	2
Black-Headed Gull	BAm	1	2
Blue Tit		7	7
Carrion Crow		10	5
Chaffinch		1	5
Coal Tit		8	1
Collard Dove			1
Common Gull	BAm		76
Cormorant		1	
Curlew	SPI, BRd		2
Dunnock	SPI, BAm	2	2
Fieldfare	WCA1, BRd	18	72
Goldfinch		15	1
Great Tit		2	3
Greenfinch		1	
Grey Wagtail	BRd		1
Greylag Goose	BAm	1	
Heron			1
Herring Gull	SPI, BRd	5	1
Jackdaw		25	12
Kestrel	BAm		1
Lesser Black-backed Gull	BAm	60	10
Long-tailed Tit		6	1
Magpie			1

Newton-in-Bowland Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Mallard	BAm	9	6
Meadow Pipit	BAm	1	5
Mistle Thrush	BRd	2	
Nuthatch			1
Oystercatcher	BAm		2
Pheasant		2	2
Pied Wagtail		1	1
Raven		1	1
Red-Legged Partridge		10	10
Redwing	WCA1, BRd	35	1
Robin		3	7
Rook		20	60
Siskin		15	3
Song Thrush	SPI, BRd	1	1
Sparrowhawk		1	
Starling	SPI, BRd	28	10
Stock Dove	BAm	1	1
Treecreeper		10	1
Wood Pigeon		10	12
Wren		1	2

Table 4. Wintering birds recorded at the Lower Houses Compound

Lower Houses Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Blackbird			1
Black-Headed Gull	BAm		18

Lower Houses Compound – Wintering Birds			
Species	Conservation Status	Peak count	
		Site	500 m buffer
Blue Tit		3	1
Carrion Crow		18	6
Chaffinch		1	
Common Gull	BAm		32
Curlew	SPI, BRd	3	
Fieldfare	WCA1, BRd	24	58
Great Tit			1
Grey Wagtail	BRd	1	2
Jackdaw		6	20
Lapwing	SPI, BRd		215
Lesser Black-backed Gull	BAm		15
Lesser Redpoll	SPI, BRd		1
Mallard	BAm	2	3
Meadow Pipit	BAm	3	3
Mistle thrush	BRd	1	
Oystercatcher	BAm	2	
Pheasant		2	2
Red-Legged Partridge		2	2
Reed Bunting	SPI, BAm		1
Robin		1	1
Rook		2	38
Skylark	SPI, BRd	1	
Snipe	BAm	3	1
Song Thrush	SPI, BRd		1
Starling	SPI, BRd	335	192
Stonechat			1
Wren		2	3

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:	TR3 Breeding Bird Survey Report 2019 V1 TR3 Breeding Bird Survey Report 2019 & 2020 V2	Date:	11/11/2019 10/07/2020
2 Project Drawings			
TR3 Bird Survey Plans – April 2019		Sheet 1 of 11 – Sheet 11 of 11	
TR3 Bird Survey Plans – May 2019		Sheet 1 of 11 – Sheet 11 of 11	
TR3 Bird Survey Plans – June 2019		Sheet 1 of 11 – Sheet 11 of 11	
TR3 Bird Survey Plans – April 2020		Sheet 1 of 1	
TR3 Bird Survey Plans – May 2020		Sheet 1 of 1	
TR3 Bird Survey Plans – June 2020		Sheet 1 of 1	
Breeding Bird Survey Overview – TR3		Sheet 1 of 1	
Breeding Bird Survey Overview – TR3 2020		Sheet 1 of 1	
3 Ecology Surveys			
Surveyors:	Mark Breaks BSc (Hons) Heather Whalley BSc (Hons) Sophie King MSc, BSc		
Survey Visits:	<p><u>TR3 north</u> Visit 1: Date 11/04/2019 Start time 08:05 End time 11:10 Visit 2: Date 07/05/2019 Start time 10:00 End time 11:45 Visit 3: Date 24/06/2019 Start time 06:35 End time 09:30</p> <p><u>TR3 central</u> Visit 1: Date 09/04/2019 Start time 08:15 End time 09:45 Visit 2: Date 07/05/2019 Start time 07:30 End time 09:45 Visit 3: Date 21/06/2019 Start time 06:30 End time 08:00</p> <p><u>TR3 south</u> Visit 1: Date 09/04/2019 Start time 11:05 End time 12:00 Visit 2: Date 09/05/2019 Start time 07:35 End time 08:45 Visit 3: Date 21/06/2019 Start time 08:20 End time 09:30</p> <p><u>2020 TR3 south</u> Visit 1: Date 28/04/2020 Start time 06:30 End time 07:30 Visit 2: Date 18/05/2020 Start time 07:00 End time 08:05 Visit 3: Date 16/06/2020 Start time 06:20 End time 07:25</p>		
Survey Method:	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). During the surveys, all birds showing signs of ‘confirmed’ or ‘probable’ breeding within the site		

	<p>boundary are mapped showing their location, along with 'possible' breeders and other birds that showed no signs of breeding being recorded.</p> <p>TR3 survey area was subject to change with an amendment development envelope in February 2020. The area was divided into two sections (north and south) of which the new TR3 south section is expanded on that from the 2019 surveys. This updated report version includes additional 2020 breeding bird Survey data that has been combined with that from 2019.</p>
Weather Conditions:	<p><u>TR3 north</u> Visit 1: 2/8 cloud, F2 easterly wind, dry, approximately 9°C. Visit 2: 8/8 cloud, F2 south-easterly wind, dry, approximately 12°C. Visit 3: 8/8 cloud, F0 wind, dry, approximately 20°C.</p> <p><u>TR3 central</u> Visit 1: 2/8 cloud, F3 easterly wind, dry, approximately 10°C. Visit 2: 8/8 cloud, F2 south-easterly wind, dry, approximately 12°C. Visit 3: 6/8 cloud, F2 westerly wind, dry, approximately 15°C.</p> <p><u>TR3 south</u> Visit 1: 6/8 cloud, F3 easterly wind, dry, approximately 10°C. Visit 2: 8/8 cloud, F1 north-easterly wind, light drizzle, approximately 8°C. Visit 3: 5/8 cloud, F2 westerly wind, dry, approximately 15°C.</p> <p><u>2020 TR3 south</u> Visit 1: 8/8 cloud, F2 easterly wind, dry, approximately 6°C. Visit 2: 8/8 cloud, F2 westerly wind, light drizzle, approximately 11°C. Visit 3: 8/8 cloud, F0 wind, dry, approximately 7°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>TR3 north: The whole of the survey was accessible and the weather during the surveys was optimal allowing for an adequate assessment of breeding birds present.</p> <p><u>2020</u></p> <p>2020 TR3 south surveys were completed, the weather during the surveys was optimal allowing for an adequate assessment of breeding birds present. It is considered that despite the new survey area being surveyed across two years the data in 6.4 combined with the relevant data from 6.3 gives a true representation of the breeding bird assemblage for the amendment development envelope (Feb 2020).</p> <p><u>2019</u></p> <p>TR3 central: The whole of the survey was accessible and the weather during the surveys was optimal allowing for an adequate assessment of breeding birds present.</p> <p>TR3 south: There were a few areas where land access was restricted throughout the visits, however, these did not interrupt the transect route and the whole of the survey area was covered and the weather during the surveys was optimal allowing for an adequate assessment of breeding birds present. It is considered that the late survey time completed on the April survey provided no limitations to the survey as the habitat is considered most suitable for upland breeding waders in particular curlew and the methodology falls within that described by Brown and Shepherd defined in Gilbert <i>et al.</i> (1998).</p> <p>TR3 survey areas at the time of scoping comprised a transect accessing through the entire sites. Considering the survey area adjustment within the amendment development envelope (July 2019) which most notably has resulted in major reduction of TR3 north and the replacement of TR3 central, these survey results refer to the areas preceding the adjustment.</p>

4 Existing data

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

Local knowledge:

- TR3 north – BTO nest box scheme and pied flycatcher RAS (Retrapping Adult Survival) ringing project scheme running within woodland at Bottom Mill.
- TR3 central – RSPB complete schedule one monitoring of bird species associated with the Bowland Fells SPA/SSSI.

5 Habitat Description

		TR3 north: Farmland comprising improved/unimproved grassland, marshy grassland, heathland, scattered trees/scrub, woodland and hedgerows.
		TR3 central: Heathland, acid grassland, unimproved grassland, marshy grassland and scattered trees.
		TR3 south: Farmland comprising improved/unimproved grassland, marshy grassland, scattered trees/scrub, drystone walls and hedgerows. 2020 section includes additional habitats of broad-leaved woodland and running water (river).

6.1 Breeding bird survey results (TR3 north – number of territories)

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
blackbird (B.)	3	3	6		Pr
blackcap (BC)			1		Po
blue tit (BT)	6	2	4		C
bullfinch (BF)	1		1	S41, A	Po
buzzard (BZ)		1			Po

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
Canada goose (CG)	1				N
carrion crow (C.)	10	6	4		Pr
chaffinch (CH)	11	6	4		Pr
coal tit (CT)	2		1		Po
collared dove (CD)	1				Po
common redstart (RT)	1			A	Po
curlew (CU)	8	17	10	S41, R	C
dunnoek (D.)			1	S41, A	Po
goldcrest (GC)	1		1		Po
golden plover (GP)	0				N
goldfinch (GO)	2	1	3		Pr
great spotted woodpecker (GS)			3		Po
great tit (GT)	1	1	4		C
green woodpecker (G.)	1	1	1		Pr
grey wagtail (GL)	1			R	Po
greylag goose (GJ)	1			A	N
house sparrow (HS)	2		2	S41, R	Pr
jackdaw (JD)	4	1	2		Pr
jay (J.)	1				Po
lapwing (L.)	16	12	2	S41, R	C
lesser black-backed gull (LB)	0	0	0	A	N
lesser redpoll (LR)	2		2	S41, R	Po
long-tailed tit (LT)	1				Po
mallard (MA)	1	1		A	Po
meadow pipit (MP)	21	4	14	A	C
mistle thrush (M.)	2			R	Po
nuthatch (NH)	2	1	2		Pr

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
oystercatcher (OC)	4	5	6	A	Pr
pheasant (PH)	3	3	2		Pr
pied flycatcher (PF)	3		1	R	C
pied wagtail (PW)	5	2	3		Pr
red-legged partridge (RL)	1				Po
redshank (RK)	1		1	A	Po
reed bunting (RB)	2		1	S41, A	Pr
ring ouzel (RZ)	0			S41, R	N
robin (R.)	1	2	4		Pr
rook (RO)	0		0		N
siskin (SK)	1		1		Po
skylark (S.)	5	5	5	S41, R	Pr
snipe (SN)	3	2	7	A	Pr
song thrush (ST)	1		2	S41, R	Pr
sparrowhawk (SH)	1	1			Po
starling (SG)	1	1	2	S41	C
swallow (SL)		2	5		Pr
swift (SI)			0	A	N
treecreeper (TC)	1		2		Pr
wheatear (W.)	2				N
willow warbler (WW)	2	4	5	A	Pr
wood pigeon (WP)	3		2		Pr
wren (WR)	9	3	12		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

6.2 Breeding bird survey results (TR3 central – number of territories)					
Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
buzzard (BZ)	0	0			N
Canada goose (CG)	5	1			Po

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
carrion crow (C.)	1	2			Po
cuckoo (CK)			1	S41, R	Po
curlew (CU)	3	5	3	S41, R	Pr
dunnock (D.)	1			S41, A	Po
goldfinch (GO)			1		Po
grasshopper warbler (GH)			1	S41	Po
greylag goose (GJ)	3	2		A	Po
lapwing (L.)		1		S41, R	Po
lesser black-backed gull (LB)		0		A	N
linnet (LI)			1	S41, R	Po
mallard (MA)	2	1		A	Po
meadow pipit (MP)	18	11	18	A	C
oystercatcher (OC)		2		A	Po
peregrine (PE)			1	Sch 1	C
pheasant (PH)	1	5	1		Pr
raven (RN)	0	0			N
red grouse (RG)	6	4		S41, A	Pr
red-legged partridge (RL)	1				Po
reed bunting (RB)	1		2	S41, A	Pr
ring ouzel (RZ)			1	S41, R	C
robin (R.)			1		Po
skylark (S.)	1	1	1	S41, R	Pr
snipe (SN)	1	1		A	Po
stonechat (SC)		3	3		C
willow warbler (WW)		3	3	A	Pr
wood pigeon (WP)		1			N
wren (WR)	5	5	9		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

6.3 Breeding bird survey results (TR3 south – number of territories)					
Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
blackbird (B.)	2	3	2		Pr
blackcap (BC)			1		Po
black-headed gull (BH)	0			A	N
blue tit (BT)	5	1	3		C
carrion crow (C.)	4	2	5		C
chaffinch (CH)	4	5	4		Pr
collared dove (CD)		2			Po
common gull (CM)	0			A	N
common redstart (RT)		1	1	A	C
curlew (CU)	3	2	3	S41, R	Pr
dunnock (D.)		1	2	S41, A	Pr
goldcrest (GC)		1			Po
goldfinch (GO)		2	2		Pr
great black- backed gull (GB)	0			A	N
great tit (GT)	1	3	1		Pr
grey wagtail (GL)		1		R	Po
herring gull (HG)	0			S41, R	N
house sparrow (HS)		1	1	S41, R	Pr
jackdaw (JD)	0				N
lapwing (L.)	3	4		S41, R	Pr
lesser black- backed gull (LB)	0			A	N
mallard (MA)	4	2		A	Po
meadow pipit (MP)	2	1		A	Po
mistle thrush (M.)	1			R	Po
nuthatch (NH)	1		1		C
oystercatcher (OC)	2	3	2	A	C

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
pheasant (PH)	6	4	1		Pr
pied wagtail (PW)	4		1		Pr
raven (RN)			0		N
red-legged partridge (RL)	2	2	0		Pr
robin (R.)	3	1	3		C
rook (RO)	(42 nests outside area)				N
siskin (SK)	0	1			N
song thrush (ST)	1	1		S41, R	Po
starling (SG)	1	2	3	S41	C
stock dove (SD)	2	1	1	A	Pr
swallow (SL)			2		Po
swift (SI)		0		A	N
treecreeper (TC)		1	1		Po
willow warbler (WW)		2		A	Po
wood pigeon (WP)		3	1		Pr
wren (WR)	1	3	4		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

6.4 Breeding bird survey results (2020 TR3 south – number of territories)					
Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
blackbird (B.)	5	6	9		C
blackcap (BC)	1	1	1		Pr
blue tit (BT)	5	5	4		C
carrion crow (C.)	5	4	5		C
chaffinch (CH)	5	4	6		Pr
collared dove (CD)		1			Po
common redstart (RT)	2	3	3	A	C
curlew (CU)	2	4	3	S41, R	Pr
dunnock (D.)		2	1	S41, A	Pr

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
goldfinch (GO)	2	2	3		Pr
great black-backed gull (GB)	(2 birds)			A	N
great spotted woodpecker (GS)			1		Po
great tit (GT)	2	3	3		C
greenfinch (GR)			1		Po
grey wagtail (GL)	1		1	R	C
greylag goose (GJ)		1	1	A	C
herring gull (HG)	(6 birds)			S41, R	N
house sparrow (HS)		1		S41, R	Po
jackdaw (JD)	(22 birds)	2			Pr
kingfisher (KF)	1	1		SH1, A	C
lapwing (L.)	3	3		S41, R	Pr
lesser black-backed gull (LB)	(123 birds)	(114 birds)	(53 birds)	A	N
long-tailed tit (LT)		2			Po
mallard (MA)	3 (5 birds)	(14 birds)	(13 birds)	A	C
meadow pipit (MP)	2	1		A	Pr
mistle thrush (M.)	3	1		R	Pr
moorhen (MH)	1				Po
nuthatch (NH)	1		2		C
oystercatcher (OC)	5	8	6	A	C
pheasant (PH)	(10 birds)	(8 birds)	(3 birds)		Pr
pied wagtail (PW)	4	3	5		Pr
raven (RN)			(2 birds)		N
red breasted merganser		1			Po
red-legged partridge (RL)	3	1	(3 birds)		Pr
robin (R.)	2	3	4		C
rook (RO)	(42 nests outside area)				C
siskin (SK)		1	1		Po

Species	Visit 1 (number recorded)	Visit 2 (number recorded)	Visit 3 (number recorded)	Cons. status	Breeding status
song thrush (ST)	1	1	1	S41, R	Pr
sparrowhawk (SH)	1				Po
spotted flycatcher (SF)		1	2	S41, R	Pr
starling (SG)	3	2 (10 birds)	2	S41, R	C
stock dove (SD)		1		A	Po
swallow (SL)		1	1		Po
swift (SI)		(2 birds)	(16 birds)	A	N
tawny owl (TO)			1		C
treecreeper (TC)		1	1		Pr
willow warbler (WW)	2	3	1	A	Pr
wood pigeon (WP)	3	3	2		Pr
wren (WR)	7	6	7		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

7 Summary
<p><u>TR3 north</u></p> <p>A total of 55 bird species were recorded using the site.</p> <ul style="list-style-type: none"> Eight species were confirmed breeding as follows: blue tit, curlew (S41, Red listed), great tit, lapwing (S41, Red listed), meadow pipit (Amber listed), pied flycatcher (Red listed), starling (S41) and wren. 20 species were identified to be probable breeding on site including: house sparrow (S41, Red listed), reed bunting (S41, Amber listed), oystercatcher (Amber listed), skylark (S41, Red listed), snipe (Amber listed), song thrush (S41, Red listed) and willow warbler (Amber listed). 19 species were recorded as possible breeders including: bullfinch (S41, Amber listed), common redstart (Amber listed), dunnoek (S41, Amber listed), grey wagtail (Red listed), lesser redpoll (S41, Red listed), mallard (Amber listed), mistle thrush (Red listed) and redshank (Amber listed). Eight species were sighted using the survey area, however, they were considered to be non-breeding, including ring ouzel (S41, Red listed). <p><u>TR3 central</u></p> <p>A total of 29 bird species were recorded using the site including peregrine and lesser black-backed gull, which are features of the SPA/SSSI designation.</p> <ul style="list-style-type: none"> Four species were confirmed breeding as follows: meadow pipit (Amber listed), peregrine (Sch 1), ring ouzel (S41, Red listed) and stonechat. Seven species were identified to be probable breeding on site including: curlew (S41, Red listed), red grouse (S41, Amber listed), reed bunting (S41, Amber listed), skylark (S41, Red listed) and willow warbler (Amber listed). 14 species were recorded as possible breeders on site including: cuckoo (S41, Red listed), dunnoek (S41, Amber

listed), grasshopper warbler (S41), greylag goose (Amber listed), lapwing (S41, Red listed), linnet (S41, Red listed) mallard (Amber listed), oystercatcher (Amber listed) and snipe (Amber listed).

- Four species were sighted using the survey area, however, they were considered to be non-breeding.

TR3 south

A total of 42 bird species were recorded using the site.

- Seven species were confirmed breeding as follows: blue tit, carrion crow, common redstart (Amber listed), nuthatch, oystercatcher (Amber listed), robin and starling (S41).
- 14 species were identified to be probable breeding on site including: curlew (S41, Red listed), dunnoek (S41, Amber listed), house sparrow (S41, Red listed), lapwing (S41, Red listed) and stock dove (Amber listed).
- Eleven species were recorded as possible breeders on site including: grey wagtail (Red listed), mallard (Amber listed), meadow pipit (Amber listed), mistle thrush (Red listed), song thrush (S41, Red listed) and willow warbler (Amber listed).
- Ten species were sighted using the survey area, however, they were considered to be non-breeding.

2020 TR3 south

A total of 49 bird species were recorded using the site.

- 15 species were confirmed breeding as follows: blackbird, blue tit, carrion crow, common redstart (Amber listed), great tit, grey wagtail (Red listed), greylag goose (Amber Listed), Kingfisher (Sch 1), mallard (Amber listed), nuthatch, oystercatcher (Amber listed), robin, rook, starling (S41) and tawny owl.
- 18 species were identified to be probable breeding on site including: blackcap, chaffinch, curlew (S41, Red listed), dunnoek (S41, Amber listed), goldfinch, jackdaw, lapwing (S41, Red listed), meadow pipit (Amber listed), mistle thrush (Red listed), pheasant, pied wagtail, red-legged partridge, song thrush (S41, Red listed), spotted flycatcher (S41, Red listed), treecreeper, willow warbler (Amber listed), wood pigeon and wren.
- Eleven species were recorded as possible breeders on site including: collared dove, great spotted woodpecker, greenfinch, house sparrow (S41, Red listed), long-tailed tit, moorhen, red-breasted merganser, siskin, sparrowhawk, stock dove (Amber listed) and swallow.
- Five species were sighted using the survey area, however, they were considered to be non-breeding, including, great black-backed gull (Amber listed), herring gull (S41, Red listed), lesser black-backed gull (Amber listed) and swift (Amber listed).

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. For the purposes of this assessment, Fuller's geographical levels have been adapted, so that Fuller's 'local' importance is assumed to correspond to District importance as described in the CIEEM guidelines (IEEM, 2006). An assemblage comprising fewer than 25 species is therefore considered to be of local importance or less.

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 and adapted in accordance with CIEEM.

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

Local	District	County	Regional	National
<25	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.

TR3 north

Based on the adapted version of Fuller's criteria, the 47 confirmed, probable and possible breeding bird species recorded within TR3 north indicates that it is of district significance for breeding birds. Weight is added to this evaluation by the presence of nine species of high (Red listed) conservation concern and ten species of medium (Amber listed) conservation concern within the site. **This site has great importance with confirmed presence of 17 breeding pairs of curlew and 16 breeding pairs of lapwing that are priority species and Red listed conservation concern species, that nest in open grassland areas. In addition, five probable breeding pairs of skylark (priority species and Red listed conservation concern species) were recorded.**

TR3 central

Based on the adapted version of Fuller's criteria, the 25 confirmed, probable and possible breeding bird species recorded within TR3 central indicates that it is of district significance for breeding birds. Weight is added to this evaluation by the presence of six species of high conservation concern and nine species of medium conservation concern within the site. **This site has importance with confirmed presence of a pair of breeding peregrine that is listed as a nationally less scarce breeding bird species (>1000 breeding pairs) and Schedule 1 species. Other notable species are the confirmed presence of one breeding pair of ring ouzel, five probable breeding pairs of curlew and one pair of skylark, which are priority species and Red listed conservation concern species.**

TR3 south

Based on the adapted version of Fuller's criteria, the 32 confirmed, probable and possible breeding bird species recorded within TR3 south indicates that it is of district significance for breeding birds. Weight is added to this evaluation by the presence of six species of high conservation concern and seven species of medium conservation concern within the site. **This site has importance with presence of three probable breeding pairs of curlew and four pairs of lapwing that are priority species and Red listed conservation concern species, that nest in open grassland areas.**

2020 TR3 south

Based on the adapted version of Fuller's criteria, the 44 confirmed, probable and possible breeding bird species recorded within the survey area indicates that it is of district significance for breeding birds. Weight is added to this evaluation by the presence of nine species of high (Red listed) conservation concern and seven species of medium (Amber listed) conservation concern within the site. **This site has importance with confirmed presence of four probable breeding pairs of curlew and three pairs of lapwing that are S41 priority species and Red listed conservation concern species, that nest in open grassland areas. The scattered trees, woodlands and scrub on site also hold house sparrow, song thrush, spotted flycatcher and starling territories (S41 priority species and Red listed conservation concern species). The site has confirmed breeding of kingfisher on the River Hodder, a Schedule 1 (Wildlife and Countryside Act, 1981 (as amended)) listed bird species and Amber 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
- Fuller, R.J., 1980. A method for assessing the ornithological interest of sites for conservation. Biological Conservation, 17(3), pp.229-239.
- Gilbert G, Gibbons DW and Evans J (1998). Bird Monitoring Methods: A manual of techniques for key UK species. RSPB, Bedfordshire
- CIEEM, 2006. Guidelines for Ecological Impact Assessment in Britain and Ireland (Terrestrial, Freshwater and Coastal). Chartered Institute of Ecology and Environmental Management, Winchester.
- 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:	TR3 Winter Bird Survey Report 2019/2020	Date:	22/04/2020
2 Project Drawings			
TR3 Bird Survey Plans – Sept 2019		Sheet 1 of 7 – Sheet 7 of 7	
TR3 Bird Survey Plans – Oct 2019		Sheet 1 of 7 – Sheet 7 of 7	
TR3 Bird Survey Plans – Nov 2019		Sheet 1 of 7 – Sheet 7 of 7	
TR3 Bird Survey Plans – Dec 2019		Sheet 1 of 7 – Sheet 7 of 7	
TR3 Bird Survey Plans – Jan 2020		Sheet 1 of 7 – Sheet 7 of 7	
TR3 Bird Survey Plans – Feb 2020		Sheet 1 of 7 – Sheet 7 of 7	
TR3 Bird Survey Plans – Mar 2020		Sheet 1 of 7 – Sheet 7 of 7	
Winter Bird Survey Overview – TR3		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><u>TR3 north area 1</u> Visit 1: Date 25/09/2019 Start time 11:00 End time 11:40 Visit 2: Date 22/10/2019 Start time 12:00 End time 12:40 Visit 3: Date 18/11/2019 Start time 11:50 End time 12:40 Visit 4: Date 11/12/2019 Start time 10:30 End time 11:00 Visit 5: Date 20/01/2020 Start time 12:50 End time 13:30 Visit 6: Date 19/02/2020 Start time 08:45 End time 09:30 Visit 7: Date 18/03/2020 Start time 10:50 End time 11:30</p> <p><u>TR3 north area 2</u> Visit 1: Date 25/09/2019 Start time 12:00 End time 12:30 Visit 2: Date 22/10/2019 Start time 10:35 End time 11:05 Visit 3: Date 18/11/2019 Start time 09:25 End time 09:50 Visit 4: Date 11/12/2019 Start time 09:55 End time 10:25 Visit 5: Date 20/01/2020 Start time 13:35 End time 14:05 Visit 6: Date 19/02/2020 Start time 09:45 End time 10:15 Visit 7: Date 18/03/2020 Start time 11:15 End time 10:45</p> <p><u>TR3 north area 3</u> Visit 1: Date 25/09/2019 Start time 12:40 End time 13:15 Visit 2: Date 22/10/2019 Start time 11:15 End time 11:45 Visit 3: Date 18/11/2019 Start time 08:50 End time 09:20 Visit 4: Date 11/12/2019 Start time 09:20 End time 09:50 Visit 5: Date 20/01/2020 Start time 14:15 End time 14:45 Visit 6: Date 19/02/2020 Start time 10:25 End time 11:00 Visit 7: Date 18/03/2020 Start time 09:30 End time 10:10</p>		

	<p><u>TR3 south area 1</u> Visit 1: Date 26/09/2019 Start time 09:50 End time 11:10 Visit 2: Date 28/10/2019 Start time 08:30 End time 09:30 Visit 3: Date 18/11/2019 Start time 13:20 End time 14:20 Visit 4: Date 12/12/2019 Start time 11:00 End time 12:00 Visit 5: Date 20/01/2020 Start time 10:50 End time 11:45 Visit 6: Date 19/02/2020 Start time 09:45 End time 11:00 Visit 7: Date 18/03/2020 Start time 13:30 End time 14:15</p> <p><u>TR3 south area 2</u> Visit 1: Date 26/09/2019 Start time 08:00 End time 09:00 Visit 2: Date 22/10/2019 Start time 09:20 End time 10:10 Visit 3: Date 21/11/2019 Start time 09:50 End time 10:40 Visit 4: Date 12/12/2019 Start time 09:20 End time 10:30 Visit 5: Date 20/01/2020 Start time 09:55 End time 10:40 Visit 6: Date 26/02/2020 Start time 14:45 End time 15:45 Visit 7: Date 18/03/2020 Start time 14:20 End time 15:00</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 weather conditions (avoiding heavy rain or strong wind) and avoiding the first hour (dawn) and final hour (dusk) of daylight.</p> <p>The TR3 survey area comprised five transects that covered the entire site, based within the July 2019 modified development envelope. The area was split into five parcels of land. TR3 north was divided into area 1 (T03/A - Lower Houses), area 2 (T03/H - Summersgill) and area 3 (T03/F - Higher Thrushgill). TR3 south was divided into area 1 (T03/G - Burnside) and area 2 (T03/C - Fober Farm).</p>
Weather Conditions:	<p><u>TR3 north area 1</u> Visit 1: 8/8 cloud, F2 south easterly wind, light drizzle, approximately 13°C. Visit 2: 8/8 cloud, F2 south westerly wind, dry, approximately 9°C. Visit 3: 0/8 cloud, F0 wind, dry, approximately 3°C. Visit 4: 4/8 cloud, F3 south westerly wind, dry, approximately 4°C. Visit 5: 7/8 cloud, F2 westerly wind, dry, approximately 6°C. Visit 6: 8/8 cloud, F3 westerly wind, dry, approximately 4°C. Visit 7: 7/8 cloud, F2 westerly wind, light rain shower, approximately 5°C.</p> <p><u>TR3 north area 2</u> Visit 1: 7/8 cloud, F2 south easterly wind, light drizzle, approximately 13°C. Visit 2: 8/8 cloud, F2 south westerly wind, dry, approximately 7°C. Visit 3: 0/8 cloud, F0 wind, frosty, approximately -1°C. Visit 4: 3/8 cloud, F3 south westerly wind, dry, approximately 4°C. Visit 5: 7/8 cloud, F2 westerly wind, dry, approximately 6°C. Visit 6: 8/8 cloud, F3 westerly wind, dry, approximately 4°C. Visit 7: 7/8 cloud, F2 westerly wind, dry, approximately 5°C.</p> <p><u>TR3 north area 3</u> Visit 1: 7/8 cloud, F2 south easterly wind, dry, approximately 15°C. Visit 2: 8/8 cloud, F2 south westerly wind, dry, approximately 7°C. Visit 3: 0/8 cloud, F0, frosty, approximately -1°C.</p>

	<p>Visit 4: 4/8 cloud, F3 south westerly wind, dry, approximately 4°C. Visit 5: 7/8 cloud, F2 westerly wind, dry, approximately 6°C. Visit 6: 8/8 cloud, F3 westerly wind, dry, approximately 4°C. Visit 7: 7/8 cloud, F1 westerly wind, dry, approximately 5°C.</p> <p><u>TR3 south area 1</u> Visit 1: 5/8 cloud, F3 south easterly wind, occasional light rain, approximately 13°C. Visit 2: 0/8 cloud, F1 north easterly wind, dry, approximately 2°C. Visit 3: 0/8 cloud, F1 north easterly wind, dry, approximately 6°C. Visit 4: 8/8 cloud, F2 south easterly wind, light drizzle, approximately 2°C. Visit 5: 7/8 cloud, F2 westerly wind, dry, approximately 6°C. Visit 6: 8/8 cloud, F3 westerly wind, dry, approximately 3°C. Visit 7: 7/8 cloud, F2 westerly wind, dry, approximately 7°C.</p> <p><u>TR3 south area 2</u> Visit 1: 5/8 cloud, F3 south easterly wind, dry, approximately 13°C. Visit 2: 8/8 cloud, F1 south westerly wind, dry, approximately 7°C. Visit 3: 7/8 cloud, F2 south easterly wind, dry, approximately 4°C. Visit 4: 8/8 cloud, F2 south easterly wind, occasional drizzle, approximately 2°C. Visit 5: 7/8 cloud, F2 westerly wind, dry, approximately 6°C. Visit 6: 6/8 cloud, F4 westerly wind, dry, approximately 5°C. Visit 7: 7/8 cloud, F1 westerly wind, dry, approximately 7°C.</p>
Limitations to the survey:	<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>
4 Existing data	
<p>Bowland Fells Site of Special Scientific Interest (SSSI) – supports the largest expanse of blanket bog and heather moorland in Lancashire and provide suitable habitat for a diverse upland breeding bird community including; hen harrier, merlin, peregrine and lesser black-backed gull. The site provides suitable habitat for predatory birds (raptors). The open moorland and blanket bog communities support other upland birds and the damp, rushy lower slopes provide ideal habitat for waders.</p> <p>Bowland Fells Special Protection Area (SPA) – qualifying features are hen harrier, merlin and lesser black-backed gull all for their breeding populations.</p> <p>The survey areas are within close proximity of the Bowland Fells SSSI/SPA with the following approximate distances; TR3 north area 1 lies 4.5 km to the north, TR3 north area 2 lies 2.3 km to the north, TR3 north area 3 lies 1 km to the north, TR3 south area 1 lies 1.2 km to the south and TR3 south area 2 lies 2.6 km to the south.</p>	

5 Habitat Description



TR3 north area 1: Farmland comprising improved/unimproved grassland, marshy grassland and scattered scrub.



TR3 north area 2: Heathland and scattered marshy grassland.



TR3 north area 3: Farmland comprising unimproved grassland, marshy grassland, scattered trees and adjacent to conifer clear fell.



TR3 south area 1: Farmland comprising improved/unimproved grassland, marshy grassland, scattered trees/scrub, plantations and standing waterbodies.



TR3 south area 2: Farmland comprising improved/unimproved grassland, marshy grassland, scattered trees/scrub and hedgerows.

6.1 Winter bird survey results (TR3 north area 1 – number of individual birds)

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
blackbird (B.)		1	1		1			-
black-headed gull (BH)					18			A
blue tit (BT)			4	3				-
carrion crow (C.)	20	1	3	2	4	6	2	-
chaffinch (CH)			1					-
common gull (CM)			32					A
curlew (CU)							3	S41, R
fieldfare (FF)			1	12		58	24	Sch 1, R
grey wagtail (GL)		2	1					R
great tit (GT)	1							-
jackdaw (JD)	6	4			18	20		-
lapwing (L.)					215	4		S41, R
lesser black-backed gull (LB)	15					2		A
lesser redpoll (LR)						1		S41, R
mistle thrush (M.)				1				R
mallard (MA)						2	3	A
meadow pipit (MP)	2	3	1				3	A
oystercatcher (OC)							2	A
pheasant (PH)			1		2	1	3	-
robin (R.)	1		2	1				-
reed bunting (RB)				1				S41, A
red-legged partridge (RL)						2	2	-
rook (RO)					40	15	18	-
skylark (S.)						1		S41, R
stonechat (SC)			1					-
starling (SG)	111	177	180	335	210	1002	12	S41, R
snipe (SN)	1	3	2					A
song thrush (ST)			1					S41, R
wren (WR)	1	2	3	2	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 (TR3 North Area 2 – number of individual birds)

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
blue tit (BT)	2							-
buzzard (BZ)	1							-
carrion crow (C.)	3	8	6	3	1	3		-
curlew (CU)							5	S41, R
hen harrier (HH)	1							Sch 1, S41, R
jackdaw (JD)			20			2		-
lapwing (L.)							1	S41, R
meadow pipit (MP)	16	7	8				8	A
pheasant (PH)	1	2		1		3	1	-

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
robin (R.)	1					1		-
redwing (RE)		6						Sch 1, R
red grouse (RG)		4						S41, A
rook (RO)		9						-
skylark (S.)							7	S41, R
wood pigeon (WP)	3							-

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

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

6.3 Winter bird survey results (TR3 North Area 3 – number of individual birds)								
Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
blackbird (B.)		4	6	9	4	5		-
blue tit (BT)	4	1		2				-
buzzard (BZ)	1							-
carrion crow (C.)	2			1		1		-
chiffchaff (CC)	2							-
collared dove (CD)			4				2	-
chaffinch (CH)			1			1		-
coal tit (CT)			1					-
curlew (CU)							4	S41, R
duncock (D.)			2		1	1		S41, A
fieldfare (FF)			3	2			94	Sch 1, R
green woodpecker (G.)		1						-
goldfinch (GO)			1		1	6	20	-
greenfinch (GR)			1					-
great spotted woodpecker (GS)			2					-
great tit (GT)				1				-
hen harrier (HH)				1				Sch 1, S41, R
jay (J.)				1				-
jackdaw (JD)	1		2	6	32			-
kestrel (K.)	1							A
lapwing (L.)							4	S41, R
mistle thrush (M.)		1	1				1	R
magpie (MG)							2	-
meadow pipit (MP)		2					47	A
pheasant (PH)			1	1	4	1	2	-
pied wagtail (PW)							3	-
robin (R.)	4	1	1	1		1	2	-
redwing (RE)					3			Sch 1, R
red-legged partridge (RL)				6				-
rook (RO)			1					-
stock dove (SD)							2	A
starling (SG)		16	8		1		44	S41, R
sparrowhawk (SH)				1				-

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
siskin (SK)				4			4	-
snipe (SN)			1		1			A
song thrush (ST)			1		1		1	S41, R
wood pigeon (WP)			3					-
wren (WR)	2	2	2	1			1	-

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

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

6.4 Winter bird survey results (TR3 South Area 1 – number of individual birds)								
Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
blackbird (B.)	2	16	5	5	3	2	3	-
bullfinch (BF)	1	1		1				S41, A
brambling (BL)					1			Sch 1
blue tit (BT)	2	3	1	1				-
buzzard (BZ)	1		1					-
carrion crow (C.)	1	11		11	1	2		-
chaffinch (CH)	1	9	3			1	2	-
coal tit (CT)	1	1		1			1	-
curlew (CU)							6	S41, R
duncock (D.)					1			S41, A
fieldfare (FF)		4		9		4		Sch 1, R
goldcrest (GC)		1					1	-
greylag goose (GJ)							3	A
goldfinch (GO)	5	17	21	9			1	-
greenfinch (GR)	1	2	1					-
great spotted woodpecker (GS)			1					-
great tit (GT)	1	2						-
grey heron (H.)		1						-
herring gull (HG)							2	S41, R
jackdaw (JD)		23			2			-
kestrel (K.)						1		A
lapwing (L.)						10	3	S41, R
long-tailed tit (LT)	8	30	8					-
mistle thrush (M.)					1	1		R
mallard (MA)	1	12	12	6	4	22	18	A
magpie (MG)			1		2			-
moorhen (MH)			1		1			-
meadow pipit (MP)	3	1		3		2	3	A
mute swan (MS)			2		2			A
oystercatcher (OC)						2	4	A
pheasant (PH)	28	44	14	39	16	10	7	-
pied wagtail (PW)						1		-
robin (R.)	4	9	2	2			1	-

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
reed bunting (RB)							1	S41, A
redwing (RE)				1				Sch 1, R
red-legged partridge (RL)		4			1		2	-
rook (RO)						3		-
stock dove (SD)					1			A
starling (SG)		8				2	1	S41, R
siskin (SK)			1		6	8		-
snipe (SN)			3	10		2	4	A
song thrush (ST)		1			1		1	S41, R
tufted duck (TU)					2			-
woodcock (WK)				1				R
wood pigeon (WP)		3	24		7			-
wren (WR)	4	5		6	1		1	-

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

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

6.5 Winter bird survey results (TR3 South Area 2 – number of individual birds)								
Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
blackbird (B.)	1		1	4	2	3	2	-
black-headed gull (BH)					2		180	A
blue tit (BT)	2		1	7	7	11	3	-
carrion crow (C.)	9	2	5	11	1	9	4	-
cormorant (CA)			1					-
collared dove (CD)					1			-
chaffinch (CH)			1	5	2	4		-
common gull (CM)		82	1		63	5	8	A
coal tit (CT)		1						-
curlew (CU)							2	S41, R
duncock (D.)		1	2	3				S41, A
fieldfare (FF)		18	73	2				Sch 1, R
greylag goose (GJ)					1			A
grey wagtail (GL)					1			R
goldfinch (GO)		15	1	1	1			-
greenfinch (GR)		1						-
great tit (GT)	5		3		1	3		-
grey heron (H.)	1							-
herring gull (HG)							6	S41, R
jackdaw (JD)	9	11		3	6	12	37	-
kestrel (K.)						1		A
lesser black-backed gull (LB)	60					15	118	A
long-tailed tit (LT)					1	6		-
mistle thrush (M.)		2	1					R
mallard (MA)	5			9	2	3	12	A

Species	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Cons. Status
magpie (MG)					1			-
meadow pipit (MP)	2					5	1	A
nuthatch (NH)					1			-
oystercatcher (OC)							2	A
pheasant (PH)	2		2	1		2	2	-
pied wagtail (PW)	1			1				-
robin (R.)	10	3	2		3	3	2	-
redwing (RE)		35	1	25				Sch 1, R
red-legged partridge (RL)				10	1	10		-
raven (RN)		1			1			-
rook (RO)		21				80	10	-
stock dove (SD)				1		1		A
starling (SG)	31	12	2	13	26	14		S41, R
sparrowhawk (SH)		1					1	-
siskin (SK)		15	3			3		-
song thrush (ST)			1				2	S41, R
treecreeper (TC)					1			-
wood pigeon (WP)	1	2	2	12	1	10		-
wren (WR)	3	1	2	2		2		-

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

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

7 Summary

TR3 north area 1

A total of 29 species of bird were recorded during the surveys (Sep-Mar) using habitats within the survey area, or flying over the survey area. These included:

- One species listed under Schedule 1 of the Wildlife & Countryside Act (1981). Fieldfare;
- Seven species listed under Section 41 (England) of the NERC Act (2006). Curlew, lapwing, lesser redpoll, reed bunting, skylark, starling and song thrush;
- Nine 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, lapwing, lesser redpoll, mistle thrush, skylark, starling and song thrush; and
- Eight 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 are black-headed gull, common gull, mallard and oystercatcher. Qualifying species for their breeding population/range decline are lesser black-backed gull, meadow pipit, reed bunting and snipe.

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 with the exception of noteworthy numbers of a pre-breeding flock of 215 lapwing, feeding within grassland adjacent to northern section of the survey area in January (numbers dropped to four in February). Snipe were present feeding on site between September to November in the western section of the survey area with a peak count of three individuals in October. Returning breeding birds in March comprised three curlew and two oystercatcher (Bowland Ecology, 2019).

Gulls – Intermittent sightings of three species of gull were recorded; birds were noted flying over, or feeding in fields adjacent to the site, species (peak counts) comprised; lesser black-backed gull (15 birds in September and two in February), common gull (32 in November) and black-headed gull (18 in January).

Winter thrushes – Fieldfare were recorded at the site throughout the winter in November, December, February and March, foraging in the grasslands with a peak count of 58 in February.

TR3 north area 2

A total of 15 species of bird were recorded during the surveys (Sep-Mar) using habitats within the survey area, or flying over the survey area:

- Two species listed under Schedule 1 of the Wildlife & Countryside Act (1981). Hen harrier and redwing;
- Five species listed under Section 41 (England) of the NERC Act (2006). Curlew, hen harrier, lapwing, red grouse and skylark;
- Five 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, hen harrier, lapwing, redwing and skylark; and
- Two species on the Amber List of Birds of Conservation Concern (Eaton *et al.* 2015). No species qualifying for their non-breeding population declines were recorded. Qualifying species for their breeding population/range decline included meadow pipit and qualifying as a species listed on the European Red List as vulnerable are red grouse.

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 – Considered to be potentially the arrival of breeding birds during March included five curlew and a single lapwing.

Winter thrushes – Six redwing recorded in October at the northern section of the site.

Other noteworthy species – A ringtail hen harrier was noted flying over the track that follows the eastern site boundary in September. Four red grouse were recorded feeding in the heathland during October; returning breeding birds in March comprised seven skylark considered to be on territory over the moorland present throughout the site.

TR3 north area 3

A total of 38 species of bird were recorded during the surveys (Sep-Mar) using habitats within the survey area, or flying over the survey area:

- Three species listed under Schedule 1 of the Wildlife & Countryside Act (1981). Fieldfare, hen harrier and redwing;
- Six species listed under section 41 (England) of the NERC Act (2006). Curlew, dunnoek, hen harrier, lapwing, 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, hen harrier, lapwing, mistle thrush, redwing, starling and song thrush; and
- Five species on the Amber List of Birds of Conservation Concern (Eaton *et al.* 2015). No species qualifying for their non-breeding population declines were recorded. Qualifying species for their breeding population/range decline are dunnoek, kestrel, meadow pipit, meadow pipit, stock dove and snipe.

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 three species were recorded with snipe occasional through the winter with an individual snipe flushed from the wet areas of grassland in the west of the survey area in November and January. During March four curlew and four lapwing were present and considered to be returning breeding birds to the survey area.

Winter thrushes – redwing and fieldfare were recorded at the site in very small numbers with three redwing in January and three counts of fieldfare with a peak of 94 in March, when birds were seen flying north in flocks.

Other noteworthy species – A ringtail hen harrier was seen flying over the conifer plantation to the south of the site in December.

TR3 south area 1

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

- Three species listed under Schedule 1 of the Wildlife & Countryside Act (1981), including brambling, fieldfare and redwing;
- Eight species listed under section 41 (England) of the NERC Act (2006), including bullfinch, curlew, dunnoek, herring gull, lapwing, reed bunting, starling and song thrush;
- Nine species on the Red List of Birds of Conservation Concern (Eaton et al 2015). Qualifying species for their non-breeding population/range decline – herring gull. Qualifying for their breeding population declines – curlew, fieldfare, lapwing, mistle thrush, redwing, starling, song thrush and woodcock; and
- Eleven 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 are greylag goose, mallard, mute swan and oystercatcher. Qualifying species for their breeding population/range decline are bullfinch, dunnoek, kestrel, meadow pipit, reed bunting, stock dove and snipe.

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 five species were recorded with snipe regularly occurring through the winter (December saw a peak count of ten), and only a single woodcock recorded during December. During February and March peak counts of six curlew, ten lapwing and four oystercatcher were sighted and considered to be returning breeding birds to the area.

Wildfowl – small numbers of three species of wintering wildfowl were recorded, mainly concentrated on the numerous ponds to the east of the site boundary. Mallard were present throughout all the surveys with a maximum of 22 in February. Two tufted duck were recorded in January, whilst a pair of mute swans were seen in November and January.

Gulls – a single record of two herring gulls was made in improved grassland at the south west of the site.

Winter thrushes – redwing and fieldfare were recorded at the site in very small numbers with a single redwing in December and three counts of fieldfare with a peak of nine in December. Additionally, a single brambling flew over the survey area during January.

TR3 south area 2

A total of 44 species of bird were recorded during the surveys (Sep-Mar) using habitats within the survey area, or flying over the survey area. These included:

- Two species listed as under Schedule 1 of the Wildlife & Countryside Act (1981). Fieldfare and redwing;
- Five species listed under section 41 (England) of the NERC Act (2006). Curlew, dunnoek, herring gull, starling and song thrush;
- Eight species on the Red List of Birds of Conservation Concern (Eaton et al 2015). Qualifying species for their non-breeding population/range decline – herring gull. Qualifying for their breeding population declines – curlew, fieldfare, grey wagtail, mistle thrush, redwing, starling and song thrush; and
- Ten 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 are black-headed gull, common gull, greylag goose, mallard and oystercatcher. Qualifying species for their breeding population/range decline are dunnoek, kestrel, lesser black-backed gull, meadow pipit and stock dove.

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 two species were recorded with both records involving breeding birds returning in March (Bowland Ecology, 2019), including two curlew in farmland to the north of the site and two oystercatcher resting next to the River Hodder.

Gulls – four species of gulls were recorded during the surveys feeding/roosting or flying over the sites improved grassland.

- Common gull was encountered on five of the seven surveys with a peak count of 82 in October. Lesser black-backed gull was absent for the winter with 60 present in September then 15 in February and 118 in March. March also saw 180 black-headed gull and six herring gull feeding with the lesser black-backed gulls on improved grassland that had been freshly covered in manure at the south of the site.

Winter thrushes – redwing and fieldfare were recorded from October to December feeding across the site, with peak counts of 73 fieldfare in November and 35 redwing in October.

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+

TR3 north area 1

Total number of bird species sighted between Sep-Mar was 29 and during winter (Nov-Mar) was 28 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 low Local significance. Weight is added to this evaluation by the presence of 17 species of conservation concern:

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

Most notable species recorded were winter migrant species within the county. The single species listed on Schedule 1 of the Wildlife and Countryside Act (1981), 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; black-headed gull, common gull, mallard and oystercatcher 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).

Grass pasture and marshy grassland habitats are the dominant features of the survey area that supported an assemblage of Red-listed farmland bird species; three curlew, 215 lapwing were recorded during the January survey foraging adjacent to site, this represent notable but not significant numbers in a county wide context.

Watercourse and scattered trees supported a small assemblage of common and widespread generalist species, Red-listed bird species were recorded including grey wagtail, lesser redpoll, mistle thrush, skylark, starling and song thrush.

TR3 north area 2

Total number of bird species sighted between Sep-Mar was 15 and during winter (Nov-Mar) was 8 within the survey area. Based on the Fuller's criteria, the species richness of wintering bird species recorded within the survey area indicates that it has no significance. Weight is added to this evaluation by the presence of 7 species of conservation concern:

- Two species listed under Schedule 1 of the Wildlife & Countryside Act (1981);
- Five species listed under Section 41 (England) of the NERC Act (2006);

- Five species on the Red List of Birds of Conservation Concern (Eaton *et al.* 2015). No species qualifying for their non-breeding population/range decline; and
- Two species on the Amber List of Birds of Conservation Concern (Eaton *et al.* 2015). No species qualifying for their non-breeding population/range decline.

Most notable species recorded were uncommon to common residents or winter migrant species within the county. The two species listed on Schedule 1 of the Wildlife and Countryside Act (1981) – redwing are abundant during the winter months throughout the county and regularly occur in large flocks, hen harrier an uncommon resident was sighted flying over the survey area in September. Features in the landscape adjacent and west of the site are considered to offer suitable winter foraging and roosting habitat for the hen harrier. Additionally, hen harrier is a designated species of the Bowland Fells SSSI/SPA that is located approximately 2.3 km to the south.

Heathland and marshy grassland habitats are the dominant features of the survey area that supported an assemblage of Red-listed bird species; five curlew, single lapwing and seven skylark. 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).

TR3 north area 3

Total number of bird species sighted between Sep-Mar was 38 and during winter (Nov-Mar) was 34 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 Local significance. Weight is added to this evaluation by the presence of 13 species of conservation concern:

- Three 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/range decline; and
- Five species on the Amber List of Birds of Conservation Concern (Eaton *et al.* 2015). No species qualifying for their non-breeding population/range decline.

Most notable species recorded were uncommon to common residents or winter migrant species within the county. The three species listed on Schedule 1 of the Wildlife and Countryside Act (1981) – fieldfare and redwing are abundant during the winter months throughout the county and regularly occur in large flocks, hen harrier an uncommon/rare resident was sighted flying over the young conifer plantation to the south of the survey area during December. Features present on site are considered not suitable for winter foraging and roosting habitat for the hen harrier, however, the adjacent conifer plantation in the wider landscape is potentially more suitable, additionally, hen harrier is a designated species of the Bowland Fells SSSI/SPA that is located approximately 1.0 km to the south.

Grass pasture habitats are present on site, most notably in the south of the survey area, where it supported an assemblage of Red-listed farmland bird species including; four curlew and four lapwing present during March. Hedgerows, gardens and scattered trees supported an assemblage of common and widespread generalist species, Red-listed bird species were recorded including grey wagtail, mistle thrush, starling and song thrush. 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).

TR3 south area 1

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 21 species of conservation concern, including:

- Three species listed under Schedule 1 of the Wildlife & Countryside Act (1981);
- Eight species listed under Section 41 (England) of the NERC Act (2006);
- Nine species on the Red List of Birds of Conservation Concern (Eaton *et al.* 2015). One species qualifying for their non-breeding population declines and eight species qualifying for their breeding population/range decline; and

- Eleven species on the Amber List of Birds of Conservation Concern (Eaton *et al* 2015). Four species qualifying for their non-breeding population/range decline or international importance and seven species qualifying 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), brambling, 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; greylag goose, herring gull, mallard, mute swan and oystercatcher 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).

Waterfowl were encountered in small numbers and were concentrated on the numerous ponds to the east of the site boundary where 22 mallard, two mute swans (November and January) were recorded, whilst during March two herring gull were resting in the south western corner of the site and three greylag geese flew over the survey area.

Marshy grassland and grass pasture habitats are dominant features of the survey area and they supported an assemblage of Red-listed farmland bird species including; six curlew, ten lapwing and four oystercatcher during February to March.

Hedgerows, scattered trees and woodland blocks supported an assemblage of common and widespread generalist species, Red-listed bird species were recorded including; mistle thrush, starling, song thrush and woodcock.

TR3 south area 2

Total number of bird species sighted between Sep-Mar was 44 and during winter (Nov-Mar) was 42 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 18 species of conservation concern, including:

- Two species listed under Schedule 1 of the Wildlife & Countryside Act (1981);
- Five 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). One species qualifying for their non-breeding population declines and seven species qualifying for their breeding population/range decline; and
- Ten 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 five 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; black-headed gull, common gull, greylag goose, herring gull, mallard and oystercatcher 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).

Grass pasture habitat is the dominant feature of the survey area and they supported an assemblage of Red-listed farmland bird species including two curlew and two oystercatcher during March. Additionally, common gull were encountered foraging/roosting in the survey area (peak count of 82 during October), whilst during March, 180 black-headed gull and six herring gull were feeding with lesser black-backed gulls in improved grassland at the south of the site.

Hedgerows, scattered trees and adjacent woodland blocks supported an assemblage of common and widespread generalist species, Red-listed bird species were recorded including; mistle thrush, starling and song thrush.

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