

Visual Impact Provision (VIP)

Peak District (East) Project

Appendix 7B Breeding Bird Survey Report

June 2019 Rev06

Quality information

Prepared by	Checked by	Verified by	Approved by
CB Ecologist MCIEEM	SD Senior Ecologist MCIEEM	CM Associate Ecologist MCIEEM CEnv	KW - Associate Director / LK - Regional Director

Revision History

Revision	Revision date	Details	Prepared by	Reviewed by	Approved by
1	27/07/2016	Internal Draft	CB	SD	KW
2	03/03/2017	Draft (following EIA Coordinator (RSK) comments)	N/A	CB	KW
3	16/03/2017	Final (following client (National Grid) comments)	N/A	CM	LK
4	February 2018	Minor Terminology and Format Updates	CM	CM	LK
5	September 2018	Incorporation of Willow Tit Survey Report	CM	CM	LK
6	June 2019	Incorporation of 2019 Updated Surveys	CC/DS	RW	CM

This report has been prepared and provided in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management.

Prepared for:

National Grid

Prepared by:

AECOM Limited
5th Floor, 2 City Walk
Leeds LS11 9AR
United Kingdom

T: +44 (0)113 391 6800
aecom.com

© AECOM Limited. All Rights Reserved.

AECOM Limited ("AECOM") has prepared this Report for the sole use of National Grid ("Client") in accordance with the Agreement under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by AECOM.

The conclusions and recommendations contained in this Report take into account information provided by the Client about the Proposed Project and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report.

The methods adopted, and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken between November 2015 and June 2017 and March 2019 to June 2019 and is based on the conditions encountered and the information available during those periods. The scope of this Report and the services are accordingly factual and therefore be subject to minor limitations as detailed in Section 3.4.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to the attention of AECOM after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. AECOM specifically does not guarantee or warrant any estimate or projections contained in this Report.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

Table of Contents

1.	Introduction.....	4
1.1	The Proposed Project.....	4
1.2	Defining the Study Area and Survey Areas	4
1.3	Survey Aim and Objectives	4
2.	Legislation and Planning Policy	6
2.1	Legislation.....	6
2.2	Planning Policy.....	7
2.3	Other Guidance.....	7
3.	Methodology.....	8
3.1	Desk Study and Consultation.....	8
3.2	Field Survey.....	8
3.3	Evaluation Methodology	10
3.4	Survey Limitations	11
4.	Results	12
4.1	Desk Study and Consultation.....	12
4.2	Field Survey.....	14
5.	Evaluation.....	22
5.1	Breeding Bird Assemblage.....	22
5.2	Breeding Bird Abundance	22
5.3	Bird Assemblage and Abundance within the Wider Survey Area.....	23
5.4	Overall Summary of Results	23
6.	References	24
	Figures 7B.1A and 7B.1B and 7B.2A – D (2016 Results).....	25
	Figures 7B.3A – 7B.3D (2019 Results)	26
	Appendix 7B.A – Willow Tit Survey Report.....	27

Tables

Table 3.1: Desk study data sources and main consultees	8
Table 3.2: 2016 Survey Details.....	9
Table 3.3: 2019 Survey Details.....	10
Table 4.1: Bird (possibly breeding) species within 2 km of the Survey Area, as returned by the desk study.....	13
Table 4.3: Breeding birds within the Survey Area.....	15
Table 4.4: Birds recorded in the Wider Survey Area.....	17

1. Introduction

1.1 The Proposed Project

AECOM was instructed by National Grid to undertake breeding bird surveys on land located to the eastern end of the Woodhead Tunnel at Dunford Bridge, South Yorkshire (centred approximately on Ordnance Survey grid reference 416540 402440). The breeding bird surveys were undertaken to inform the Visual Impact Provision (VIP), Peak District (East) Project (hereafter referred to as the 'Proposed Project'). The Proposed Project is described in detail in Chapter 2 of the Environmental Assessment Report.

1.2 Defining the Study Area and Survey Areas

Within this report the following terminology is used when referring to the geographic areas within which the breeding bird survey has been conducted:

- Desk Study Area – the area subject to the desk study; comprising of the Breeding Bird Survey Area plus a 2 km radius;
- Breeding Bird Survey Area - as shown on Figures 7B.1 - 3 (herein referred to as the 'Survey Area'). This is the extent of land which was the main focus of the walked transect route conducted and reflects an area within which the Proposed Project (as detailed in Section 3 of EAR) has potential to result in direct or indirect disturbance effects on individual birds and breeding bird populations.
- The Wider Survey Area extends to land beyond the boundary of the Survey Area which was also surveyed from the transect routes, in order, along with the desk study data, to put the bird assemblage identified within the Survey Area into context with the wider environment (shown on Figures 7B.1, 7B.2 and 7B.3). This is important given the relatively close proximity of the South Pennine Moors Special Protection Area (SPA) and land which could be used by SPA birds but located outside the SPA boundary.

Wogden Foot Local Wildlife Site (LWS) is located in the central and eastern parts of the Survey Area, and predominantly consists of acid grassland and moorland.

The Trans Pennine Trail runs through the centre of the Survey Area which is lined with a band of trees and scrub. The River Don flows through the Survey Area in an easterly direction (adjacent to the Trans Pennine Trail) and several other smaller watercourses are present, including some that pass underneath the Trans Pennine Trail via culverts. There are scattered farms and private properties within the Survey Area largely in the north.

The roads 'Windle Edge' and 'Brook Hill Lane' define the western and northern boundary of the Survey Area. Just outside the western boundary of the Survey Area, beyond the Village of Dunford Bridge is Winscar Reservoir. The South Pennine Moors Special Protection Area (SPA) boundary lies at its nearest point approximately 100 m west of the Survey Area (close to the where it extends to the edge of Winscar reservoir); the SPA is designated for its breeding bird populations of European importance (as detailed in Section 4.1.1).

1.3 Survey Aim and Objectives

The aim and objectives of the breeding bird survey work and this report is to:

Aim

- Determine the status, distribution and assemblage of breeding birds within the Survey Area in order to inform the Ecological Impact Assessment (EclA).

Objectives

- Undertake a desk study to review existing information relating to the status of breeding birds within the Desk Study Area;
- Conduct baseline surveys to establish the current status of the Survey Area and Wider Survey Area with respect to breeding birds and its potential to support breeding birds, in particular specifically protected species or those of particular conservation concern; and

- Evaluate the survey results to determine the value of the Survey Area for breeding birds and establish which species/species groups are taken forward for assessment within the EclA.

The purpose of this report is to provide baseline technical information and evaluation only. Accordingly, the report outlines the methods and results of the work undertaken and provides an evaluation of the relevant species or assemblage as defined by the objectives. It does not include recommendations, mitigation or impact assessment. These elements will be addressed in Chapter 7 of the Environmental Assessment Report.

2. Legislation and Planning Policy

2.1 Legislation

2.1.1 EC Directive 2009/147/EC on the Conservation of Wild Birds

Annex 1 species are Species listed on Annex 1 of EC Directive 2009/147/EC on the Conservation of Wild Birds, requiring the UK Government to take special measures, including the designation of SPAs (see Section 4.1) which form part of the Natura 2000 network of sites protected by European wildlife legislation, to ensure the survival and reproduction of these Annex 1 species throughout their area of distribution.

2.1.2 The Wildlife and Countryside Act 1981

The legislative provisions for the protection of wild birds in the UK are contained primarily within Sections 1-7 of the Wildlife and Countryside Act 1981 (as amended) (W&CA). Under the W&CA, a wild bird is defined as any bird of a species that is resident in or is a visitor to (in a wild state) the European Territory of any member state.

The W&CA makes it an offence to:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while it is being built or in use; and
- Take or destroy the eggs of any wild bird.

Special penalties exist for offences related to species listed on Schedule 1 of the Act, relating to disturbance of these birds and / or their dependent young at their nests.

2.1.3 The Natural Environment and Rural Communities Act (2006)

The Natural Environment and Rural Communities (NERC) Act (2006), as amended, put an obligation on public bodies in England to have regard (so far as is consistent with the proper exercise of their functions), to the purpose of conserving biodiversity.

Under the terms of the Act, conserving biodiversity includes restoring or enhancing populations and/or habitats. The local planning authority (LPA) or other determining authority must therefore consider the effects of planning applications upon biodiversity and how it can be mitigated for or enhanced. A list of species and habitats 'of principal importance for the purpose of conserving biodiversity' is published under Section 41 (S41) of the NERC Act (2006). The list which includes 56 habitats and 943 species has been drawn up in consultation with Natural England and draws upon the previous UK Biodiversity Action Plan (UK BAP) List of Priority Species and Habitats which is now obsolete. The UK Post 2010 Biodiversity Framework follows on from the UK BAP. It outlines biodiversity actions to be taken across the UK between now and 2020 in order to achieve strategic goals and the 'Aichi' targets set in Nagoya 2010 to halt global declines of biodiversity.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

There are 53 bird species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier (*Circus cyaneus*) has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

2.2 Planning Policy

2.2.1 National Planning Policy

The revised National Planning Policy Framework (NPPF) was published on 24th July 2018 (updated in 2019) and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in March 2012.

The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

2.2.2 Local Planning Policy

Both Barnsley Metropolitan Borough Council and the Peak District National Park Authority have local development planning documentation to guide the decision-making process. Local planning policies within this statutory documentation are used to protect and conserve biodiversity, further details are provided in Chapter 7 (Ecology) of the Environmental Assessment Report.

2.2.3 Local Biodiversity Action Plan (LBAP)

The Barnsley Local Biodiversity Action Plan (LBAP) is in the process of being revised (as of 2018). It currently lists 46 bird species as being a local priority, breeding and/or over-wintering within the Barnsley region. Species include waders such as curlew (*Numenius arquata*) and lapwing (*Vanellus vanellus*), and farmland birds such as linnet (*Linaria cannabina*) and reed bunting (*Emberiza schoeniclus*). Action Plans have been drawn up for lapwing and grey partridge (*Perdix perdix*) and for barn owl (*Tyto alba*) and kestrel (*Falco tinnunculus*). The Peak District LBAP, which covers much of the Peak District National Park and the Dark Peak area immediately south of the Survey Area, lists three bird species for which species action plans have been drawn up; curlew, lapwing and twite (*Linaria flavirostris*).

2.3 Other Guidance

2.3.1 Species of Conservation Concern

The RSPB (2015) and Eaton *et al.* (2015) have published lists of Birds of Conservation Concern (BoCC). Species listed on the Red List are those that have declined in numbers by at least 50 % over the last 25 years, those that have shown a historical population decline between 1800 and 1995, and species that are of global conservation concern. The species on the Red List are of the most urgent conservation concern.

Amber-listed species include those that have shown a moderate decline in numbers (25 % - 49 %) over the last 25 years and those with total populations of less than 300 breeding pairs. Also included are those species which represent a significant proportion (greater than 20 %) of the European breeding or wintering population, those for which at least 50% of the British population is limited to 10 sites or less, and those of unfavourable conservation status in Europe.

The remaining species are placed on the Green list, indicating that they are of low conservation priority. These species still receive full protection through the provisions of the W&CA. Certain introduced non – native species such as Canada goose (*Branta canadensis*) are not listed and for the purposes of this report are classed as having no conservation status in the UK.

These lists confer no legal status. However, they are useful when assessing the significance of predicted impacts and determining the level of mitigation that may be required when birds are affected by development or any other activity. Furthermore, inclusion on the Red List is a factor in determining the species for which LBAPs and national priority species of concern are developed.

3. Methodology

3.1 Desk Study and Consultation

A desk study was carried out to identify protected and notable bird species potentially relevant to the Proposed Project. The approach taken involved obtaining records of third parties and searching the publicly available data sources detailed in Table 3.1. The approach taken when defining the Desk Study Area was based on the likely zone of influence of the Proposed Project on different ecological receptors and an understanding of the maximum distances typically considered by statutory consultees.

Table 3.1: Desk study data sources and main consultees

Data Source	Accessed/Contacted	Data Obtained
Barnsley Biological Records Centre (BBRC)	November 2015 August 2018	Data provided detailing bird records within approximately 2km of the Survey Area.
Barnsley Bird Study Group (BBSG)	July 2016	Data provided detailing bird records within approximately 3km of the Survey Area.
Peak District National Park Authority (PDNPA)	November 2015	Data provided detailing bird records within approximately 2km of the Survey Area.
Atlas of Breeding Birds in the Barnsley area 2006 - 2011	May 2019	Population estimates within Barnsley Bird Study Group Area

A review of statutory and non-statutory designated sites within the Desk Study Area was also conducted to determine the presence of designated sites for bird interests.

A request was also made to Natural England as part of early stage consultation conducted, for any data which may be held for the SPA in particular, which could be useful to the baseline work being conducted.

A follow up record request was made to the Barnsley Bird Study Group (BBSG) in 2019 for further records collated since the bird atlas was published in 2018. BBSG responded by saying that no new annual reports were available and that the abundance and distribution of bird species is not considered to have changed since the Atlas was published.

A number of other publications and data were also used to inform the survey and evaluation work undertaken including; the latest Rare Breeding Birds Report (Holling et al. 2018); the Yorkshire Bird Report (Dobbs, 2015); breeding bird survey report supplied by Natural England.

3.2 Field Survey

3.2.1 The Survey Area

The Survey Area is approximately 187.5 ha and is shown on Figures 7B.1A and B and 7B.2A to 2D. All of the habitats within the Survey Area were surveyed either from adjacent public rights of way or, where access was given, from private land. Given the relatively close proximity of Winscar Reservoir to the west of the Survey Area, and those habitats peripheral to the Survey Area (such as north of Windle Edge and Brook Hill Lane to the north, and the South Pennine Moors SPA to the west), these areas were also surveyed for birds, and are within the Wider Survey Area (up to an approximate distance of between 100m and 300m from the Survey Area). Surveying birds immediately outside the Survey Area puts the breeding bird assemblage on site into context with the bird community in the wider area. The Wider Survey Area is also shown on Figures 7B.1, 7B.2 and 7B.3.

3.2.2 Survey Methodology

A survey team, including an experienced AECOM ornithologist equipped with binoculars walked along a pre-determined transect route (as shown on Figures 7B.1A and B and 7B.2A to 2D for the 2016 survey and Figures 7B.3A to 3D for the 2019 survey) that provided visual coverage of all parts of the Survey Area.

Whilst the transect route undertaken in 2016 provided sufficient visual coverage of the Survey Area and Wider Survey Area of the land to the north of Windle Edge Road, the completion of an additional year of survey work in 2019 provided the opportunity to reaffirm and gain additional survey data in the wider area north of the proposed northern access track (as detailed in the EAR). Therefore the 2019 transect route was slightly extended to also include a route across fields within the land north of Windle Edge/Brook Hill Lane as shown on Figures 7B.3A – 3D.

Further minor amendments to the remainder of the transect route were made following the initial survey visit in 2019 to take into account current access points, surveyor safety and topography in order to optimise visual coverage of the survey area and surrounding habitats. These changes were only minor and as such did not significantly undermine the consistency of Survey Area between the two survey years.

The survey followed an amended Common Bird Census (CBC) methodology (Marchant, 1983; Bibby *et al.* 1992) which allows for a reduced number of visits¹. The ten visit CBC methodology was primarily intended to be used to establish reliable data on population trends over a number of years and has now been superseded for this purpose by the Breeding Bird Survey (BBS) which uses a reduced number of visits each Survey Area each year. The CBC methodology is however still useful in providing comparable data between visits and as such a revised CBC methodology has been adopted (i.e. the survey procedure is CBC, but the number of visits is revised downwards to be proportionate to the need to provide robust data). This is an approach commonly adopted in surveys of this type and has been accepted by Natural England on other projects.

All bird registrations were recorded onto Ordnance Survey base mapping using standard British Trust for Ornithology (BTO) species codes and behaviour notation (see Marchant, 1983 for details). In particular, behaviours indicative of breeding (singing, alarm calling, territorial disputes with conspecifics, nests with eggs, soliciting downy or fledged young, courtship display, birds carrying food, nesting material, egg fragments or faecal sacs) were recorded. Bird territories were determined using standard territory mapping techniques, which involved using consistent identification at particular points and cues of territoriality and breeding. This method is based on the observation that many species during the breeding season are territorial. This is marked especially in passerines where territories are often determined by conspicuous song, display and periodic disputes with neighbouring conspecifics. The expected outcome of this technique is that mapped registrations fall into clusters, approximately coinciding with territories.

A fresh field map was used on each survey visit. These were then used to create individual species maps, following the completion of the surveys. This data analysis follows procedures detailed in Gilbert *et al.* (1998). From species maps, the number of territories for each species was established. If a species was recorded within the Survey Area (in suitable nesting habitat) during the survey period, this was deemed sufficient evidence that the Survey Area constituted part of that individuals' breeding territory. During the night time surveys described in section 3.2.2 all nocturnal birds were anecdotally recorded if seen or heard.

3.2.3 Number and Timing of Visits

3.2.3.1 2016

The surveys in 2016 consisted of four visits to the Survey Area between April and June 2016. The surveys lasted approximately 4.5 – 5 hours commencing at dawn (during this time, breeding birds are more active and can be detected in song more frequently).

Surveys were undertaken on days with suitable weather conditions, and avoided very windy, wet and foggy days in order to avoid adversely affecting the quality of the count and/or the detection rates of birds. The dates/ times of surveys and weather conditions are provided in Table 3.2 below.

Table 3.2: 2016 Survey Details

Survey Date	Survey details/conditions	Sunrise Time
18th April 2016	06:20-10:50 hrs; Cloudy (100% cloud cover); 4°C; moderate-strong wind; dry	05:59 hrs
16th May 2016	06:20-11:15 hrs; Partially sunny (20% cloud cover); 5°C; moderate wind; dry	05:04 hrs
3rd June 2016	04:50-10:00 hrs; Sunny (10% cloud cover); 4°C; light wind; dry	04:42 hrs
15th June 2016	05:15-09:50 hrs; Cloudy (100% cloud cover); 11°C; calm; dry	04:37 hrs

¹ Bibby, C.J., N.D. Burgess, and Hill, D.A. (1992) *Bird Census Techniques*. Academic Press: London

In addition, on the nights of 18th April and 16th May 2016 (approximately 20:00 – 22:30 hrs) an experienced ornithologist recorded any nocturnal bird species present. Weather conditions were fine, dry and relatively calm. This included the area from Dunford Bridge east along the Trans Pennine Trail to (and including) Wogden Foot LWS, and the fields in the north-eastern extreme of the Survey Area.

3.2.3.2 2019

To follow methodology undertaken in 2016, a further four surveys visits were conducted between April and June 2019 as detailed in Table 3.3. The surveys lasted approximately 4.5 – 5 hours commencing at dawn (during this time, breeding birds are more active and can be detected in song more frequently).

Similarly, to 2016, two dusk surveys were carried out across the Survey Area on the nights of the 1st April and 15th May 2019 (between approximately 19:30 and 23:00). Weather conditions for both surveys were calm and dry.

Table 3.3: 2019 Survey Details

Survey Date	Survey details/conditions	Sunrise Time
2nd April 2019	06:45 -11:00 hrs; Cloudy (100% cloud cover); 4°C; moderate-strong wind; occasional drizzle	06:34 hrs
16 th May 2019	06:20-11:15 hrs; Misty conditions to start clearing, partially sunny (20% cloud cover); 4°C; moderate wind; dry	05:07 hrs
7 th June 2019	05:22-10:53 hrs; cloudy (100% cloud cover); 11°C, very light breeze; dry	04:45 hrs
18 th June 2019	05:40-11:00 hrs; Sunny throughout (10% cloud cover); 9°C; moderate breeze with strong wind on high ground; dry	04:42 hrs

3.2.4 Willow Tit Survey

Following consultation with stakeholders, a dedicated survey for willow tit was also undertaken in 2017 by Geoff Carr Ecology. The survey was also further repeated in 2019. The initial survey in 2017 included a habitat assessment of the Trans Pennine Trail corridor between Dunford Bridge car park and Hazlehead Bridge (A616 Whams Road) and of Wogden Foot LWS. The aim of the habitat assessment was to determine the general suitability of habitats present within the survey area to support nesting willow tit. This was followed by two survey visits to identify potential nesting willow tit territories/pairs, undertaken on 9th and 21st March 2017 using a 'call/play back' methodology which had been reviewed by the stakeholders and follows that applied for the Back from the Brink surveys being conducted in the Dearne Valley by the Yorkshire Wildlife Trust and the RSPB (<https://naturebftb.co.uk/the-projects/willow-tit/>). The survey methodology (excluding the habitat assessment given that habitat had remained unchanged) was repeated in 2019, with a total of three survey visits being conducted between early March and mid April 2019. Full details of the survey area and methodology are provided in the Willow Tit Survey report presented as Appendix 7B.A of this report.

3.3 Evaluation Methodology

The method of evaluation that has been utilised has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater and Coastal – Second Edition (CIEEM, 2016). These give advice on scoping and carrying out environmental assessments and place appraisal in the context of relevant policies. Data received through consultation, desk-based studies and field-based surveys are used to allow relevant ecological features (i.e. designated sites, ecosystems, habitat and species) of value (or potential value) to be identified, and the main factors contributing to their value described and related to available guidance.

Ecological features may be important for multiple reasons (e.g. rarity in a particular geographic context; role in habitat connectivity; or a species on the edge of their range). Relevant reasons for which an ecological feature is important are described and considered in order to assign each relevant ecological feature an overall value in accordance with the following geographical frames of reference:

- international (i.e. European);
- national (i.e. England);
- regional (i.e. Northern England);

- county (i.e. South Yorkshire);
- district (i.e. Barnsley Metropolitan Borough/Dark Peak);
- local (i.e. Survey Area and up to 2km radius); and
- negligible (used where the value is lower than the Local level).

3.4 Survey Limitations

Access to a section of the transect route within land to the south of the TPT was unavailable on one occasion in 2019 (16th May 2019 dawn survey), however the majority of this area is open moorland that could be surveyed remotely using optical equipment and a greater reliance on identification of birds using aural cues. This transect section was fully accessible on all of the other three survey visits. All factors considered this minimal access restriction was not concluded to result in a significant limitation to the overall survey effort conducted.

4. Results

4.1 Desk Study and Consultation

4.1.1 Designated Sites

One of the key drivers for the completion of breeding bird surveys is the proximity of the Proposed Project to the Peak District Moors (South Pennine Moors Phase 1) SPA (and encompassing the South Pennine Moors Special Area of Conservation (SAC) and the Dark Peak Site of Special Scientific Interest (SSSI)). At its nearest point the boundary of the SPA is located approximately 100m west of the Survey Area separated by an area of plantation woodland. The boundary line of the Wider Survey Area extends further north and west and therefore extends partially into the SPA although no element of the Proposed Project is to be undertaken within the designated site.

Designating Features

The Peak District Moors (South Pennine Moors Phase 1) SPA was classified in 1996. The site qualifies under Article 4.1 of the Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain population of a species listed in Annex I, in any season:

- Breeding merlin *Falco columbarius* – 30 - 36 pairs representing between 2.3 % and 2.8 % of the breeding population in Great Britain;
- Breeding golden plover *Pluvialis apricaria* – 435 - 445 pairs representing between 19 % and 2.0 % of the breeding population in Great Britain (count as at 1990); and,
- Breeding short-eared owl *Asio flammeus* – 22 - 25 pairs representing between 2.2 % and 2.5 % of the breeding population in Great Britain.

Non-qualifying species of interest: The site supports a rich upland breeding bird assemblage which, as well as the qualifying species listed above, includes important numbers of Peregrine *Falco peregrinus*, Lapwing *Vanellus vanellus*, Dunlin *Calidris alpina schinzii*, Snipe *Gallinago gallinago*, Curlew *Numenius arquata*, Redshank *Tringa totanus*, Common Sandpiper *Actitis hypoleucos*, Whinchat *Saxicola rubetra*, Wheatear *Oenanthe oenanthe*, Ring Ouzel *Turdus torquatus* and Twite *Carduelis flavirostris*.

SPA Conservation Objectives

The following conservation objectives have been identified for the Peak District Moors South Pennine Moors Phase 1 SPA <http://publications.naturalengland.org.uk/publication/6145889668169728> (accessed 28th November 2016):

“Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site”.

4.1.2 Species Records

The BBRC, BBSG and PDNPA provided bird records within 2 km) of the Survey Area. The resolution of the data provided was variable, including records at the tetrad, kilometre square and specific grid reference level.

Natural England provided a shapefile containing bird records for the whole of the SPA dated 2005, and breeding bird distribution maps which show data collated as part of the Higher-Level Stewardship work conducted within Snailsden Moor area of the SPA (approximately 1.3km north west of the Proposed Project) in 2015 (Waxwings Ornithology, 2015). Whilst dated, the information was also used to inform the evaluation detailed in Section 5.0.

A summary of significant bird species of conservation concern and their conservation status that may breed within 2 km of the Survey Area is provided in Table 4.1.

Table 4.1: Bird (possibly breeding) species within 2 km of the Survey Area, as returned by the desk study

Common Name	Latin Name	Conservation Status (see Table 4.2)
Black grouse	<i>Tetrao tetrix</i>	Birds Dir; NERCS41; Red listed
Bullfinch	<i>Pyrrhula pyrrhula</i>	NERCS41; LBAP; Amber listed
Common crossbill	<i>Loxia curvirostra</i>	W&CA; Green listed
Common sandpiper	<i>Actitis hypoleucos</i>	Amber listed
Common snipe	<i>Gallinago gallinago</i>	LBAP; Amber listed
Cuckoo	<i>Cuculus canorus</i>	NERCS41; LBAP; Red listed
Curlew	<i>Numenius arquata</i>	NERCS41; LBAP ¹ ; Red listed
Dipper	<i>Cinclus cinclus</i>	Amber listed
Dunnock	<i>Prunella modularis</i>	NERCS41; LBAP; Amber listed
Golden plover	<i>Pluvialis apricaria</i>	Birds Dir; SPA; Green listed
Goshawk	<i>Accipiter gentilis</i>	W&CA; Green listed
Grasshopper warbler	<i>Locustella naevia</i>	NERCS41; LBAP; Red listed
Grey partridge	<i>Perdix perdix</i>	NERCS41; LBAP; Red listed
Grey wagtail	<i>Motacilla cinerea</i>	LBAP; Red listed
House sparrow	<i>Passer domesticus</i>	NERCS41; LBAP; Red listed
Kestrel	<i>Falco tinnunculus</i>	LBAP; Amber listed
Lapwing	<i>Vanellus vanellus</i>	NERCS41; LBAP ¹ ; Red listed
Lesser redpoll	<i>Acanthis cabaret</i>	NERCS41; LBAP; Red listed
Linnet	<i>Linaria cannabina</i>	NERCS41; LBAP; Red listed
Mallard	<i>Anas platyrhynchos</i>	Amber listed
Meadow pipit	<i>Anthus pratensis</i>	Amber listed
Merlin	<i>Falco columbarius</i>	Birds Dir; SPA; W&CA; LBAP; Red listed
Mistle thrush	<i>Turdus viscivorus</i>	LBAP; Red listed
Nightjar	<i>Caprimulgus europaeus</i>	Birds Dir; NERCS41; LBAP; Amber listed
Oystercatcher	<i>Haematopus ostralegus</i>	Amber listed
Peregrine falcon	<i>Falco peregrinus</i>	Birds Dir; SPA; W&CA; Green listed
Redstart	<i>Phoenicurus phoenicurus</i>	Amber listed
Red grouse	<i>Lagopus lagopus scoticus</i>	NERCS41; LBAP; Amber listed
Red kite	<i>Milvus milvus</i>	Birds Dir; W&CA; Green listed
Reed bunting	<i>Emberiza schoeniclus</i>	NERCS41; LBAP; Amber listed
Ring ouzel	<i>Turdus torquatus</i>	NERCS41; LBAP; Red listed

Common Name	Latin Name	Conservation Status (see Table 4.2)
Short-eared owl	<i>Asio flammeus</i>	Birds Dir; SPA; Amber listed
Skylark	<i>Alauda arvensis</i>	NERCS41; LBAP; Red listed
Song thrush	<i>Turdus philomelos</i>	NERCS41; LBAP; Red listed
Spotted flycatcher	<i>Muscicapa striata</i>	NERCS41; LBAP; Red listed
Starling	<i>Sturnus vulgaris</i>	NERCS41; LBAP; Red listed
Stock dove	<i>Columba oenas</i>	Amber listed
Tawny owl	<i>Strix aluco</i>	Amber listed
Tree pipit	<i>Anthus trivialis</i>	NERCS41; LBAP; Red listed
Turtle dove	<i>Streptopelia turtur</i>	NERCS41; Red listed
Twite	<i>Carduelis flavirostris</i>	NERCS41; LBAP ¹ ; Red listed
Willow tit	<i>Poecile montanus</i>	NERCS41; LBAP; Red listed
Willow warbler	<i>Phylloscopus trochilus</i>	Amber listed
Woodcock	<i>Scolopax rusticola</i>	LBAP; Red listed
Yellowhammer	<i>Emberiza citrinella</i>	NERCS41; LBAP; Red listed

Table 4.2: Glossary of Terms

Abbreviation	
Birds Dir	Annex 1 of the EC Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended)
SPA	Qualifying feature of South Pennine Moors SPA (primary reason for designation)
W&CA	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) Part II refers to species protected during close season (February to August inclusive) but may be killed or taken outside this period
NERCS41	Section 41 of the Natural Environment and Rural Communities Act (2006)
LBAP	Local Biodiversity Action Plan Priority Species for Barnsley ¹ Curlew, lapwing and twite are also LBAP species for the Peak District, which includes the Black Peak area which is on the periphery of the Survey Area. Twite is not a LBAP for species for Barnsley
Red listed	Birds of Conservation Concern (2015) Red Listed Species
Amber listed	Birds of Conservation Concern (2015) Amber Listed Species
Green listed	Birds of Conservation Concern (2015) Green Listed Species
None	No Conservation Status – Introduced/Non-native species.

4.2 Field Survey

The results of the breeding bird surveys within the Survey Area are presented in Table 4.3. Figures 7B.1A and 7B.1B (2017) and Figures 7B.3A and 7B.3D (2019) present the approximate location of the territories of Red and Amber listed species recorded within the Survey Area in each survey year. Figures 7B.2A – 7B.2D (2017) and

Figure 7B.3A and 7B.3D (2019) present the approximate location of the territories of Green listed and non-native species recorded within the Survey Area. The depiction of territories does not necessarily show nest locations; rather it is an approximate representation of a territory within which a nest may be located.

Table 4.3: Breeding birds within the Survey Area

Common Name (code)	Latin Name	Number of Territories 2016	Number of Territories 2019	Conservation Status (see 4.2)
Blackbird (B)	<i>Turdus merula</i>	13	7	Green listed
Blackcap (BC)	<i>Sylvia atricapilla</i>	6	3	Green listed
Blue tit (BT)	<i>Cyanistes caeruleus</i>	5	5	Green listed
Bullfinch (BF)	<i>Pyrrhula pyrrhula</i>	1	1	NERCS41; LBAP; Amber listed
Chaffinch (CH)	<i>Fringilla coelebs</i>	14	3	Green listed
Chiffchaff (CC)	<i>Phylloscopus collybita</i>	2	3	Green listed
Coal tit (CT)	<i>Periparus ater</i>	2	1	Green listed
Collared dove (CD)	<i>Streptopelia decaocto</i>	7	2	Green listed
Common whitethroat (WH)	<i>Sylvia communis</i>	1	2	Green listed
Cuckoo (CK)	<i>Cuculus canorus</i>	1	3	NERCS41; LBAP; Red listed
Curlew (CU)	<i>Numenius arquata</i>	7	3	NERCS41; LBAP ¹ ; Red listed
Dipper (DI)	<i>Cinclus cinclus</i>	1	0	Amber listed
Dunnock (D)	<i>Prunella modularis</i>	8	2	NERCS41; LBAP; Amber listed
Garden warbler (GW)	<i>Sylvia borin</i>	0	3	Green listed
Goldcrest (GC)	<i>Regulus regulus</i>	3	3	Green listed
Goldfinch (GO)	<i>Carduelis carduelis</i>	4	1	Green listed
Great spotted woodpecker (GS)	<i>Dendrocopos major</i>	1	0	Green listed
Great tit (GT)	<i>Parus major</i>	5	4	Green listed
Greenfinch (GR)	<i>Chloris chloris</i>	4	3	Green listed
Green woodpecker (G)	<i>Picus viridis</i>	1	0	Green listed
Grey wagtail (GL)	<i>Motacilla cinerea</i>	1	0	LBAP; Red listed
House sparrow (HS)	<i>Passer domesticus</i>	5 (colonies)	1	NERCS41; LBAP; Red listed

Common Name (code)	Latin Name	Number of Territories 2016	Number of Territories 2019	Conservation Status (see 4.2)
Jackdaw (JD)	<i>Corvus monedula</i>	2	0	Green listed
Jay (J)	<i>Garrulus glandarius</i>	2	0	Green listed
Kestrel (K)	<i>Falco tinnunculus</i>	1	0	LBAP; Amber listed
Lapwing (L)	<i>Vanellus vanellus</i>	2	1	NERCS41; LBAP ¹ ; Red listed
Lesser redpoll (LR)	<i>Acanthis cabaret</i>	2	3	NERCS41; LBAP; Red listed
Long-tailed tit (LT)	<i>Aegithalos caudatus</i>	2	0	Green listed
Mallard (MA)	<i>Anas platyrhynchos</i>	1	0	Amber listed
Meadow pipit (MP)	<i>Anthus pratensis</i>	3	2	Amber listed
Mistle thrush (M)	<i>Turdus viscivorus</i>	3	2	LBAP; Red listed
Nuthatch (NH)	<i>Sitta europaea</i>	0	2	Green listed
Pheasant (PH)	<i>Phasianus colchicus</i>	6	2	None
Pied wagtail (PW)	<i>Motacilla alba</i>	2	0	Green listed
Red grouse (RG)	<i>Lagopus lagopus scoticus</i>	4	2	NERCS41; LBAP; Amber listed
Reed bunting (RB)	<i>Emberiza schoeniclus</i>	1	0	NERCS41; LBAP; Amber listed
Robin (R)	<i>Erithacus rubecula</i>	16	10	Green listed
Siskin (SK)	<i>Spinus spinus</i>	2	1	Green listed
Song thrush (ST)	<i>Turdus philomelos</i>	8	6	NERCS41; LBAP; Red listed
Sparrowhawk (SH)	<i>Accipiter nisus</i>	1	0	Green listed
Spotted flycatcher (SF)	<i>Muscicapa striata</i>	1	0	NERC S41; LBAP; Red listed
Starling (SG)	<i>Sturnus vulgaris</i>	2	0	NERCS41; LBAP; Red listed
Swallow (SL)	<i>Hirundo rustica</i>	3	2	Green listed
Tawny Owl (TO)	<i>Strix aluco</i>	0	1	Amber listed
Treecreeper (TC)	<i>Certhia familiaris</i>	0	4	Green listed

Common Name (code)	Latin Name	Number of Territories 2016	Number of Territories 2019	Conservation Status (see 4.2)
Wheatear (W)	<i>Oenanthe oenanthe</i>	1	0	Green listed
Willow tit (WT)	<i>Poecile montana</i>	1 in 2016 2 in 2017	2	NERCS41; LBAP; Red listed
Willow warbler (WW)	<i>Phylloscopus trochilus</i>	23	16	Amber listed
Woodpigeon (WP)	<i>Columba palumbus</i>	8	4	Green listed
Woodcock (WK)	<i>Scolopax rusticola</i>	1 likely	2	Red listed
Wren (WR)	<i>Troglodytes troglodytes</i>	25	11	Green listed

Table 4.4 presents the bird records from the habitats in the Wider Survey Area. This list does not necessarily refer to breeding birds, and not all species are likely to have bred in the immediately surrounding area. Territory number is determined for the bird assemblage within the Survey Area but not the Wider Survey Area, and only a species list is given for the bird community in the Wider Survey Area. Territories identified in the Wider Survey Area in 2019 have been included on Figures 7B.3A – 7B.3D. It is appreciated that, in many instances, bird territories may extend across the Survey Area and Wider Survey Area, but it is deemed appropriate to separate the two, for the benefit of assessing the importance of the Survey Area alone for breeding birds.

Table 4.4: Birds recorded in the Wider Survey Area

Species (code)	Latin Name	Observed in 2016	Observed in 2019	Conservation Status (see Table 4.2)
Blackbird	<i>Turdus merula</i>	Yes	Yes	Green listed
Blackcap	<i>Sylvia atricapilla</i>	Yes	Yes	Green listed
Black-headed gull ²	<i>Chroicocephalus ridibundus</i>	Yes	Yes	Amber listed
Blue tit	<i>Cyanistes caeruleus</i>	Yes	Yes	Green listed
Bullfinch	<i>Pyrrhula pyrrhula</i>	Yes	Yes	NERCS41; LBAP; Amber listed
Canada goose ²	<i>Branta canadensis</i>	Yes	Yes	None
Carrion crow	<i>Corvus corone</i>	Yes	Yes	Green listed
Chaffinch	<i>Fringilla coelebs</i>	Yes	Yes	Green listed
Chiffchaff	<i>Phylloscopus collybita</i>	Yes	Yes	Green listed
Coal tit	<i>Periparus ater</i>	Yes	Yes	Green listed
Collared dove	<i>Streptopelia decaocto</i>	Yes	Yes	Green listed
Common buzzard	<i>Buteo buteo</i>	Yes	No	Green listed
Common sandpiper ²	<i>Actitis hypoleucos</i>	Yes	No	Amber listed

Species (code)	Latin Name	Observed in 2016	Observed in 2019	Conservation Status (see Table 4.2)
Common snipe	<i>Gallinago gallinago</i>	Yes	Yes	LBAP; Amber listed
Cuckoo	<i>Cuculus canorus</i>	Yes	No	NERCS41; LBAP; Red listed
Curlew	<i>Numenius arquata</i>	Yes	Yes	NERCS41; LBAP ¹ ; Red listed
Dunnock	<i>Prunella modularis</i>	Yes	Yes	NERCS41; LBAP; Amber listed
Feral duck ²	<i>Anas</i> sp.	Yes	No	None
Feral goose ²	<i>Anser</i> sp.	Yes	No	None
Goldcrest	<i>Regulus regulus</i>	Yes	Yes	Green listed
Golden plover	<i>Pluvialis apricaria</i>	No	Yes	Birds Dir; SPA; Green listed
Goldfinch	<i>Carduelis carduelis</i>	Yes	Yes	Green listed
Great black-backed gull	<i>Larus marinus</i>	Yes	No	Amber listed
Great tit	<i>Parus major</i>	Yes	Yes	Green listed
Greenfinch	<i>Chloris chloris</i>	Yes	Yes	Green listed
Grey heron	<i>Ardea cinerea</i>	Yes	No	Green listed
Greylag goose ²	<i>Anser anser</i>	Yes	Yes	Amber listed
Herring gull ²	<i>Larus argentatus</i>	Yes	Yes	NERCS41; Red listed
House martin	<i>Hirundo rustica</i>	Yes	No	LBAP; Amber listed
House sparrow	<i>Passer domesticus</i>	Yes	No	NERCS41; LBAP; Red listed
Jackdaw	<i>Corvus monedula</i>	Yes	Yes	Green listed
Jay	<i>Garrulus glandarius</i>	Yes	Yes	Green listed
Kestrel	<i>Falco tinnunculus</i>	Yes	Yes	LBAP; Amber listed
Lapwing	<i>Vanellus vanellus</i>	Yes	Yes	NERCS41; LBAP ¹ ; Red listed
Lesser black-backed gull ²	<i>Larus fuscus</i>	Yes	Yes	Amber listed
Lesser redpoll	<i>Acanthis cabaret</i>	Yes	Yes	NERCS41; LBAP; Red listed

Species (code)	Latin Name	Observed in 2016	Observed in 2019	Conservation Status (see Table 4.2)
Linnet	<i>Linaria cannabina</i>	Yes	Yes	NERCS41; LBAP; Red listed
Magpie	<i>Pica pica</i>	Yes	No	Green listed
Mallard ²	<i>Anas platyrhynchos</i>	Yes	Yes	Amber listed
Meadow pipit	<i>Anthus pratensis</i>	Yes	Yes	Amber listed
Mistle thrush	<i>Turdus viscivorus</i>	Yes	Yes	LBAP; Red listed
Oystercatcher ²	<i>Haematopus ostralegus</i>	Yes	Yes	Amber listed
Pheasant	<i>Phasianus colchicus</i>	Yes	Yes	None
Pied wagtail	<i>Motacilla alba</i>	Yes	Yes	Green listed
Raven	<i>Corvus corax</i>	Yes	No	Green listed
Redstart	<i>Phoenicurus phoenicurus</i>	Yes	No	Amber listed
Red grouse	<i>Lagopus lagopus scoticus</i>	Yes	Yes	NERCS41; LBAP; Amber listed
Red kite	<i>Milvus milvus</i>	No	Yes	Birds Dir; W&CA; Green listed
Reed bunting	<i>Emberiza schoeniclus</i>	Yes	Yes	NERCS41; LBAP; Amber listed
Ring ouzel	<i>Turdus torquatus</i>	Yes	No	NERCS41; LBAP; Red listed
Ringed plover ²	<i>Charadrius hiaticula</i>	Yes	No	LBAP; Red listed
Robin	<i>Erithacus rubecula</i>	Yes	Yes	Green listed
Rook	<i>Corvus frugilegus</i>	Yes	No	Green listed
Sand martin	<i>Riparia riparia</i>	Yes	No	Green listed
Short-eared owl	<i>Asio flammeus</i>	No	Yes	Birds Dir; SPA; Amber listed
Siskin	<i>Spinus spinus</i>	Yes	Yes	Green listed
Skylark	<i>Alauda arvensis</i>	Yes	Yes	NERCS41; LBAP; Red listed
Song thrush	<i>Turdus philomelos</i>	Yes	Yes	NERCS41; LBAP; Red listed
Sparrowhawk	<i>Accipiter nisus</i>	Yes	No	Green listed

Species (code)	Latin Name	Observed in 2016	Observed in 2019	Conservation Status (see Table 4.2)
Starling	<i>Sturnus vulgaris</i>	Yes	Yes	NERCS41; LBAP; Red listed
Stock dove	<i>Columba oenas</i>	Yes	No	Amber listed
Stonechat	<i>Saxicola torquata</i>	Yes	No	Green listed
Swallow	<i>Hirundo rustica</i>	Yes	Yes	Green listed
Swift	<i>Apus apus</i>	Yes	No	LBAP; Amber listed
Tufted duck ²	<i>Aythya fuligula</i>	Yes	Yes	Green listed
Treecreeper	<i>Certhia familiaris</i>	No	Yes	Green listed
Wheatear	<i>Oenanthe oenanthe</i>	Yes	No	Green listed
Willow warbler	<i>Phylloscopus trochilus</i>	Yes	Yes	Amber listed
Woodpigeon	<i>Columba palumbus</i>	Yes	Yes	Green listed
Wren	<i>Troglodytes troglodytes</i>	Yes	Yes	Green listed

² These species were recorded exclusively (or almost exclusively) in and around Winscar Reservoir.

In 2016, a pair of woodcock (*Scolopax rusticola*) were recorded during the night surveys with the birds roding (flights by displaying males) along the Trans Pennine Trail on the 18th April, and a pair roding at the edge of a woodland immediately south-west of Dunford Bridge village on 16th May. The pair is likely to be breeding within the Survey Area and is thus included as a breeding species within the Survey Area for the analysis. The approximate location of this species within the Survey Area is shown on Figure 7B.1. Similar behaviour was observed during the 2019 dusk surveys on 1st April and 15th May with multiple display flights occurring along the TPT. On both the 2nd and 4th dawn visits a woodcock was flushed from the land adjacent to the Trans Pennine Trail. It is likely that there are 2 separate territories within this area.

A flock of 15 non-breeding fieldfare (*Turdus pilaris*) (W&CA; BoCC Red List) were recorded in 2016 within the Survey Area during the first survey (18 April 2016). This species only over-winters in England and therefore this record is of passage birds migrating to breeding areas in northern Europe (i.e. classified as a non-breeding species).

4.2.1 Specially Protected Species

No breeding species listed on Annex 1 of the EU Birds Directive, Schedule 1 of the W&CA or a qualifying species of the South Pennine Moors SPA were recorded during the 2016 surveys.

In 2019 on the second visit a red kite (*Milvus milvus*) was observed flying north over Brook Hill Lane whilst being mobbed by jackdaws. This was the only sighting of a Schedule 1 species during any of the 2016 and 2019 surveys. No potential red kite nests were observed in the Survey Area or Wider Survey Area. The area where the red kite was observed could be part of the foraging range of a breeding individual but as this was only sighted once it is likely the edge of its range or a roaming non-breeding individual. Red kite was not recorded nesting within the Survey Area therefore there is no risk of nest destruction due to works and risk of disturbance is highly unlikely.

On the second visit of the 2019 surveys a golden plover (*Pluvialis apricaria*) was observed flying westwards, very high across north of Brook Hill Lane. Golden plover was not recorded again on any survey and, based on the survey results, is unlikely to have a territory in the Survey Area. On the third visit a short-eared owl (*Asio flammeus*) was observed foraging for approximately 10 minutes over in-bye rough grasslands north of Brook Hill Lane. This behaviour indicates occupation of a home range or possible breeding territory (Hardy, J et al 2006). Given that short-eared owls have a core foraging range of 2km from the nest when breeding (SNH, 2013) and no other

sightings of this species have been made during 2 separate years of survey the available evidence suggests that the individual recorded was foraging within a territory “centred” on a nest that is distant from the proposed development area and therefore was not detected during surveys.

4.2.2 Species of Conservation Concern

A maximum of twelve Red listed and up to nine (2016) Amber listed breeding species were recorded within the Survey Area.

Red list species identified:

- Cuckoo (2016 - 1 territory, 2019 – 3 territories);
- Curlew (2016 - 7 territories, 2019 – 3 territories);
- Grey wagtail (2016 - 1 territory, 2019 – 0 territories);
- House sparrow (2016 - 5 colonies; 1 colony);
- Lapwing (2016 - 2 territories, 2019 – 1 territory);
- Lesser redpoll (2016 - 2 territories, 2019 – 3 territories);
- Mistle thrush (2016 - 3 territories, 2019 – 2 territories);
- Starling (2016 - 2 territories, 2019 – 0 territories);
- Song thrush (2016 - 8 territories, 2019 – 6 territories);
- Spotted flycatcher (2016 - 1 territory, 2019 – 0 territories);
- Willow tit (1 territory in 2016, 2 territories in 2017 and 2 territories in 2019); and
- Woodcock (2016 - likely 1 territory, 2019 – 2 territories).

Amber listed species in 2016 were bullfinch (1 territory), dipper (1 territory), dunnoek (8 territories), kestrel (1 territory), mallard (1 territory), meadow pipit (3 territories), red grouse (4 territories), reed bunting (1 territory) and willow warbler (23 territories).

In 2019 the Amber listed species territories were bullfinch (1 territory), dunnoek (2 territories), meadow pipit (2 territories), red grouse (2 territories), tawny owl (1 territory) and willow warbler (16 territories)

Many of the ground-nesting species, such as curlew, lapwing, meadow pipit and red grouse were concentrated in the rough pasture and moorland to the north and south of the Trans Pennine Trail. Breeding populations of other species, such as song thrush, mistle thrush, dunnoek, starling and house sparrow, were typically concentrated in close proximity to built-up areas (e.g. houses and farms). The woodland strip running along the edge of the Trans Pennine Trail supported breeding species including willow tit, willow warbler and lesser redpoll. Wogden Foot LWS supported breeding spotted flycatcher, bullfinch and willow warbler, and watercourses and wetland areas close to the Trans Pennine Trail supported breeding dipper, reed bunting and mallard. Cuckoo was active in the centre of the Survey Area around the Trans Pennine Trail and may have parasitized the nest of meadow pipit which were active close by.

5. Evaluation

5.1 Breeding Bird Assemblage

The number of species recorded in an area is a simple measure of diversity that can indicate its importance or conservation value at each season of the year. It is appreciated that in some instances the specific species present (e.g. those of the greatest conservation concern) may be the most important determination of a site's conservation value (and this is considered in section 4.2.4), but nevertheless determining the overall species diversity within a site does provide another measure of conservation value. An area's importance will be determined by a number of factors, such as geographical location, diversity of habitats present and size. Fuller (1980) gives the following diversity criteria with respect to species number:

Table 5.1: Diversity Criteria with respect to Species Number (Fuller, 1980)

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

Based on Fuller's Criteria, the breeding bird assemblage of the Survey Area is of local importance (47 species in 2016 and 38 species in 2019). However, it should be noted however that Fuller's analysis was developed in the 1970's, since which time species diversity has declined significantly (Eaton *et al.*, 2015). As a result, Fuller's thresholds are too high for today's bird populations. With these changes in bird populations considered, along with consideration given to the number of species of conservation concern recorded (21 species); it is concluded that the breeding bird assemblage within the Survey Area is of **County importance**.

5.1.1 Willow Tit

Two confirmed willow tit territories were identified within Wogden Foot LWS (as detailed in Appendix 7B.A) during the 2016/17 surveys. Two willow tit territories were also identified during the 2019 surveys. Whilst in 2009 the UK estimated number of breeding pairs was 3,400 (Musgrove *et al.*, 2013), according to the Rare Breeding Birds Panel, the population of willow tit has experienced a decline recently in the UK to 2,000 breeding pairs (Lancashire Wildlife Trust, 2016) and for the purposes of this evaluation, this is taken to be the most accurate national population estimate currently available as it is based on data from a 5-year period. Estimates at the regional and county scale in Holling M *et al.* (2018) are acknowledged by the authors to be of low accuracy, being based on incomplete geographical coverage.

Two breeding territories represent approximately 0.1% of the national population and this does not meet the threshold for national significance (1% of the national population) or county significance (0.5% of the national population as used by a number of unitary authorities including West Yorkshire [West Yorkshire Local Sites Partnership, 2016], Cumbria [Cumbria Wildlife Trust, 2008] and Cheshire [Giles, 2012]. The recorded population represents 2.4% of the Barnsley District population of 80 breeding pairs (Barnsley Bird Study Group Area, 2018). In accordance with the evaluation criteria presented in this report willow tit numbers within the Survey Area are concluded of **District importance**.

5.2 Breeding Bird Abundance

In addition to evaluating a site based on its breeding bird assemblage, consideration has to be given to the value of the site for the population of individual species that it supports. This can be done by comparing the population present within the Survey Area with the national and county breeding population for a given species. National population estimates are published in Musgrove *et al.* (2013). No breeding population within the Survey Area approaches the 1% level of the national population, which would have constituted a nationally significant breeding population.

At County level, a LWS designation in the Barnsley region is largely based on the habitats present, rather than specific assemblage of breeding birds per se. However, if a breeding bird population approaches the 0.5 % level of the national population, this is likely a good indication that this is a county significant breeding population. None of the species recorded during the course of the survey period within the Survey Area were recorded in numbers that would constitute a significant breeding population at the County level.

It should be noted that according to the Rare Breeding Birds Panel, the population of willow tit has experienced a decline recently in the UK to 2,000 breeding pairs (Lancashire Wildlife Trust, 2016), making this species an even rarer breeding bird to record. The presence of this species breeding in the wooded strip running parallel to the Trans Pennine Trail is thus a notable finding.

5.3 Bird Assemblage and Abundance within the Wider Survey Area

The Wider Survey Area supported a species-rich bird assemblage consisting of 65 species during the 2016 surveys and 49 species during the 2019 surveys. Species including the Red listed linnet (*Linaria cannabina*), ring ouzel (*Turdus torquatus*), ringed plover (*Charadrius hiaticula*) and skylark (*Alauda arvensis*) and Amber listed common sandpiper (*Actitis hypoleucos*), common snipe (*Gallinago gallinago*), oystercatcher (*Haematopus ostralegus*), black-headed gull (*Chroicocephalus ridibundus*), short-eared owl (*Asio flammeus*) and redstart (*Phoenicurus phoenicurus*) were recorded only outside the Survey Area. Some of these species were recorded around Winscar Reservoir (common sandpiper, oystercatcher, black-headed gull and ringed plover) and other species within habitats to the north of the Survey Area (common snipe, redstart, linnet, ring ouzel and skylark). In 2016 a relatively large colony of nesting black-headed gulls was present along the western edge of Winscar Reservoir. In 2019 oystercatcher were found to be nesting on the western edge of the reservoir. Five species of conservation concern (dipper, grey wagtail, reed bunting, spotted flycatcher and willow tit) were recorded within the Survey Area but not in the Wider Survey Area in 2016. In 2019, 6 species of conservation concern (house sparrow, cuckoo, house martin, willow tit, reed bunting, and tawny owl) were recorded within the Survey Area but not the Wider Survey Area. It should be noted that for at least some of these species (most notably for dipper and grey wagtail), as the watercourses they will be using within the Survey Area extend out into the wider area, the territories of these species are also likely to include habitats within the Wider Survey Area.

The desk study revealed 45 (possibly breeding) bird species of conservation interest within the Desk Study Area. Although most of these species were recorded during the surveys conducted, several species were not encountered, such as merlin *Falco columbarius* and peregrine falcon *Falco peregrinus*, ground-nesting species (black grouse *Tetrao tetrix* and grey partridge) and passerines associated with woodland habitats (common crossbill *Loxia curvirostra* and tree pipit *Anthus trivialis*). The Desk Study Area includes the South Pennine Moors SPA which supports breeding bird populations of European importance, including golden plover, merlin and peregrine falcon therefore as expected the desk study revealed a much greater number of species records for these areas.

Foraging owls (such as short-eared owl *Asio flammeus* and tawny owl *Strix aluco* which were both revealed from the desk study) may use the Survey Area and particularly the rough pasture and moorland to the north and south of the Trans Pennine Trail. No owls were recorded on the nights of the 18th April and 16th May in 2016, but woodcock (*Scolopax rusticola*) were recorded within the Survey Area in both 2016 and 2019 and this species is likely breeding on site. In 2019 a pair of juvenile tawny owls were found roosting within the strips of woodland adjacent to the TPT and a short-eared owl was recorded foraging in the rough grassland in the Wider Survey Area (see section 4.2.1). There are multiple factors which make it highly unlikely that nesting by short-eared owls occurred near the development area. This was the only observation of a short-eared owl in any of the surveys completed in both 2016 and 2019, the core foraging range of a short-eared owl is up to 2km away from nests and the breeding habitat of a short-eared owl (heather moorland) is available in the surrounding areas but only a small section in the development area itself. The most recent records obtained from the Barnsley Bird Group for confirmed breeding short-eared owls are for 1 record in 2006 in tetrad SE10G and another in 2011 in tetrad SE10F. Both records are approximately 1-2km away from the Survey Area. There are also records available for bird surveys completed in 2004 that covered the whole peak district SPA (Carr, G & Middleton, P 2004). The closest records for these surveys are for tetrads SE10A, SE10K and SE10Q, all of which were for one bird sighting only so do not confirm breeding in those areas. SE10A is approximately 3km away from the Survey Area while the northern-most extent of both SE10K and SE10Q only just meet the Survey Area boundary.

5.4 Overall Summary of Results

In 2016 a total of 47 breeding bird species were recorded within the Survey Area, 21 of which were species of conservation concern. In 2019 this changed to 38 breeding bird species within the Survey Area, 15 of which were species of conservation concern.

These comprised the Red Listed cuckoo, curlew, grey wagtail, house sparrow, lapwing, lesser redpoll, mistle thrush, song thrush, spotted flycatcher, starling, willow tit and woodcock, and Amber listed bullfinch, dipper, dunnoek, kestrel, mallard, meadow pipit, red grouse, reed bunting, short-eared owl, tawny owl and willow warbler. Typically, fewer than five territories each were recorded for these species; however more than seven territories each were recorded for dunnoek, song thrush and willow warbler in both 2016 and 2019. The overall breeding bird assemblage and willow tit will be taken forward for assessment in the EclA.

6. References

- AECOM (2016) Peak District: Visual Impact Provision Wintering Bird Survey Report. Prepared by AECOM for National Grid. April 2016.
- Back from the Brink website (2018) <https://naturebftb.co.uk/the-projects/willow-tit/> accessed September 2018
- Bibby, C.J., N.D. Burgess, and Hill, D.A. (1992) *Bird Census Techniques*. Academic Press: London
- Carr, G. & Middleton, P. (2004). Breeding Bird Survey of the Peak District Moorlands Report Maps – Part A
- CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester
- Cumbria Wildlife Trust (2008). Guidelines for selection of County Wildlife Sites in Cumbria. p 81
- Dobbs, G (ed.) (2015). *Yorkshire Bird Report 2015*. Yorkshire Naturalists' Union. p. 50
- Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. and Gregory, R. (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 of assessing the ornithological interest of sites for conservation. *Biological Conservation* 17: 229-239.
- Giles, R. (2012). Local Wildlife Site Selection Criteria for the Cheshire Region.
- Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2006). *Raptors: a field guide to survey and monitoring*. The Stationery Office, Edinburgh.
- Holling, M. and the Rare Breeding Birds Panel (2018). Rare breeding birds in the UK in 2016. *British Birds* 111, pp 644-694
- Pearce, D and Middleton, P (2018) Atlas of Breeding Birds in the Barnsley Area 2006 - 2011
- Lancashire Wildlife Trust (2016) New worries over willow tits. Thursday 14th April 2016. <http://www.lancswt.org.uk/news/2016/04/14/new-worries-over-willow-tits>. Accessed 22nd July 2016.
- Marchant (1983). *Common Birds Census Instructions*. British Trust for Ornithology, Tring
- Musgrove, A., Aebischer, N., Eaton, M., Hearn, R., Newson, S., Noble, D., Parsons, M., Risely, K. and Stroud, D. (2013) Populations estimates of birds in Great Britain and the United Kingdom. *British Birds* 106: 64-100.
- RSPB (2015) Birds of Conservation Concern 4. Available from https://www.rspb.org.uk/Images/birdsofconservationconcern4_tcm9-410743.pdf Accessed March 2016
- Scottish Natural Heritage (2013). *Assessing Connectivity with Special Protection Areas (SPAs)*. SNH
- Snailden Moor, South Yorkshire - HLS Breeding Bird Survey Data, 2015 (Waxwings Ornithology, supplied by NE)
- West Yorkshire Local Sites Partnership (2016). Wst Yorkshire Local Wildlife Site Selection Criteria. p 120

Figures 7B.1A and 7B.1B and 7B.2A – D (2016 Results)

Figures 7B.3A – 7B.3D (2019 Results)

Appendix 7B.A – Willow Tit Survey Report



GEOFF CARR ECOLOGY
CHARTERED ENVIRONMENTALIST

Willow Tit Survey Dunford Bridge, Penistone, Yorkshire



Geoff Carr Ecology

March 2017

(Updated March 2019 with Appendix C)

Willow Tit Survey Dunford Bridge, Penistone Yorkshire

Contents:**1. Summary****2. Introduction**

-
-
-

3. Methodology

-

3.1 The Survey Area**3.2 Willow Tit Targeted Habitat Survey Methodology****3.3 Willow Tit Survey Methodology**

-

4. Results**4.1 Willow Tit Targeted Habitat Survey****4.2 Willow Tit Survey Results****5. Other Significant Species Recorded****6. Survey Conclusion****7. Recommendations and mitigation****Appendix A Maps****Appendix B Photos of the survey site****Appendix C 2019 Willow Tit Survey**

1 Summary

A survey of an area around the Trans-Pennine Trail at Dunford Bridge, Penistone, Yorkshire; defined below as the Survey Area was undertaken in March 2017 to establish the presence of Willow Tit (*Poecile montanus kleinschmidtii*). The survey was conducted by Geoff Carr Ecology on behalf of National Grid in relation to the Proposed Peak District Visual Impact Provision (VIP) Scheme. A parallel detailed targeted habitat suitability survey was also undertaken to map the areas of key habitats for this species in the Survey Area.

The survey identified the presence of two Willow Tit territories and discovered unexpected high quality habitats for this species which had developed naturally on the abandoned former railway line which is now the Trans-Pennine Trail (TPT) and sidings, now Wogden Foot Local Wildlife Site (LWS). The location of the territories and suitable Willow Tit habitat is shown on Appendix A.

Recommendations for maintaining and enhancing the value of the site for Willow Tits are proposed and mitigating actions in respect of the Proposed Peak District VIP Scheme are given.

2 Introduction

The Willow Tit *Poecile montanus kleinschmidtii* is currently undergoing a dramatic and recent decline within the UK, documented in the Bird Atlas 2007-11 (Balmer *et al* BTO books) and is now a conservation priority “Red List” species. Nationally, Willow Tits have declined at a rapid rate and have disappeared from many former areas occupied in southern England, East Anglia and the southern Midlands in a short space of 20 years and the species is considered to be the fastest declining resident bird in the UK Bird Atlas 2007-11 (Balmer *et al*, BTO books) and (Musgrove *et al*, 2013 Population estimates of birds in Great Britain and the UK, British Birds 106: 64-100). The regional population in both West and South Yorkshire is not fully known and recording is patchy but Barnsley Bird Study Group Atlas Survey 2006-11 found just over 80 territories within the recording area (BSBG Breeding Bird Atlas 2006-11 in prep) of approximately 500 sq km of both full and part squares.

The Survey comprised of two elements; a Willow Tit habitat suitability survey and a targeted Willow Tit bird survey. Following to recent stakeholder meetings held by National Grid to discuss the Proposed Scheme, the survey work was commissioned as a sub-contract by AECOM and part of their larger, multi-contract on the VIP Scheme to access taking down the high-powered cable line and support pylons west of Wogden Foot LWS and then running a new cable line underground through part of Wogden Foot LWS, along the Trans-Pennine Trail (TPT) to the entrance of the original Woodhead Rail Tunnel at Dunford Bridge.

The aims of the survey work are;

- to gather detailed Willow Tit habitat information within the survey area and to complete a pre-breeding Willow Tit field survey to determine if this UK “priority” and “Red List” species is still present from former records and in which particular territorial zones;
- From this survey information to then produce a document to show identified Willow Tit breeding and feeding zones; and
- to offer recommendations of further mitigation/enhancement measures to improve the habitat for the species.

For up to ten years Willow Tits have been recorded, and have successfully bred along the TPT

at Dunford Bridge and at Wogden Foot LWS and although it is not a site that is regularly visited by bird recorders there appears to be some continuity of the breeding population there. When Barnsley Bird Study Group surveyed this area as part of the Barnsley Breeding Bird Atlas project single birds were located within squares SE1602 and SE1902 along the TPT, but no detailed map reference, (BBSG Breeding Bird Atlas 2006-11 in prep). A mobile family of six birds were recorded in July 2008 at SE1602 along the TPT and a pair of territorial birds in January 2016 at SE172026 within the Wogden Foot LWS (Geoff Carr *pers. obs.*).

3 Methodology

3.1 The Survey Area

The Willow Tit survey area is situated between the car park at Dunford Bridge at SE159024 and east to Whams Road, Hazelhead Bridge at SE195029. Between these two reference points surveyed were the TPT, the area of Wogden Foot LWS and an area of private land from SE182027 to Whams Road on the northern downslope between the TPT and River Don. The TPT has a slight incline from Whams Road at 262 metres and reaching 300 metres at the Dunford Bridge car park. The TPT and Wogden Foot LWS are owned by Barnsley MBC with the TPT managed by Barnsley MBC Public Rights of Way group and Wogden Foot LWS managed for Barnsley MBC by the Yorkshire Wildlife Trust. The Survey Area is shown on the plan included as Appendix A.

3.2 Willow Tit Targeted Habitat Survey Methodology

Willow Tit Targeted Habitat Survey

The Willow Tit Targeted Habitat Survey was based on the known requirements of the species for young, damp, scrubby woodland with rotting wood for nesting (Siriwardena 2004; Lewis *et al.* 2009), as they are one of the very few passerines that needs to excavate a new nesting site each year, with thick tangled undergrowth often near water for foraging. The survey therefore assessed;

- the species of trees and shrubs present and particularly those with tendencies for dead wood such as willows *Salix*, Elder *Sambucus nigra* and birches *Betula*;
- the extent of ground cover especially tangled undergrowth such as brambles *Rubus* spp.
- the extent of suitable dead and rotting wood, and
- a judgement of the dampness of the habitat (proximity to water or wet habitats)

An index of suitability was devised to summarise the survey findings along different stretches of the Survey Area where scoring was assigned as follows:

1. not suitable – areas of hard-standing, open ground, few trees or shrubs, dry
2. dry woodland, little undershrub, little dead wood
3. wetter woodland, more undershrub, some or little dead wood
4. woodland with undershrub, dead wood and some wetness
5. very suitable wet woodland, frequent dead wood, good undergrowth

Presentation of results

The habitat survey visit was undertaken on 7th March, 2017. Weather conditions were ideal for survey on the day: dry and sunny.

Following reconnaissance, the Survey Area was divided into 9 sections reflecting the differing convenient compartments to describe the suitability of the Survey Area as Willow Tit habitat. It is of note that the habitat suitability assessment was carried out prior to the actual Willow Tit survey.

The results are presented as:

- A descriptive account of the survey visit to assess habitats and key species along the 9 compartments
- A map showing all Phase 1 related habitats
- Annotations to the map and a table showing the registrations of Willow Tit sightings, territories and potential nest sites.

3.3 Willow Tit Survey Methodology

The survey followed the recognised and tested RSPB methodology (Bellamy. P & Weir. J, RSPB unpublished) and that applied during the completion of similar surveys used in 2015 to survey the Dearne Natural Improvement Area (NIA) in Barnsley:

- Two visits are made across the Survey Area, in February and March, in good weather conditions.
- Areas of wet woodland and scrub are targeted preferentially.
- A line transect route is walked, with a stop every 100 metres to play a recording of Willow Tit calls and song, for two minutes.
- After playback, surveyors wait a further two minutes for any response to the recordings.
- For all responses, co-ordinates and surrounding habitat details are logged, along with number of birds, type (song or alarm) and duration of response.

4 Results

4.1 Willow Tit Targeted Habitat survey

General

The TPT forms the spine of the Survey Area. Alongside the hard surface of the trail are stretches of short grassland, but mainly stretches of woodland of up to about 40 year old largely self-set tree growth with areas of tall ruderal and bramble understory. There are some stretches of older trees, and especially on the banks of the old railway sloping down to the River Don are stands of older woodland with much dead wood.

The Wogden Foot LWS site generally consists of large areas of open grassland, tree and scrub habitat which in parts have an understory of vegetation and rotting wood.

Detail (please refer to map)

Compartment 1

A narrow ribbon of riparian woodland alongside the River Don. Goat Willow *Salix caprea* dominated, with frequent Sycamore *Acer pseudoplatanus* and occasional Birch *Betula* spp (Silver Birch *Betula pendula* obvious but *B. pubescens* and possible hybrids possibly present),

Alder *Alnus glutinosa* and Hawthorn *Crataegus monogyna*. Trees 5-10 metres tall with frequent holes and cavities. To the north there is a small quarry and feeder stream which is more open with some Rowan *Sorbus aucuparia*.

Willow Tit Suitability score: 4

Compartment 2

North side of TPT a narrow strip of dominant, even-aged 5 metre high young Birch with frequent Goat Willow and occasional dead wood, but dry and sparse understorey.

Willow Tit Suitability score; 2

The rest of compartment, i.e. that located to the south side of the TPT is the car-park, other hard-standing areas, some amenity grassland and small planted saplings, of Hazel *Corylus* spp, Beech *Fagus sylvatica*, Alder *Alnus* spp and Spindle *Euonymus europaea*.

Willow Tit Suitability score: 1

Compartment 3

North side of the TPT is a thin strip of dominant, even aged, up to 8 metres high Birch, with occasional Goat Willow and Alder. Some dead wood present and at the western end an area of thick Bramble undershrub.

Willow Tit Suitability score: 3

South side of the TPT has both a thin strip of tall, thin, Birch with occasional Sycamore, Ash *Fraxinus excelsior* and Goat Willow with a little undershrub, and a more westerly small strip of wetter Goat Willow and Birch over an understory of *Rhododendron ponticum*.

Willow Tit Suitability score: 2

Compartment 4

North side of the TPT to entrance of Wogden Foot LWS has two components – a riparian strip on the steep bank down to the river, and a separate dry strip adjacent to the TPT. Alongside the River Don is dominated by Goat Willow, 5 metres high, with more frequent Ash and occasional Sycamore. Many trees are multi-stemmed and there is abundant dead standing wood with a frequent Bramble understory. The parallel dry strip of Birch dominated scrub lies alongside the TPT.

Willow Tit Suitability score: 4

An area of scattered scrub lies to the north of the Survey Site on farmland. This was not surveyed but viewed from a distance and does not appear to be suitable habitat for Willow Tit.

Willow Tit Suitability score: 2

The south side of the compartment is a steep narrow hillside forming a north-facing cutting with thin Birch, Goat Willow, and Rowan over Heather *Calluna vulgaris* and Bilberry *Vaccinium myrtillus*. Very little dead wood.

Willow Tit Suitability score: 1

Compartments 5a and 5b

This section comprises most of the Wogden Foot LWS.

The LWS is comprised of large areas of unimproved neutral grassland, some with scattered small Hawthorn and Goat Willow scrub. The whole site is developed on made ground from the railway (e.g. ballast) and is known to support a range of calcicole herbs as well as those of neutral grasslands, however it is clearly unimproved as assigned as such.

The western end of the LWS, plus a wide strip alongside the steep south bank adjacent to the River Don, plus a large area at the western entrance to the reserve adjacent to the TPT is dominated by Goat Willow scrub/woodland up to 6 metres high with frequent Birch. On the riverbank are stands of mature Sycamore and some Alder, and going east more Hawthorn. There are some large mature Elders amongst the mix. The scrub patches and riverside have copious dead standing wood, and abundant understory including brambles and nettles *Urtica dioica*. These areas were assessed as prime habitat for Willow Tits during the habitat survey and were proved to support birds on the bird surveys.

Areas of the LWS are grazed resulting in some of the flat ground having a sparse undershrub layer (and therefore less suitable for Willow Tits) in contrast to the steep riverbank which was too steep for grazing.

Willow Tit Suitability score; riverside 5; mature patches on reserve 4

The south side of the TPT is moorland edge comprising a narrow strip of vegetation of rough grassland and occasional heather and Bilberry with scattered small Birch between the wall and track.

Willow Tit Suitability score: 1

Compartment 6

This area comprised a thick thicket of 5 metre high Hawthorn scrub with occasional taller Sycamore and Birch over bare ground and very occasional dead wood. The compartment slopes down to the River Don with a grassland paddock. On the slope are some mature Sycamore and more Bramble and rough grassland vegetation.

Willow Tit Suitability score: 2

South side of the TPT is a very narrow strip of rough grassland alongside the fence.

Willow Tit Suitability score: 1

Compartment 7

The area located between the eastern boundary of the Wogden Foot LWS to the bridge over the TPT is a narrow steep sided cutting with rough grassland, and mixed scattered trees of mainly Birch with occasional Goat Willow, Ash and Sycamore.

Willow Tit Suitability score: 1

On the south side of the TPT is a steep bank or cutting with scattered Birch, Oak *Quercus* spp., Sycamore and Goat Willow over Heather and Bilberry – akin to Oak-Birch woodland. Near

to the Wogden Beck is a triangular stone-walled enclosure of mature Sycamore over grass (grazed).

Willow Tit Suitability score: 1

Compartment 8

This section runs from the bridge over the TPT to the picnic area near to Whams Road and consists of mature woodland of 15-20 metre high Sycamore, Ash and Beech and Rowan on a steep bank over a sparse understory, with some Beech regeneration. There is very little dead wood.

Willow Tit Suitability score: 1

On the south side of the TPT are buildings (being renovated) and a garden area with a band of re-growing birch scrub alongside the trail and some mature Sycamore.

Willow Tit Suitability score: 1

Compartment 9

This section to the north of the TPT is amenity grassland with occasional isolated trees, notably Birch. Over a stone wall to the north of the grassland area is a triangular area of rough grassland and scrub including an old railway embankment with Heather. There are frequent Birch, Hawthorn Elder bushes with thick Bramble understory and very occasional dead wood.

Willow Tit Suitability score: 3

South side of the TPT is thin, dry, 5 metre high Birch on a steep grassy bank and a level strip of even-aged Birch alongside the TPT which is managed as 'the Magic Wood' for recreation.

Willow Tit Suitability score: 1

4.2 Willow Tit Survey Results

Two visits were completed to establish the status of Willow Tits within the survey area. These surveys were conducted on 9th March and 21st March 2017. Both days were sunny, dry and no more than moderate winds (Beaufort scale 3-4). Both days started around 0900 and through to 1600 and completed a double run (Dunford Bridge car park to Whams road and back) using the established methodology. Willow Tits are notoriously difficult species to survey and after nest building in mid-April can remain very quiet and hard to find. Therefore, any meaningful surveys need to be completed early in the year to find pairs or territories. Even so, birds can still be very variable in their responses to the call-back methodology.

During the first Willow Tit survey on 9th March two territories were located, both within the Wogden Foot LWS. A single bird responded to the playback song/call both on the way east late morning and coming back mid-afternoon at SE17856,02655. A pair responded to the playback song/call at SE17270,02640 around mid-afternoon and stayed within 50 metres of the area until we left after 15 minutes. So, two initial territories recorded some 600 metres apart and both in *Salix* woodland with bramble understory and both fallen and standing dead wood – ideal as nesting habitats.

The second survey, conducted on 21st March found a single bird singing at SE17311,02640

late morning and a slight delayed response to the playback song/call. A single birds was observed, again late morning, on the downslope to the River Don at SE17470,02645 and although playing the playback song/call the bird did not respond for some reason (possibly a female?). On this particular survey day the temperature throughout was no more than 5c so perhaps this subdued any response to the playback song/call.

From these survey results it appears that there are two territories and both within the Wogden Foot LWS. One territory around the SE17270,02640 to SE17311,02640 zone and the other SE17856,02655 to SE17470,02645 zone. It would be expected that territorial birds would move around and feed within each zone at this time of year but would form a smaller territorial zone around a nest site.

On both days, responses to the call-back methodology from Great Tit *Parus major*, Blue Tit *Poecile caerulea*, Long-tailed Tit *Aegithalos caudata*, and Robin *Erithacus rubecula* were recorded frequently. This involved birds coming to the observers, sometimes calling, and suggested that the playback methodology was effective and should have elicited Willow Tit responses when present. However, the second survey day was noticeably colder and responses from all species were less frequent. This second survey day was chosen as the best of the week and within a timescale of completing the survey, not quite ideal but at least we had one short Willow Tit response.

5 Other Significant Species Recorded

UKBAP Species

A number of UKBAP Red List and other important species were recorded during the survey and occurred within the survey area. These were territorial and probably breed within the site. Brown Hare *Lepus europaeus*, Common Frog *Rana temporaria*, Common Toad *Bufo bufo*, Dipper *Cinclus cinclus*, Song Thrush *Turdus philomelos*, Mistle Thrush *Turdus viscivorus*, Bullfinch *Pyrrhula pyrrhula* and Lesser Redpoll *Acanthis cabaret*.

Although not in the remit of this particular survey it was felt important to include these species.

6 Survey Conclusion

Two Willow Tit territories were confirmed, both within the Wogden Foot LWS and in Compartments 5a and 5b.

The habitat suitability survey found that parts (Compartments 1, 4 and 5a 5b) of the whole site were highly suitable for willow tit comprising large stands of Goat Willow scrub with abundant dead wood, together with a rough tangled understory of Bramble and Nettle. This was especially noticeable on the steep south bank of the River Don where the old railway line slopes down to the river, and also at the western end of the Wogden Foot LWS. The presence of the River Don clearly added to the dampness of the scrub along the embankment down to the river in contrast to the dry scrub habitat over the ballast substrate as is the case within Wodgen Foot LWS. Some of the large mature trees, particularly of Goat Willow and Elder were prime examples of ideal Willow Tit nesting habitat with many cracks, crevices and holes and standing dead wood (see photos Appendix B).

Although Compartments 1 and 4 were assessed as being very suitable for Willow Tits, none was found during the survey, although records for Compartment 1 and Compartment 6 have been made in the past (see above). The timing of those records, however, was different and may represent other hidden territories or areas used during or after the breeding season.

Willow Tits are known to be highly sedentary. In the Dearne Valley, Barnsley, territories can be spaced by as much as 600 metres or as little as 200 metres (Carr & Lunn, in press), so it is possible that the Survey Area could support more than the two territories found. It is clear that the contiguity of habitat, especially along the River Don, is an important component of the habitat suitability for this species within compartments 1, 4, 5a and 5b as mentioned above. The other compartments are less ideal and in particular with minimal dead wood and lack of understory.

7 Recommendations and mitigation

The proposed undergrounding works could affect the Willow Tit territories identified in the survey. Willow Tit breed from April through to the end of June (allowing for any repeat nests due to predation or other failure) and any work during this period could destroy a nest site. It is presumed that during any excavations a corridor of habitat would be lost for a period of time.

Works, provided on the plans provided, include the establishment of a construction laydown area, and permanent location for the proposed substation. This should avoid the western Willow Tit territory in particular, but also any riverside scrub. This could mean establishing the construction laydown area on the grassland and pond to the east, and this would be preferable as these features can be more easily re-created in advance or after the works.

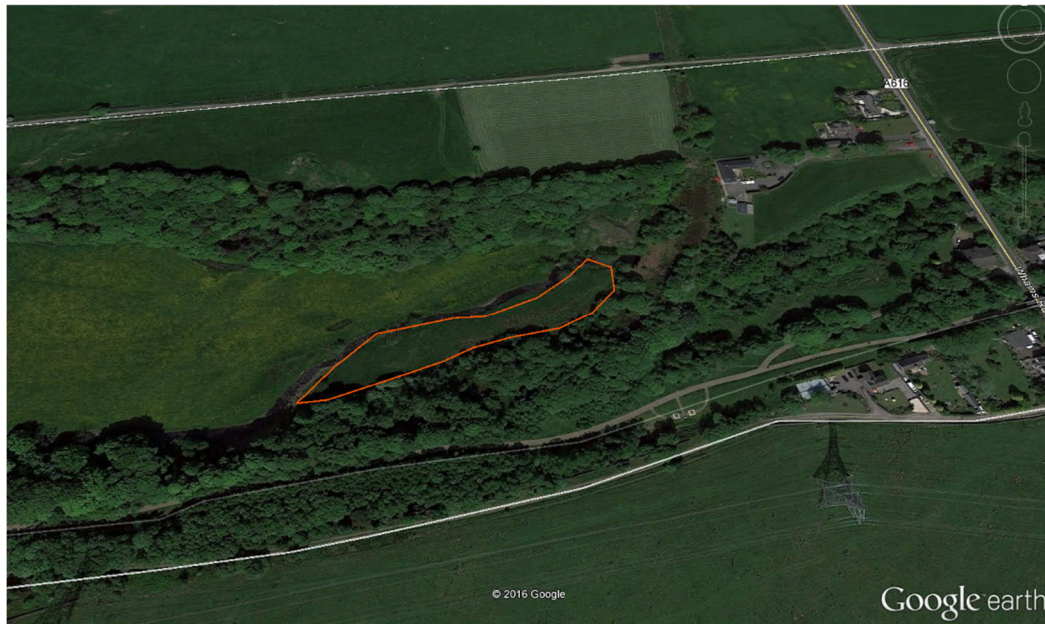
Willow Tit habitats could be improved by not interfering with those compartments scoring 4 and 5 in the survey as Willow Tit habitat suitability (compartments 1, 4, and 5a 5b) and leaving them to develop, but improving the management of other compartments to avoid the removal of dead wood, establishing a thicker understorey of Bramble and rough herbage in parts and thinning of dry stands of Birch in particular. Further planting of Goat Willow and Elder to create more habitat would assist, although the integration of this objective with other objectives (especially of the LWS) such as grassland management will need to be reconciled.

It was considered that to provide additional habitat for Willow Tits on or adjoining the Survey Area then perhaps the present grassland valley either side of where Wogden Clough meets the River Don (compartment 6; as show approximately in the image below) could be planted with Goat Willow, Alder and Elder.



Another area identified locally which is low lying, and as such would be suitable to enhance for willow tit through willow and elder planting would be the narrow strip of land between the

disused railway and the River Don (compartment 9; as shown in the image below) at SE192028. Both of these are outside the Wogden Foot LWS boundary.

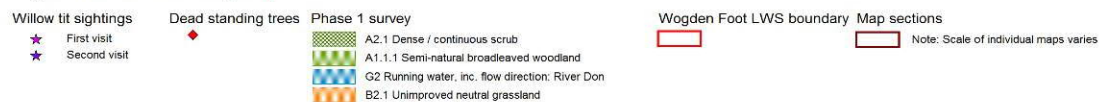
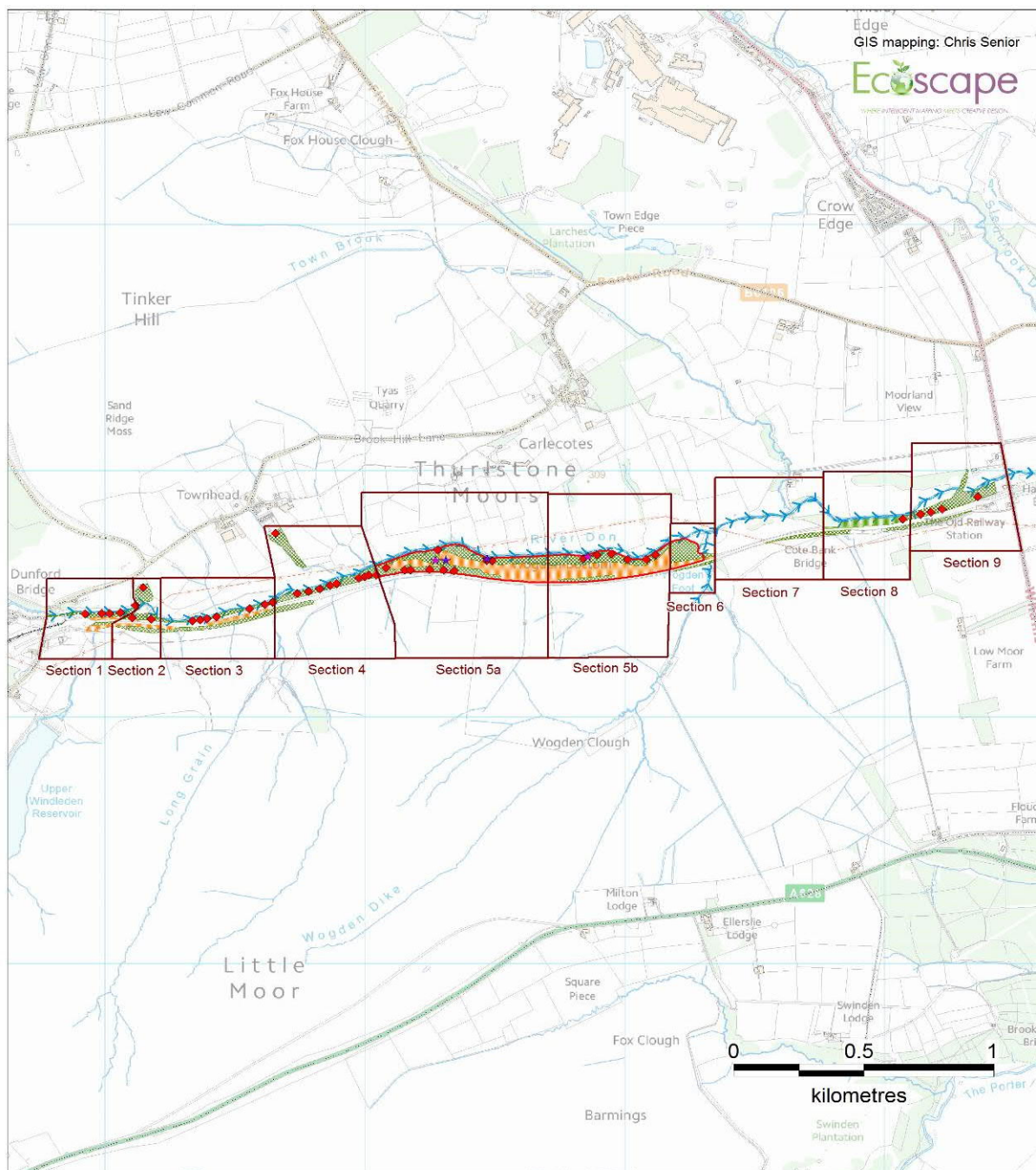


As an addition, the pond in particular supported significant populations of Common Frog and Common Toad at the time of survey, so an alternate breeding pond should be created in advance of any works at a safe location should this be decided as the location of any works to provide habitats for amphibians. After the works are complete, further ponds could be established to enhance this habitat on site, as well as creating the conditions for natural regeneration of unimproved grassland which had developed on made ground. It is likely that the calcicole species recorded would benefit from reduced competition during the pioneer phase of establishment. If any riverside scrub is to be removed as part of the connection of the powerline, then this should try and avoid the Willow Tit territories, be as minimal as possible, and be re-instated after works are completed planting Goat Willow and Elder.

Appendix A. Survey Area Map

Willow tit and Phase 1 habitat Survey Dunford Bridge: Overview of map sections (individual maps follow)

Key to this and following maps:



Appendix B. Photos of the survey site



Wogden Foot habitat that held a Willow Tit territory (compartment 5a)



Wogden Foot riverside habitat that held a Willow Tit territory (compartment 5b)



Typical dead tree as mapped and possible future Willow Tit nest site

Appendix C 2019 Willow Tit Survey

A re-survey of the Trans-Pennine Trail at Dunford Bridge, Penistone, Yorkshire; defined below as the Survey Area was undertaken in 2019 to establish the continued presence of Willow Tit (*Poecile montanus kleinschmidtii*). The survey was conducted by Geoff Carr Ecology on behalf of National Grid in relation to the Proposed Peak District Visual Impact Provision (VIP) Scheme.

Using the exact same methodology and the same survey route as in 2017 three survey days were completed to establish if Willow Tit are still territorial and therefore possibly breeding within the Survey Area. Surveys were completed on 27th February and 20th March on fine weather days with little or no wind.

On 27th February it was a clear, sunny day but quite cold and although some bird species were singing no Willow Tit were recorded.

The second survey was conducted on 20th March, in partially overcast conditions with a light westerly wind and warm enough to encourage several overwintering butterflies into flight. A number of various bird species were singing, and the day looked encouraging but no evidence of Willow Tit was recorded.

Following the completion of the two survey visits where no willow tit were recorded, a decision was made to undertake a third survey visit based upon the knowledge of the surveyors relating to the records of willow tit in other surveys areas in the Borough. Based upon this local knowledge and understanding of the ecology of this species, the timing of the detection of willow tit territories in Barnsley was considered to be potentially slightly later in spring 2019. Therefore, a further survey visit was conducted on 8th April which was an overcast day with a cool, light north-east wind (therefore no survey limitation encountered). A pair of Willow Tit were recorded during the third survey visit responding to the song/call playback in a location alongside the Trans-Pennine Trail (TPT) and just west of the entrance into the Wogden Foot Local Wildlife Site at OS grid reference SE16462 02400. The birds spent a few minutes singing or calling back to the playback before moving off west along the TPT. No other Willow Tit were recorded on 8th April.

This pair was located in optimal ~~ideal~~ Willow Tit habitat with an abundance of dead wood and bramble understory within Compartment 4 and again, as in 2017, given a habitat score of 4. (see habitat image below).

The willow tit pair was located within 200 metres of a territory recorded in 2017 around the SE17270,02640 to SE17311,02640 zone and may represent the same pair or at least one of the 2017 birds. The area within which the pair was recorded is considered to be the most optimal habitat within the entire Survey Area.

A number of other territorial species were recorded during the three 2019 survey visits from within the survey area. In summary these were - Tawny Owl (1 at SE178026), Song Thrush (5), Mistle Thrush (2), Dipper (2), Grey Wagtail, Long-tailed Tit (3), Treecreeper (2), Nuthatch (2), Bullfinch (2) and Lesser Redpoll (2). Furthermore, Red Kite, Raven (2), several Chiffchaff and Willow Warbler were recorded on the third survey visit but were either passing through or on migration. Great Tits and Blue Tits appeared low in numbers compared with the numbers recorded during the 2017 survey.



Approximate location at SE16462 02400 - pair of Willow Tit recorded on Survey Visit 3 (8th April 2019).



Habitat present at SE16462 02400

Geoff Carr and Jeff Lunn
Chartered Environmentalists
23/04/19

AECOM Limited
5th Floor, 2 City Walk
Leeds LS11 9AR
United Kingdom

T: +44 (0)113 391 6800
aecom.com