

FIVE MILE LANE IMPROVEMENTS

BREEDING BIRD ASSESSMENT 2016

CONFIDENTIAL

AUGUST 2016

**FIVE MILE LANE
IMPROVEMENTS**
BREEDING BIRD ASSESSMENT
Vale of Glamorgan

Type of document (version)
Confidential

Project no: 70021703
Date: August 2016

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QUALITY MANAGEMENT

ISSUE/REVISION	FIRST ISSUE	REVISION 1	REVISION 2	REVISION 3
Remarks				
Date	16 th August 2016			
Prepared by	Jean Hamilton (TACP)			
Signature				
Checked by	Marc Thomas			
Signature				
Authorised by	Marc Thomas			
Signature				
Project number	70021703			
Report number				
File reference				

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A P P E N D I X A BREEDING BIRD SURVEY REPORT

APPENDIX A-1 BREEDING BIRD SURVEY REPORT

A P P E N D I X B FIGURE 1

1 INTRODUCTION

1.1 BACKGROUND AND PURPOSE OF THIS REPORT

The Vale of Glamorgan submitted a planning application for improvements at Five Mile Lane, Barry (Planning Ref 2016/00305/RG3), which included an Environmental Statement outlining the potential environmental impacts of the Scheme and the mitigation measures proposed to minimise such impacts. A series of ecological surveys was carried out in 2014 in order to inform this assessment, but due to time constraints, a breeding bird survey was not carried out at that time. In order to adequately assess the impacts of the Scheme on breeding birds, a breeding bird survey was carried out at the appropriate time of the year in 2014.

This report outlines the main findings of the survey, assesses the potential impacts of the Scheme on the bird species identified and the appropriateness of the mitigation already designed for breeding birds (as outlined in the ES). Additional mitigation is proposed for certain species.

2 PREVIOUS SURVEY INFORMATION

SEWBREC DATA

The SEWBReC data search results supplied contained 962 avian records. Most were flight records of species of low conservation value which are both common and widespread in the local area. Notable records with potential relevance to the scheme included;

- Five records collected between 2009 and 2014 of Yellowhammer in a 1km square containing the village of Moulton;
- Four records collected between 2009 and 2014 of Skylark;
- A single record from 2014 of Northern Wheatear; and
- Nine records collected between 2009 and 2014 of Northern Lapwing in the general areas around Moulton, with five confirmed breeding records in the same period.

BREEDING BIRD SURVEYS CONDUCTED BY SOLTYS BREWSTER IN 2008

The bird species recorded within the study area during the 2008 breeding bird surveys conducted by Soltys-Brewster and other surveys carried out for the Scheme are listed in Table 1. The conservation status of each species is also presented (including BOCC Status, EU Birds Directive Annex 1, WCA Schedule 1, UK BAP, NERC Section 42 and VoG BAP). Bird species of conservation concern (i.e. those that are Red-listed and/or are listed under Annex I of EU Birds Directive / Schedule I of the WCA / priority species of UK BAP/Section 42/VoG) are highlighted in bold and discussed below.

Incidental records of several of the species listed in Table 1 were noted during the 2014 surveys conducted by TACP, including the red-listed species yellowhammer and skylark.

Table 1: Bird Species Recorded within the survey corridor in 2008 surveys and their Conservation/Protection Status

Species	BOCC Status	EU Birds Directive Annex I	WCA Schedule I	UK BAP Species	Section 42 Species	VoG Priority Species
Blackbird (<i>Turdus merula</i>)	Green	No	No	No	No	No
Blue tit (<i>Cyanistes caeruleus</i>)	Green	No	No	No	No	No
Buzzard (<i>Buteo buteo</i>)	Green	No	No	No	No	No
Carrion crow (<i>Corvus corone</i>)	Green	No	No	No	No	No
Chiffchaff (<i>Phylloscopus collybita</i>)	Green	No	No	No	No	No
Collared dove (<i>Streptopelia decaocto</i>)	Green	No	No	No	No	No
Coal tit (<i>Parus ater</i>)	Green	No	No	No	No	No
Dunnock (<i>Prunella modularis</i>)	Amber	No	No	Yes	Yes	No
Goldfinch (<i>Carduelis carduelis</i>)	Green	No	No	No	No	No
Great tit (<i>Parus major</i>)	Green	No	No	No	No	No
Herring gull (<i>Larus argentatus</i>)	Red	No	No	Yes	Yes	No
House sparrow (<i>Passer domesticus</i>)	Red	No	No	Yes	Yes	No
Jackdaw (<i>Corvus monedula</i>)	Green	No	No	No	No	No
Kingfisher (<i>Alcedo atthis</i>)	Amber	Yes	Yes	No	No	No
Linnet (<i>Carduelis cannabina</i>)	Red	No	No	Yes	Yes	No
Nuthatch (<i>Sitta europaea</i>)	Green	No	No	No	No	No
Meadow pipit (<i>Anthus pratensis</i>)	Amber	No	No	No	No	No
Pheasant (<i>Phasianus colchicus</i>)	N/A	No	No	No	No	No
Robin (<i>Erithacus rubecula</i>)	Green	No	No	No	No	No
Skylark (<i>Alauda arvensis</i>)	Red	No	No	Yes	Yes	Yes
Song thrush (<i>Turdus philomelos</i>)	Red	No	No	Yes	Yes	Yes
Starling (<i>Sturnus vulgaris</i>)	Red	No	No	Yes	Yes	No
Swallow (<i>Hirundo rustica</i>)	Amber	No	No	No	No	No
Swift (<i>Apus apus</i>)	Amber	No	No	No	No	No
Tawny owl (<i>Strix aluco</i>)	Green	No	No	No	No	No
Wood pigeon (<i>Columba palumbus</i>)	Green	No	No	No	No	No
Whitethroat (<i>Sylvia communis</i>)	Amber	No	No	No	No	No
Yellowhammer (<i>Emberiza citrinella</i>)	Red	No	No	Yes	No	No

3 METHODS USED DURING 2016 SURVEYS

The Breeding Bird Survey was undertaken in 2016 and a modified version of the 'Common Bird Census' methodology (Bibby et al, 2000) was employed. This method was chosen as it records specific avian activity on site, from which the probability of birds breeding can be meaningfully assessed, and specific breeding territories for individual pairs can be estimated if required. This can assist considerably with identifying particularly sensitive areas of the site, and also enables more precise recommendations for management work to be made if appropriate.

A total of four site visits were conducted between April and June 2016, including a reconnaissance visit conducted in April.

Full details of the methods used in the surveys are provided in the Breeding Bird Survey Report, provided as Appendix A to this document.

4 SUMMARY OF THE RESULTS OF 2016 BREEDING BIRD SURVEYS

Full details of the results of the 2016 breeding bird surveys are provided in Appendix A and are summarised below.

A total of 44 bird species were identified during the course of the survey. On the basis of observations made, 19 species were confirmed to be breeding within the study area, with an additional 14 species probably breeding (but where breeding could not be confirmed), and a further 8 species were seen exhibiting behaviours suggesting possible breeding. Whilst the majority of the bird species using the site for breeding are common and widespread in the local area, some were of notable conservation significance.

Maps showing the locations of key species exhibiting breeding behaviour and an approximate indication of the areas likely to be used for breeding are provided in Figure 1 in Appendix B.

4.1 SCHEDULE 1 BIRDS

Birds on Schedule 1 of the Wildlife and Countryside Act require special attention as they are afforded a greater degree of attention than other bird species, and there is a greater burden of proof required to prove that any reckless disturbance of nesting individuals could not have been reasonably avoided.

No Schedule 1 birds were noted during the breeding bird survey.

4.2 RED LISTED BIRDS

Birds on the UK Red List include species that are globally threatened and / or where there has been a long term historical population decline or range contraction within the UK. See Eaton et al (2009) for full background and definitions in respect of avian Red Listing criteria.

Ten Red Listed species were recorded during the survey: Grey Wagtail, Herring Gull, House Sparrow, Starling, Linnet, Northern Lapwing, Skylark, Song Thrush, Spotted Flycatcher, and Yellowhammer. Of these, Northern Lapwing, Skylark, Song Thrush and Yellowhammer were confirmed to be breeding within the study area. Linnet is probably breeding in the northern part of the study area, potentially within the footprint of the Scheme. Starling is probably breeding in at least one location (Blackland Farm) and probably other locations within the study area too. Starlings are most likely to be nesting within buildings and, therefore, outside the footprint of the scheme.

Most of the species recorded in the 2016 surveys had previously been recorded within the study area in 2008 surveys conducted by Soltys Brewster. Red listed species not recorded in the 2008 surveys but recorded in 2016 were Northern Lapwing, Grey Wagtail and Spotted Flycatcher.

4.3 AMBER LISTED BIRDS

Birds on the UK Amber List include species that have an unfavourable conservation status in Europe, and / or where there has been a long term historical population decline, which is now recovering. Other criteria for inclusion on the Amber List include a moderate decline in UK population size, or range contraction, or where the UK breeding or non-breeding population is significant at a European scale. See Eaton et al (2009) for full background and definitions in respect of avian Amber Listing criteria.

Nine Amber Listed species were recorded during the survey: Barn Swallow, Dunnock, House Martin, Lesser Black-Backed Gull, Mallard, Meadow Pipit, Common Swift, Whitethroat and Willow Warbler. Of these, Dunnock, Whitethroat and Willow Warbler were confirmed to be breeding both within the study area and within hedgerows within the footprint of the Scheme. Barn Swallow is probably breeding within the study area, most likely in buildings outside the footprint of the Scheme. Meadow Pipit is probably breeding within the footprint of the scheme within grassland and arable crop areas.

Of the Amber listed species recorded during the 2016 survey, four species had not been previously recorded within the study area: House Martin, Lesser Black-Backed Gull, Mallard and Willow Warbler.

4.4 SECTION 42 SPECIES

The following breeding birds listed, as species of principal species of importance for conservation of biological diversity in Wales, were found within the study area; Dunnock, House Sparrow, Northern Lapwing, Skylark, Song Thrush, and Yellow Hammer with Linnet and Starling also listed, and probably breeding.

4.5 MAIN AREAS OF AVIAN ACTIVITY

Although most parts of the site appeared to be used by foraging birds, and many parts by breeding birds, there were areas that appeared to be used more frequently than others. The most frequently used habitats by breeding birds were the woodland areas either side of the existing road at the south part of the site, hedgerows throughout the site, and agricultural fields and grass leys on either side of the existing road, north of Sutton Fach Farm.

To address the request for additional information on ground-nesting birds and Yellowhammer from the Local Planning Authority Ecologist, four maps have been provided with this report showing the general areas where these species were seen exhibiting territorial behaviour (Lapwing Skylark and Yellowhammer territories in Figure 1).

5 VALUATION OF BIRD POPULATION WITHIN THE STUDY AREA

Bird species recorded within the Study Area during the 2008 surveys were given a geographical valuation, based in CIEEM guidance (see Table 2). The valuations of these species has not changed due to the 2016 survey results.

The valuation of bird species recorded in the 2016 and not recorded in 2008 is provided in Table 3.

Table 2: Birds Recorded within the Study Area in 2008 Surveys, Evaluation, and Selection as Key Ecological Receptors in Environmental Statement

Ecological Receptor	Valuation of Receptor	Selection as Key Ecological Receptor Y/N
Skylark	Skylark is a Priority species under the Vale of Glamorgan BAP. As skylark regularly occur within the study area in large numbers, the population within the study area is considered to be of County importance.	Yes
Song thrush	This species was also noted within the study area and is a Vale of Glamorgan BAP Priority species. As no information is available on the numbers of song thrush within the study area, a precautionary approach is taken in assigning it a value of County importance.	Yes
Yellowhammer	Yellowhammer is a red-listed species which is also listed as a Priority species under the UK BAP. This species was recorded on a number of occasions during surveys conducted for the Scheme, and so is considered to have a local stronghold in the area. This population is therefore considered to be of County importance.	Yes
Kingfisher	Kingfisher is listed on Schedule 1 of the WCA and is also an EU Birds Directive Annex I species. Given its conservation and legal status, the presence of even one individual within the Scheme corridor is considered to be of County importance.	Yes
Other breeding birds	Other breeding birds recorded within the study area are either common and widespread species in the UK, or occur in low numbers within the study area. They area therefore considered to be of Local importance.	Yes

Table 3: Additional Bird Species Recorded within the Study Area in 2016 Surveys, Evaluation, and Selection as Key Ecological Receptors

Ecological Receptor	Valuation of Receptor	Selection as Key Ecological Receptor Y/N
Northern Lapwing	This species is a Priority species under the Vale of Glamorgan BAP and is red-listed in Wales. Lapwing were recorded displaying breeding behaviour in a field approximately 200m from the Scheme. There are also historical records of large wintering populations within a 1km radius of the Scheme. This species is therefore considered to be of County Importance for both breeding and wintering populations.	Yes
Grey Wagtail	Grey wagtail is red-listed in Wales but is not a UK BAP, Section 42 or Schedule 1 species. This species is therefore considered to be of Local Importance.	Yes
Spotted Flycatcher	The spotted flycatcher is red-listed in Wales but is not a UK BAP, Section 42 or Schedule 1 species. This species is therefore considered to be of Local Importance.	Yes
Amber-listed birds	House Martin, Lesser Black-Backed Gull, Mallard and Willow Warbler were all recorded within the study area. These species are all amber-listed in Wales but are not UK BAP, Section 42 or Schedule 1 species. These species are therefore considered to be of Local Importance.	Yes

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IMPACT CHARACTERISATION

The potential impacts of the Scheme on breeding birds are set out in Table 4 (Construction Phase impacts) and Table 5 (Operation Phase impacts). These tables are taken from the ES for the Scheme and any changes as a result of the 2016 surveys are highlighted in red.

Table 4: Construction Phase Impacts on Breeding Birds

Key Ecological Receptor	Nature Conservation Value	Description of Impact	Magnitude of Impact	Significance of Impact
Skylark	County Importance	Damage or destruction of active nests/eggs/dependant young during site clearance/construction works within arable fields/field margins.	Medium Adverse	Moderate Adverse
		Some small areas of arable fields will be lost under the footprint of the Scheme. Arable fields and their associated field margins represent important feeding and breeding habitat for this species. NOTE: The surrounding area contains abundant arable fields suitable for this species, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse
Northern Lapwing	County Importance	Damage or destruction of active nests/eggs/dependant young during site clearance/construction works within arable fields.	Medium Adverse	Moderate Adverse
		Disturbance to wintering lapwing; though no wintering birds survey has been carried out, there are historical records of large populations of wintering lapwing within a 1km radius of the Scheme. In the absence of further survey information, this impact is	Medium Adverse	Moderate Adverse
		Some small areas of arable fields will be lost under the footprint of the Scheme. Arable fields and their associated field margins represent important feeding and breeding habitat for this species. Note: the surrounding area contains abundant arable fields suitable for this species, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse
Song thrush	County Importance	Damage or destruction of active nests/eggs/dependant young during site clearance works in areas with thick vegetation.	Medium Adverse	Moderate Adverse
		Loss of breeding habitat (hedgerows, woodland and scrub) during site clearance works, including foraging habitat within territories for breeding pairs. NOTE: Only very small areas of suitable breeding bird habitat will be lost under the footprint of the road, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse
Yellowhammer	County Importance	Damage or destruction of active nests/eggs/dependant young during site clearance works in areas with thick vegetation.	Medium Adverse	Moderate Adverse

Key Ecological Receptor	Nature Conservation Value	Description of Impact	Magnitude of Impact	Significance of Impact
		Loss of breeding habitat (hedgerows) during site clearance works, including foraging habitat within territories for breeding pairs. NOTE: Only very small areas of suitable breeding bird habitat will be lost under the footprint of the road, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse
		Some small areas of arable fields will be lost under the footprint of the Scheme. Arable fields and their associated field margins represent important feeding habitat for this species. NOTE: The surrounding area contains abundant arable fields suitable for this species, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse
Kingfisher	County Importance	Pollution of the River Waycock may result in indirect impacts through fish kills which would reduce the food resource for kingfisher.	Low Adverse	Slight Adverse
		Construction works in the vicinity of the River Waycock may cause disturbance to kingfisher.	Low Adverse	Slight Adverse
Other breeding birds	Local Importance	Damage or destruction of active nests/eggs/dependant young during site clearance works.	Low Adverse	Slight Adverse
		Loss of breeding bird habitat during site clearance works, including foraging habitat within territories for breeding pairs.	Low Adverse	Slight Adverse
		Disturbance of birds during construction works will deter birds from nesting near the site. However, there is abundant suitable habitat (in the form of hedgerows, woodland and scrub) in the surrounding area.	Low Adverse	Slight Adverse

Table 5: Operation Phase Impacts on Breeding Birds

Key Ecological Receptor	Nature Conservation Value	Description of Impact	Magnitude of Impact	Significance of Impact
Skylark	County Importance	Slight reduction in area of arable field habitat available for feeding. NOTE: The surrounding area contains abundant arable fields suitable for this species, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse

Key Ecological Receptor	Nature Conservation Value	Description of Impact	Magnitude of Impact	Significance of Impact
Northern Lapwing	County Importance	Slight reduction in area of arable field habitat available for feeding. NOTE: The surrounding area contains abundant arable fields suitable for this species, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse
		Increase in noise as a result of the Scheme may deter birds from nesting in the area.	Low Adverse	Slight Adverse
Song thrush	County Importance	Planting scheme will result in a net increase in the total lengths of hedgerows (an important feeding and breeding habitat for this species) within the study area.	Low Beneficial	Slight Beneficial
Yellowhammer	County Importance	Slight reduction in area of arable field habitat available for feeding. NOTE: The surrounding area contains abundant arable fields suitable for this species, and this has been taken into account in determining the severity of this impact.	Low Adverse	Slight Adverse
		Planting scheme will result in a net increase in the total lengths of hedgerows (an important breeding habitat for this species) within the study area.	Low Beneficial	Slight Beneficial
Kingfisher	County Importance	N/A	N/A	N/A
Other breeding birds	Local Importance	Planting scheme will result in a net increase in the total lengths of hedgerows (an important breeding habitat for breeding birds) within the study area.	Low Beneficial	Slight Beneficial

7 MITIGATION

The mitigation measures already designed for the Scheme are considered to be generally suitable for all species newly recorded in 2016. Table 6 shows the mitigation measures proposed for the Scheme; any additional measures proposed for newly-recorded species such as Lapwing are highlighted in red. The predicted residual impacts of the Scheme, after mitigation, are also provided.

Table 6: Mitigation for Breeding Birds, and Residual Impacts

POTENTIAL IMPACTS	NATURE OF IMPACT	SIGNIFICANCE (WITHOUT MITIGATION)	MITIGATION MEASURES	RESIDUAL IMPACT
Skylark	Damage or destruction of active nests/eggs/dependant young during site clearance/construction works within arable fields/field margins.	Moderate Adverse	Where possible, vegetation clearance will take place outside the nesting season for skylark. If vegetation clearance is to commence in the period April to August, all areas of suitable skylark habitat will be thoroughly searched for the presence of nests prior to clearance. If nests are found, these will be marked off and prevented from harm until chicks have fledged.	Neutral
	Some small areas of arable fields will be lost, an important feeding and breeding habitat.	Slight Adverse	None proposed	Slight Adverse
Northern lapwing	Damage or destruction of active nests/eggs/dependant young during site clearance/construction works within arable fields/field margins.	Moderate Adverse	Where possible, vegetation clearance will take place outside the nesting season for lapwing. If vegetation clearance is to commence in the period April to August, all areas of suitable skylark habitat will be thoroughly searched for the presence of nests prior to clearance. If nests are found, these will be marked off and prevented from harm until chicks have fledged. An appropriate buffer zone will be kept around nesting areas in order to prevent disturbance.	Neutral

POTENTIAL IMPACTS	NATURE OF IMPACT	SIGNIFICANCE (WITHOUT MITIGATION)	MITIGATION MEASURES	RESIDUAL IMPACT
	Disturbance to wintering Lapwing during Construction phase.	Moderate Adverse	Pre-construction surveys will be carried out to determine the presence of lapwing within or near the Scheme boundary prior to the commencement of works, and the Environmental Clerk of Works will carry out regular checks. If populations of wintering lapwing are discovered near the Scheme, appropriate buffer zones will be put around such areas until such time as lapwing have left their wintering grounds.	Neutral
	Noise disturbance during Operation phase	Low Adverse	Noise reduction measures have been designed for the Scheme; provided these measures are properly implemented, it is not expected that noise levels in the area will be increased.	Neutral
	Some small areas of arable fields will be lost, an important feeding and breeding habitat.	Slight Adverse	It is proposed to create 4.7ha of wildflower meadow as part of the Scheme. This habitat will provide alternative foraging habitat for lapwing and will be managed to encourage lapwing. It is likely that, over time, this habitat may be used by lapwing for foraging but due to the proximity to the road it is unlikely that it would be used for breeding; however, there are large areas of suitable lowland lapwing habitat (arable fields) in the surrounding area.	Slight Adverse

POTENTIAL IMPACTS	NATURE OF IMPACT	SIGNIFICANCE (WITHOUT MITIGATION)	MITIGATION MEASURES	RESIDUAL IMPACT
Song thrush	Damage or destruction of active nests/eggs/dependant young during site clearance works in areas with thick vegetation.	Moderate Adverse	Where possible, vegetation clearance will take place outside the nesting season for song thrush. If vegetation clearance is to commence in the period April to August, all areas of suitable skylark habitat will be thoroughly searched for the presence of nests prior to clearance. If nests are found, these will be marked off and prevented from harm until chicks have fledged.	Neutral
	Loss of breeding habitat (hedgerows, woodland and scrub) during site clearance works, including foraging habitat within territories for breeding pairs.	Slight Adverse	Additional hedges and woodland will be planted which may provide suitable habitat	Slight Beneficial
Yellowhammer	Damage or destruction of active nests/eggs/dependant young during site clearance works in areas with thick vegetation.	Moderate Adverse	Where possible, vegetation clearance will take place outside the bird nesting season. If vegetation clearance is to commence in the period April to August, all areas of suitable skylark habitat will be thoroughly searched for the presence of nests prior to clearance. If nests are found, these will be marked off and prevented from harm until chicks have fledged.	Neutral
	Loss of breeding habitat (hedgerows) during site clearance works, including foraging habitat within territories for breeding pairs.	Slight Adverse	More hedgerow will be planted, giving more potential nesting habitat	Slight Beneficial
	Some small areas of arable fields will be lost, an important feeding habitat.	Slight Adverse	None proposed	Slight Adverse
Kingfisher and Grey Wagtail	Pollution of the River Waycock may result in indirect impacts through fish kills which would reduce the food resource for kingfisher and Grey Wagtail.	Slight Adverse	Attenuation ponds help prevent pollutants entering water courses	Slight Beneficial

POTENTIAL IMPACTS	NATURE OF IMPACT	SIGNIFICANCE (WITHOUT MITIGATION)	MITIGATION MEASURES	RESIDUAL IMPACT
	Construction works in the vicinity of the River Waycock may cause disturbance to kingfisher and Grey Wagtail.	Slight Adverse	None proposed	Slight Adverse
Other breeding birds	Damage or destruction of active nests/eggs/dependant young during site clearance works.	Slight Adverse	Where possible, vegetation clearance will take place outside the bird nesting season. If vegetation clearance is to commence in the period April to August, all areas of suitable skylark habitat will be thoroughly searched for the presence of nests prior to clearance. If nests are found, these will be marked off and prevented from harm until chicks have fledged.	Neutral
	Loss of breeding bird habitat during site clearance works, including foraging habitat within territories for breeding pairs.	Slight Adverse	Some new habitat is being created which might provide suitable nesting sites	Slight Beneficial
	Disturbance of birds during construction works will deter birds from nesting near the site.	Slight Adverse	None proposed. However, there is abundant suitable habitat (in the form of hedgerows, woodland and scrub) in the surrounding area.	Slight Adverse

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CONCLUSIONS

The 2016 breeding birds survey recorded many of the same species recorded in the 2008 surveys, but there were several notable new species recorded, the most significant of which is Northern Lapwing, a Section 42 and Vale of Glamorgan Priority Species.

The impacts of the Scheme on newly-recorded species have been assessed. Impacts on species already recorded within the study area have not changed since the writing of the Environmental Statement.

The mitigation measures already designed for the Scheme are generally appropriate for all newly-recorded species, but some additional measures are proposed in order to mitigate for impacts, particularly for Northern Lapwing.

Provided the mitigation measures proposed for the Scheme are properly implemented, the residual impacts of the Scheme on breeding birds would be no greater than Slight Adverse for any species.

Appendix A

BREEDING BIRD SURVEY REPORT

APPENDIX A-1

BREEDING BIRD SURVEY REPORT

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BREEDING BIRD SURVEY, FIVE MILE LANE, BARRY, VALE OF GLAMORGAN. ISSUE 3.0

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Report Date	12 th August 2016	
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Editorial History

Activity	Date	Name
Draft 1	10 th July 2016	Denis Jackson
Issue 1	12 th July 2016	Denis Jackson / Typographical corrections
Draft 2	26 th July 2016	Denis Jackson / inclusion of client comments
Issue 2	11 th August 2016	Denis Jackson
Issue 3	12 th August 2016	Denis Jackson / Further amendments requested by client

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1 SUMMARY

A breeding bird assessment was undertaken of a proposed road scheme along and either side of a section of Five Mile Lane, north of Barry, in the Vale of Glamorgan, to determine the bird species present, which species are (or may be) breeding, and to identify important areas and habitat types for birds on site. Subsequent to this evaluation, an assessment was made of the likely impact as a result of the Scheme.

Most avian species found to be using, or breeding on the site were common and widespread in the local area, but, within arable and grassland habitats, and within hedgerows throughout the site, several species of conservation concern, including Lapwing, Linnet, Yellowhammer and Whitethroat were all found to be breeding.

To avoid committing offences in respect of breeding birds, timing of certain works, in particular, vegetation removal, to avoid the breeding season will be required. Mitigation/compensation will be required for the loss of woodland, arable land, grass leys and hedgerows.

2 Introduction

Wyedean Ecology was approached by Dr Tim Rich, on behalf of TACP Ltd., to undertake a 'standard survey for breeding birds' along a section of roadway and adjoining habitats, forming part of the Welsh Government's Five Mile Lane Improvement Scheme (hereafter, 'the Scheme').

This report details the findings of the survey undertaken, provides outline assessments of the potential impacts of the scheme implementation on breeding birds, and suggests potential mitigation options which could be explored in more detail as planning progresses.

3 ESSENTIAL AVIAN ECOLOGY

Most British avian species breed during the spring and summer months, between April and August, although some, such as pigeons, and doves, will frequently breed at all times of year, as they are not dependent on small, soft-bodied invertebrates to provide food for their chicks. Some other species, such as Barn Owl have also been recorded breeding in the winter months, in years when winters have been mild, and small mammal prey plentiful, although such breeding attempts are unusual, with chicks frequently failing to fledge. The breeding season can be extended for most species if the weather is mild, and food plentiful.

Contrary to common belief, whilst some bird species, such as crows and rooks, nest high in trees, often more than 10m high, the majority of British breeding birds will nest within 2m of the ground (or on the ground) within dense scrub or within holes and other natural and manmade cavities in rocks and walls.

Most bird species take considerably less than 60 days from egg-laying to chick fledging, whilst others, such as Barn Owl, can take more than 90 days. Many, but not all, British species will make multiple breeding attempts if environmental conditions and food availability allow.

3.1 BREEDING BIRDS

In Britain, all naturally occurring avian species are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). The legislation protects all birds, their nests and eggs, and it is an offence to:

- Intentionally kill, injure or take a wild bird;
- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built; and
- Intentionally take or destroy the egg of any wild bird.

In addition, birds listed on Schedule 1 of the Act, such as the Red Kite (*Milvus milvus*), are afforded further protection, and it is an offence to:

- Intentionally or recklessly disturb the bird whilst nest building or while at (or near) a nest with eggs or young; and
- Disturb the dependant young of such a bird.

4 METHODOLOGY

4.1 GENERAL

All field survey work was undertaken by Mr Denis Jackson DipEnvSci MSc FRSB MCIEEM Mem.MBA. Mr Jackson has more than 20 years bird survey experience, with twelve years professional ecological practice. Mr Jackson is a licenced bird ringer/trainer and holds survey and/or disturbance licences for Bats, Dormouse, Great Crested Newt, White-Clawed Crayfish,

Barn Owl, Red Kite and Goshawk

4.2 DESK STUDY

A data search had been previously undertaken by TACP, and the avian data was extracted and supplied to us. We were also provided with an extract from a Breeding Bird Survey undertaken by Soltys Brewster in 2008 and the proposed scheme mitigation plans, all of which were reviewed.

4.3 FIELD SURVEY – BREEDING BIRDS

The Breeding Bird Survey was undertaken in 2016 and a modified version of the ‘Common Bird Census’ methodology (Bibby et al, 2000) was employed. This method was chosen as it records specific avian activity on site, from which the probability of birds breeding can be meaningfully assessed, and specific breeding territories for individual pairs can be estimated if required. This can assist considerably with identifying particularly sensitive areas of the site, and also enables more precise recommendations for management work to be made if appropriate.

This survey method was first developed as a conservation tool by the British Trust for Ornithology (BTO) in 1962 and is established as a reliable and accurate method for surveying birds. In the original survey method, at least 10 visits would be made during all months of the breeding season. The reason for the large number of survey visits was to enable detailed avian territory maps of the site under survey to be produced.

For development projects such as this, however, detailed territory mapping is generally not required, and it is sufficient to know what birds are breeding on site, to map those areas where breeding birds are concentrated (if applicable), and to identify potential areas of the site for mitigation, compensation or enhancement. To achieve these objectives, three survey visits between the beginning of April and the end of June are generally considered to be adequate.

For this project, approximate transect routes were agreed in advance with Dr Rich (Appendix 1). The first visit is used to assess the site, determine the route the surveyor will follow and gather data on suitable breeding and foraging habitats, in addition to recording birds seen during the visit. It did not prove necessary to deviate significantly from the transects agreed, but it proved possible to access some other areas and data from these are included in the results.

Subsequent survey visits are focused entirely on recording birds. Birds are identified by sight and sound. Surveys take place early in the morning when bird singing is at its peak, and carry on until mid-day. Every bird identified is recorded on a 1:10,000 scale map. With all bird survey methods that do not involve capture of birds, males are usually more readily detected than

females, and records of singing males may represent a breeding pair, or an attempt to establish or defend a breeding territory.

Survey visits take place on calm, dry days with wind-speeds less than Beaufort Force 4. No audio or other lures are used. During each survey visit, the surveyor walked the site following the route described in Appendix 1. On one of the three survey visits, the direction of the route was reversed, to reduce the potential for bias arising from surveyor fatigue to be introduced. The survey route chosen endeavoured to ensure that the surveyor passed within 50m of all features (e.g. hedgerows, trees and scrub) with potential to be of value to breeding birds and which were considered likely to be within the zone of impact of the Scheme.

A pair of Leica Ultravid 8x40 binoculars were used on all survey visits, and a 20-60 x 80mm telescope was occasionally used to search more distant areas.

4.4 DETERMINATION OF BREEDING STATUS

In evaluating the breeding status for each species within the site boundary, the criteria devised by the European Ornithological Atlas Committee (EOAC, 1979) have been applied. These criteria are defined as: -

Possible breeding

- Species observed in breeding season in possible nesting habitat; and/or
- Singing male(s) present (or breeding calls heard) in breeding season.

Probable breeding

- Pair observed in suitable nesting habitat in breeding season;
- Permanent territory presumed through registration of territorial behaviour (song, etc.), on at least two different days, a week or more apart at the same place;
- Courtship and display;
- Visiting a probable nest site;
- Agitated behaviour or anxiety calls from adults; and/or
- Nest building or excavating nest-holes.

Confirmed breeding

- Distraction-display or injury feigning;
- Used nest or eggshells found (occupied or laid within period of survey);
- Recently fledged young or downy young;
- Adults entering or leaving nest-site in circumstances indicating occupied nest (including high nest or nest-holes, the contents of which cannot be seen), or adult seen incubating;
- Adult carrying fecal sac or food for young;
- Nest containing eggs; and/or
- Nest with young seen or heard.

4.5 SURVEY TIMINGS

Surveys were undertaken as per Tables 1

Table 1. Field Survey details

Date	Time	Conditions (Wind: Beaufort, Temp: at start of survey)	Notes
24/04/2016	06:00 – 13:40	Wind 1-2, Temp 8°C Cloud 7/8	Reconnaissance visit.
01/05/2016	05:40 – 13:30	Wind: 1-2, Temp: 5-14 °C, Cloud: 5/8	Good Survey Conditions
29/05/2016	05:00 – 13:30	Wind: 0-2, Temp: 10-18°C, Cloud:0/8	Perfect survey conditions
26/06/2016	05:00 – 13:30	Wind 1-2, Temp 12-17°C, Cloud 8/8	Perfect survey conditions

4.6 CONSTRAINTS

There were no constraints to the survey.

5 RESULTS

5.1 RESULTS – DESK STUDY

The breeding bird survey undertaken in 2008 identified the presence of Skylark, Yellowhammer, Meadow Pipit, Kingfisher and other species on site – 27 species in total but, at least in the extract we were provided with, it did not indicate the probability of that any of these species were breeding or attempting to breed on the site. No search of historical data appears to have been undertaken. Fieldwork comprised two survey visits, undertaken in June and July 2008 which is too late in the season to detect territorial behaviour of species such as Lapwing.

The SEWBRc data search results supplied contained 962 avian records. Most were flight records of species of low conservation value which are both common and widespread in the local area. Notable records with potential relevance to the scheme included;

- Five records collected between 2009 and 2014 of Yellowhammer in a 1km square containing the village of Moulton;
- Four records collected between 2009 and 2014 of Skylark;
- A single record from 2014 of Northern Wheatear; and
- Nine records collected between 2009 and 2014 of Northern Lapwing in the general areas around Moulton, with five confirmed breeding records in the same period.

5.2 RESULTS – BREEDING BIRD SURVEY

5.3 RESULTS – SUMMARY

An assemblage of 44 bird species was recorded. No bird species listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended) was identified as breeding within the study area, and no Nightjars were found to be present. A full list of all bird species recorded during the bird surveys, together with their conservation status and breeding status on site, is provided in Appendix 2.

5.4 RESULTS – BREEDING BIRDS

A total of 44 bird species were identified during the course of the survey. On the basis of observations made, 19 species were confirmed to be breeding within the study area, with an additional 14 species probably breeding (but where breeding could not be confirmed), and a further 8 species were seen exhibiting behaviours suggesting possible breeding. Whilst the majority of the bird species using the site for breeding are common and widespread in the local area, some were of notable conservation significance.

Maps showing the locations of key species exhibiting breeding behaviour and an approximate indication of the areas likely to be used for breeding are provided in in attached files *Lapwing Skylark and Yellowhammer territories 1 - 4*.

5.4.1 SCHEDULE 1 BIRDS

Birds on Schedule 1 of the Wildlife and Countryside Act require special attention as they are afforded a greater degree of attention than other bird species, and there is a greater burden of proof required to prove that any reckless disturbance of nesting individuals could not have been reasonably avoided.

No Schedule 1 birds were noted during the breeding bird survey.

5.4.2 RED LISTED SPECIES

Birds on the UK Red List include species that are globally threatened and / or where there has been a long term historical population decline or range contraction within the UK. See Eaton *et al* (2009) for full background and definitions in respect of avian Red Listing criteria.

Ten Red Listed species were recorded during the survey: Grey Wagtail, Herring Gull, House Sparrow, Starling, Linnet, Northern Lapwing, Skylark, Song Thrush, Spotted Flycatcher, and Yellowhammer. Of these, Northern Lapwing, Skylark, Song Thrush and Yellowhammer were confirmed to be breeding within the study area. Linnet is probably breeding in the northern part of the study area, potentially within the footprint of the Scheme. Starling is probably breeding in at least one location (Blackland Farm) and probably other locations within the study area too. Starlings are most likely to be nesting within buildings and, therefore, outside the footprint of the scheme.

5.4.3 AMBER LISTED SPECIES

Birds on the UK Amber List include species that have an unfavourable conservation status in Europe, and / or where there has been a long term historical population decline, which is now recovering. Other criteria for inclusion on the Amber List include a moderate decline in UK population size, or range contraction, or where the UK breeding or non-breeding population is significant at a European scale. See Eaton *et al* (2009) for full background and definitions in respect of avian Amber Listing criteria.

Nine Amber Listed species were recorded during the survey: Barn Swallow, Dunnock, House Martin, Lesser Black-Backed Gull, Mallard, Meadow Pipit, Common Swift, Whitethroat and Willow Warbler. Of these, Dunnock, Whitethroat and Willow Warbler were confirmed to be breeding both within the study area and within hedgerows within the footprint of the Scheme. Barn Swallow is probably breeding within the study area, most likely in buildings outside the footprint of the Scheme. Meadow Pipit is probably breeding within the footprint of the scheme within grassland and arable crop areas.

5.4.4 GREEN LISTED SPECIES

Birds on the UK Green List are all those which occur and/or breed regularly in the UK and are considered to be generally both widespread and common, but which do not fulfil the criteria to warrant Red or Amber Listing.

5.4.5 SECTION 42 SPECIES

The following breeding birds listed, as species of principal species of importance for conservation of biological diversity in Wales, were found within the study area; Dunnock, House Sparrow, Northern Lapwing, Skylark, Song Thrush, and Yellow Hammer with Linnet and Starling also listed, and probably breeding.

5.5 RESULTS – MAIN AREAS OF AVIAN ACTIVITY

Although most parts of the site appeared to be used by foraging birds, and many parts by breeding birds, there were areas that appeared to be used more frequently than others. The most frequently used habitats by breeding birds were the woodland areas either side of the existing road at the south part of the site, hedgerows throughout the site, and agricultural fields and grass leys on either side of the existing road, north of Sutton Fach Farm.

Because the Local Planning Authority Ecologist had specifically requested additional information on ground-nesting birds & Yellowhammer, four maps have been provided with this report showing the general areas where these species were seen exhibiting territorial behaviour (*Lapwing Skylark and Yellowhammer territories 1 – 4*)

6 BREEDING BIRDS – EVALUATION & IMPACT CHARACTERISATION

Due to the specific species and abundance of breeding birds present within the study area, and the legislative protection afforded to them, breeding birds are considered be of importance at the County level.

The breeding bird survey undertaken in 2008 was wholly inadequate, having failed to take into account any recorded historical use of the area by birds, and with fieldwork largely undertaken outside of the principal breeding season for many avian species. Only 27 species were identified. Lapwing, an important breeding species on site was missed, and the significance of breeding Skylark significantly understated.

A summary of those species of conservation concern is provided in Table 2.

Table 2. Potential impacts for avian species of conservation concern breeding or potentially breeding within the study area.

Common Name	Conservation Status	Evaluation & likely impact of the Scheme
Barn Swallow	Amber	Occasionally seen foraging over open fields. Probably breeding in farm buildings. Unlikely to be adversely impacted.
Dunnock (Hedge Accentor)	Amber/Sect.42	Breeding in many hedgerows throughout the site. Breeding and foraging opportunities will reduce
Grey Wagtail	Red/Sect. 42	One individual was heard on the reconnaissance visit near Waycock Bridge. Not seen on subsequent visits. Breeding birds could be killed, injured or disturbed by works close to the river.
Herring Gull	Red/Sect. 42	Not breeding. Occasionally seen around the site. Impacts highly unlikely.
House Martin	Amber	Possibly nesting on farm or other buildings. Impacts unlikely.
House Sparrow	Red/Sect. 42	Confirmed nesting on farm buildings. Impacts highly unlikely.

Common Name	Conservation Status	Evaluation & likely impact of the Scheme
Lesser Black-Backed Gull	Amber	<p>More than 50 seen loafing on field centred on ST078703 immediately south of Grovelands Farm.</p> <p>Non-breeding. Impacts highly unlikely</p>
Linnet	Red/Sect. 42	<p>Individuals or small groups occasionally seen in the north part of the scheme.</p> <p>Probably breeding within the hedgerows in this area.</p> <p>Potential for individuals to be killed, injured or disturbed or nests to be damaged during construction. Likely to avoid area near new road sections road due to noise in the short-term post-construction but may adapt over time.</p>
Mallard	Amber	<p>Individuals seen over. Impacts highly unlikely.</p>
Meadow Pipit	Amber	<p>No historical records. Few seen around the northern part of the site and they are probably breeding in the larger areas holding Skylark.</p> <p>Potential for individuals to be killed, injured or disturbed or nests to be damaged during vegetation clearance and soil strip. Individuals likely to avoid area near new road sections road due to noise in the short-term post-construction but may adapt over time.</p> <p>Reduction in available nesting habitat and foraging opportunities.</p>
Northern Lapwing	Red/Sect. 42	<p>Historical records of breeding in the area around Moulton and three individuals exhibiting breeding behaviour seen at ST07839 707621 on the first survey visit only.</p> <p>Lapwing breed early and chicks may have fledged and this single-brooded species may have left the area before second survey visit undertaken.</p> <p>Potential for individuals to be killed, injured or disturbed or nests to be damaged during vegetation clearance and soil strip.</p> <p>This area is very close to the area of a proposed new junction. Individuals likely to avoid area near</p>

Common Name	Conservation Status	Evaluation & likely impact of the Scheme
		<p>new road sections road due to noise in the short-term post-construction but may adapt over time. However, if traffic and therefore noise levels increase significantly, breeding densities are likely to permanently reduce and birds may abandon the area altogether.</p> <p>Reduction in available nesting habitat and foraging opportunities.</p> <p>Note that nesting and foraging areas to be lost will include not only that directly lost to the Scheme, but also those areas from which birds are likely to be displaced as a consequence of any increase in disturbance from increased road noise.</p> <p>It is considered possible that Lapwing use the area during the winter. In the absence of a wintering bird survey then winter presence should be assumed and a suitably precautionary approach adopted.</p> <p>See file <i>Lapwing Skylark and Yellowhammer territories 2</i> (supplied to TACP separately) for approximate location of Lapwing territories.</p>
Skylark	Red/Sect. 42	<p>There were few records of Skylark within the study area, but many birds exhibiting territorial behaviour were seen on all survey visits. It is estimated that there are between 27 and 37 territories present, possibly more. Breeding success is likely to vary considerably from year to year with changes in agricultural crops and associated management regimes.</p> <p>Potential for individuals to be killed, injured or disturbed or nests to be damaged during vegetation clearance and soil strip.</p> <p>Reduction in available nesting habitat and foraging.</p> <p>It is considered possible that Skylark use the area during the winter. A winter bird survey to determine this and evaluate likely impacts is strongly recommended.</p> <p>Note that nesting and foraging areas to be lost will</p>

Common Name	Conservation Status	Evaluation & likely impact of the Scheme
		<p>include not only that directly consumed by the Scheme but also those areas from which birds are likely to be displaced as a consequence of any increase in disturbance from increased road noise</p> <p>See files <i>Lapwing Skylark and Yellowhammer territories 1 - 4</i> (supplied to TACP separately) for approximate location of Skylark territories.</p>
Song Thrush	Red/Sect. 42	<p>Some territories within woodland at the southern part of the site with others in small woodland stands elsewhere.</p> <p>Potential for killing, injuring, damage to nests or chicks during the breeding season. Potential loss of nesting and foraging opportunities.</p>
Spotted Flycatcher	Red/Sect. 42	<p>A single individual seen on one survey visit. Possible breeding but not confirmed. Potential impacts unknown.</p>
Starling	Red/Sect. 42	<p>Mostly seen around farm buildings where they are likely to be breeding.</p> <p>Unlikely to be any direct impacts. Loss of farmland and hedgerows will potentially result in reduced foraging opportunities but foraging may well be focused on areas in close proximity to livestock.</p>
Swift	Amber	<p>Mostly seen around farm buildings where they are likely to be breeding.</p> <p>Unlikely to be any direct impacts. Loss of farmland and hedgerows will potentially result in reduced foraging opportunities but foraging may well be focused on areas in close proximity to livestock.</p>
Whitethroat	Amber	<p>Territorial behaviour mostly observed in association with hedgerows but scrub also valuable for this species.</p> <p>Potential for individuals to be killed, injured or disturbed or nests to be damaged during vegetation clearance and construction. Likely to avoid area near new road sections road due to noise in the short-term. Post-construction, they may adapt over time.</p>

Common Name	Conservation Status	Evaluation & likely impact of the Scheme
Willow warbler	Amber	<p>Some territories within woodland at the southern part of the site with others in small woodland stands elsewhere.</p> <p>Potential for killing, injuring, damage to nests or chicks during the breeding season. Nests within scrub etc. on or very near to the ground. Potential loss of nesting and foraging opportunities.</p>
Yellowhammer	Red/Sect. 42	<p>It is estimated that approximately 16 – 22 Yellowhammer territories exist within the study area with most in the more central and northern parts. There were five recent historical records.</p> <p>Potential for individuals to be killed, injured or disturbed, or nests to be damaged during vegetation clearance and construction. Likely to avoid area near new road sections road due to noise in the short-term. Post-construction, they may adapt over time.</p> <p>See files Lapwing Skylark and Yellowhammer territories 1 - 4 (supplied to TACP separately) for approximate location of Yellowhammer territories</p>

7 CONCLUSIONS

The study area hosts a wide range of breeding birds. Most are species widespread and common within the local area, but others, such as Starling, Linnet, Lapwing, Skylark and Yellowhammer, are more restricted in their distribution and have undergone significant population declines over the last 30 years.

Because the scheme will result in removal of woodland, hedgerows, arable land and grass leys, it is likely to have direct and indirect significant impacts on all avian species recorded breeding along its course. In particular, the Scheme is most likely to have negative significant impacts on those avian species considered to be farmland and hedgerow specialists, because the majority of habitats lost to, or disturbed by the Scheme would be farmland and hedgerows.

There are historical records of Lapwing nesting in the area, but numbers now appear very low now and for ground-nesting species such as this, low numbers in breeding colonies tend to result in increased predation rates. Continued breeding may not be sustainable at this site

whether the Scheme progresses or not as the long-term survival of the species in this area is dependent on land management and agricultural practices in the wider area.

Skylark is present with a good number of territories, but breeding success will be significantly influenced by cropping regimes. In particular, the increased use of autumn and winter sown crops has been shown to be detrimental to the breeding success of this species. Whitethroat, Yellowhammer and Linnet will all nest within hedgerows and this is where most territorial behaviour was observed during the study area.

As well as breeding, it is likely that all of the species mentioned, with the exception of Whitethroat, could be present within the scheme area in the winter. It is possible that the habitats present could provide a significant winter food resource for those and other species. In the absence of a wintering bird survey, winter presence and significance should be assumed.

A mitigation programme for the scheme has been developed. We have reviewed these and can confirm that they include suitable provision for breeding birds, including 6.7ha of native woodland planting, with coppice stools re-located where possible, 6308m of native hedgerow planting, and 4.7ha of wildflower meadow planting. All these measures include appropriate aftercare and provision for long-term management.

Monitoring of the study area and any new areas nearby used for mitigation/compensation should be undertaken, with results evaluated against this baseline report. It is recommended that Breeding Bird Surveys are undertaken in Year 1, 3, 5 & 7 post-development.

8 LIMITATIONS

This report has been prepared by Wydean Ecology Ltd, with all reasonable care, skill and attention to detail as set out within our standard terms and conditions.

The lack of evidence of a protected species does not mean they are not currently present, nor does it preclude their presence at some future date. The survey methods used and/or recommended are suitable to establish the presence of a populations of protected species, and, in accordance with published best practice methodologies, are considered to show adequate effort in determining that a species is likely to be absent, or at least present for such a limited period of time, or at such low population levels, that the habitats present on site are highly unlikely to be significant to that population.

Any ecological survey can only identify what was present on site when it was conducted. Habitat usage by species can change over time, and if development works do not begin within twenty four months of the date of this report, further survey work will be required to identify

any change of use of the site by protected species.

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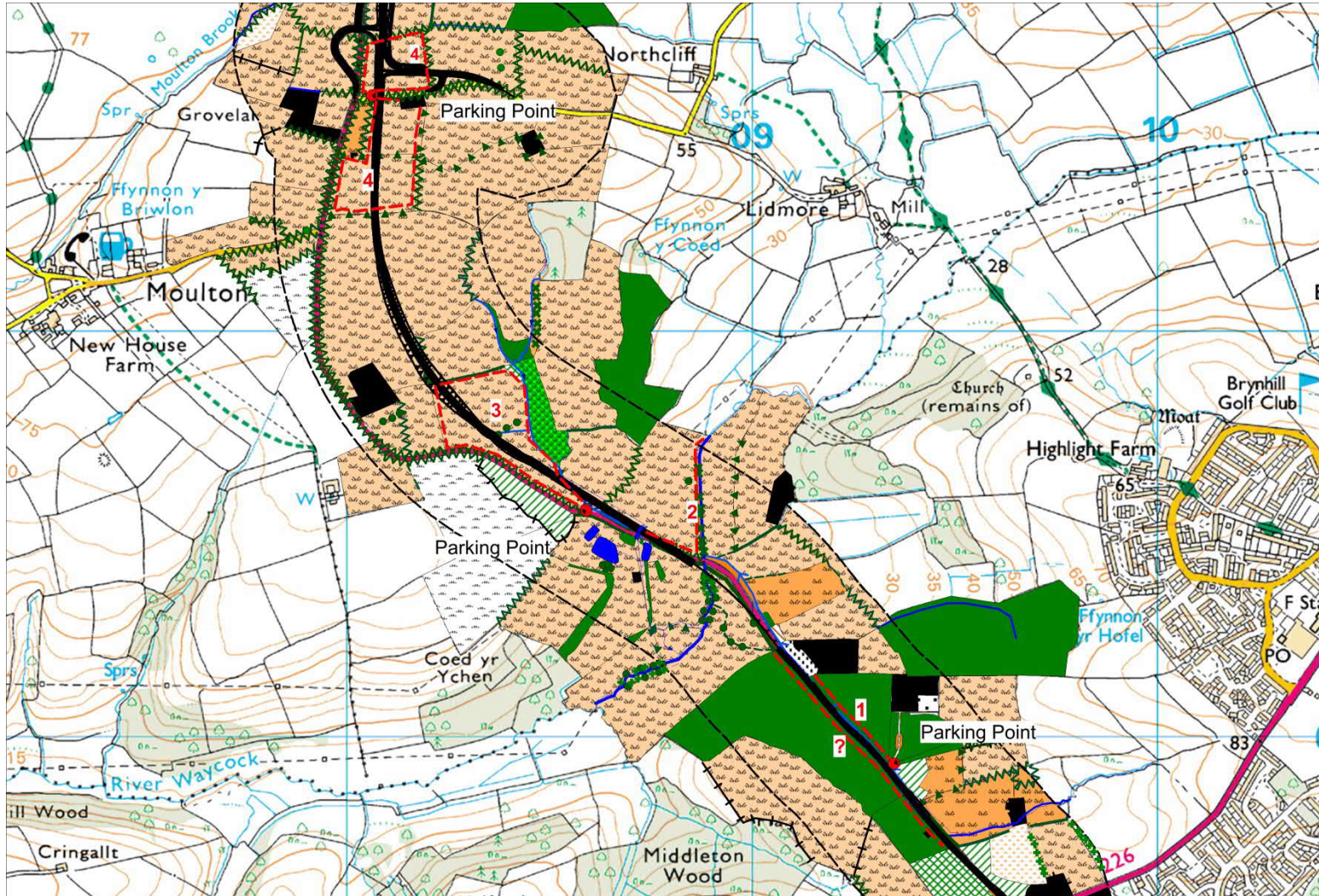
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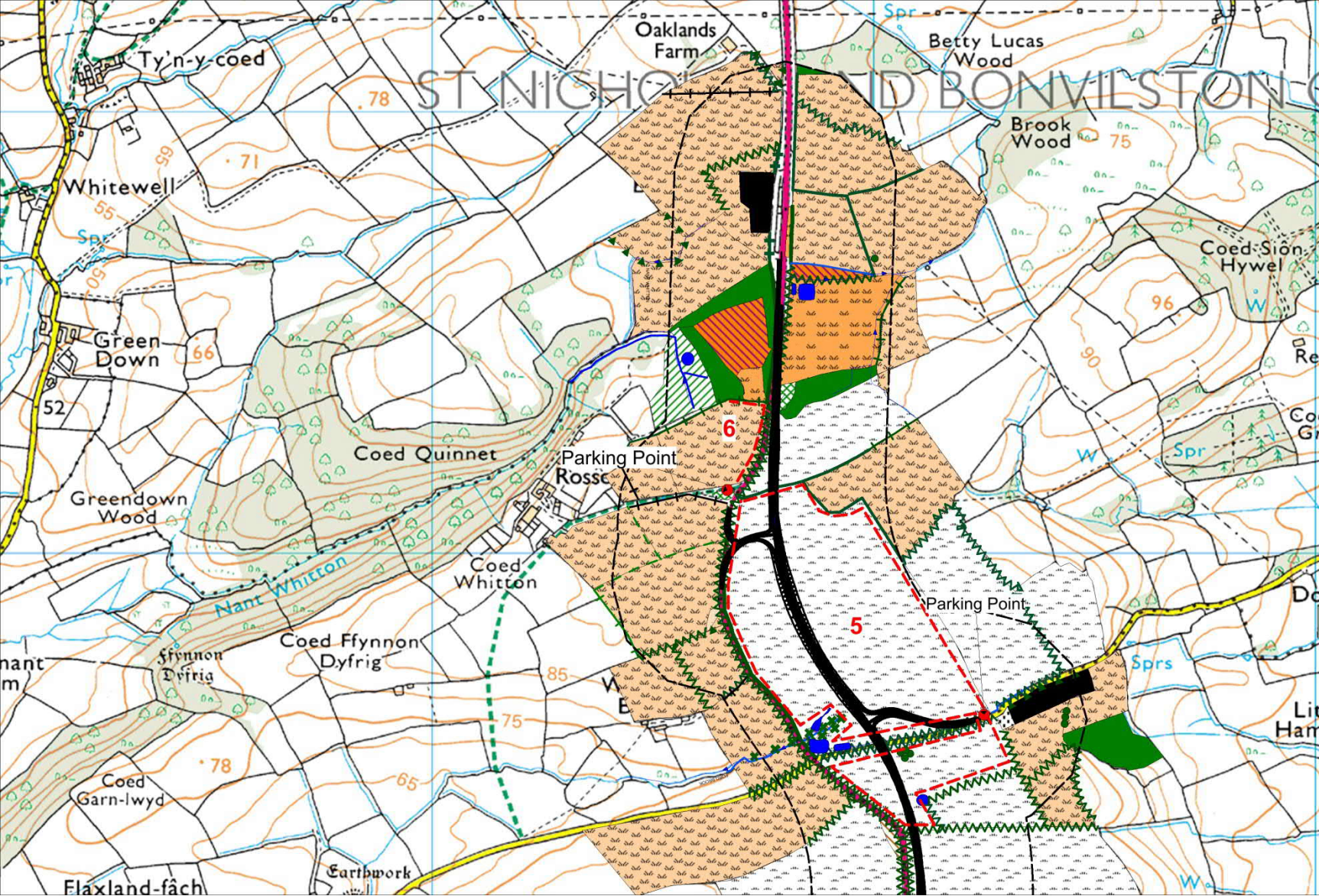
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11 APPENDIX 1. Bird Survey Transects (supplied by TACP)

11.1 SOUTHERN END



NORTHERN END



12 APPENDIX 2. FULL LIST OF BIRDS IDENTIFIED ON SITE.

Common Name	Scientific Name	BTO Survey Code	Indicative Breeding Status	WCA Schedule 1	Red Listed	Amber Listed	Section 42 Species
Barn Swallow	<i>Hirundo rustica</i>	SL	Probable			√	
Blackbird	<i>Turdus merula</i>	B.	Confirmed				
Blackcap	<i>Sylvia atricapilla</i>	BC	Confirmed				
Blue Tit	<i>Cyanistes caeruleus</i>	BT	Confirmed				
Buzzard	<i>Buteo buteo</i>	BZ	Confirmed				
Carrion Crow	<i>Corvus corone corone</i>	C.	Confirmed				
Chaffinch	<i>Fringilla coelebs</i>	CH	Probable				
Chiffchaff	<i>Phylloscopus collybita</i>	CC	Confirmed				
Collard Dove	<i>Streptopelia decaocto</i>	CD	Probable				
Dunnock (Hedge Accentor)	<i>Prunella modularis</i>	D.	Confirmed			√	√
Garden Warbler	<i>Sylvia borin</i>	GW	Confirmed				
Goldfinch	<i>Carduelis carduelis</i>	GO	Probable				
Great Spotted Woodpecker	<i>Dendrocopos major</i>	GS	Probable				

Common Name	Scientific Name	BTO Survey Code	Indicative Breeding Status	WCA Schedule 1	Red Listed	Amber Listed	Section 42 Species
Great Tit	<i>Parus major</i>	GT	Probable				
Green Woodpecker	<i>Picus viridis</i>	G.	Possible				
Grey Wagtail	<i>Motacilla cinerea</i>	GL	Possible		√		√
Herring Gull	<i>Larus argentatus</i>	HG			√		√
House Martin	<i>Delichon urbicum</i>	HM	Possible			√	
House Sparrow	<i>Passer domesticus</i>	HS	Confirmed		√		√
Jackdaw	<i>Corvus monedula</i>	JD	Probable		√		
Jay	<i>Garrulus glandarius</i>	J.	Possible				
Lesser Black-Backed Gull	<i>Larus fuscus</i>	LB				√	
Long-tailed tit	<i>Aegithalos caudatus</i>	LT	Probable				
Linnet	<i>Carduelis cannabina</i>	LI	Probable		√		√
Magpie	<i>Pica pica</i>	MG	Confirmed				
Mallard	<i>Anas platyrhynchos</i>	MA				√	
Meadow Pipit	<i>Anthus pratensis</i>	MP	Probable			√	
Northern Lapwing	<i>Vanellus vanellus</i>	L.	Confirmed		√		√
Nuthatch	<i>Sitta europaea</i>	NH	Probable				

Common Name	Scientific Name	BTO Survey Code	Indicative Breeding Status	WCA Schedule 1	Red Listed	Amber Listed	Section 42 Species
Pheasant	<i>Phasianus colchicus</i>	PH	Probable				
Pied Wagtail	<i>Motacilla alba</i>	PW	Probable				
Raven	<i>Corvus corax</i>	RN	Possible				
Robin	<i>Erithacus rubecula</i>	R.	Confirmed				
Rook	<i>Corvus frugilegus</i>	RO	Possible				
Skylark	<i>Alauda arvensis</i>	S.	Confirmed		√		√
Song Thrush	<i>Turdus philomelos</i>	ST	Confirmed		√		√
Spotted Flycatcher	<i>Muscicapa striata</i>	SF	Possible		√		√
Starling	<i>Sturnus vulgaris</i>	SG	Probable		√		√
Swift	<i>Apus apus</i>	SI	Possible			√	
Whitethroat	<i>Sylvia communis</i>	WH	Confirmed			√	
Willow warbler	<i>Phylloscopus trochilus</i>	WW	Confirmed			√	
Wood pigeon	<i>Columba palumbus</i>	WP	Confirmed				
Winter Wren	<i>Troglodytes troglodytes</i>	WR	Confirmed				
Yellowhammer	<i>Emberiza citrinella</i>	Y.	Confirmed		√		√

Appendix B

FIGURE 1

