
Kirkby Valley Golf Club

Breeding Birds Survey Report

Compiled by Ecology Services Ltd.

on behalf of

L32 Trading Ltd

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Ref. number: 19054
Written by: SB
Checked: LR
Approved: LR

1 Church Row Chambers
Longton
Preston
Lancashire
PR4 5PN

tel: 01772 614932
fax: 01772 614930
email: info@ecologyservices.co.uk
web: www.ecologyservices.co.uk

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1.0 Introduction

- 1.1 Ecology Services Limited was commissioned by L32 Trading Ltd. in May 2019, to undertake a breeding bird survey (BBS) on a large plot of derelict land to the west of Kirby Valley Golf Club and the River Alt, nearest postcode Liverpool, L32 4SS, hereinafter referred to as 'the site'. The site centre is located by National Grid Reference (NGR) 339318, 397904. See Figures 2 - 3 Breeding Bird Activity Maps. This site forms part of a wider application site including Kirby Valley Golf Course located to the north and east. The survey focussed on the area of derelict land as this offered the best habitat within the application site for breeding birds.
- 1.2 The site was subject to a walk over in January 2020 by Ecology Services Limited which confirmed that habitats within the site remain largely unchanged. The results of the 2019 breeding bird survey are therefore considered to remain valid.

Site Description

- 1.3 The land comprises unmanaged grassland, swamp, hedgerows and scrub with scattered trees. The overall site is bounded by Valley Road to the south, Aintree Lane to the west and the River Alt to the east. A section of railway between Fazakerley and Kirkby is located approximately 500m to the north-west, which runs alongside an extensive linear corridor comprising scrub and trees.

Proposals

- 1.4 Four parcels of land within the site, collectively referred to as the 'development area', are proposed for (re)development as shown on Figure 1 including:
- Reconfiguration and other improvement works across the entire golf course including the reshaping of tees / greens / bunkers and erection of a footbridge over the River Alt to provide both an improved 18 hole course and a new 9 hole course.
 - New and improved irrigation / drainage works (including irrigation lake), extensive tree and shrub planting, and ecological mitigation measures across the course.
 - The erection of a new 2 storey Clubhouse;
 - Retention, alteration and extension of the existing clubhouse and its change of use to form a golf-related / grounds maintenance training academy (existing access and car park retained / unchanged).
 - A new greenkeeper's compound with associated building and security fencing.
 - Provision of an adventure golf course and practice putting green; and provision of a golf driving range with an associated 2 storey building and external lighting and safety netting.
 - 6 synthetic outdoor 5-a-side football pitches, 5 synthetic outdoor tennis courts, 1 external bowling green with associated timber players' hut plus associated lighting and means of enclosure.
 - Car and cycle parking spaces to serve all of the above facilities with two new vehicular accesses created onto Valley Road.
 - Formation of a new gated access via Aintree Lane for the use of construction traffic and (upon completion of development works) for the sole use of course operatives for the purposes of course management / maintenance.
- 1.5 While the proposals include reconfiguration and other improvement works including irrigation/ drainage works across the entire golf course, extensive tree/ shrub planting and other ecological mitigation measures will be implemented across the course to mitigate these impacts. No significant impacts on birds on the wider golf course are anticipated in the longer term.

Survey Objectives

- 1.6 The objectives of the breeding bird survey were to:
- Identify any legally protected species using the site;
 - Identify any Nationally, regionally or locally significant species using the site (including NERC Act 2006 Species of Principal Importance);
 - Identify key habitat areas for those species recorded; and
 - Provide recommendations, taking these species into account.

2.0 Planning Policy and Legislation

Planning Policy

- 2.1 The National Planning Policy Framework (NPPF, 2021) places a clear responsibility on Local Planning Authorities (LPA) to contribute to conserving and enhancing the natural and local environment. LPAs should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species (e.g. Species of Principal importance, Local Biodiversity Action Plan species); and identify and pursue opportunities for securing measurable net gains for biodiversity. The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation.
- 2.2 A Local Planning Authority (LPA) has a duty to ensure that protected species and habitats within the UK are a 'material consideration' in the determination of a planning application. Therefore, an LPA is unlikely to determine an application until all relevant information relating to protected species or habitats is submitted to fully inform the application. Relevant information includes adequate surveys and, where required, mitigation strategies, which will need to be submitted to inform a planning application.
- 2.3 Although the UKBAP has been superseded by the UK Post-2010 Biodiversity Framework and, in England, Biodiversity 2020: A strategy for England's wildlife and ecosystem services (2011), many Local Authorities have prepared and operate Local Biodiversity Action Plans (LBAPs). LBAPs not only highlight species that are of Principal Importance but also species that are of local importance. LBAPs will be prepared for these species. Listing of a species in a LBAP does not confer any new statutory or planning policy protection. However, impacts upon species prioritised in LBAPs may be a material consideration in a planning application.

Legislation

- 2.4 The Wildlife and Countryside Act (WCA) 1981 (as amended) states that all wild birds are protected. Under the WCA, it is an offence to kill, injure or take any wild bird, to take damage or destroy the nest of any wild bird or to take or destroy the egg of any wild bird. A special penalty is levied to any of the above offences being committed in conjunction with a bird listed on Schedule 1 of the WCA. It is also an offence if a person disturbs any bird listed on Schedule 1 while it is building a nest, is on or near a nest containing young or disturbs dependent young of such a bird.
- 2.5 The Countryside and Rights of Way Act 2000 has made it an offence to intentionally or recklessly disturb Schedule 1 species as above and also an offence to intentionally or recklessly take, damage or destroy the nest of any wild bird or its eggs or dependent young.
- 2.6 Section 41 (S41) of the NERC Act 2006 requires the Secretary of State, as respects England, to publish a list of the living organisms and types of habitat which are of principal importance for the purpose of conserving biodiversity. Section 40 of the NERC Act 2006 places a duty to conserve biodiversity on every public body. The Local Planning Authority and Natural England will expect account to be taken of these species in the overall layout and landscape strategy for the development.

- 2.7 There are 49 bird Species of Principal Importance included on the NERC Section 41 list. These are the species found in England which were identified as requiring action under the former UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework and, in England, Biodiversity 2020: A strategy for England's wildlife and ecosystem services (2011). Bird Species of Principal Importance are selected, in England, if they fall under one or more of the following criteria: species which are globally threatened and species which are rapidly declining in the UK i.e. by more than 50% in the last 25 years.
- 2.8 The above sections provide an overview upon current planning policy and legislation relating to species and habitats that could be located within the survey area.

3.0 Methodology

Desktop Study

- 3.1 Ecological data and historic records of protected and notable species was collated from the following sources; listed in Table 1.

Table 1: Desktop Study Results and Record Centres Consulted

Source of information	Information supplied
Natural Environment and Rural Communities (NERC) Act 2006	Review of Species of Principal Importance known to occur in the region.
North Merseyside Local Biodiversity Action Plan (NMBAP)	Identification of local BAP species known to occur in the region.
Merseyside Biobank	To identify species of interest within c.2km of the site.

- 3.2 An ecological data search was undertaken by Merseyside Biobank and the report was received on 15th January 2021.

Survey Methodology

- 3.3 A breeding bird survey was undertaken on the 22nd of May 2019 and the 24th of June 2019 following the Breeding Bird Survey (BBS) technique as described in Bibby *et. al.* (2000). The route taken for the breeding bird survey transect was established whilst undertaking the initial scoping surveys at the site earlier in the year.
- 3.4 On each visit a section of the route was walked early in the morning to encompass the period of highest bird activity increasing the chances of detecting breeding bird species present on the site. However, the one-hour period immediately after dawn was avoided as this is the period of greatest activity and may bias the results, as an area surveyed during this period would have an artificially high bird population in comparison to the rest of the site. The surveys were completed by mid-morning.
- 3.5 The location and behaviour of all birds encountered were recorded on a large-scale field map using the standard BTO species codes. The re-occurrence of individuals displaying territorial and/or breeding activity in the same location over a period of time allows for certain assumptions to be made about the breeding status of each species, based on set criteria. The criteria used in the present assessment are adapted from the standard criteria used for the BTO Bird Atlas 2007-2011 (Balmer *et. al.*, 2013). The breeding status of each species can be classified into four categories, as described in Section 4.
- 3.6 The survey method adopted provides a reasonable level of accuracy of the status of the majority of species present, but cannot successfully survey for all species. It is considered that the two visits as per survey methodology were adequate to determine the breeding bird usage on the site and assess its importance to local bird populations. The transect route was designed to cover all suitable breeding habitat and included hedgerows and dense linear

areas of scrub along with wooded areas, patchy scrub and areas that are seasonally wet. The survey recorded all birds seen and/or heard.

Personnel

- 3.7 The breeding bird survey was undertaken by Senior Consultant Ecologist Mr. S. Booth.

Timing

- 3.8 The breeding bird surveys were conducted on the 22nd of May 2019 and the 24th of June 2019.

Survey Limitations

- 3.9 The site is particularly large and contains difficult terrain in places such as dense, tussocky grassland. The least line of resistance for the transect was chosen in these areas. It is considered that any areas not walked were sufficiently viewed using field binoculars and spotting scopes. On the morning of the surveys, the conditions were good with no wind, which meant call identification was not constrained.

Determination of Breeding Status

- 3.10 The breeding status of each species can be classified in to three categories; confirmed breeder, probable breeder and possible breeder. The behaviour, sex, age and location of individual birds allow conclusions to be drawn about breeding status, based on categories used for the BTO Bird Atlas 2007-2011 (Balmer et. al., 2013). It is also possible that species are merely present in a habitat and are not actually breeding. Breeding evidence used in this report follows Balmer et. al. (2013) and these are given below. The three breeding categories, confirmed, probable and possible breeding species are abbreviated to CO, PR and PO in the accompanying tables. Birds not thought to be breeding on the site are classed as non-breeder, which is shown as NB in the tables. Birds recorded flying over the site are referred to as flyovers with this being abbreviated to FO in the accompanying tables.

BTO Bird Atlas Criteria for Categorising of Breeding Status

Possible breeding

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

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 or many individuals on one day
- Courtship and display
- Visiting a probable nest site
- Agitated behaviour or anxiety calls from adults
- Brood patch on adult examined in the hand
- Nest building or excavating nest-hole

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 adults seen incubating
- Adult carrying faecal sac or food for young
- Nest containing eggs

- Nest with young seen or heard.

Conservation Status

- 3.11 The evaluation takes account of Birds of Conservation Concern (BoCC) which is a review of the status of all birds occurring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations. The latest report was published in 2015 (Eaton *et al.*, 2015). The criteria are complex, but generally: Red list species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years; Amber list species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included as Amber listed, together with those where 50% of the population is localised in 10 sites or fewer and those where 20% of the European population is found in the UK.
- Red list species are those that are **globally threatened** according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and have not shown a substantial recovery.
 - Amber list species are those with an unfavourable conservation status in Europe; whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders and those with internationally important or localised populations.
- 3.12 Species that fulfil none of the above criteria are green listed. These species are not included in the evaluation.

4.0 Results and Evaluation

Desktop Study

- 4.1 The desktop study identified records of the following protected bird species/ Species of Principal Importance within the 2km of the development area:

Table 2: Desktop Study Species Results

Common name	Scientific name	Legally protected ¹	NERC S41	NMBAP
Barn Owl	<i>Tyto alba</i>	Sch.1		
Common crossbill	<i>Loxia curvirostra</i>	Sch.1		
Kingfisher	<i>Alcedo atthis</i>	Sch.1		
Little ringed plover	<i>Charadrius dubius</i>	Sch.1		
Marsh harrier	<i>Circus aeruginosus</i>	Sch.1		
Peregrine	<i>Falco peregrinus</i>	Sch.1		
Quail	<i>Coturnix coturnix</i>	Sch.1		
Song thrush	<i>Turdus philomelos</i>		✓	✓
House martin	<i>Delichon urbicum</i>			✓
Swift	<i>Apus apus</i>			✓
Reed bunting	<i>Emberiza schoeniclus</i>		✓	
Bullfinch	<i>Pyrrhula pyrrhula</i>		✓	
Lesser redpoll	<i>Acanthis cabaret</i>		✓	
Tree sparrow	<i>Passer montanus</i>		✓	
House sparrow	<i>Passer domesticus</i>		✓	✓
Grasshopper warbler	<i>Locustella naevia</i>		✓	
Dunnock	<i>Prunella modularis</i>		✓	
Starling	<i>Sturnus vulgaris</i>		✓	✓
Herring gull	<i>Larus argentatus</i>		✓	
Common cuckoo	<i>Culculus canorus</i>		✓	
Skylark	<i>Alauda arvensis</i>		✓	✓

Common name	Scientific name	Legally protected ¹	NERC S41	NMBAP
Yellow wagtail	<i>Motacilla flava</i>		✓	
Common linnet	<i>Carduelis cannabina</i>		✓	
Yellowhammer	<i>Emberiza citrinella</i>		✓	
Northern lapwing	<i>Vanellus vanellus</i>		✓	✓
Corn bunting	<i>Emberiza calandra</i>		✓	✓
Grey partridge	<i>Perdix perdix</i>		✓	✓
Turtle Dove	<i>Streptopelia turtur</i>		✓	
Lesser spotted woodpecker	<i>Dendrocopos minor</i>		✓	
Willow tit	<i>Poecile montanus</i>		✓	
Spotted flycatcher	<i>Muscicapa striata</i>		✓	

¹All wild birds and their nests receive a basic level of protection. Sch1 = birds afforded additional protection during the breeding season under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

- 4.2 The desktop study identified low resolution records for barn owl, common crossbill, kingfisher, little ringed plover, marsh harrier, peregrine falcon and quail within 2km of the site, which are species listed on Schedule 1 of the 1981 Wildlife and Countryside Act (as amended). The site is considered not to provide suitable breeding habitat for these species.

Results Summary

- 4.3 During the breeding bird surveys, a total of 32 species was recorded. Table 3 gives a summary of the breeding status of birds that are: Schedule 1 of the Wildlife and Countryside Act; Red or Amber listed as birds of Conservation Concern; those that are Species of Principal Importance (S41); and Local BAP species. Comments relating to these species are included in Table 4. The breeding status of all birds recorded at the site is given in Table 5.

Table 3: Breeding Status of Birds of Conservation Concern at the Site

Common Name	Scientific Name	Indicative Breeding Status	WCA Schedule 1	Red List	Amber List	S41	North Merseyside LBAP
Barn owl	<i>Tyto alba</i>	NB	✓				
Dunnock	<i>Prunella modularis</i>	PR			✓	✓	
Grey wagtail	<i>Motacilla cinerea</i>	NB		✓			
House sparrow	<i>Passer domesticus</i>	NB		✓		✓	✓
Kestrel	<i>Falco tinnunculus</i>	NB			✓		
Kingfisher	<i>Alcedo atthis</i>	NB	✓		✓		
Linnet	<i>Carduelis cannabina</i>	PR		✓			
Mallard	<i>Anas platyrhynchos</i>	PO			✓		
Mistle thrush	<i>Turdus viscivorus</i>	PO		✓			
Oystercatcher	<i>Haematopus ostralegus</i>	FO			✓		
Reed bunting	<i>Emberiza schoeniclus</i>	PR			✓	✓	
Song thrush	<i>Turdus philomelos</i>	PR		✓		✓	✓
Starling	<i>Sturnus vulgaris</i>	NB		✓		✓	✓
Willow warbler	<i>Phylloscopus trochilus</i>	PR			✓		

PR = Probable breeder. PO = Possible breeding. CO = Confirmed breeder. FO = Flying over site. NB = Non-breeder.

Table 4: Birds of Conservation Concern recorded at site with comments

Common Name	Scientific Name	Comments
Barn owl	<i>Tyto alba</i>	A single hunting bird recorded during evening transect surveys for bats.
Dunnock	<i>Prunella modularis</i>	Fewer than expected birds considering the availability of habitats for this species.
Grey wagtail	<i>Motacilla cinerea</i>	Typically found in association with the River Alt.
House sparrow	<i>Passer domesticus</i>	Not a typical species on site and likely associated with nearby housing to the south.
Kestrel	<i>Falco tinnunculus</i>	Hunting over rough grassland
Kingfisher	<i>Alcedo atthis</i>	Commuting along the outer northern boundary between the River Alt and ponds
Linnet	<i>Carduelis cannabina</i>	Observed in small groups foraging in tall grassland.
Mallard	<i>Anas platyrhynchos</i>	Potentially nesting in tall vegetation.
Mistle thrush	<i>Turdus viscivorus</i>	Foraging in areas of open mown grassland.
Oystercatcher	<i>Haematopus ostralegus</i>	Recorded flying over. The site is not suited to this species.
Reed bunting	<i>Emberiza schoeniclus</i>	Recorded in wet grassland. The site could support higher numbers post development.
Song thrush	<i>Turdus philomelos</i>	Recorded around hedgerows and near to scattered trees in the centre of the site.
Starling	<i>Sturnus vulgaris</i>	Not a typical species on site and likely associated with nearby housing to the south.
Willow warbler	<i>Phylloscopus trochilus</i>	Recorded numerous times. The site provides good habitat for this species.

Table 5: Breeding Status of all Birds at the Site

Common Name	Scientific Name	Indicative Breeding Status
Barn owl	<i>Tyto alba</i>	NB
Blackbird	<i>Turdus merula</i>	PR
Blackcap	<i>Sylvia atricapilla</i>	PR
Blue tit	<i>Parus caeruleus</i>	PO
Carrion crow	<i>Corvus corone</i>	PR
Chaffinch	<i>Fringilla coelebs</i>	PR
Chiffchaff	<i>Phylloscopus collybita</i>	PR
Dunnock	<i>Prunella modularis</i>	PR
Goldfinch	<i>Carduelis carduelis</i>	PO
Great tit	<i>Parus major</i>	PO
Greenfinch	<i>Carduelis chloris</i>	PO
Grey wagtail	<i>Motacilla cinerea</i>	NB
House sparrow	<i>Passer domesticus</i>	NB
Jackdaw	<i>Corvus monedula</i>	PO
Kestrel	<i>Falco tinnunculus</i>	NB
Kingfisher	<i>Alcedo atthis</i>	NB
Lesser whitethroat	<i>Sylvia curruca</i>	PR
Linnet	<i>Carduelis cannabina</i>	PR
Magpie	<i>Pica pica</i>	CO
Mallard	<i>Anas platyrhynchos</i>	PO
Mistle thrush	<i>Turdus viscivorus</i>	PO

Common Name	Scientific Name	Indicative Breeding Status
Oystercatcher	<i>Haematopus ostralegus</i>	FO
Pheasant	<i>Phasianus colchicus</i>	PR
Reed bunting	<i>Emberiza schoeniclus</i>	PR
Robin	<i>Erithacus rubecula</i>	PR
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	PR
Song thrush	<i>Turdus philomelos</i>	PR
Starling	<i>Sturnus vulgaris</i>	NB
Whitethroat	<i>Sylvia communis</i>	PR
Willow warbler	<i>Phylloscopus trochilus</i>	PR
Wood pigeon	<i>Columba palumbus</i>	PR
Wren	<i>Troglodytes troglodytes</i>	PR

- 4.4 During the update otter survey undertaken in June 2021, breeding sand martins (*Riparia riparia*) were observed within the bank of the River Alt where vegetation had been cleared from the bank in the south of the site. At least four nest holes were present. Sand martin is not a red or amber listed Bird of Conservation Concern.

Breeding Status

- 4.5 Interpreting the data using the BTO Bird Atlas criteria, of the 33 species recorded, two were confirmed as breeding on the site, 17 are classed as probable breeding species and 7 are possible breeding species. Of the remainder, 6 are categorised as non-breeding species and one species was recorded flying over the site.

Schedule 1 Birds

- 4.6 On the morning of the 22nd of May 2019, a kingfisher was noted commuting just off site along the northern site boundary from the direction of the River Alt towards a group of small pools to the east. However, there are no banks suitable for nesting purposes within the site or in the vicinity of the site whereby disturbance issues arising from the development would be of concern.
- 4.7 On the evening of the 24th of June 2019 during a bat transect survey, a barn owl was observed hunting in the northern portion of the site over an area of rough grassland. There are no buildings within the site or tree cavities sufficiently large enough to support breeding or roosting barn owl.

Conservation Status

- 4.8 Of the total assemblage of birds recorded, the survey recorded 14 species that are afforded conservation status. The survey found two birds listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), five Species of Principal Importance and three species included in the North Merseyside BAP. Six Red listed species and seven Amber listed species were recorded. Of these, five species are assessed as being probable breeding species, but not including any Schedule 1 birds (see Table 1).

Evaluation of Breeding Birds

- 4.9 The site offers a broad range of habitats that are suitable for breeding and foraging birds and is of ample size to support birds that require large territories. However, during the breeding bird surveys, surprisingly low numbers of birds were recorded that would have otherwise be expected for a site of this size.
- 4.10 Not all Birds of Conservation Concern recorded at the site were found to breed on site. For example, two species, starling and house sparrow (both Species of Principal Importance/Red

listed & Local BAP species) were both recorded on site, but were using the site for foraging and/or using the boundary features as territories adjacent to the residential area along Moor Lane. The Amber listed oystercatcher was recorded only as a fly-over.

- 4.11 The site is essentially compartmentalised into four main areas by hedgerows. The most dominating habitat is unmanaged grassland, which is abundant across all parts of the site, but the thatch is not so well developed for the most part. Much of the grassland to the west is mown and used by a local model flying club. This short-structured grassland currently provides good foraging habitat for Red listed starling and mistle thrush. The grassland area to the north is tussocky and affords the most suitable grassland structure to support small mammals and is suitable for hunting barn owl, which is a Schedule 1 species and the Amber listed kestrel. Both species were recorded here. Parts of the ground at this location are low lying and as such, a somewhat wetter habitat has developed with areas of tall ruderal intermixing with the grassland. This location was particularly favoured by the occasional sedge warbler and one singing male reed bunting, which is a Species of Principal Importance and Red listed.
- 4.12 The south western and south eastern blocks of grassland are unremarkable in terms of value to birds other than for foraging value and it was in this habitat that a small group of Red listed linnet was recorded, which may breed in nearby riverside scrub. The boundaries that surround this area are composed of hedgerows, trees and scrub with the River Alt corridor along the eastern side. These boundary features afford areas of good habitat for nesting, foraging and commuting and also help to form territory boundaries but surprisingly few birds were recorded in these areas. It was in proximity to these features where the more common bird species were encountered such as wren, robin, goldfinch and the occasional whitethroat. Grey wagtail, which is Red listed was recorded locally here too, but off site along the River Alt corridor. Breeding sand martins were recorded in the banks of the River Alt during the updated otter survey undertaken in June 2021. Where trees are a dominant feature, the occasional blackcap and amber listed willow warbler was also present. Dunnock, which is a Species of Principal Importance and Amber listed was occasionally encountered, but not in the numbers that would be expected for a site of this size.
- 4.13 Lastly the southern central area of the site contains areas of rough grassland interspersed by areas of mature scrub and mature trees located on undulating ground. The trees were found to have very few natural cavities to support hole nesting species and the taller trees particularly, such as Lombardy poplar, contained fairly frequent magpie and crow nests. This may account for the lower than expected bird assemblage as a result of disruption to nests and predation of nestlings. The presence of such species is also likely to deter nesting birds. Much of the scrub was found to be tall and leggy and not ideal for nest construction by smaller species, but smaller areas of patchy bramble were still a common feature with whitethroat and chiffchaff commonly noted calling.

5.0 Impacts and Recommendations

- 5.1 It is considered likely that only one species, the linnet will be lost from the site post development, which is on the Red list of Birds of Conservation Concern. A small number of birds were seen feeding on tall grasses and it is considered probable that it breeds on site. The site post development does not provide sufficient open habitat where this species would likely thrive. However, the site is not a typical habitat for this species, as it's widely recognised as a bird that favours farmland sites for breeding and as such, it's presence on site is potentially attributed to areas of arable land located to the north of the site at 700m. The potential loss of this species on site would not be considered significant above site level given the more suitable habitats to the north of the site. Compensation is however offered for Red listed starling and house sparrow as an alternative provision.

- 5.2 The impacts on site are all temporary with a view to creating new habitats that offer a greater diversity of smaller habitat areas aimed at supporting almost all of the displaced species as discussed in Section 5.6 below. Direct impacts on the breeding sand martins are not anticipated. Where habitat provision does not meet the needs of birds on site, habitat enhancement is provided on the wider golf course site. One of the major reasons for the lower than expected bird assemblage on site is likely attributed to the presence of corvid species. The newly developed site, post development is likely to be less suited to this group of birds, which generally avoid human activity; corvids are less prevalent on the adjacent golf course. The impacts arising from the loss of habitats on site for the duration of the works are considered to be significant at a local level and not significant post development.
- 5.3 Both during site clearance and mid-development there may be some disturbance and subsequent temporary displacement of birds using the adjacent habitats, particularly along the northern boundary of the site and potentially in the retained areas of scrub along the River Alt. However, this temporary impact is considered to be significant at site level only and temporary. Commuting kingfisher is unlikely to be affected by the works.
- 5.4 The sections below also consider loss of nesting bird habitat across the wider golf course, although loss of nesting habitat in the wider golf course is not anticipated to be significant. As for the derelict area of land, temporary disturbance and displacement of birds using adjacent habitats during the reconfiguration and other improvement works including irrigation/ drainage works across the wider golf course are considered to be significant at the site level only.

Pre-development Site Clearance Works

- 5.5 Ideally any site clearance works throughout the entire planning application site (including all habitats) should be undertaken outside the breeding bird season (March through to August inclusive). However, it should be noted that if weather conditions are favourable i.e. after a particularly mild winter, this period can be extended. Species such as the mistle thrush for example, which was noted on site can often begin laying a month earlier than the guidelines suggest. If habitat clearance works are expected during or near to the breeding season, then the impacted zone should be checked by a suitably qualified ecologist immediately prior to any works taking place. Should a nest be identified and depending on the species and / or location, a suitable buffer zone would be required to ensure the birds are allowed to continue their breeding cycle. Buffer zones vary greatly depending on the species. It must be noted however, that a site of this size would be extremely difficult to search and so this approach is not recommended.

Mid-development Works

- 5.6 It is expected that large amounts of earth will be moved in order to level the land and undertake landscaping works. The contractors should avoid allowing areas to become pooled with water unless they are constructing a new permanent water feature as this could encourage inland waders such as oystercatcher to breed, especially if the habitat is left undisturbed. The contractor should also avoid bunding earth or sand with vertical faces, which could encourage kingfisher and/or sand martin (*Riparia riparia*) to breed. A species commonly attracted to brownfield/ construction sites is the little ringed plover (*Charadrius dubius*) which favours areas of open stony ground and is often a habitat feature that becomes available as a consequence of large construction sites with stoned areas. Keeping open areas of freshly stoned ground to a minimum size should limit attracting this species.

Post-development and Mitigation Measures

- 5.7 In terms of mitigation and compensation measures for habitat losses and temporary displacement of birds within the site and wider golf course, the proposals include habitat creation and enhancements throughout the entire planning application site. All of the habitats within the derelict part of the site will be removed to allow construction of the nine-hole golf

course and leisure facilities. Newly created habitats are proposed as part of the landscaping, but these will take time to establish. Generally, the habitats with regards to birds are locally common when considering that similar habitats exist along the nearby M57 corridor. However, it must be borne in mind that these adjacent habitats will already support populations of birds in their own right and should not be relied upon to accommodate displaced birds. With that in mind, it is crucial that the site post development seeks to create new habitats that are suitable to support those species that were recorded and enhance the wider application site for birds overall. The developed part of the site will include approximately 10.8ha semi-rough, rough and long rough grassland with areas seeded with wildflower seed mix. To assist with interim losses and to provide further compensation for the long-term, out of play areas on the wider existing golf course which are currently intensely managed by mowing and fertilizing, will be managed for wildlife. It is the intent that these will become semi-improved tussocky grassland with a good litter layer and will compensate grassland losses to the west of the River Alt. Scrub may also become established here in places. It is considered that these new areas of rough grassland will provide new habitat for hunting barn owl and kestrel. There are no proposals to erect any barn owl roost or nest boxes on site because of the close proximity to the A506 and also the M57 motorway with high risk of road kill. Encouraging barn owl to establish breeding territories close to busy trunk roads should be discouraged¹.

- 5.8 There are no proposals to undertake any works that could negatively impact upon kingfisher habitat or disturb kingfisher during the breeding season. The River Alt and corridors connecting to off line ponds are to remain intact. There are no suitable breeding habitats located on site or in the vicinity of the site.
- 5.9 To the east of the River Alt in an area of 6,310 sqm, a new mixed woodland and 1,049 new trees and shrubs including 71 extra heavy standards and 96 heavy standards will be planted to compensate the loss of trees from the western side of the River Alt. The woodland will be linked to the adjacent established woodland to the east and will aim to provide a new Habitat of Principal Importance at the site. This in the long-term will provide habitat for Red listed mistle thrush among other species. It is acknowledged that new woodlands do take many years to establish and although cavities on the trees lost to development were not numerous, a bird box scheme will be adopted on the existing golf course to compensate for the small loss of trees with holes.
- 5.10 Extensive tree and shrub planting, plus other ecological mitigation measures including a bird box scheme across the wider golf course will be implemented to mitigate loss of nesting bird habitat during the reconfiguration and other improvement works including irrigation / drainage works across the wider golf course. At least two trees will be planted for every tree lost and at least 1ha mixed native scrub planting will be provided (in addition to the proposed woodland, hedgerow, tree and shrub planting on the landscape plans). This could comprise underplanting of areas of scattered trees, separate blocks of scrub planting or further native species-rich hedgerow.

Artificial Nesting Boxes (existing golf course east)

- 5.11 To be distributed throughout the site:
- 4 x Tawny owl
 - 2 x Kestrel
 - 40 x Small boxes with small circular holes for cavity nesters such as tits and nuthatches
 - 20 x Large boxes with large holes for cavity nesters such as jackdaw, starling, green woodpecker and great spotted woodpecker
 - 40 x Generalist boxes with open fronts for species such as robins and blackbirds.

¹ David J Ramsden, Barn Owls and Major Roads.

Suggested Artificial Nesting Boxes on Buildings

- 5.12 To be distributed on buildings at appropriate locations
- 4 x House sparrow terraces
 - 8 x Starling boxes
 - 5 x Swift boxes
 - 8 x House martin cups
- 5.13 It is considered that the careful inclusion of sparrow terraces and starling boxes on buildings across the golf course to encourage these red listed species could be considered as adequate compensation for the potential loss of linnet at the site.

Enhancement Measures

- 5.14 To enhance the site for birds generally, new habitats will be created on the new nine-hole golf course and also on the existing golf course. The proposals include two new large lakes and associated wetland habitats to include tall marginal grasses and aquatic planting. There will be no fish introduction, which will aid aquatic plant establishment and encourage species such as little grebe (*Tachybaptus ruficollis*) that feed on small aquatic invertebrates. Other wetland species are likely to include moorhen (*Gallinula chloropus*) and coot (*Fulica atra*) with a potential for ducks such as mallard, goldeneye (*Bucephala clangula*) and tufted duck (*Aythya fuligula*). The marginal habitats will be suitable to support sedge warbler and reed bunting and are also likely to attract reed warbler (*Acrocephalus scirpaceus*). Over time more desirable species such as water rail (*Rallus aquaticus*) could even take up residence.
- 5.15 Throughout the entire golf course, rough out of play areas will also be created to provide additional tussocky grassland with the inclusion of new areas of mixed native species and gorse scrub, which provides good habitat for small birds that frequently suffer from predation by crows and magpies. This habitat will be suitable for long-tailed tit (*Aegithalos caudatus*), dunnock, blackbird and song thrush. Linnet could also potentially use this habitat. In total, 6.72ha within the wider golf course will be enhanced to provide compensation for loss of habitat within the south western part and general ecological enhancement of the wider site.
- 5.16 The developed part of the site will have large numbers of scattered trees planted to help delineate fairways with each tree being a native species of local provenance. This includes 71 extra heavy standards and 96 heavy standards. Two trees will be planted for every tree lost providing ecological gain in the long term. Tree species include pedunculate oak (*Quercus robur*), white willow (*Salix alba*), alder buckthorn (*Rhamnus frangula*), Scots pine (*Pinus sylvestris*), silver birch (*Betula pendula*), rowan (*Sorbus aucuparia*), alder (*Alnus glutinosa*), beech (*Fagus sylvatica*) and field maple (*Acer campestre*).
- 5.17 In line with current planning policy it is recommended that there is no overall net loss in the biodiversity value of habitats suitable for birds at the site and net gain is provided. Therefore, it is further recommended that:
- Any suitable habitats such as waterbodies are designed to allow them to become habitat refuges.
 - Any habitat creation/enhancement works should aim to create Habitats of Principal Importance or LBAP habitats where possible and include only native species of local provenance.

6.0 Conclusion

- 6.1 The breeding bird survey on land to the west of Kirby Valley Golf Club was undertaken at a suitable time of year by an experienced ecologist. The survey identified a range of common and widespread bird species to be using the site along with two Schedule 1 bird species, five

Species of Principal Importance, three Local Biodiversity Action Plan species and thirteen Birds of Conservation Concern.

- 6.2 The proposals at the site include full site clearance of the derelict part of the site to the west of the River Alt, along with habitat creation and additional habitat enhancement of the existing golf course, including a bird box scheme. All habitats will be managed long-term and aim to provide adequate compensatory habitat for displaced birds along with creating habitats for species not currently found on site. It is considered that only one species of conservation concern will be lost from the site, which is the Red listed linnet. The potential loss of this species on site would not be considered significant above site level given the more suitable habitats to the north of the site. It is considered that the inclusion of sparrow terraces and starling boxes on buildings in the newly developed golf course to encourage these Red listed species could be considered as adequate compensation for this loss.

7.0 References

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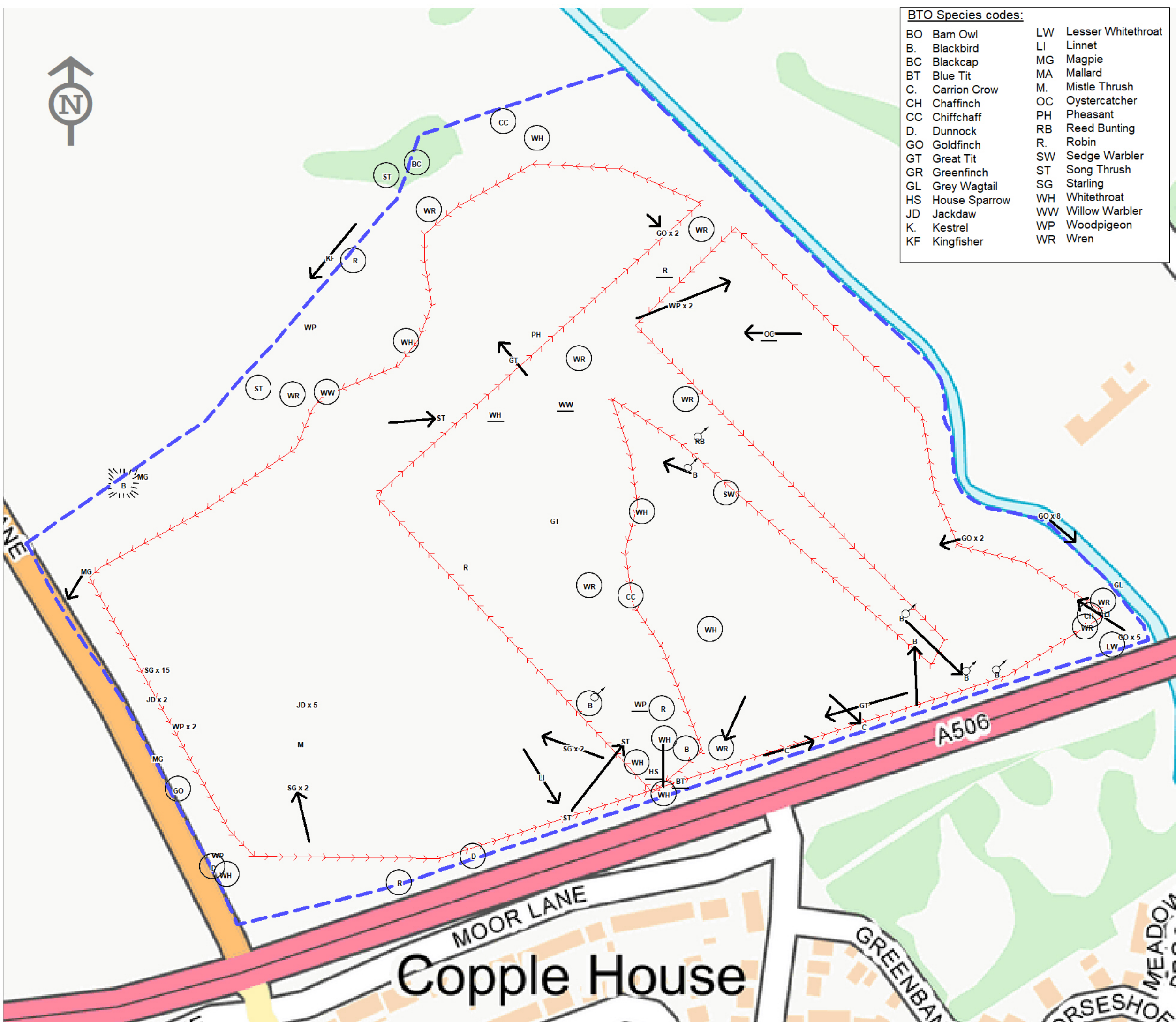
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Figure 1:
Proposed Estate Plan (9627-L22_C)

Figure 2:
Breeding Bird Survey Activity Map, Round 1



BTO Species codes:

BO	Barn Owl	LW	Lesser Whitethroat
B.	Blackbird	LI	Linnet
BC	Blackcap	MG	Magpie
BT	Blue Tit	MA	Mallard
C.	Carrion Crow	M.	Mistle Thrush
CH	Chaffinch	OC	Oystercatcher
CC	Chiffchaff	PH	Pheasant
D.	Duncock	RB	Reed Bunting
GO	Goldfinch	R.	Robin
GT	Great Tit	SW	Sedge Warbler
GR	Greenfinch	ST	Song Thrush
GL	Grey Wagtail	SG	Starling
HS	House Sparrow	WH	Whitethroat
JD	Jackdaw	WW	Willow Warbler
K.	Kestrel	WP	Woodpigeon
KF	Kingfisher	WR	Wren

Kirkby Golf Club

Figure 2:
Breeding Bird
Survey Results Map
Round 1 - 22.05.2019.

Map Ref: (NGR) 339,500, 397,725
Map Scale: 1:2,250 @ A3

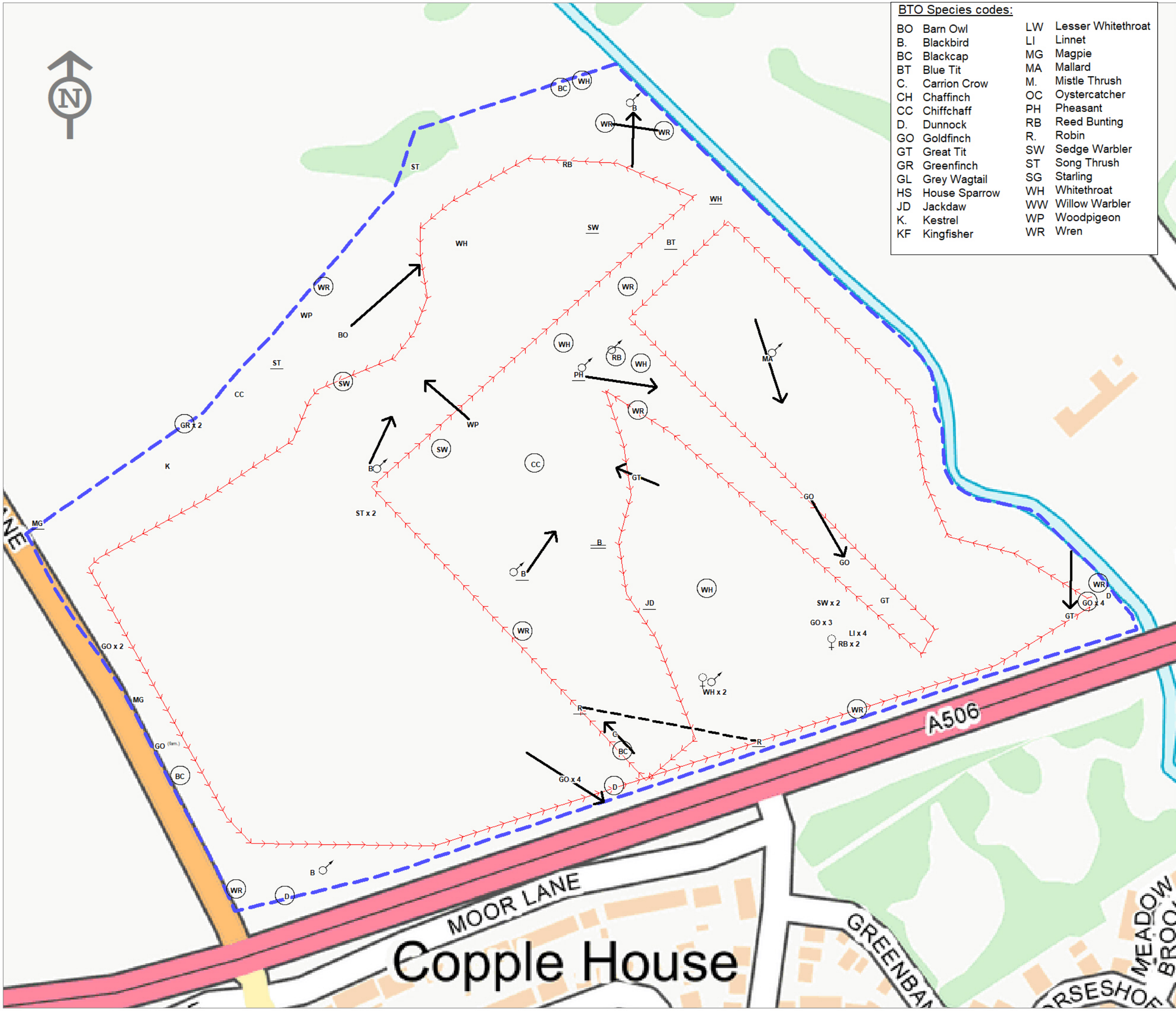
KEY

- Breeding bird survey area
- Route
- Calling
- Alarm calling
- Singing
- Aggression
- Registrations of the same bird
- Simultaneous registrations of the same
- Male
- Female
- Family

Blackbird movement symbols:

- A blackbird moving between two perches
- A blackbird flying in and landing (first seen in flight)
- A blackbird perched, then flying away (not seen land)
- A blackbird flying over (seen only in flight)

Figure 3:
Breeding Bird Survey Activity Map, Round 2



Kirkby Golf Club

Figure 3:
Breeding Bird
Survey Results Map
Round 2 - 24.06.2019.

Map Ref: (NGR) 339,500, 397,725
Map Scale: 1:2,250 @ A3