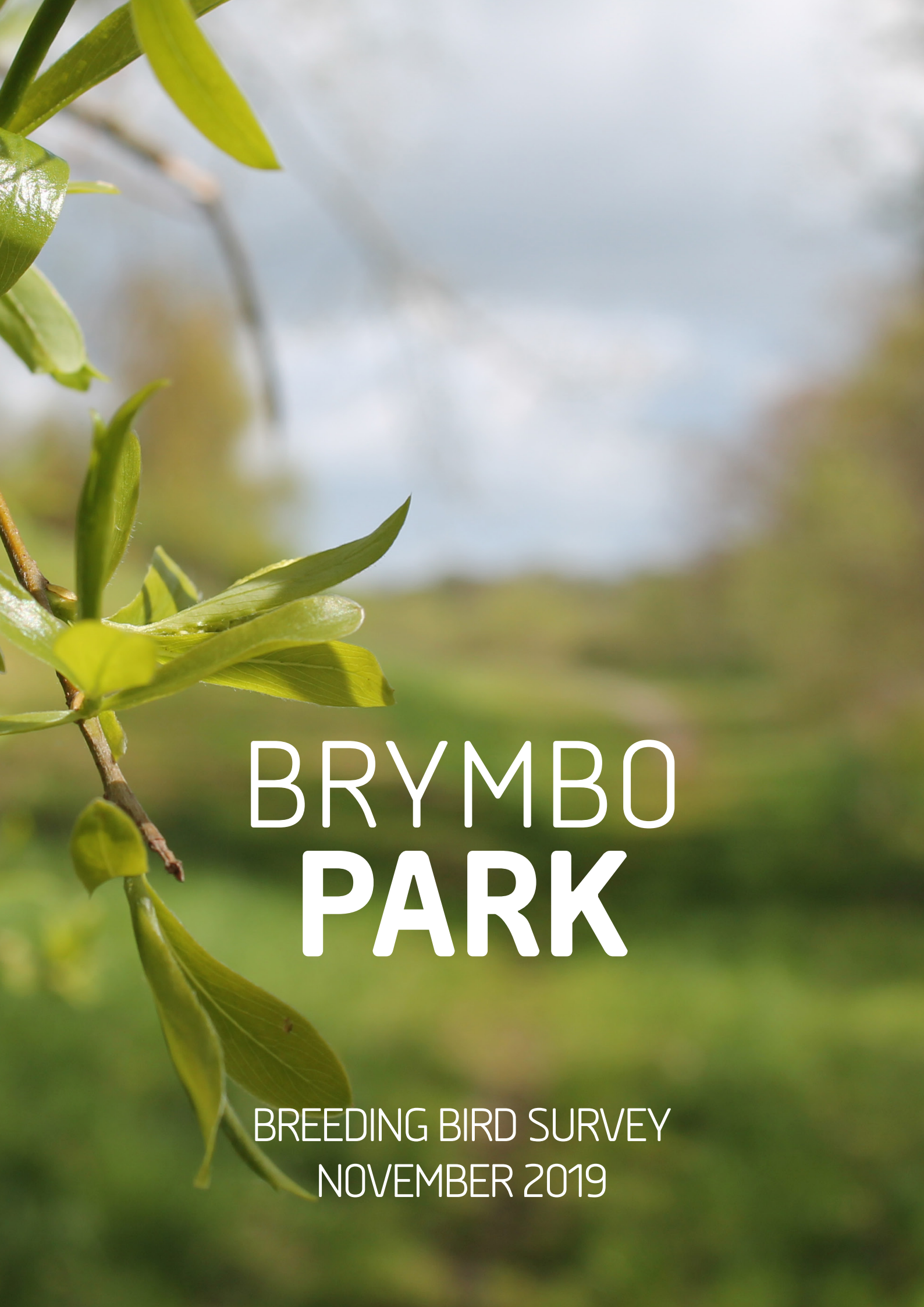




BRYMBO **PARK**

BREEDING BIRD SURVEY
NOVEMBER 2019

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BRYMBO DEVELOPMENTS LTD

LAND AT THE FORMER BRYMBO STEELWORKS, BRYMBO, WREXHAM

BREEDING BIRD SURVEY REPORT

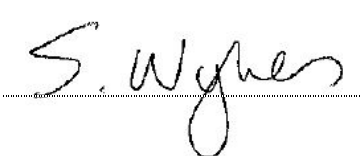
JULY 2019

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DRAWINGS	TITLE	SCALE
ST16882-034	Breeding Bird Transect and Field ID	1:4,000@A3
ST16882-035	Confidential Breeding Bird Survey Plan	1:4,000@A3

1 INTRODUCTION

1.1 Survey Area Context

- 1.1.1 Wardell Armstrong LLP (WA) was commissioned by Brymbo Developments Ltd to undertake a breeding bird survey (BBS) at the former Brymbo Steelworks, Brymbo, Wrexham; central Ordnance Survey grid reference SJ296534.
- 1.1.2 The area of detailed ecological study referred to as 'the Site' encompasses approximately 32 hectares of former industrial land which has been remediated and regraded, formed of two distinct areas separated by a steeply sloping bank.
- 1.1.3 The uppermost area is known as Ty Cerrig, forming the western part of the Site. Ty Cerrig has been returned to open rye-grass ley fields separated by native hedgerows (species-rich and species poor) with small dividing blocks of plantation woodland.
- 1.1.4 A bank which separates the uppermost and lower areas has scattered trees and scrub with an extensive network of informal footpaths.
- 1.1.5 The lower eastern part of the Site is separated from the west by Phoenix Drive. This area has been regraded into open brown field plateau covered in sparse ephemeral/short perennials.
- 1.1.6 The 'study area' is regarded as the Site plus the surrounding habitats that are likely to be functionally linked to the Site by the bird species that occupy them, out with to a distance of approximately 50m.

1.2 Objectives

- 1.2.1 The objectives of this survey and report are to:
- Identify all notable breeding bird species (and their territory locations) present within the survey area;
 - Highlight potential constraints to future developments works;
 - Ensure that breeding birds are fully considered within the design proposals; and
 - Provide mitigation and enhancement recommendations for species likely to be affected by the proposals (although this is not an ecological impact assessment report).

- 1.2.2 Owing to the sensitive nature of some of the species identified, Drawing ST16882-035 is **confidential** and should only be made available to *bone fide* individuals. It should not be used to disclose the location of the breeding sites of birds of conservation concern.

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2 METHODOLOGY

2.1 Desk Study

2.1.1 The desk study was informed by review of the latest bird data provided by Cofnod (North Wales Environmental Information Service) for a 2 kilometre (km) search radius from the Site (received August 2018).

2.1.2 From the records supplied, breeding bird records were selected as those recorded between the months of March to August, inclusive. Where no specific sighting date was provided, professional judgment and knowledge of species' ecology was used to categorise the record (i.e. wintering, breeding or passage migrant/vagrant).

2.2 Breeding Bird Survey

2.2.1 All bird surveys were undertaken by an experienced ornithologist from WA.

2.2.2 Bird species were identified by direct observation and through species vocalisation. Observations were made using 10x32 Zeiss binoculars.

2.2.3 Details of the 2019 survey dates, weather and timings are provided within Appendix 2 and details of the survey area and transect route are shown on Drawing Number Drawing ST16882-034.

2.2.4 The methodology used during the field surveys was based upon the standardised BTO/JNCC¹/RSPB Common Bird Census (CBC) survey technique, which has adopted 10x2 visits as standard. Ideally, these should be spread uniformly between mid-March and mid-July.

2.2.5 The survey approach consisted of an adapted CBC methodology, entailing one visit per month during the peak of the breeding season (i.e. April - June inclusive).

2.2.6 During the bird breeding season (i.e. March to September, inclusive), many birds (especially passerines³) mark their territories by singing conspicuously, displaying or periodically disputing with rival neighbours (Bibby et al 2000). The territory mapping methodology (Bibby et al 2000) was used to record the presence of displaying birds within the survey area and immediate surrounds. During each survey visit, the locations of the displaying birds were marked on site maps to indicate territory

¹ Joint Nature Conservation Committee (JNCC).

² However, it should be noted that – 'For any one species, all ten visits are rarely needed' (Bibby et al 2000).

³ Passerines, i.e. perching birds – an order of birds containing over half of the world's bird species, with anatomical adaptations for perching and singing.

locations.

- 2.2.7 The dawn surveys commenced within the first hour after sunrise and were completed before any lull in activity; usually around mid-day.
- 2.2.8 Surveys consisted of a plotted transect route to limit the effects of double-counting. The transect involved walking the predetermined route at a steady pace, ensuring that all habitat types within the survey area were sampled.
- 2.2.9 To provide a thorough assessment of the bird species' diversity within the local area, all species observed within the Site and within an appropriate zone of influence, were recorded. The zone of influence is assessed during the site visit and is determined by species present, or likely present, and the type of development proposed.
- 2.2.10 Dates and weather conditions of the surveys are shown within Appendix 2.

2.3 Data Interpretation/Determination of Breeding Status

- 2.3.1 Recording the behaviour, sex, age and location of birds allows conclusions to be drawn about breeding status within a survey area, based upon categories devised by the European Bird Census Council (EBCC 1997) and the British Trust for Ornithology (BTO).
- 2.3.2 Four breeding status categories are used to indicate the likely breeding status, these are:
- Confirmed breeder;
 - Probable breeder;
 - Possible breeder; and
 - Non-breeder.
- 2.3.3 These categories relate to breeding evidence obtained for individuals in potential suitable nesting habitat. The breeding evidence used in this report follows EBCC guidelines 1997 and BTO guidelines and the criteria used can be seen in Appendix 4.
- 2.3.4 For those species that do not readily 'sing' in display (e.g. corvids), breeding is assessed based on one or more of the following being recorded:
- Presence of a nest;
 - Breeding display;
 - Mating behaviour;
 - Territorial behaviour; and/or

- Presence of young.

2.3.5 When all the BBS site visits were completed, the information obtained for each species of conservation concern was transferred onto a separate 'species map'. Registrations on the species maps fall more or less neatly into clusters indicating the activity of particular birds or pairs throughout the main breeding season. The maps are then analysed to determine the number of territories/pairs present.

2.3.6 A cluster is in general a spatially distinct group of registrations in which not more than one male and one female are represented. Depending upon the biology of the species, it usually relates directly to a breeding territory. The estimated centre of the territories is then plotted using the results from each visit (based on the positions of the registration clusters) and the number of territories counted. In practice, the number of territories/pairs will be an estimate, particularly for species such as dunno which do not always hold territory in pairs and *Phylloscopus* warblers which are mobile and can be inconspicuous when not singing.

2.3.7 A breeding bird territory drawing (see Confidential Drawing ST16882-035) has been produced that highlights the locations of the BoCC⁴ and Section 7⁵ species recorded as breeding within the site. The BTO code markers on the map represent the approximate centre of the breeding territories. For species that do not 'hold' territories, the registration represents the approximate location of the breeding site based upon the behavioural observations recorded.

2.4 Evaluation

2.4.1 The evaluation of the results has been undertaken using UK bird evaluation and protection criteria, such as BoCC, Eaton *et al.* 2015 lists, Wrexham Local Biodiversity Action Plan (BAP) priority species and Section 7 'Species of Principal Importance'.

2.4.2 In order to assess the value of the breeding bird assemblage associated with the survey area, the Fuller (1980) criteria in Table 1 was used. These criteria have been used to classify the ornithological interest of >3,000 sites in Britain according to their importance for conservation and provides a standardised classification mechanism that identifies priority sites for conservation planning purposes; thereby forming a

⁴ Birds of Conservation Concern 4 (BoCC) 2015

⁵ Environment (Wales) Act 2016, Section 7 of the act requires Welsh Ministers to publish and maintain lists of species in Wales that are regarded as of 'principal importance' for the purpose of maintaining and enhancing biodiversity.

basis for making detailed comparisons of site quality.

Table 1: Species Richness Criteria (Breeding)			
Level of Conservation Importance			
Local	County	Regional	National
25-49	50-69	70-84	85+

2.5 Caveat

- 2.5.1 Ornithological surveys are affected by a variety of factors that affect the presence of birds (e.g. season, weather, food availability, species behaviour and disturbance).
- 2.5.2 The absence of any particular species within the survey area should not be taken as conclusive evidence that the species is not present or that it will not be present in the future. The results of these bird surveys give an indication of the use of the survey area by breeding bird species at the time of survey and provide guidance in impact assessment and predictions of effects.

3 RESULTS

3.1 Desk Study

3.1.1 The data provided by Cofnod identified multiple records of bird species with varying degrees of notability and/or protection within the 2km radius around the Site. For the purposes of this assessment a recent record is defined as being no more than 10 years old at the time of reporting, so in this case all records before 2009 are discounted.

3.1.2 Records of birds of conservation concern (BoCC) with potential to utilise the site including cuckoo *Cuculus canorus*, garden warbler *Sylvia borin*, grey partridge *Perdix perdix*, linnet *Linaria cannabina*, redstart *Phoenicurus phoenicurus*, skylark *Alauda arvensis*, spotted flycatcher *Muscicapa striata*, willow warbler *Phylloscopus trochilus* and yellowhammer *Emberiza citrinella* were recorded within 2km of the site.

3.2 Breeding Bird Survey

3.2.1 A total of 47 species were recorded within the BBS area. The species recorded, their scientific name, conservation status, breeding status and general activity descriptions are provided in Appendix 1.

3.2.2 The species recorded within the BBS area and Site that are listed on Schedule 1 of the Wildlife & Countryside Act 1981, Section 7 priority species, Wrexham LBAP, and/or species determined to be of Red or Amber listed BoCC by the RSPB and, therefore, of 'conservation concern' and are summarised in Table 2 below.

Table 2: Total species and Conservation Status	Site
Total species	47
Schedule 1 on W&CA	1
Annex 1 on the Birds Directive	0
Species on BoCC Red List	9
Species on BoCC Amber List	8
'Species of Principal Importance' listed under Section 7 of the Environment (Wales) Act 2016	10
Wrexham Local Biodiversity Action Plan (LBAP)	1

3.2.3 Species of conservation concern recorded and their breeding status within the survey area comprised:

- **One Schedule 1 species:**

Non-breeding – Redwing *Turdus iliacus* feeding in hedgerows and wooded areas in March.

- **Ten Section 7 listed species:**

Breeding – herring gull *Larus argentatus* (one probable pair on adjacent buildings), kestrel *Falco tinnunculus* (one possible breeding pair in former Brymbo steel works), skylark (six probable territories), dunnoek *Prunella modularis* (seven probable territories), song thrush *Turdus philomelos* (three probable territories), starling *Sturnus vulgaris* (probable breeder in adjacent residential areas), house sparrow *Passer domesticus* (two probable colonies), linnet *Linaria cannabina* (five probable pairs) and bullfinch *Pyrrhula pyrrhula* (three probable pairs).

Non-breeding – lesser redpoll *Carduelis cabaret*.

- **Nine Red listed BoCC:**

Breeding - herring gull (one probable pair on adjacent buildings), skylark (six probable territories), song thrush (three probable territories), starling (probable breeder in adjacent residential areas), house sparrow (two probable colonies) and linnet (five probable pairs).

Non-breeding – grey wagtail *Motacilla cinerea*, redwing, and lesser redpoll.

- **Seven Amber listed BoCC:**

Breeding - kestrel (one possible breeding pair in former Brymbo steel works), stock dove *Columba oenas* (three probable pairs in former steel works area), swift *Apus apus* (two possible pairs in former steel works area), dunnoek (seven probable territories), house martin *Delichon urbicum* (breeding in adjacent residential areas), willow warbler (eight probable territories) and bullfinch (three probable pairs).

Non-breeding – meadow pipit *Anthus pratensis*

- **Wrexham LBAP:**

Breeding – song thrush (three probable territories)

Species Accounts

- 3.2.4 Accounts of all Schedule 1 listed and breeding BoCC species recorded are provided below. For location references, refer to Drawing ST16882-034.

Winter Thrushes

- 3.2.5 During the April survey visit a small flock of redwing were recorded foraging in W4 and flying over the site. Redwing are a Schedule 1 and BoCC Red listed species due to very small numbers breeding in the far north of Scotland. However, redwing overwinter in the UK in large numbers, roving through the countryside feeding on berries, fruit and

invertebrates. The birds recorded on site were winter visitors preparing for the breeding season back on the continent with no breeding connection to the site.

Farmland Passerines

- 3.2.6 Small numbers of the following farmland passerines of conservation concern were recorded within the survey area, see Table 3 below.

Table 3: Farmland Passerines - Breeding birds of Conservation Concern	
Species	Number of pairs/territories Primary Survey Area
Stock Dove	Three probable pairs breeding in former steel works
Skylark	Two probable pairs in arable ley fields and four probable pairs in bare ground
Dunnock	Seven probable territories
Song Thrush	Three probable territories
House Sparrow	Two probable colonies
Linnet	Five probable pairs
Bullfinch	Three probable pairs

- 3.2.7 Three probable pairs of stock dove were recorded breeding within the former Brymbo steel works and regularly foraging within the bare ground and arable fields on site. Stock Dove is a resident breeder in the UK and is Amber listed due to Britain holding at least 20% of the European population (Eaton *et al* 2015).
- 3.2.8 Two pairs of skylark were recorded regularly displaying over the arable ley fields (F2, F3 and F4) and four pairs were recorded displaying over the cultivated/disturbed land-ephemeral/short perennial. The birds were often observed in song overhead and occasionally undertaking short territorial flights. The skylark is a common resident species in the UK, however it is Red and Section 7 listed as it has suffered very severe population declines in recent decades linked to farming intensification and habitat change (Eaton *et al* 2015).
- 3.2.9 Dunnock is a widespread territorial species that associates with hedgerows and dense, low undergrowth (Harrison & Harrison 2005). Seven probable territories were recorded across the survey area, breeding in association with hedgerows, scrub and woodland fringe. Although ubiquitous, the species is Amber and Section 7 listed as it is yet to recover fully from the drop-in abundance during the 1970s and 1980s.
- 3.2.10 Three probable pairs of song thrush were recorded in the survey area. This species is a migrant/resident breeder in the UK and is Red and Section 7 listed due to currently undergoing severe long-term population decline (Eaton *et al* 2015). This species is

monogamous and territorial during the breeding season. Recorded throughout the site in association with hedgerows and mature trees.

- 3.2.11 Two probable house sparrow colonies are located within the survey area, with one colony in H5 and a second colony in association with the residential gardens to the south of the cultivated/disturbed land-ephemeral/short perennial. House Sparrow is a widespread resident breeder in the UK, it is Red and Section 7 listed due to severe population declines linked to agricultural intensification (Baillie *et al* 2014).
- 3.2.12 Linnet is a migrant/resident breeder in the UK and has undergone severe population declines in recent decades, resulting in its inclusion on the Red list (Eaton *et al* 2015) and on Section 7. Five probable pairs were recorded during the survey, breeding in association with hedgerows and scrub on Site. Linnet often form loose colonies and the male's display song is not always indicative of a territory.
- 3.2.13 Three probable pairs of bullfinch were recorded within the survey area in scrub 2, H3 and W4. Bullfinches are not overtly territorial and can be unobtrusive during the breeding season, making conformation of territories difficult (Snow *et al* 1998). This species is a resident breeder in the UK and is currently Amber and Section 7 listed due to sharp declines in the 1970s, from which it has begun to slowly recover in recent years (Baillie *et al* 2014).

Raptors

- 3.2.14 The kestrel was the only raptor species of conservation concern recorded within the survey area, listed as an Amber BoCC. A pair of kestrel were regularly recorded foraging over the ephemeral/short perennial vegetation, arable ley fields and around the former Brymbo steel works buildings. The former steel works buildings provide suitable breeding habitat for this species and based on the activity recorded provide a possible breeding location.

Swifts and Hirundines

- 3.2.15 Swifts and house martins were regularly recorded foraging over the site with probable breeding indicated in the former Brymbo steelworks and surrounding residential properties. Swifts and house martins are amber listed BoCC species and although not breeding within the Site they are utilising the Site for foraging.

Warblers

- 3.2.16 The survey area was found to be supporting at least four species of warbler (comprising blackcap *Sylvia atricapilla*, whitethroat *Sylvia communis*, chiffchaff

Phylloscopus collybita and willow warbler). Of these species only willow warbler is of conservation concern. The willow warbler is an amber listed BoCC and was recorded in notably high density with eight territories recorded in association with areas of young trees, scrub and woodland fringe.

- 3.2.17 The warbler assemblage is noteworthy and indicative of the mosaic of fringe habitats present within the survey area.

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4 EVALUATION OF BREEDING BIRD ASSEMBLAGES

4.1.1 In terms of evaluating the survey area for its significance to breeding birds, the following criteria were taken into account:

- A. The occurrence of significant concentrations of a bird species, particularly if these comprise a significant proportion (i.e. 1% or more) of the national breeding population;
- B. The species-richness of the bird assemblage of the survey area (i.e. how many different types of species does the survey area support);
- C. Species listed on Schedule 1 of the Wildlife & Countryside Act 1981, Annex 1 Birds Directive, Section 7 listed species, Wrexham LBAP species and species determined to be of either red or amber status in BoCC 4, and therefore of conservation concern.

Criteria A

4.1.2 No breeding populations recorded within the Site or survey area comprised 1% or higher of the national breeding population.

Criteria B

4.1.3 A total of 47 species were recorded within the survey area.

4.1.4 In accordance with the criteria provided by Fuller (1980); the survey area is considered to support a breeding assemblage that is important at a local scale.

Criteria C

4.1.5 One Schedule 1 species was recorded within the survey area – redwing. Redwing were recorded in April and are a nationally widespread winter visitor to the UK.

4.1.6 No breeding Schedule 1 listed species were recorded within the survey area.

4.1.7 Ten Section 7 listed species were recorded within the survey area, of which nine were breeding (comprising kestrel, herring gull, skylark, dunnoek, song thrush, starling, house sparrow, linnet and bullfinch).

4.1.8 Seventeen BoCC red or amber listed species were recorded, of which thirteen were identified as breeding within the survey area (comprising kestrel, herring gull, stock dove, swift, skylark, house martin, dunnoek, song thrush, willow warbler, starling, house sparrow, linnet and bullfinch).

- 4.1.9 Though much declined, all of these are still relatively abundant nationally and are likely to be widespread in the local area within suitable habitat.
- 4.1.10 Six territories of skylark and eight territories of willow warbler are particularly notable, the site as a whole is considered to be of local value for breeding birds.

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5 RECOMMENDATIONS

5.1.1 Mitigation / enhancement measures for breeding birds are recommended as follows:

- 1) Skylark: It is recommended that within the landscape masterplan for the scheme there is the inclusion of native, species rich, rough grassland meadows, that are created and managed specifically with skylark in mind.

Skylarks occupy open fields devoid of trees and scrub to avoid predators. They require moderate to large sized fields (above 3ha in size, ideally greater than 5ha) and generally do not use the field edges within 10m of a field boundary. Skylarks nest on the ground in grassland vegetation which is 20-50cm in height, with a tussocky sward that is open enough to give the birds easy access to the ground. The management of the grassland should include approximately half of the grassland cut once a year in the autumn, on rotation. Allowing the grassland areas to be used by breeding skylark over the spring/summer and retaining some rank grassland areas for shelter and foraging over the winter.

- 2) Warblers: Four species of warbler were recorded within the survey area (blackcap, whitethroat, chiffchaff and willow warbler), most of which were recorded in the vegetation around the peripheries of the site and outside of the development footprint. Of particular conservation interest is the density of willow warbler (eight territories within the survey area). This amber listed BoCC occupies areas of young, open scrubby woodland with small trees. The retention of the scrub, woodland blocks and tree lines around the periphery of the site and within the masterplan will retain habitat for this species. The inclusion of young tree planting and scrub (particularly birch, hawthorn and willow) with a base of herbs, low shrubs and grass tussocks would also create additional habitat for willow warbler within the Site.

- 3) Cavity nesting species: It is likely that kestrel, stock dove and swift would continue to utilise the former Brymbo steel works for breeding, but it is recommended that foraging habitat for these species is retained and/or incorporated into the masterplan for the scheme in the form of areas of open rough grassland within the site. Additionally, as an enhancement, it would be beneficial if nest boxes for these species could be included within the scheme. Kestrel and stock dove occupy medium sized nest boxes⁶ that would be best situated overlooking areas of open

⁶ <https://shopping.rspb.org.uk/bird-prey-nest-boxes/kestrel-nest-box.html>

grassland. Swift boxes can be integrated into the built development and the inclusion of swift bricks is aiding in providing breeding habitat for this rapidly declining species⁷;

- 4) Hedgerow species: Linnet and bullfinch and declining species of conservation concern require dense, species rich hedgerows for breeding and foraging. It is recommended that foraging and breeding habitat for these species is retained and incorporated into the masterplan for the scheme in the form of hedgerow retention and planting. Tree and shrub planting of particular value to these species includes hawthorn, dog-rose and other berry bearing native species;
- 5) Other declining urban associated species: Dunnock, house sparrow, house martin, starling and song thrush are likely to utilise new planting, areas of green space and gardens within residential and urban areas as they mature and may find new foraging and breeding opportunities within the built environment, but this can be enhanced through adding nesting habitat. It is increasingly common to provide integrated nesting boxes, which homeowners are likely to find a positive intervention⁸;
- 6) Any works that require vegetation clearance should be timed to avoid the bird nesting season, which is generally accepted to be March to August, inclusive. If this is not possible, then areas of vegetation clearance should be first checked by a suitably qualified ecologist 24-hours in advance of works for the presence of occupied nests.

5.1.2 These measures would provide and retain breeding opportunities for Section 7 and BoCC listed species post development.

⁷ https://www.swift-conservation.org/2017_SNH_Swift_Best_Practice_Advice_Note-2.pdf

⁸ <http://eprints.glos.ac.uk/5682/1/Roberts%20MSc%20Applied%20Ecology%20Dissertation.pdf>

6 CONCLUSION

- 6.1.1 The breeding bird surveys recorded the presence of 47 species within the survey area, of which there were 17 species of conservation concern.
- 6.1.2 In accordance with the criteria provided by Fuller (1980); the Site is considered to support a breeding bird assemblage important at a Local scale, based upon the total number (i.e. 47) of species recorded.
- 6.1.3 Therefore, the Site is considered of Local value for breeding birds, and breeding birds should be accounted for accordingly within the masterplan and development scheme for the Site, particularly those associated with the arable ley fields, bare ground with short ephemeral/perennial vegetation, woodland and hedgerows.
- 6.1.4 Mitigation and enhancement measures for breeding birds are recommended in Section 5. Of particular note is the consideration for skylark.
- 6.1.5 These mitigation measures would provide and retain breeding opportunities for Section 7 and BoCC listed species post development and maintain the local value of the area for breeding birds.

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Appendix 1
Brymbo Breeding Bird Survey Species List
(March 2019 – June 2019)

APPENDIX 1: BRYMBO BREEDING BIRD SURVEY SPECIES LIST (MARCH 2019 - JUNE 2019)					Breeding Status within Survey Area	General activity discription / notable observations
Birds of Conservation Concern						
Red Listed, Amber Listed, Green Listed, Annex 1, Schedule 1, SEC 7, LBAP						
Sparrowhawk				Accipiter nisus	Non-breeding	Hunting flights along hedgerows, field margins and wooded areas
Buzzard				Buteo buteo	Non-breeding	Occasional flyovers, often associating with open fields and wooded areas
Kestrel			SEC 7	Falco tinnunculus	Possible	Regular foraging pair over bare ground and grassland. Also should signs of breeding association around the former steelworks building area
Herring Gull			SEC 7	Larus argentatus	Probable	Regular flyovers and occasionally dropping into fields and bare ground areas, probable pair identified breeding on adjacent residential buildings
Stock Dove				Columba oenas	Probable	Three pairs recorded in association with the former Brymbo steelworks buildings
Woodpigeon				Columba palumbus	Probable	Regular flyovers and breeding in woodland blocks and hedgerows
Collared Dove				Streptopelia decaocto	Probable	Recorded in former Brymbo steelworks and in association with adjacent residential areas
Swift				Apus apus	Possible	Probable breeding in former Brymbo steelworks buildings
Green Woodpecker				Picus viridis	Probable	Yaffling from adjacent woodland and probable breeder adjacent to the Site
Great Spotted Woodpecker				Dendrocopos major	Probable	Individuals recorded in treelines and wooded areas throughout, drumming in March
Skylark			SEC 7	Alauda arvensis	Probable	Six pairs recorded in arable ley fields and disturbed ground with short ephemeral/perennial vegetation
Swallow				Hirundo rustica	Probable	Regularly foraging over the site, probable breeding within former Brymbo steelworks
House Martin				Delichon urbicum	Probable	Regularly foraging over the site, probable breeding in adjacent residential areas
Meadow Pipit				Anthus pratensis	Non-breeding	Regularly recorded in the early spring (March and April) before departing to breeding areas away from Site
Grey Wagtail				Motacilla cinerea	Non-breeding	Individual recorded foraging on the bare ground in March
Pied Wagtail				Motacilla alba	Probable	Foraging on bare ground and probable breeder in former Brymbo steelworks buildings
Wren				Troglodytes troglodytes	Probable	Regular in wooded areas and hedgerows throughout
Dunnock			SEC 7	Prunella modularis	Confirmed	Seven territories recorded, regular in hedgerows and scrub throughout the survey area
Robin				Erithacus rubecula	Confirmed	Regular in wooded areas, scrub and hedgerows throughout
Blackbird				Turdus merula	Confirmed	Regular in wooded areas, scrub and hedgerows throughout
Song Thrush			SEC 7 LBAP	Turdus philomelos	Probable	Three territories recorded in survey area, regular foraging activity in hedgerows and scrub on Site
Redwing		1		Turdus iliacus	Non-breeding	Small flock recorded in April foraging in W4
Blackcap				Sylvia atricapilla	Probable	Regular in wooded areas, scrub and hedgerows throughout
Whitethroat				Sylvia communis	Probable	Regular in wooded areas, scrub and hedgerows throughout
Chiffchaff				Phylloscopus collybita	Probable	Regular in wooded areas, scrub and hedgerows throughout
Willow warbler				Phylloscopus trochilus	Probable	Eight territories recorded in scrub and woodland fringe throughout the survey area
Goldcrest				Regulus regulus	Probable	Regularly recorded in coniferous areas throughout the survey area
Long-tailed Tit				Aegithalos caudatus	Probable	Flocks moving along hedgerows and treelines throughout
Blue Tit				Cyanistes caeruleus	Confirmed	Generally individuals or in mixed tit flocks in treelines and wooded areas
Great Tit				Parus major	Confirmed	Generally individuals or in mixed tit flocks in treelines and wooded areas
Coal Tit				Parus ater	Probable	Generally individuals or in mixed tit flocks in treelines and wooded areas
Treecreeper				Certhia familiaris	Probable	Generally individuals in treelines and wooded areas
Jay				Garrulus glandarius	Possible	Individuals or pairs, calling in wooded adjacent to the Site
Magpie				Pica pica	Confirmed	Individuals or pairs, calling in wooded areas and hedgelines throughout
Jackdaw				Corvus monedula	Confirmed	Breeding colony in buildings and walls associated with former Brymbo steelworks
Rook				Corvus frugilegus	Non-breeding	Occasional flyovers and foraging in fields
Carriion Crow				Corvus corone	Possible	Regularly foraging in fields
Raven				Corvus corax	Non-breeding	Single calling flyover in March
Starling			SEC 7	Sturnus vulgaris	Probable	Occasional flyovers, likely breeding in surrounding residential areas
House Sparrow			SEC 7	Passer domesticus	Probable	Two colonies, one in H5 and one in scrub adjacent to gardens and residential areas in the SE of the Site
Chaffinch				Fringilla coelebs	Probable	Regular display in hedgelines and wooded areas, mainly in western half of the Site
Greenfinch				Carduelis chloris	Probable	One individual recorded in display in H4 in April
Goldfinch				Carduelis carduelis	Probable	Regular in scrub and woodland fringe
Siskin				Carduelis spinus	Probable	Recorded regularly in western half of Site
Linnet			SEC 7	Carduelis cannabina	Probable	Five probable pairs identified, regular presence in scrub and hedgerows throughout the Site
Lesser Redpoll			SEC 7	Carduelis cabaret	Non-breeding	Two birds recorded in W4 in April
Bullfinch			SEC 7	Pyrrhula pyrrhula	Probable	Three probable pairs recorded in woodland and scrub throughout the survey area
TOTAL SPECIES - SURVEY AREA					47	
Annex 1 Protected Species					0	
Schedule 1 Protected Species					1	
BoCC 4 Red Listed Species					9	
BoCC 4 Amber Listed Species					8	
BoCC 4 Green Listed Species					30	
BoCC 4 Species Not Assessed (na)					0	
Section 7: Species of Principal Importance					10	
Wrexham LBAP					1	

Key: Red, Amber and Green listed based on BoCC 4. Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. & Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Birds 108: 708-346. Annex 1: listed on Annex 1 of the European Birds Directive, Schedule 1:listed on Sch 1 of the Wildlife and Countryside Act (WCA) 1981, Section 7 listed species (formerly S42 listed species): Environment (Wales) Act (2016); Wrexham LBAP:

Wrexham Local Biodiversity Action Plan Listed Species

Appendix 2
Survey Data Tables

Appendix 2. Survey Data Tables				
Table 1: Breeding Bird Survey (BBS) Weather and Times on Site				
BBS visit	Date	Weather	Time On site	Sunrise time
BBS 1	08/03/19	Wind calm from the SW 2-5mph, 1-4°C, dry, overcast and cold	07:20 - 11:20	06:44
BBS 2	11/04/19	Wind from the SW 8-10mph. Cold morning - 1°C - 6°C by mid-morning. Sunny, dry and clear. Dry	07:10 – 11:00	06:23
BBS 3	21/05/19	Wind from the W 5-7mph. 5-16°C, dry and bright sunny morning	06:00 – 10:00	05:05
BBS 4	13/06/19	Wind from the NW 4-6mph. 9-11°C, grey and overcast, band of light rain between 09:00 and 09:30.	05:35 – 09:45	04:42

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Appendix 3
BTO Breeding Status Codes

Breeding Status Codes

Non-breeding	
F	Flying over
M	Species observed but suspected to be still on M igration
U	Species observed but suspected to be s U mmerring non-breeder
Possible breeder	
H	Species observed in breeding season in suitable nesting H abitat
S	S inging male present (or breeding calls heard) in breeding season in suitable breeding habitat
Probable breeding	
P	P air observed in suitable nesting habitat in breeding season
T	Permanent T erritory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more part at the same place or many individuals on one day
D	Courtship and D isplay (judged to be in or near potential breeding habitat; be cautious with wildfowl)
N	Visiting probable N est site
A	A gitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby
I	Brood patch on adult examined in the hand, suggesting I ncubation
B	Nest B uilding or excavating nest-hole
Confirmed breeding	
DD	D istractio D - D isplay or injury feigning
UN	U sed N est or eggshells found (occupied or laid within period of survey)
FL	Recently F Ledged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g. feeding) is helpful. Be cautious, even if the record comes from suitable habitat.
ON	Adults entering or leaving nest-site in circumstances indicating O ccupied N est (including high nests or nest holes, the contents of which can not be seen) or adults seen incubating
FF	Adult carrying F aecal sac or F ood for young
NE	N est containing E ggs
NY	N est with Y oung seen or heard

Appendix 4
Legislation and Policy

LEGISLATION AND POLICY⁹

The *European Community Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive)* is a framework for the conservation of wild birds in member states. Those bird species listed on *Annex 1* of the *Birds Directive* are subject to special conservation measures through the designation of UK Special Protection Areas (SPA) in order to safeguard important sites within the member states. The species listed in *Annex I* of the *Birds Directive* are those in danger of extinction, rare, vulnerable to specific changes in their habitat or requiring particular attention for reasons of the specific nature of their habitat.

The *Conservation of Habitats and Species Regulations 2017 (The Habitat Regulations)* provides legal protection for UK SPAs. The *Habitat Regulations* also provide legal protection to wetlands of international importance as designated under the Ramsar Convention. Proposals that are likely to affect an SPA or Ramsar site must address all relevant features that contribute to the integrity of the protected site, whether or not the proposal lies within or out with of the site. This allows for the protection of qualifying features (i.e. bird species) several kilometres from any development being proposed and is especially pertinent to migratory bird species.

The *Wildlife & Countryside Act (WCA) 1981* and the *Wildlife & Countryside Act (1981 as amended)* provide legal protection to all wild birds¹⁰, their nests and their eggs, making it an offence to intentionally kill or injure any wild bird, damage or destroy an active nest of any wild bird or destroy the eggs of any wild bird. Species listed in *Schedule 1* of the *Act* are also protected by special penalties from reckless or intentional disturbance whilst nest building or at (or near) a nest with eggs or young; or disturbance to dependant young¹¹. Under the *Wildlife & Countryside Act (1981 as amended)*, a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild form.

The Environment (Wales) Act (2016) Part 1 sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces

⁹ The relevant Policies and Acts should be consulted for definitive information. This resource is intended as a guide only.

¹⁰ Game birds are covered by *The Games Acts 1831*, which fully protects them during the closed season.

¹¹ Other offences apply but are of less relevance to this assessment.

the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

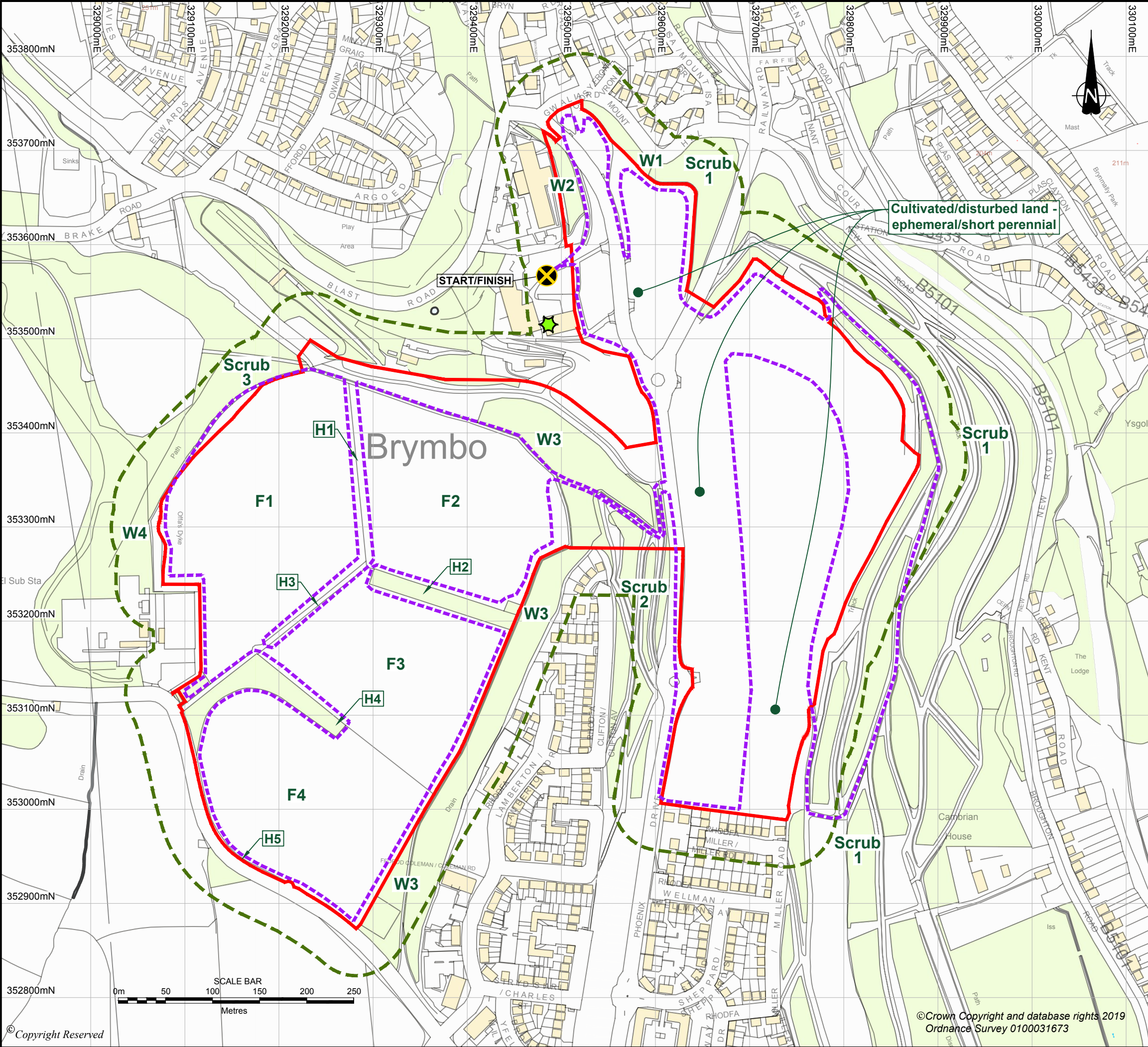
The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

Part 1 of the Act, including Sections 6 and 7, came into force on May 21, 2016.

Local Biodiversity Action Plans (LBAPs) exist throughout Wales. These highlight species that are considered to be under specific threat in a particular district or county or those considered to be at numbers to be a stronghold for that particular species. These plans do not offer the species any specific protection, but help to highlight the importance of a species at a local level.

The UK's leading bird conservation organisations (i.e. Royal Society for the Protection of Birds (RSPB), British Trust for Ornithology (BTO) and BirdLife) undertake a five-yearly review of the status of birds that occur regularly in the UK. Species are divided between red, amber and green categories, according to their status over the previous five years as Birds of Conservation Concern (BoCC). The criteria used for assessment ensure that the BoCC listings reflect each species' global and European status as well as that within the UK, as well as measuring the UK population in international terms. Red-listed species have been subject to the greatest population loss, rate of decline and/or range contraction. Amber-listed species have been subject to moderate declines, followed by green listed species, which are not considered to be declining or do not qualify under any of the red or amber criteria. For a detailed breakdown of the BoCC criteria, see Eaton *et al.* (2015).

DRAWINGS



DO NOT SCALE FROM THIS DRAWING

KEY

- SITE BOUNDARY
- - - STUDY AREA
- - - TRANSECT
- ✕ START/FINISH
- F4 FIELD ID REFERENCE
- ★ FORMER STEELWORKS

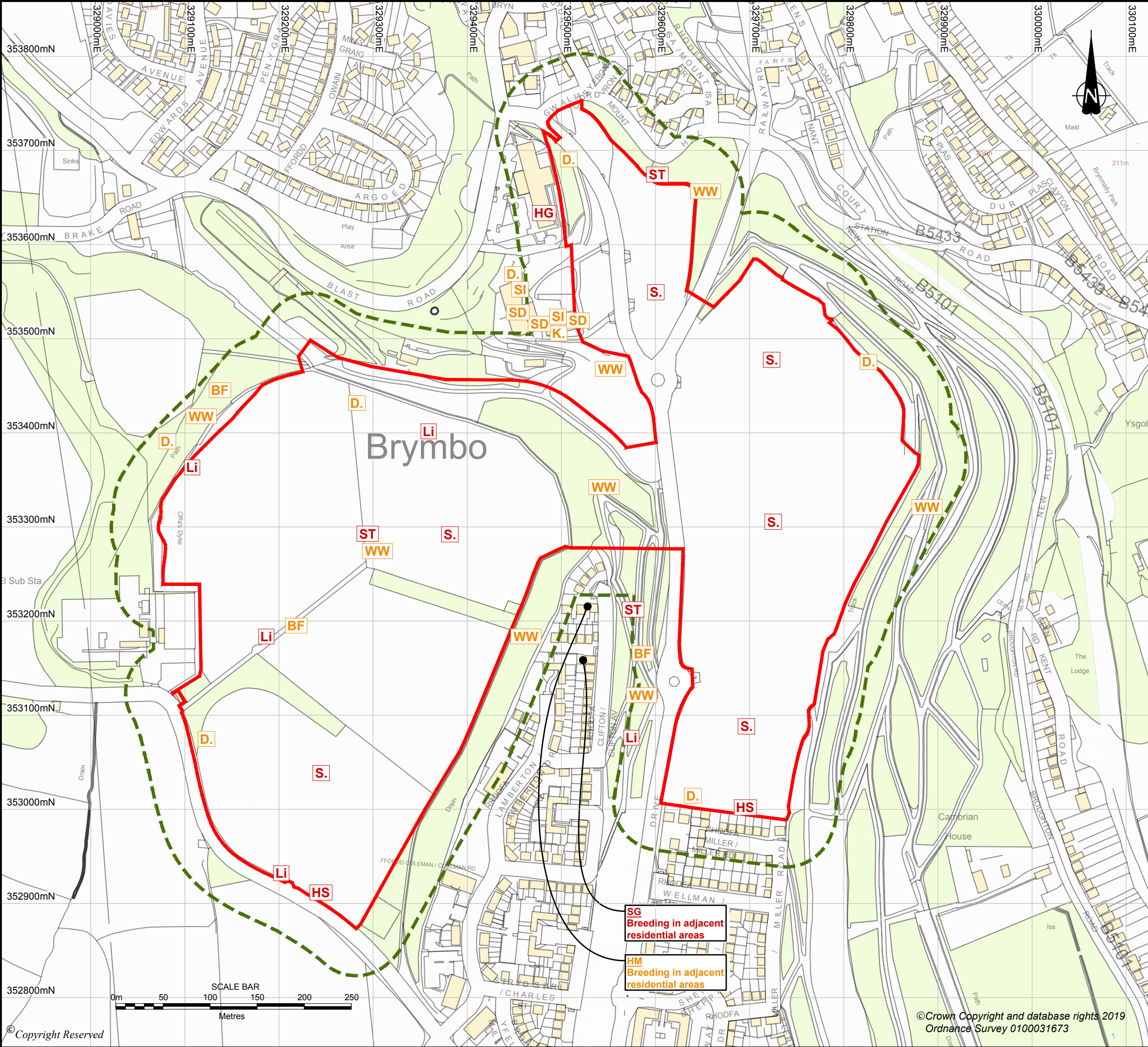
NOTES:
COORDINATES TO BRITISH NATIONAL GRID.

A	First Issue	23/07/19	MAB	JB	SW
REVISION	DETAILS	DATE	DRN	CHKD	APPD
CLIENT					
Parkhill Estates					
PROJECT					
Former Brymbo Steelworks, Werexham					
DRAWING TITLE					
Breeding Bird Transect and Field ID					
DRG No.		ST16882-034		REV	
				A	
DRG SIZE		SCALE		DATE	
A3		1:4000		08/07/2019	
DRAWN BY		CHECKED BY		APPROVED BY	
MAB		JB		SW	



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DO NOT SCALE FROM THIS DRAWING

KEY

- SITE BOUNDARY
- STUDY AREA

BTO Code	Species	No. Pairs/Territories
BF	Bullfinch	3
D.	Dunnock	7
HG	Herring Gull	1
HM	House Martin	**
HS	House Sparrow	2 colonies
K.	Kestrel	1
Li	Linnet	5
S.	Skylark	6
ST	Song Thrush	3
SG	Starling	**
SD	Stock Dove	3
SI	Swift	2
WW	Willow Warbler	8

** Breeding in adjacent residential areas

NOTES:
COORDINATES TO BRITISH
NATIONAL GRID.

A	First Issue	23/07/19	MAB	JB	SW
REVISION	DETAILS	DATE	DRN	CHKD	APPD
CLIENT Parkhill Estates					
PROJECT Former Brymbo Steelworks, Werexham					
DRAWING TITLE Breeding Bird Territory Map					
DRG No. ST16882-035			REV A		
DRG SIZE A3		SCALE 1:4000		DATE 08/07/2019	
DRAWN BY MAB		CHECKED BY JB		APPROVED BY SW	



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