

A12 Chelmsford to A120 widening scheme TR010060

6.3 ENVIRONMENTAL STATEMENT APPENDIX 9.5 BREEDING BIRD SURVEY REPORT

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ENVIRONMENTAL STATEMENT
APPENDIX 9.5 BREEDING BIRD SURVEY REPORT

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LIST OF CONTENTS

1	Executive Summary	4
2	Introduction	5
2.1	Background	5
2.2	Purpose of the report	6
2.3	Survey objectives	7
3	Breeding bird ecology	8
4	Legislation and policy	9
4.1	Legislation	9
4.2	National planning policy framework.....	9
4.3	Priority species.....	10
4.4	Birds of Conservation Concern (BoCC)	10
4.5	Essex Red Data List.....	10
5	Methodology.....	11
5.1	Desk study	11
5.2	Limitations.....	11
5.3	Field study.....	12
6	Results	15
6.1	Desk study	15
6.2	Field study.....	16
6.3	Waterfowl	17
6.4	Waders.....	18
6.5	Gulls.....	19
6.6	Raptors	20
6.7	Passerines	21
6.8	Non-passerines	25
7	Discussion	28
7.1	Summary.....	28
7.2	Evaluation	29
8	References.....	31
9	Glossary.....	32
	Annex A. Environmental records for birds.....	33
	Annex B. Qualifying features of designated sites	53
	Annex C. Summary of field survey results	57

Annex D. Survey Metadata.....	81
Figures.....	87

LIST OF FIGURES

Figure 1 Breeding birds – 2020 surveys study area

Figure 2 Breeding birds – 2020 surveys notable species

LIST OF TABLES

Table 6.1 SPA/Ramsar sites identified by the desk study.....	15
Table 6.2 Conservation and breeding status of waterfowl recorded during the surveys	17
Table 6.3 Conservation and breeding status of waders recorded during the surveys.....	18
Table 6.4 Conservation and breeding status of gulls recorded during the surveys.....	19
Table 6.5 Conservation and breeding status of raptors recorded during the surveys	20
Table 6.6 Conservation and breeding status of passerines recorded during the surveys..	21
Table 6.7 Summary of Red List passerine species recorded during the surveys.....	23
Table 6.8 Summary of Amber List passerine species recorded during the surveys.....	24
Table 6.9 Conservation and breeding status of passerines recorded during the surveys..	25
Table 6.10 Summary of Red List passerine species recorded during the surveys.....	27
Table 6.11 Summary of Amber List passerine species recorded during the surveys.....	27
Table A.1 Environmental records for birds within 2km of the proposed scheme obtained from Essex Wildlife Trust	33
Table A.2 Environmental records for birds within 2km of the proposed scheme obtained from Essex Field Club, showing distance from the proposed scheme	51
Table B.1 SPA/Ramsar sites within 2km of the proposed scheme, or located at a greater distance where an effect pathway could exist, and their qualifying features in respect of breeding species - over wintering bird species are excluded (JNCC, 2016).....	53
Table C.1 Bird species recorded during the 2017 surveys with peak counts for each transect and the study area as a whole	57
Table C.2 Birds recorded during the 2017 survey with assessments of breeding status for each transect and the study area as a whole, where: CB = confirmed breeding; PB = probable breeding; PS = possible breeding, and NB = not breeding	66

Table C.3 Bird species recorded during the 2020 surveys with peak counts for each transect and the study area as a whole	70
Table C.4 Birds recorded during the 2017 survey with assessments of breeding status for each transect and the study area as a whole, where: CB – confirmed breeding; PB = probable breeding; PS = possible breeding, and NB = not breeding	76
Table D.1 Weather metadata for 2017 surveys	81
Table D.2 Weather metadata for 2020 surveys	85

1 Executive Summary

- 1.1.1 This report is an appendix of the A12 Chelmsford to A120 widening scheme Environmental Statement (ES). The report presents an evaluation of breeding birds based on field surveys undertaken by Jacobs in 2017 and 2020.
- 1.1.2 The policy and legislative context within which the Environmental Impact Assessment (EIA) process is being carried out is presented in this report. Likely significant effects on, and mitigation for breeding birds, are considered in Chapter 9 of the ES.
- 1.1.3 The breeding bird surveys were based on current good practice guidance including the Common Birds Census methodology (Marchant 1983), and the British Trust for Ornithology (BTO) breeding bird survey methodology (detailed in Gilbert *et al.*, 1998).
- 1.1.4 A combined total of 90 bird species were recorded across the 27 transects surveyed within the study area in 2017 and 2020. There were 36 confirmed breeders, 15 probable breeders, 18 possible breeders, and 21 non-breeders.
- 1.1.5 The surveys found that 50 recorded species are designated under conservation/legal status indicating either historical population declines, or targeted conservation for certain species. Of these, six species are listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), 16 species are included on the Birds of Conservation Concern (BoCC) Red List, 27 are on the BoCC Amber List, 16 are species of principal importance (NERC S41), 16 are included on the Essex Red Data List and two species cited under the Essex Local Biodiversity Action Plan (LBAP). These will be referred to as 'notable' species within the report.
- 1.1.6 The assemblage of species was typical of the habitats present within the study areas. This included a mosaic of arable farmland, rough grassland, scrub, plantation woodland, waterbodies, and watercourses. A variety of species were recorded including 12 species of waterfowl, three species of wader, five species of gull, five species of raptor, 25 passerines, and six non-passerines.
- 1.1.7 The study area supported scarce breeding bird species of county importance including hobby *Falco subbuteo*, turtle dove *Streptopelia turtur* and sand martin *Riparia riparia*. Cetti's warbler *Cettia cetti* observed in 2017 is considered a possible breeder.
- 1.1.8 The assessment of the breeding bird population within the study area is considered of **local** importance for biodiversity with the exception of hobby, turtle dove, and sand martin that are considered significant breeding records on a **county** level.

2 Introduction

2.1 Background

- 2.1.1 The A12 Chelmsford to A120 widening scheme (hereon referred to as the 'proposed scheme') comprises improvements to the A12 between junction 19 (Boreham) at TL741094, and junction 25 (Marks Tey) at TL917238, approximately 24km, or 15 miles. The proposed scheme involves widening the A12 to three lanes throughout. It includes safety improvements, including closing of existing at grade accesses, and reducing access to cyclists along the dual carriageway by providing an alternative route for walkers, cyclists, and horse riders.
- 2.1.2 The proposed scheme would require new crossings of watercourses and potential improvements to existing culvert and bridge crossings. There are eight crossings of main rivers, six of which comprise existing crossings and two of which comprise new crossings on proposed offline sections of road. Three of the crossings would require minor realignments at the crossing points.
- 2.1.3 Land would be required both temporarily and permanently to construct, operate and maintain the proposed scheme. Permanent land-take requirements include the footprint of all the proposed highway infrastructure and associated earthworks, drainage works and access roads, together with environmental mitigation areas such as landscape planting and biodiversity habitat creation.
- 2.1.4 The proposed scheme is classed as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act (2008), triggering the need to apply for a Development Consent Order (DCO).
- 2.1.5 The selection criteria in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 have been used to screen the proposed scheme and identified the potential for significant effects. The proposed scheme is therefore required to be accompanied by an Environmental Statement to provide information on likely significant effects.
- 2.1.6 The Scoping Report (Highways England, 2020a), informed by an Extended Phase 1 Habitat Survey (Highways England, 2020b) identified a number of ecological receptors which have the potential to be impacted by construction or operation of the proposed scheme.
- 2.1.7 Ecological surveys are required to establish an accurate baseline against which the impacts of the proposed scheme could be assessed in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance for Ecological Impact Assessment (EcIA) (CIEEM, 2019) and DMRB LA 108 – Biodiversity (Highways England, 2020c).
- 2.1.8 Scoping opinions received from statutory and non-statutory consultees during this process were also taken into consideration (refer to Chapter 9 of the Environmental Statement ES).

2.1.9 The Extended Phase 1 Habitat Survey confirmed the requirement to undertake the following suite of ecological surveys for the proposed scheme:

- a. Botanical surveys of potential UK Biodiversity Action Plan (BAP) priority habitats
- b. Hedgerow
- c. Freshwater macro-invertebrates
- d. Freshwater fish
- e. Freshwater macrophytes
- f. White-clawed crayfish
- g. River habitat survey
- h. Pond habitat survey
- i. Terrestrial invertebrates
- j. Birds (breeding and wintering)
- k. Barn owls
- l. Bats (bat activity, bat roost potential, and roost characterisation surveys)
- m. Dormice
- n. Water vole
- o. Otter
- p. Badger

2.2 Purpose of the report

- 2.2.1 This report is an appendix of the A12 Chelmsford to A120 widening scheme ES. It presents the results of the breeding bird surveys undertaken by Jacobs in both 2017 and 2020.
- 2.2.2 An evaluation of the status of the breeding bird population across the proposed scheme based has been conducted which is based on a desk-based review of records and the field surveys.
- 2.2.3 The report presents the policy and legislative context within which the EIA is carried out. Likely significant effects on, and mitigation for breeding birds, are considered in Chapter 9 of the ES.

2.3 Survey objectives

2.3.1 The key objectives of this survey were to:

- a. determine the extent of the breeding bird population within the study area to evaluate the breeding bird assemblage, habitat use, distribution, and breeding status
- b. identify notable breeding bird species within the scheme boundary
- c. identify likely territorial boundaries and habitats of importance to breeding birds within the study area
- d. provide an evaluation for the breeding bird population in the study area
- e. inform the assessment of potential impacts on breeding bird populations associated with the proposed scheme (as detailed within the ES)
- f. provide sufficient field data for the development of appropriate mitigation if necessary (as detailed in the ES).

3 Breeding bird ecology

- 3.1.1 Breeding birds are found in a wide variety of habitats in the UK, from rural semi-natural to urban habitats. Birds may use natural or artificial features for nesting. Typical features used for nesting include hedgerows, scrub, trees, woodland, and buildings. Several species prefer to nest on the ground in arable fields, crops, grassland, and field margins. Wetland habitats are used for nesting activity, including reed beds or margins of standing water, rivers, and canals.
- 3.1.2 The main bird breeding season is recognised as being between 1st March and 31st July, however many species start nesting before this period, and may continue after. Woodpigeon *Columba palumbus* and collared dove *Streptopelia decaocto*, for example can breed at any time of year. Extended periods of favourable weather may encourage many species to have further broods with blackbird *Turdus merula* having up to four in a year (RSPB, 2020).
- 3.1.3 In Britain, several summer migrants arrive for the breeding season. Species include swallow *Hirundo rustica*, house martin *Delichon urbica*, swift *Apus apus*, and warblers, such as the chiffchaff *Phylloscopus collybita*, willow warbler *Phylloscopus trochilus* and blackcap *Sylvia atricapilla*. These species typically arrive in the UK in April and May and remain until August or September.

4 Legislation and policy

4.1 Legislation

- 4.1.1 Many UK bird species and their habitats are protected by legislation. The key articles of relevance to this proposed scheme are:
- a. Council Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive')
 - b. Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive')
 - c. Wildlife and Countryside Act 1981 (as amended)
 - d. Countryside and Rights of Way Act 2000
 - e. Natural Environment and Rural Communities Act 2006
- 4.1.2 All species of nesting birds in the UK are protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally kill, injure or take any wild bird, or take or destroy their eggs or nest, or damage a nest, while that nest is in use or being built. It is also an offence to deliberately block access to a nest which is in use.
- 4.1.3 Section 40 of the Natural Environment and Rural Communities Act 2006 (NERC) places a duty on all public bodies to have regard to the conservation of biodiversity in England, when carrying out their normal functions (the biodiversity duty).

4.2 National planning policy framework

- 4.2.1 The National Networks National Policy Statement (NNNPS) sets out the Government's policies to deliver the development of NSIP on the national road and rail networks in England. The Secretary of State uses the NNNPS as the primary basis for making decisions on DCO applications.
- 4.2.2 Paragraph 5.22 of the NNNPS states that the applicant's assessment should describe any likely significant effects on internationally, nationally, and locally designated sites of ecological conservation importance; protected species; habitats (including irreplaceable habitats such as ancient woodland and veteran trees); and other species identified as being of principal importance for the conservation of biodiversity. The surveys described in this report will inform the assessment of significant effects within the ES.
- 4.2.3 In addition to the national policy set out in the NNNPS, the proposed scheme has also had regard to relevant legislation and local plans and policy.

4.3 Priority species

- 4.3.1 Species of principal importance for the conservation of biodiversity in England are listed under NERC S41. This list is used to guide decision-makers in public bodies in implementing their biodiversity duty. The species listed are afforded priorities for nature conservation action and therefore for consideration in the EIA.
- 4.3.2 The UK BAP was the UK's response to the Global Convention on Biological Diversity (CBD) drafted in 1992. It lists priority species and habitats that are identified as being the most threatened and require conservation action (JNCC, 2014). In 2012, the UK Post-2010 Biodiversity Framework (2012) succeeded the UK BAP and is the UK Government's response to a new strategic plan of the CBD which was published in 2010.
- 4.3.3 Much of the work previously carried out under the UK BAP is now focused on a country level. The UK BAP lists of priority species and habitats remain important and have been used to draw up the NERC S41 statutory list that includes 49 bird species.
- 4.3.4 Local BAPs (LBAPs) integrate the conservation measures provided in the UK BAP to enhance biodiversity at the local and regional levels. The Essex LBAP (2011) is pertinent to the proposed scheme (Essex Biodiversity Project, 2012).
- 4.3.5 The Essex LBAP lists five species, bittern *Botaurus stellatus*, grey partridge *Perdix perdix*, skylark *Alauda arvensis*, song thrush *Turdus philomelos* and stone curlew *Burhinus oedicnemus*.

4.4 Birds of Conservation Concern (BoCC)

- 4.4.1 The most recent update to a widely adopted review of the status of UK birds, BoCC 5: the population status of birds in the United Kingdom, Channel Islands and Isle of Man (Eaton, et al., 2021), is followed in this report in relation to conservation statuses of UK bird species. The BoCC lists each species in one of three alert lists, red, amber, or green, according to set assessment criteria. Red list species are considered to be of high conservation concern and Amber list species are of medium conservation concern. Green list species are of low conservation concern and are not discussed in this report.

4.5 Essex Red Data List

- 4.5.1 The Essex Field Club maintains a list of taxa of conservation concern in the county (Essex Field Club, 2016). There are 49 bird species on the Essex Red Data List.

5 Methodology

5.1 Desk study

- 5.1.1 Environmental records were obtained in 2020 within 2km of the proposed scheme boundary (referred as the PRA boundary) from:
- Essex Wildlife Trust Biodiversity Records Centre (EWTBR)
 - Essex Field Club (EFC)
- 5.1.2 A review of the records was undertaken prior to the breeding bird survey to identify the legally protected and notable bird species (as noted in Chapter 4) that could be present within the study area.
- 5.1.3 A search was undertaken on the Multi-Agency Geographical Information for the Countryside (MAGIC) online tool any statutory sites designated for birds.
- 5.1.4 Statutory designated sites included those designated due to their importance for birds at international or national levels. International designated sites include Special Protection Areas (SPA) and Ramsar sites. National designated sites include Sites of Special Scientific Interest (SSSI).
- 5.1.5 The search area comprised any designated sites within 2km of the 500m route corridor buffer. A greater distance was used for international designated sites if an effective pathway existed. These included:
- sites located up or downstream of a watercourse or a primary tributary of such that the project crosses or is adjacent to
 - sites designated for species that can forage over large distances. This was restricted to those sites where individuals of the SPA/Ramsar site populations could potentially be present within the study area
- 5.1.6 A barn owl *Tyto alba* survey was conducted by Jacobs from March to October 2017, and December 2019 to November 2020 (see Barn Owl Survey Report [HE551497-JAC-EBD-SCHW-RP-LE-0006]).
- 5.1.7 A database of incidental records of species of interest recorded by other surveyors on the proposed scheme has been reviewed for records of relevance to this report.

5.2 Limitations

- 5.2.1 Although the data provided by the consultees are the most complete set of species data available, the absence of records should not be taken as an indication of absence of such species. The absence of records is often a facet of under-recording.

- 5.2.2 Historic records pre-2010 have not been included in the desk study. It is considered that sufficient time has passed to reduce the relevance of the respective records. These records do not account for likely habitat changes over time (to the site and/or local environs) which inevitably affects the likelihood of presence/likely influence.

5.3 Field study

Transects

- 5.3.1 The survey methodology was based on the BTO breeding bird survey method (Gilbert *et al.* 1998). Species names and taxonomic order adhere to the British List produced by the British Ornithologists' Union (BOU, 2017).
- 5.3.2 The PRA boundary issued in July 2020 was used as the final proposed scheme boundary for the surveys. The online/off-line approach used to define the study area is detailed below.
- a. online section includes the existing carriageway between junction 19 – Boreham Interchange and junction 22 – Colemans Interchange; junction 23 – Kelvedon South Interchange and 24 – Kelvedon North Interchange, and over junction 25 – Marks Tey Interchange
 - b. off-line section includes realignment between junction 22 and junction 23, and from junction 24 to junction 25.
- 5.3.3 The study area comprised a buffer of 500m from the proposed scheme and was sampled by 16 pre-determined transects in 2017. These surveys were supplemented by an additional 11 transects in 2020, during the breeding bird season, to incorporate previously un-surveyed land parcels following a revision to the route alignment.
- 5.3.4 Four monthly visits were completed for each transect in 2017. An enforced reduction to three survey visits per transects were conducted in 2020 due to COVID-19 travel restrictions imposed by the UK government in April 2020.
- 5.3.5 Each monthly visit was spread over five days due to the size of the study area.
- 5.3.6 Survey transects were designed to cover suitable habitats for breeding birds within the study area, where accessible. Habitats sampled included large arable fields, hedgerows, grassland, watercourses, and large waterbodies.
- 5.3.7 Colemans Reservoir was surveyed in both 2017 and 2020 due to its range of habitat diversity and potential for breeding and migratory species. A total of 27 discrete transects were walked over the two survey seasons.
- 5.3.8 Surveys took place at the optimal time of day for bird activity, beginning shortly after dawn and finishing before midday.
- 5.3.9 Surveys were conducted to avoid adverse weather such as heavy rain and strong wind, as these conditions can reduce bird activity and detectability. Weather metadata for all surveys can be found in Annex D of this report.

- 5.3.10 An experienced ornithologist led each survey and walked along the transect route at a slow walking pace. Surveyors recorded all birds identified by sight or from vocalisations within approximately 250m of the transect. Binoculars were used to aid visual recording.
- 5.3.11 Individuals, or groups of birds (identified either by call, song or visually) were recorded on field maps using standard BTO species codes (see Annex A, Table A.1) or in ArcGIS Collector (ESRI, 2017). Care was taken to avoid double counting. Longer periods of observations were made in areas of high bird activity.
- 5.3.12 During each of the survey visits the following details were recorded:
- bird numbers, species, age (eg. adult, juvenile) and sex
 - bird behaviour (eg. in flight, singing, or feeding), paying particular attention to evidence of breeding.
- 5.3.13 Details of survey dates and weather conditions are provided in Annex D.
- 5.3.14 The behaviour, sex, age, and location of individual birds recorded on the survey field maps, together with incidental observations, allowed conclusions to be drawn about the breeding status for each species.
- 5.3.15 The breeding status of each species was classified into four categories: 'confirmed', 'probable', or 'possible' breeding, or as 'non-breeding' following Balmer *et al.* (2013).

Limitations

- 5.3.16 Transect 12 in April 2017 was not available for access during the first round of visits for the survey and therefore no data was collected here.
- 5.3.17 The survey on 18 June 2020 (Transect 6) was delayed until 10am due to heavy rain.
- 5.3.18 The findings of this report represent the professional opinion of qualified ecologists and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited in this document.
- 5.3.19 This report should be read in full, and excerpts may not be representative of the findings.
- 5.3.20 This report has been prepared exclusively for Jacobs' client and no liability is accepted for any use or reliance on the report by third parties.

Breeding bird specific limitations

- 5.3.22 Difficulty was encountered in counting birds, such as house sparrow *Passer domesticus* in urban environments, as birds in such habitats frequently occupied cover in gardens or were otherwise out of sight. To respect residents' privacy, binoculars were not used in urban areas. This made counting individuals difficult, and it is likely that populations of birds around houses have been under-counted.
- 5.3.23 Sections of Transects 3, 4, and 5 in the vicinity of the A12 impaired bird identification where the road noise made it difficult to hear birds. This is not considered a significant limitation as visual identification was still possible and the areas where road noise was an impact were relatively small in relation to the entire transect.
- 5.3.24 The 2020 survey schedule was impacted by the COVID-19 global pandemic. The subsequent lockdown during April 2020 resulted in a brief hiatus of all survey works on the proposed scheme. Surveys were cancelled as government lockdown guidance was initiated temporarily halting the ability to undertake field surveys. Surveying across all transects commenced in May 2020 and continued unhindered until July 2020 inclusive. The data collected during May and July is considered sufficient for the baseline assessment.
- 5.3.25 This report combines the results of the observations made during the 2017 and 2020 surveys. To this end, references to bird records on a specific transect will be notated by the transect label followed by the survey year eg. Transect 1 (2017).

6 Results

6.1 Desk study

- 6.1.1 Seven SPA and Ramsar sites were identified within 2km of the proposed scheme, or at a greater distance where an effect pathway could exist. These sites and their distance to the proposed scheme are summarised in Table 6.1.
- 6.1.2 The qualifying features of the SPA/Ramsar sites in respect to breeding birds are listed in Annex B. Crouch and Roach Estuaries SPA/Ramsar and Dengie SPA/Ramsar are not designated for any breeding bird species.
- 6.1.3 No SSSIs designated for their importance to breeding birds outside those already incorporated into SPA or Ramsar sites were identified within 2km of the proposed scheme.

Table 6.1 SPA/Ramsar sites identified by the desk study

Site name/code	Approx. distance to proposed scheme* (km)
Abberton Reservoir SPA UK9009141 / Ramsar UK11001	6.5
Blackwater Estuary SPA UK9009245 / Ramsar UK11007	6.6
Colne Estuary SPA UK9009243 / Ramsar UK11015	11.3
Crouch and Roach Estuaries SPA UK9009244 / Ramsar UK11016	13.5
Dengie SPA UK9009242 / Ramsar UK11018	16.0
Stour and Orwell Estuaries SPA UK9009121 / Ramsar UK11067	17.0
Outer Thames Estuary SPA UK9020309	53.0
Alde-Ore SPA UK9009112 / Ramsar UK11002	58.0

*Based on the proposed Order Limits at the time of writing

- 6.1.4 A complete list of environmental records for birds within 2km of the proposed scheme are provided in Annex A.
- 6.1.5 The desk study returned records of one qualifying bird species for the designated sites identified: black-headed gull *Chroicocephalus ridibundus*. The black-headed gull is listed as a breeding species for Colne Estuary SPA.
- 6.1.6 Six species listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended) were identified in the environmental records including barn owl, brambling *Fringilla montifringilla*, hobby, little ringed plover *Charadrius dubius*, red kite *Milvus milvus* and spoonbill *Platalea leucorodia*.
- 6.1.7 One hobby was recorded during a barn owl survey in July 2017, flying over a lake to the east of Rivenhall End (TL 8589116121).
- 6.1.8 Targeted barn owl surveys identified four confirmed breeding sites within the Stage 3 buffer. Full details of barn owl breeding records are found in Appendix 9.3 of the ES [TR010060/APP/6.3].

6.1.9 Twelve species listed on the BoCC Red list were identified by the environmental records including cuckoo *Cuculus canorus*, fieldfare *Turdus iliacus*, house sparrow, lapwing, mistle thrush *Turdus viscivorus*, nightingale *Luscinia megarhynchos*, skylark, song thrush, starling *Sturnus vulgaris*, turtle dove yellowhammer, and yellow wagtail *Motacilla flava*.

6.1.10 Nine species listed on the BoCC Amber list were identified by the environmental records including black-headed gull, dunnoek *Prunella modularis*, house martin, kestrel *Falco tinnunculus*, kingfisher *Alcedo atthis*, mallard *Anas platyrhynchos*, meadow pipit *Anthus pratensis*, mute swan *Cygnus olor*, and spoonbill.

6.2 Field study

6.2.1 The combined field surveys in 2017 and 2020 recorded 90 bird species across 27 transects. This included 50 species of conservation concern. The protection and conservation status of these 50 species (noting that classifications are not all mutually exclusive, eg. a species can be of principal importance, listed on the BoCC Red list and on the Essex Red Data List), includes:

- a. Six species listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended)
- b. 16 species of principal importance
- c. 16 species listed on the BoCC Red list
- d. 27 species listed on the BoCC Amber list
- e. two species listed on the Essex BAP
- f. 16 species listed on the Essex Red Data List

6.2.2 Two species recorded were listed as breeding species at statutory designated sites identified by the desk study: cormorant *Phalacrocorax carbo*, a feature of the Abberton Reservoir SPA/Ramsar/SSSI, and lesser black-backed gull *Larus fuscus*, a feature of Alde-Ore Estuary SPA.

6.2.3 The breeding status of the 90 bird species recorded were assessed as:

- a. 36 confirmed breeding
- b. 15 as probably breeding
- c. 18 as possibly breeding
- d. 21 as non-breeding

6.2.4 A total of 66 species were recorded at Colemans Reservoir over the two survey seasons. This represents 73% of the total species recorded across the 27 transects.

- 6.2.5 A list of all species recorded during each survey visit, their conservation/legal statuses, peak counts across the survey, and an assessment of the breeding status of each species recorded are provided in Annex C. The location maps of 2017 and 2020 survey records are shown in Annex F.
- 6.2.6 Further detail is provided in the following sections in relation to those species that are of conservation concern or listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended).

6.3 Waterfowl

- 6.3.1 Twelve waterfowl species were recorded during the surveys with six listed on the BoCC Amber list: mallard, moorhen *Gallinula chloropus*, mute swan, shelduck *Tadorna tadorna*, shoveler *Anas clypeata* and greylag goose *Anser anser* (Table 6.2).
- 6.3.2 Waterfowl species recorded included largely resident species associated with waterbodies and riverine habitats. Breeding waterfowl were generally recorded in small numbers and are not considered to be significant at any more than a local level.

Table 6.2 Conservation and breeding status of waterfowl recorded during the surveys

Species	Scientific name	Legal Status/Protection	Breeding status
Canada goose	<i>Branta canadensis</i>	BoCC Green	Confirmed breeder
Coot	<i>Fulica atra</i>	BoCC Green	Confirmed breeder
Egyptian goose	<i>Alopochen aegyptiaca</i>	BoCC Green	Non-breeder
Feral/hybrid mallard type	-	BoCC Green	Confirmed breeder
Great crested grebe	<i>Podiceps cristatus</i>	BoCC Green	Confirmed breeder
Greylag goose (see below)	<i>Anser anser</i>	BoCC Amber	Possible breeder
Mallard	<i>Anas platyrhynchos</i>	BoCC Amber	Confirmed breeder
Moorhen	<i>Gallinula chloropus</i>	BoCC Amber	Confirmed breeder
Mute swan	<i>Cygnus olor</i>	BoCC Green	Confirmed breeder
Shelduck	<i>Tadorna tadorna</i>	BoCC Amber	Non-breeder

Species	Scientific name	Legal Status/Protection	Breeding status
Shoveler	<i>Anas clypeata</i>	BoCC Amber	Non-breeder
Tufted duck	<i>Aythya fuligula</i>	BoCC Green	Confirmed breeder

- 6.3.3 Amber list status for greylag goose refers exclusively to wild populations in the north of the country. Those recorded within the study area are considered self-sustaining introduced (feral) populations.
- 6.3.4 Mallard were recorded across the study area from 15 transects. Small numbers were recorded in rivers or flying overhead, with larger numbers recorded at Colemans Reservoir and the other lakes around Transect 9 (2017) with a peak count of 33 birds. Breeding was confirmed on Transects 3 and 6 (2017).
- 6.3.5 A single record of shelduck over Transect 16 (2017) and shoveler over Transect 16 (2017) and Transect 6 (2020) were seen as birds flying overhead, possibly commuting to waterbodies within the region.

6.4 Waders

- 6.4.1 Three wader species were recorded across the study area, lapwing, common sandpiper *Actitis hypoleucos* and little ringed plover (Table 6.3).
- 6.4.2 Waders recorded during the surveys were assessed as migrant species associated with waterbodies and riverine habitats with exposed mud and shingle. Lapwing are partial migrants that require bare ground or short vegetation for nesting. A single breeding record is considered significant at a local level.

Table 6.3 Conservation and breeding status of waders recorded during the surveys

Species	Scientific name	Legal Status/Protection	Breeding status
Common sandpiper	<i>Actitis hypoleucos</i>	BoCC Amber	Non-breeder
Lapwing	<i>Vanellus vanellus</i>	BoCC Red; NERC S41; Essex Red Data List	Confirmed breeder
Little ringed plover	<i>Charadrius dubius</i>	Schedule 1, Essex Red Data List	Non-breeder

- 6.4.3 Lapwing is a species of principal importance, listed on the BoCC Red list and the Essex Red Data list. Breeding activity was confirmed at Hole Farm, Transect 9 (2020) when a pair and juvenile were observed feeding in the farmhouse paddocks.
- 6.4.4 Lapwing were recorded on all four survey visits to Transect 9 (2017) where birds were seen displaying at the quarry to the west of Colemans Reservoir. Lapwing were observed during the first visit to Transect 8 (2017).

- 6.4.5 Inland populations of lapwing have reduced markedly in the last 20 years due to degradation of suitable farmland habitat. Breeding populations are estimated to be around 85 pairs within the county with strongholds located around estuarine and coastal areas. Only two confirmed pairs were recorded at inland breeding sites in 2018 (Essex Bird Report, 2018).
- 6.4.6 Two common sandpiper and two little ringed plover (one adult and one juvenile) were observed on an exposed shingle bank at Colemans Reservoir in July on Transect 8 (2020). Both these species were considered as post-breeding passage birds as neither species were recorded within the study area in 2017, nor in May and June 2020.

6.5 Gulls

- 6.5.1 Five gull species were recorded during the surveys, all of which are of conservation concern (Table 6.4).
- 6.5.2 Gulls recorded during the surveys included migratory species associated with waterbodies, coastal, and estuarine habitats. Gulls are typically gregarious often forming large feeding and migratory groups. Breeding usually occurs at coastal sites and large movements may have been associated with short migratory journeys over the study area towards breeding areas within the county.

Table 6.4 Conservation and breeding status of gulls recorded during the surveys

Species	Scientific name	Legal Status/Protection	Breeding status
Black-headed gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber	Non-breeder
Common gull	<i>Larus canus</i>	BoCC Amber	Non-breeder
Great black-backed gull	<i>Larus marinus</i>	BoCC Amber	Non-breeder
Herring gull	<i>Larus argentatus</i>	BoCC Red / NERC S41	Non-breeder
Lesser black-backed gull	<i>Larus maritimus</i>	BoCC Amber	Non-breeder

- 6.5.3 Herring gull is a species of principal importance and listed on the BoCC Red list, whilst black-headed gull, common gull *Larus canus*, great black-backed gull *Larus marinus* and lesser black-backed gull are BoCC Amber list species.

- 6.5.4 Most records were of small numbers of gulls flying overhead or in arable fields within the study area. Larger numbers were recorded on the reservoir along Transect 9 (2017). An estimated group of 180 black-headed gull were observed flying west over Transects 3 and 5 (2020). Black-headed gull breed just outside the PRA boundary with 150+ pairs recorded at Russell Green Gravel Pit in 2018 (Essex Bird Report, 2018).
- 6.5.5 The breeding status of all other gull species recorded have been assessed as non-breeding birds commuting between local waterbodies and feeding areas. They are not considered significant at any more than a local level.

6.6 Raptors

- 6.6.1 Five species of raptor were recorded across the study area during 2017 and 2020: hobby, red kite, kestrel, common buzzard *Buteo buteo* and sparrowhawk *Accipiter nisus* (Table 6.5).
- 6.6.2 The raptors recorded during the surveys included resident and migratory species associated with woodland, arable farmland, urban, and wetland habitats.

Table 6.5 Conservation and breeding status of raptors recorded during the surveys

Species	Scientific name	Legal status/protection	Breeding status
Common Buzzard	<i>Buteo buteo</i>	BoCC Green	Confirmed breeder
Hobby	<i>Falco subbuteo</i>	BoCC Green; Schedule 1; Essex Red Data List	Confirmed breeder
Kestrel	<i>Falco tinnunculus</i>	BoCC Amber	Confirmed breeder
Red kite	<i>Milvus milvus</i>	BoCC Green; Schedule 1	Possible breeder
Sparrowhawk	<i>Accipiter nisus</i>	BoCC Amber	Probable breeder

- 6.6.3 Of the five species recorded, red kite and hobby are Schedule 1 species. Hobby is cited under the Essex Red Data List. Kestrel and sparrowhawk are BoCC Amber list species.
- 6.6.4 One hobby was observed during the final field surveys in July 2020. A potential nesting site was identified within a small area of woodland adjacent to Transect 3 (2020). A male hobby was observed flying over the transect and was later seen leaving a large oak *Quercus spp.* tree where a nest-site was presumed to be located.
- 6.6.5 A second potential nest-site was identified in an area of woodland adjacent to Transect 11 (2020) where an adult hobby (sex not determined) was observed on three separate occasions during the survey season (ie. during the 2020 breeding bird survey and during surveys in 2020 for other ecological receptors).
- 6.6.6 Hobby are a highly sensitive species, prone to disturbance, and are widely distributed across England. The breeding population within Essex has increased and range expanded within the past decade. The county breeding population is estimated to be at least 5 pairs but could be higher as nest-sites are difficult to locate (Essex Bird Report, 2018).

- 6.6.7 Areas of mature woodland provide nesting opportunities for the hobby that favour open waterbodies lined with dense riparian vegetation such as reedbeds or scrub attracting insects and dragonflies for feeding. They breed in nests built by other species particularly those of corvids.
- 6.6.8 Confirmed breeding records for hobby are considered significant at county level.
- 6.6.9 Red kite was observed sporadically during the surveys along Transects 12 and 14 (2017), and Transects 6, 7, and 8 (2020). Breeding activity was not recorded during the survey.
- 6.6.10 Breeding kestrel were confirmed along Transects 6 and 7 (2020), the latter observed an active family with four young. Additionally, single birds were observed across eight transects in 2017, hunting over farmlands or over the verge of the A12. A juvenile bird was seen in April along Transect 10 (2017) confirming breeding activity in the area.
- 6.6.11 Sparrowhawk were observed widely across the survey area. While breeding was not confirmed, two individual records along Transects 6 and 7 (July 2020) indicate possible post-breeding dispersal within the local area.

6.7 Passerines

- 6.7.1 Twenty-five notable passerine species of conservation concern and/or listed on the Schedule 1 of the Wildlife and Countryside Act (1981) (as amended) were recorded during the surveys in 2017 and 2020. Species that appear on the BoCC Green list are not provided (Table 6.6).

Table 6.6 Conservation and breeding status of passerines recorded during the surveys

Common Name	Scientific name	Conservation Status	Breeding status
Bullfinch	<i>Pyrrhula pyrrhula</i>	NERC S41 BoCC Amber, Essex Red Data List	Possible breeder
Cetti's warbler	<i>Cettia cettia</i>	Schedule 1, BoCC Green	Possible breeder
Dunnock	<i>Prunella modularis</i>	NERC S41, BoCC Amber	Confirmed breeder
Greenfinch	<i>Chloris chloris</i>	BoCC Red	Confirmed breeder
Grey wagtail	<i>Motacilla cinerea</i>	BoCC Amber	Possible breeder
House martin	<i>Delichon urbicum</i>	BoCC Amber, Essex Red Data List	Possible breeder
House sparrow	<i>Passer domesticus</i>	NERC S41, BoCC Red	Probable breeder
Lesser redpoll	<i>Acanthis cabaret</i>	NERC S41, BoCC Red,	Possible breeder
Linnet	<i>Linaria cannabina</i>	NERC S41, BoCC Red, Essex Red Data List	Probable breeder

Common Name	Scientific name	Conservation Status	Breeding status
Marsh tit	<i>Poecile palustris</i>	NERC S41, BoCC Red, Essex Red Data List	Non-breeder
Meadow pipit	<i>Anthus pratensis</i>	BoCC Amber	Non-breeder
Mistle thrush	<i>Turdus viscivorus</i>	BoCC Red	Possible breeder
Reed bunting	<i>Emberiza schoeniclus</i>	NERC S41, BoCC Amber, Essex Red Data List	Possible breeder
Rook	<i>Corvus frugilegus</i>	BoCC Amber	Non-breeder
Sand martin	<i>Riparia riparia</i>	Essex Red Data List	Confirmed breeder
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	BoCC Amber	Possible breeder
Skylark	<i>Alauda arvensis</i>	NERC S41, BoCC Red, Essex Red Data List, LBAP	Confirmed breeder
Song thrush	<i>Turdus philomelos</i>	NERC S41, BoCC Amber, Essex Red Data List, LBAP	Probable breeder
Starling	<i>Sturnus vulgaris</i>	NERC S41, BoCC Red	Confirmed breeder
Stonechat	<i>Saxicola rubicola</i>	Essex Red Data List	Possible breeder
Willow warbler	<i>Phylloscopus trochilus</i>	BoCC Amber	Probable breeder
Wren	<i>Troglodytes troglodytes</i>	BoCC Amber	Probable breeder
Yellow wagtail	<i>Motacilla flava</i>	NERC S41, BoCC Red, Essex Red Data List	Probable breeder
Yellowhammer	<i>Emberiza citrinella</i>	NERC S41 BoCC Red, Essex Red Data List	Probable breeder
Whitethroat	<i>Curruca communis</i>	BoCC Amber	Confirmed breeder

6.7.2 The assemblage of passerines recorded during the surveys included resident and migratory species associated with river corridors, farmland, woodland, scrub, urban, and other built-up habitats.

Schedule 1 species

6.7.3 Cetti's warbler *Cettia cettia*, listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended), was recorded as a possible breeder within scrub habitat along the River Blackwater near Colemans Reservoir on Transect 9 (2017). Up to three individuals were identified. The species was however absent in 2020.

- 6.7.4 No other passerines listed under Wildlife and Countryside Act Schedule 1 were recorded during the breeding bird surveys.

Red List species

- 6.7.5 Species included on the BoCC Red List that were recorded during the survey visits are set out in Table 6.7. Red List species were generally recorded in small numbers and are not considered to be significant at any more than a local level.
- 6.7.6 Skylark were recorded during both survey seasons and was the most numerous farmland bird, with up to 62 individuals recorded within the study area in May 2017. Individual skylarks were associated predominantly with cereal crops, but a small number of birds were present within rough grassland on Transect 4 (2017) and Transect 11 (2020). Breeding skylark were confirmed on Transect 16 (2017) where juvenile birds were noted. Transect 11 (2020) held a post-breeding group of 20 individuals.
- 6.7.7 Yellow wagtail, a typical species of arable farmland habitats, was recorded across six transects in 2020 as a probable breeder. National declines have been reflected within the county with diminishing records of breeding success. Probable and confirmed breeding records totalled 79 pairs in 2018. Habitat restoration particularly set-aside management may have had some benefit in arresting the decline within Central Essex (Essex Bird Report, 2018).
- 6.7.8 A juvenile marsh tit was observed calling in woodland habitat along Transect 1 (2020) in July. This species is on the BoCC Red list and is cited as a species of principal importance. Although a notable record, this species was not considered to have bred in the woodland, rather an individual that may have dispersed from a breeding site within the region. Marsh tit is considered a scarce and sedentary resident species within Essex. County populations are estimated at approximately eight pairs (Essex Bird Report, 2018).

Table 6.7 Summary of Red List passerine species recorded during the surveys

Species	Transect peak count	Survey results
Greenfinch	6	Confirmed breeder on Transect 10 (2017) but recorded widely throughout both survey years within semi-urban habitats.
House martin	10	Possible breeder. Recorded mostly near to residential areas and flying over arable fields.
House sparrow	50+	Probable breeder. Locally abundant – at least 50 recorded on Transect 6 (2017).
Lesser redpoll	1	Non-breeder – single bird observed flying over Transect 7 (2017).
Linnet	11	Possible breeder. Recorded on 10 transects in 2017 and six transects in 2020. Semi-colonial breeder of scrub habitats but no breeding activity noted.
Marsh tit	1	Non-breeder. Single bird recorded on Transect 1 (2020) - (see 6.7.8)

Species	Transect peak count	Survey results
Mistle thrush	4	Possible breeder – observed on 11 out of 17 transects in 2017 and 2 transects in 2020. No breeding activity noted.
Skylark	20+	Confirmed territories within cereal fields and grassland - (see 6.7.6)
Starling	20	Confirmed breeder in both 2017 and 2020 within semi-urban and arable landscapes.
Yellowhammer	4	Probable breeder. Recorded on seven transects in 2017 and four transects in 2020. Found on hedgerows bordering arable farmland. No territories confirmed.
Yellow wagtail	1	Probable breeder. Recorded on six transects in 2020. Probable territory on Transect 1 (2020) where a singing male was observed – (see 6.7.7)

Amber List species

- 6.7.9 A relatively small number of birds were recorded which are included on the BoCC Amber List (Table 6.8). They are not considered to be significant at any more than a local level.

Table 6.8 Summary of Amber List passerine species recorded during the surveys

Species	Transect peak count	Survey results
Bullfinch	2	Possible breeder. Recorded along four transects in 2020 and four transects in 2017 within areas of woodland and scrub.
Dunnock	4	Confirmed breeder recorded widely across the survey area during 2017 and 2020.
Grey wagtail	2	Single birds observed three times in 2017 and twice in 2020 along the River Blackwater and similar riparian habitats. No breeding activity noted.
Meadow pipit	4	Non-breeder recorded only in April 2017 and likely to be late over-wintering birds.
Reed bunting	2	Possible breeder. Recorded along five transects in 2020 and seven transects in 2017, in both farmland and riparian habitats.
Rook	17	Gregarious groups observed mainly within arable landscapes.
Sedge warbler	2	Observed within suitable reedbed habitat surrounding a private fishing lake on Transect 5 (2020)
Song thrush	4	Confirmed breeder on Transect 12 (2017) and observed widely across study area in semi-urban and arable landscapes.

Species	Transect peak count	Survey results
Whitethroat	14	Reasonably common summer migrant within scrub habitat recorded widely during both survey years. Confirmed breeder.
Willow warbler	1	Possible breeder. Recorded as single birds within scrub and woodland in both 2017 and 2020.
Wren	12	Widespread resident breeding species observed along within the survey area.

Essex Red List

- 6.7.10 Of the recorded passerines, sand martin is a species of county importance and is included on the Essex Red Data List. Two colonies were located within the study area in 2020.
- the Colemans quarry, located at junction 22, was observed from Transect 8 along Colemans Reservoir where up to ten individuals were recorded in June and July 2020
 - a second confirmed breeding location was incidentally recorded with adults, juveniles, and a minimum of eight excavated holes occupied by young, observed within a sand bank near Kelvedon (TL 8717518253)
- 6.7.11 Sand martin breeding numbers have significantly declined within the county. The species is largely dependent on man-made sites that were often destroyed or infilled. County breeding territories in 2018 were confirmed from eight sites (Essex Bird Report, 2018).
- 6.7.12 All other species cited under the Essex Red Data List were not significant at any more than a local level.

6.8 Non-passerines

- 6.8.1 Eight non-passerine species of conservation concern and/or listed on the Schedule 1 of the Wildlife and Countryside Act (1981) (as amended) were recorded during the surveys in 2017 and 2020 (Table 6.9).
- 6.8.2 The assemblage of non-passerines recorded during the surveys were generally observed within rural locations within river corridors, lakes, farmland, woodland, and scrub habitats.

Table 6.9 Conservation and breeding status of passerines recorded during the surveys

Common Name	Scientific Name	Conservation Status	Breeding Status
Barn owl	<i>Tyto alba</i>	NERC S41 BoCC Amber, Essex Red Data List	Probable breeder
Common tern	<i>Sterna hirundo</i>	BoCC Amber	Non-breeder

Common Name	Scientific Name	Conservation Status	Breeding Status
Cuckoo	<i>Cuculus canorus</i>	NERC S41, BoCC Red	Non-breeder
Kingfisher	<i>Alcedo atthis</i>	Schedule 1, BoCC Amber	Possible breeder
Stock dove	<i>Columba oenas</i>	BoCC Amber	Probable breeder
Swift	<i>Apus apus</i>	BoCC Red	Non-breeder
Turtle dove	<i>Streptopelia turtur</i>	NERC S41, BoCC Red, ERL	Confirmed breeder
Woodpigeon	<i>Columba palumbus</i>	BoCC Amber	Probable breeder

Schedule 1

- 6.8.3 Barn owl, listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended), was recorded as a probable breeder on Transect 6 (2020). A single adult bird was observed flying out of a barn north of Wickham Bishops Road with pellets found in the vicinity.
- 6.8.4 Given the extent of suitable habitat within the survey area, and the availability of suitable nesting and roosting sites, barn owl is considered a probable breeder within the survey area. The species was not recorded during 2019. A separate barn owl survey report provides more detail of this species within the survey area (Chapter 9C of the ES).
- 6.8.5 Sightings of kingfisher were recorded widely during the 2017 surveys with five confirmed observations and a further two records during the surveys in 2020. Riparian habitat suitable for kingfisher are present across the survey area predominantly in areas where the River Blackwater navigates adjacent to the A12 corridor between Hatfield Peverel and Kelvedon.
- 6.8.6 Kingfisher was noted along the River Ter on Transect 3 (2017). Fishing ponds scattered along the survey area provided supplementary feeding opportunities and sightings were recorded on Transect 3 (2020). Despite these multiple sightings, breeding was not confirmed during the surveys, but the potential of a breeding site is considered probable given the extent of suitable habitat within the survey area.

Red List species

- 6.8.7 Species included on the BoCC Red List for non-passerines that were recorded during the survey visits are set out in Table 6.10. Red List non-passerine species were generally recorded in small numbers.
- 6.8.8 An adult and juvenile turtle dove were seen perched on overhead lines along the railway to the north-west of Transect 15 (2017), north of Easthorpe Road. The birds were present only briefly and the direction where the birds flew away was not identified. No further records of turtle dove were made within the study area. As a juvenile bird was recorded, turtle dove has been categorised as a 'confirmed breeder' although the breeding site location was not determined.

- 6.8.9 Turtle dove is a rapidly declining summer resident and passage migrant. Approximately 47 singing males were reported within the county in 2018. (Essex Bird Report, 2018). The breeding record therefore represents a significant local record.

Table 6.10 Summary of Red List passerine species recorded during the surveys

Species	Transect peak count	Survey Results
Cuckoo	2	Non-breeder. Two individuals observed flying across Transect 6 (2020) considered to be migrant birds.
Swift	12+	Non-breeder. Small foraging groups considered to be migrant birds.
Turtle dove	2	Confirmed breeder. An adult and juvenile observed on Transect 15 (2017) – (See 6.8.2)

Amber List species

- 6.8.10 A relatively small number of birds were recorded which are included on the BoCC Amber List (Table 6.11). They are not considered to be significant at any more than a local level.

Table 6.11 Summary of Amber List passerine species recorded during the surveys

Species	Transect peak count	Survey Results
Barn owl	1	Probable breeder. A single bird seen on Transect 6 (2020).
Common tern	2	Small numbers passing through waterbodies on migration that may be breeding in the region.
Kingfisher	1	Possible breeder. Observed along the River Blackwater on five transects in 2017 and twice in 2020. No breeding activity noted.
Stock dove	6	Probable breeder. Flying or foraging in arable fields recorded along seven transects in 2020 and ten transects in 2017.
Woodpigeon	80	Large localised groups observed widely across farmland and woodland habitats.

7 Discussion

7.1 Summary

- 7.1.1 The breeding bird survey results indicate that the study area is regularly used by several notable species, either for breeding activity, or as transitory locations for migrant bird species. The survey findings generally reflected the composition of the historical data results.
- 7.1.2 A combined total of 90 species were recorded during the surveys completed in 2017 and 2020 of which 50 were notable species including:
- six species listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended)
 - 16 BoCC Red List species
 - 27 BoCC Amber List species
 - 16 species of principal importance (NERC S41)
 - 16 cited on the Essex Red Data List
 - two species requiring local conservation action
- 7.1.3 Of the 50 notable species recorded:
- 12 were confirmed breeders
 - 11 were assessed as probable breeders
 - 12 as possible breeders
 - 15 as non-breeders and therefore considered to be passing through on migration or post-breeding dispersal
- 7.1.4 The survey results show that most individual notable breeding species recorded within the study area are present in numbers that would not be considered of any more than local value.
- 7.1.5 The exceptions are the confirmed inland breeding records of hobby (Schedule 1 – north of Hatfield Peverel) and sand martin (Essex Red Data List – Colemans Quarry). These species are considered significant at a county level.
- 7.1.6 Confirmed breeding records of turtle dove (Red list – north of Easthorpe Road) and lapwing (Red list - Hole Farm at Hatfield Peverel) are considered significant at a local level in the context of county breeding populations.
- 7.1.7 Extensive areas of lowland intensive arable farmland were observed to have been of limited value for notable breeding species. Although a range of Red Listed species were observed as confirmed or probable breeders, these were recorded in small numbers relative to county populations.

- 7.1.8 Skylark represented the most widespread of the notable farmland species and was confirmed breeding within the study area at two locations.
- 7.1.9 Species diversity was observed within areas where a range of habitats were present. Colemans Reservoir was particularly notable for a diverse range of species. The reservoir featured a large waterbody bordered by deciduous woodland and scrub adjacent to arable farmland.
- 7.1.10 A lack of quality linear hedgerow and woodland boundary features were evident within the study area resulting in limited diversity of farmland birds. Areas of intact hedgerow north of Hatfield Peverel supported small numbers of notable farmland birds such as yellowhammer and house sparrow.
- 7.1.11 The River Blackwater and areas around Domsey Brook provide important ecosystems for a variety of species including grey wagtail, reed bunting and kingfisher. Cetti's warbler is found exclusively in riparian habitats such as reedbeds and areas of scrub bordering onto waterbodies and was recorded along the River Blackwater. Cetti's warbler are currently expanding widely across southern part of the UK and were not unexpected given the rapid increase in population.

7.2 Evaluation

- 7.2.1 The county of Essex features a wide range of habitat types, including coastal and marine areas of national importance for wading birds and waterfowl. The desk study showed that areas of heathland and mature woodland provide breeding opportunities for scarce species such as nightingale and turtle dove.
- 7.2.2 Results from the data search collected from EFC recorded an assemblage of species typical of managed cereal-crop, woodland and semi-urban habitats that were substantiated by the field survey results from 2017 and 2020.
- 7.2.3 The scheme corridor is dominated by intensively managed cereal-crop arable farmland, typical of central Essex and widespread and abundant across the county.
- 7.2.4 Based on farmland bird indicators, population trends have seen steep declines of 45% since 1970 and a decline of 5% in the short term between 2013 and 2018 (The State of the UK's Birds 2020). Habitat loss, fragmentation, intensive farming, and pesticide use are some of the contributing factors that are expediting the decline of many species sensitive to changes within our ecosystems.
- 7.2.5 Habitat connectivity such as hedgerows and woodland provide important corridors for post-breeding dispersal, commuting, and migration to promote genetic diversity and enhancing regional populations. Red List species are casualties of diminishing ecosystems where fragmentation of hedgerows and woodland limit areas for breeding and dispersal of young birds from nest-sites. Hedgerows particularly were found to be poorly managed, defunct, and generally sub-optimal in supporting large numbers of breeding passerines.
- 7.2.6 Maintaining and restoring niche habitats are important to the future breeding success for several vulnerable county species recorded during the surveys such as hobby, turtle dove, and sand martin.

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- 7.2.7 Recording observations across two discrete years provides a robust baseline of breeding bird species that use the area for breeding and feeding.
- 7.2.8 The assessment of the breeding bird population within the study area is considered of **local** importance for biodiversity with the exception of hobby, turtle dove, and sand martin that are considered significant breeding records on a **county** level.

8 References

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9 Glossary

Gregarious	Animals living in flocks or loosely organised communities.
Riverine	Living or situated on the banks of a river
Sedentary	Non migratory birds that never move more than a few kilometres from where they were born

Annex A. Environmental records for birds

Table A.1 Environmental records for birds within 2km of the proposed scheme obtained from Essex Wildlife Trust

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	TL81671467	Witham river walk	16/12/2016	Present Count	BOCC Amber list
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	TL8100015000	Witham, Bure Drive	27/11/2011	1 Count	
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	TL828140	Witham AGW Treatment Works	01/05/2010 - 31/05/2010	Present Count	
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	TL842124	Wickham Bishops	01/01/2002 - 31/12/2002	Present Count	
Brambling	<i>Fringilla montifringilla</i>	TL842124	Wickham Bishops	01/01/2002 - 31/12/2002	1 Count of Female	Schedule 1
Cuckoo	<i>Cuculus canorus</i>	TL725095	Springfield	10/06/1996	1 Count of Adult	Species of principal importance, BoCC Red list
Cuckoo	<i>Cuculus canorus</i>	TL725095	Springfield	22/04/1996	1 Count of Adult	
Cuckoo	<i>Cuculus canorus</i>	TL725095	Springfield	07/05/1995	1 Count of Adult	
Cuckoo	<i>Cuculus canorus</i>	TL829133	Wickham Bishops, Benton Hall	04/05/2013	1 Count of Adult	
Cuckoo	<i>Cuculus canorus</i>	TL83731205	Wickham Bishops, St Barts churchyard	26/05/2013	1 Count of Adult	
Cuckoo	<i>Cuculus canorus</i>	TL838120	Wickham Bishops	25/05/2012	1 Count	
Cuckoo	<i>Cuculus canorus</i>	TL830138	Whet Mead LNR Bra183	12/06/2016	Present Count	
Cuckoo	<i>Cuculus canorus</i>	TL859211	Feering	29/04/2012	1 Count	
Cuckoo	<i>Cuculus canorus</i>	TL8720	Feering	01/04/2012 - 30/04/2012	1 Count of Adult	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Cuckoo	<i>Cuculus canorus</i>	TL897187	Messing	23/05/2012	1 Count	
Cuckoo	<i>Cuculus canorus</i>	TL897190	Messing	02/05/2012	1 Count	
Cuckoo	<i>Cuculus canorus</i>	TL902212	Colchester	08/05/2012	1 Count	
Dunnock	<i>Prunella modularis</i>	TL769124	Lost Wood Bra94	02/04/2016	Present Count	Species of principal importance, BoCC Amber list
Dunnock	<i>Prunella modularis</i>	TL77101314	Terling Hall Woods Bra96	31/12/2016	Present Count	
Dunnock	<i>Prunella modularis</i>	TL82351560	Witham, Cut Throat lane	28/01/2017	1 Count of Adult	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	10/09/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	10/09/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	12/02/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	05/11/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	26/11/2000	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	03/12/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	06/08/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	22/01/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	10/12/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	24/12/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	12/11/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	15/01/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	05/02/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	23/04/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	08/01/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	29/01/2002	2 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	07/05/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	14/05/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	27/08/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	02/07/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	29/10/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	26/11/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	19/11/2000	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	17/12/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	03/12/2000	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	20/08/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	21/05/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	30/04/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	10/12/2000	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	09/07/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	26/02/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	22/10/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	05/11/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	15/10/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	15/10/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	10/09/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	03/09/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	09/07/2000	1 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	12/11/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	01/01/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	19/03/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	23/07/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	05/03/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	19/11/2002	2 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	30/07/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	17/12/2000	3 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	09/04/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	24/12/2000	3 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	02/07/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	19/02/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	08/10/2000	1 Count	
Dunnock	<i>Prunella modularis</i>	TL842124	Wickham Bishops	02/04/2002	1 Count	
Dunnock	<i>Prunella modularis</i>	TL9322	Copford, Churchyard	16/07/2013	Present Count	
Dunnock	<i>Prunella modularis</i>	TL9323	Copford	26/03/2012	1 Count	
Dunnock	<i>Prunella modularis</i>	TL9323	Copford	26/03/2012	1 Count	
Fieldfare	<i>Turdus pilaris</i>	TL77151105	Boreham	22/01/2015	2 Count of Adult	Species of principal importance, BoCC Red list
Fieldfare	<i>Turdus pilaris</i>	TL81951612	Rickstones Road, Witham	14/12/2016	1 Count of Adult	
Fieldfare	<i>Turdus pilaris</i>	TL89791902	Messing	05/01/2017	25 Count	
Grey Partridge	<i>Perdix perdix</i>	TL873204	Feering	06/01/2017	9 Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL72970945	Springfield CP	19/05/2016	2 Count of Adult	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	04/06/2013	Present Count of Adult	BoCC Amber list, Essex Red Data List
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	01/05/2013	1 Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	15/05/2013	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	12/08/2012	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	30/05/2013	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	30/07/2012	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	03/06/2013	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	06/06/2013	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	07/06/2013	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	21/05/2013	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL8230816263	Witham, Poplar Close CM8 2PB	06/07/2013	Present Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL820164	Rickstones Road, Witham	24/04/2015	2 Count of Adult	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	10/09/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	18/06/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	02/07/2002	2 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	30/07/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	16/07/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	27/08/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	21/05/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	09/07/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	03/09/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	25/06/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	20/08/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	13/08/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	23/07/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL842124	Wickham Bishops	06/08/2002	2 Count	
House Martin	<i>Delichon urbicum</i>	TL878189	Inworth, Columbyne Cottage	01/01/2012 - 31/12/2012	Present Count of Nest	
House Sparrow	<i>Passer domesticus</i>	TL816146	witham river walk	24/06/2016	Present Count of Adult	Species of principal importance, BoCC Red list
House Sparrow	<i>Passer domesticus</i>	TL8100015000	Witham, Bure Drive	27/11/2011	7 Count	
House Sparrow	<i>Passer domesticus</i>	TL823155	Witham, Cut Throat lane	25/01/2017	Present Count	
House Sparrow	<i>Passer domesticus</i>	TL82351560	Witham, Cut Throat lane	28/01/2017	Present Count	
House Sparrow	<i>Passer domesticus</i>	TL82301556	Witham, Cut Throat lane	07/01/2017	Present Count	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	28/05/2013	5Adult(s) with Count of brood	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	20/10/2012	Present Count of Adult	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	10/06/2013	Present Adult(s) + Count of brood	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	07/05/2013	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	04/09/2012	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	20/06/2013	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	27/05/2013	Present Adult(s) + Count of brood	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	28/07/2012	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	21/05/2013	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	01/08/2013	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	17/06/2013	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	30/07/2012	Present Count of Adult	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	24/12/2002	18 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	01/10/2002	5 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	17/09/2002	5 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	30/04/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	02/04/2002	18 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	19/11/2002	17 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	02/07/2002	6 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	03/09/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	12/02/2002	12 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	26/11/2002	16 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	27/08/2002	3 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	15/10/2002	12 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	10/12/2002	13 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	26/02/2002	12 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	09/04/2002	12 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	03/12/2002	17 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	21/05/2002	6 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	15/01/2002	15 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	05/02/2002	20 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	25/06/2002	2 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	12/11/2002	16 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	29/10/2002	10 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	13/08/2002	5 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	14/05/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	30/07/2002	4 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	07/05/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	17/12/2002	12 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	29/01/2002	15 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	05/11/2002	12 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	26/03/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	16/04/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	06/08/2002	12 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	19/03/2002	16 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	20/08/2002	3 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	01/01/2002	19 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	23/04/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	10/09/2002	3 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	22/01/2002	21 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	09/07/2002	6 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	08/10/2002	10 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	05/03/2002	13 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	08/01/2002	9 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	23/07/2002	3 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	18/06/2002	2 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	19/02/2002	20 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	24/09/2002	10 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	12/03/2002	18 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	22/10/2002	8 Count	
House Sparrow	<i>Passer domesticus</i>	TL842124	Wickham Bishops	16/07/2002	2 Count	
Jackdaw	<i>Corvus monedula</i>	TL83731205	Wickham Bishops, St Barts churchyard	21/04/2012	Present Count of Adult	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Jackdaw	<i>Corvus monedula</i>	TL9322	Copford Church	26/03/2012	7 Count	
Jackdaw	<i>Corvus monedula</i>	TL9322	Copford	12/03/2012	12 Count	
Jackdaw	<i>Corvus monedula</i>	TL930230	Copford, Gravelpit Wood	16/04/2010	Present Count	
Jackdaw	<i>Corvus monedula</i>	TL930230	Copford	16/09/2010	10 Count	
Kestrel	<i>Falco tinnunculus</i>	TL737096	Springfield CP	05/06/2016	1 Adult Count of Male	BoCC Amber list
Kestrel	<i>Falco tinnunculus</i>	TL8251112187	Blackwater, Wickham Bishop	22/11/2012	1 Count of Adult	
Kestrel	<i>Falco tinnunculus</i>	TL8230816263	Witham, Poplar Close CM8 2PB	02/12/2012	1 Count of Adult	
Kestrel	<i>Falco tinnunculus</i>	TL830138	Whet Mead LNR Bra183	12/06/2016	Present Count	
Kestrel	<i>Falco tinnunculus</i>	TL9017825024	Marks Tey, E&S Weir to downstream	15/05/2012	1 Count	
Kestrel	<i>Falco tinnunculus</i>	TL916247	Aldham	30/04/2014	1 Count	
Kestrel	<i>Falco tinnunculus</i>	TL926228	Copford Green	09/11/2010	1 Count	
Kestrel	<i>Falco tinnunculus</i>	TL9326	Fordham CP	30/05/2015	1 Count of Adult	
Kingfisher	<i>Alcedo atthis</i>	TL817151	witham river walk	09/10/2016	1 Count of Adult	Species of principal importance, BoCC Amber list
Kingfisher	<i>Alcedo atthis</i>	TL8231311713	Blackwater, Wickham Bishop	22/11/2012	1 Count of Adult	
Kingfisher	<i>Alcedo atthis</i>	TL8209711430	River Blackwater, Blue Mills Bridge area	20/08/2013	1 Count	
Kingfisher	<i>Alcedo atthis</i>	TL8248812286	Blackwater, Wickham Bishop	22/11/2012	1 Count of Adult	
Kingfisher	<i>Alcedo atthis</i>	TL831133	River Blackwater	11/10/2016	1 Count of Adult	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Kingfisher	<i>Alcedo atthis</i>	TL8312514313	River Blackwater, Little Braxted	16/09/2013	1 Count	
Kingfisher	<i>Alcedo atthis</i>	TL86601912	Packhorse Bridge	13/08/2016	1 Count	
Lapwing	<i>Vanellus vanellus</i>	TL7596908430	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	2 Count of Adult	Species of principal importance, BoCC Red list, Essex Red Data List
Lapwing	<i>Vanellus vanellus</i>	TL929221	Copford	08/06/2015	1 Count of Adult	
Lapwing	<i>Vanellus vanellus</i>	TL94622485	Rough grassland	25/01/2015	55 Count	
Mallard	<i>Anas platyrhynchos</i>	TL7593108393	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	3 Count	BoCC Amber list
Mallard	<i>Anas platyrhynchos</i>	TL756084	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	1 Count	
Mallard	<i>Anas platyrhynchos</i>	TL7640708551	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	3 Count of Adult Male	
Mallard	<i>Anas platyrhynchos</i>	TL7640708551	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	1 Count of Adult Female	
Mallard	<i>Anas platyrhynchos</i>	TL7640708551	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	6 Count of Juvenile	
Mallard	<i>Anas platyrhynchos</i>	TL816146	Witham river walk	24/06/2016	Present Count	
Mallard	<i>Anas platyrhynchos</i>	TL817147	Witham river walk	28/05/2016	Present Count	
Mallard	<i>Anas platyrhynchos</i>	TL81671467	Witham river walk	16/12/2016	Present Count	
Mallard	<i>Anas platyrhynchos</i>	TL816146	Witham river walk	02/01/2017	Present Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Mallard	<i>Anas platyrhynchos</i>	TL8100015000	Witham, Bure Drive	27/11/2011	2 Count	
Mallard	<i>Anas platyrhynchos</i>	TL817151	witham river walk	09/10/2016	Present Count	
Mallard	<i>Anas platyrhynchos</i>	TL82381587	Forest Road Pond, Witham	24/02/2015	2 Count of Adult	
Mallard	<i>Anas platyrhynchos</i>	TL82371586	Forest Road Pond, Witham	19/03/2015	4 Count of Adult	
Meadow Pipit	<i>Anthus pratensis</i>	TL930230	Copford	16/09/2010	11 Count	BoCC Amber list
Mistle Thrush	<i>Turdus viscivorus</i>	TL83731205	Wickham Bishops, St Barts churchyard	10/07/2011	1 Count of Adult	BoCC Red list
Mistle Thrush	<i>Turdus viscivorus</i>	TL9322	Copford	26/03/2012	1 Count	
Mistle Thrush	<i>Turdus viscivorus</i>	TL9322	Copford, St Michael & All Saints Church, churchyard	26/03/2012	1 Count	
Mistle Thrush	<i>Turdus viscivorus</i>	TL9323	Copford	12/03/2012	2 Count	
Mistle Thrush	<i>Turdus viscivorus</i>	TL9323	Copford, St Michael & All Saints Church, churchyard	12/03/2012	2 Count	
Mute Swan	<i>Cygnus olor</i>	TL7524908578	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	1 Count of Adult	BoCC Amber list
Mute Swan	<i>Cygnus olor</i>	TL81671467	Witham river walk	16/12/2016	2 Count of Adult	
Mute Swan	<i>Cygnus olor</i>	TL816146	Witham river walk	02/01/2017	2 Count of Adult	
Mute Swan	<i>Cygnus olor</i>	TL9124	Aldham	15/01/2015	2 Count of Adult	
Nightingale	<i>Luscinia megarhynchos</i>	TL931234	Pit Wood	16/05/2015	Present Count	Essex Red Data List species, BoCC Red list

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Oystercatcher	<i>Haematopus ostralegus</i>	TL73521011	Springfield CP	21/05/2016	2 Count of Adult	BoCC Amber list
Red Kite	<i>Milvus milvus</i>	TL83211367	Whet Mead LNR Bra183	03/07/2016	1 Count	Schedule 1
Red Kite	<i>Milvus milvus</i>	TL9121	Easthorpe	01/04/2013 - 30/04/2013	2 Count of Adult	
Skylark	<i>Alauda arvensis</i>	TL73780955	Springfield CP	18/02/2017	2 Count of Adult	Species of principal importance, BoCC Red list, Essex Red Data List
Skylark	<i>Alauda arvensis</i>	TL7575608355	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	1 Count	
Skylark	<i>Alauda arvensis</i>	TL7627408605	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	1 Count	
Skylark	<i>Alauda arvensis</i>	TL7628308582	Chelmer & Blackwater Navigation, Little Baddow Lock area	04/06/2013	1 Count	
Song Thrush	<i>Turdus philomelos</i>	TL842124	Wickham Bishops	29/01/2002	1 Count	Species of principal importance, Essex Red Data List, BoCC Red list
Song Thrush	<i>Turdus philomelos</i>	TL842124	Wickham Bishops	08/01/2002	1 Count	
Song Thrush	<i>Turdus philomelos</i>	TL842124	Wickham Bishops	22/01/2002	1 Count	
Song Thrush	<i>Turdus philomelos</i>	TL878189	Inworth, Columbyne Cottage	01/01/2012 - 31/12/2012	1 Count of Adult	
Song Thrush	<i>Turdus philomelos</i>	TL894188	Messing, Kelvedon Road	01/05/2012 - 31/05/2012	1 Count of Adult	
Song Thrush	<i>Turdus philomelos</i>	TL90502346	Marks Tey	15/05/2016	1 Adult Count of Male	
Starling	<i>Sturnus vulgaris</i>	TL828140	Witham AGW Treatment Works	01/05/2010 - 31/05/2010	Present Count	Species of principal

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	28/05/2013	5Adult(s) with Count of brood	importance, BoCC Red List
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	07/06/2013	Present Adult(s) + Count of brood	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	19/01/2013	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	20/01/2013	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	30/07/2012	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	26/05/2013	Present Adult(s) + Count of brood	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	10/06/2013	Present Adult(s) + Count of brood	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	01/08/2013	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	15/01/2013	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	06/06/2013	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	28/07/2012	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	04/09/2012	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	10/11/2012	Present Count of Adult	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	13/12/2012	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	20/04/2013	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	24/10/2012	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL8230816263	Witham, Poplar Close CM8 2PB	12/12/2012	Present Count of Adult	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	17/12/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	02/07/2000	5 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	26/02/2002	5 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	26/03/2002	2 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	19/03/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	02/08/2000	2 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	02/04/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	30/07/2000	7 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	07/05/2002	10 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	19/02/2002	9 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	15/10/2000	10 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	24/12/2000	5 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	21/05/2002	2 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	03/09/2000	7 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	20/08/2000	5 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	08/10/2000	12 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	08/01/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	10/09/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	22/10/2000	10 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	17/09/2002	3 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	23/04/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	14/05/2002	4 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	17/12/2000	7 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	01/10/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	10/09/2000	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	12/02/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	22/10/2002	4 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	22/01/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	10/12/2000	5 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	24/12/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	26/11/2002	5 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	12/11/2002	3 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	05/11/2002	3 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	01/01/2002	9 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	19/03/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	01/10/2000	10 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	02/07/2002	5 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	08/10/2002	8 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	23/07/2000	3 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	05/02/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	19/11/2000	10 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	16/04/2002	4 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	12/11/2000	20 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	29/10/2002	2 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	16/07/2000	3 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	09/04/2002	6 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	05/11/2000	25 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	03/09/2002	2 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	09/07/2000	4 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	10/12/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	27/08/2000	12 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	24/09/2000	13 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	16/07/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	29/01/2002	9 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	29/10/2000	7 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	26/11/2000	12 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	03/12/2002	2 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	15/01/2002	4 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	15/10/2002	4 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	09/07/2002	1 Count	

Common name	Scientific name	Grid reference	Location	Date	Abundance	Conservation / legal status
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	25/06/2002	1 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	05/03/2002	7 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	17/09/2000	4 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	03/12/2000	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	30/04/2002	8 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	24/09/2002	10 Count	
Starling	<i>Sturnus vulgaris</i>	TL842124	Wickham Bishops	19/11/2002	3 Count	
Starling	<i>Sturnus vulgaris</i>	TL864184	Brockwell Meadows Bra229	01/05/2016	Present Count	
Starling	<i>Sturnus vulgaris</i>	TL9424	Stanway, Sainsburys	03/02/2016	300 Count	
Turtle Dove	<i>Streptopelia turtur</i>	TL75691008	Allens Close	05/05/2015	2 Count of Adult	Species of principal importance, Essec Red Data List, BoCC Red list
Turtle Dove	<i>Streptopelia turtur</i>	TL75681009	Allens Close	16/07/2014	2 Count of Adult	
Turtle Dove	<i>Streptopelia turtur</i>	TL904232	Marks Tey, Godman's Lane	21/06/2012	2 Count	
Waxwing	<i>Bombycilla garrulus</i>	TL855155	Braxted Park Ma44	17/02/2011	8 Count	Green List
Yellowhammer	<i>Emberiza citrinella</i>	TL74000981	Chelmsford District	20/03/2016	2 Count	Species of principal importance, Essex Red Data List, BoCC Red list
Yellowhammer	<i>Emberiza citrinella</i>	TL74050989	Chelmsford District	29/03/2016	3 Count of Adult	
Yellowhammer	<i>Emberiza citrinella</i>	TL93362391	fields	02/09/2015	2 Count of Adult	

Table A.2 Environmental records for birds within 2km of the proposed scheme obtained from Essex Field Club, showing distance from the proposed scheme

*A precise grid reference for each record was not provided by the Essex Field Club.

Common Name	Scientific Name	Grid Reference*	Location	Year	Abundance	Conservation / Legal Status
Barn Owl	<i>Tyto alba</i>	TL8417	Kelvedon	2015	1	Schedule 1, Essex Red Data List
Common Black-headed Gull	<i>Chroicocephalus ridibundus</i>	TL8116	Witham, River Brain footpath	2011	1	BoCC Amber list
Common Kestrel	<i>Falco tinnunculus</i>	TL8315	Mobile-TL8315	2015	1	BoCC Amber list
Common Kingfisher	<i>Alcedo atthis</i>	TL8415	Witham; Elm Farm GPs	2014	1	Species of principal importance, BoCC Amber list
Eurasian Hobby	<i>Falco subbuteo</i>	TL8217	Rivenhall	2013	1	Schedule 1, Essex Red Data List
Eurasian Hobby	<i>Falco subbuteo</i>	TL8215	Cutthroat Lane	2013	1	Essex Red Data List
Eurasian Spoonbill	<i>Platalea leucorodia</i>	TL8217	Rivenhall	2013	1	Schedule 1, BoCC Amber list
Fieldfare	<i>Turdus pilaris</i>	TL8217	Rivenhall	2014	5	Species of principal importance, BoCC Red list
Fieldfare	<i>Turdus pilaris</i>	TL8415	Coleman's Reservoir	2015	1	BoCC Red list
Fieldfare	<i>Turdus pilaris</i>	TL8115	Essex, Witham NW	2015	1	BoCC Red list
Great Crested Grebe	<i>Podiceps cristatus</i>	TL8415	Witham; Elm Farm GPs	2014	1	Green list
Herring Gull	<i>Larus argentatus</i>	TL8215	Chelmsford station	2015	1	Red list
Little Ringed Plover	<i>Charadrius dubius</i>	TL8415	Witham; Elm Farm GPs	2014	1	Schedule 1, Essex Red Data List

Common Name	Scientific Name	Grid Reference*	Location	Year	Abundance	Conservation / Legal Status
Red Kite	<i>Milvus milvus</i>	TL8217	Rivenhall End	2015	1	Schedule 1
Red Kite	<i>Milvus milvus</i>	TL8417	Kelvedon	2015	1	Schedule 1
Song Thrush	<i>Turdus philomelos</i>	TL8116	Witham	2015	1	Species of principal importance, Essex Red Data List, BoCC Red list
Yellow Wagtail	<i>Motacilla flava</i>	TL8217	Rivenhall	2013	1	Species of principal importance, Essex Red Data List, BoCC Red List
Yellowhammer	<i>Emberiza citrinella</i>	TL8217	Rivenhall	2013	1	Species of principal importance, Essex Red Data List, BoCC Red List

Annex B. Qualifying features of designated sites

Table B.1 SPA/Ramsar sites within 2km of the proposed scheme, or located at a greater distance where an effect pathway could exist, and their qualifying features in respect of breeding species - over wintering bird species are excluded (JNCC, 2016)

Site name/code	Site description	Qualifying features ¹
Abberton Reservoir SPA UK9009141 / Ramsar UK11001	The largest freshwater body in Essex. Less than 8km from the coast, primary role is as a roost site for the estuarine wildfowl population.	SPA: <ul style="list-style-type: none"> Cormorant (<i>Phalacrocorax carbo</i>) 490 pairs representing at least 1.2% of the breeding Northwestern Europe population and 7% of the breeding population in Great Britain (5-year mean, 1993-1997) Ramsar: <ul style="list-style-type: none"> As for SPA
Alde-Ore Estuary SPA UK9009112 / Ramsar UK11002		SPA: <ul style="list-style-type: none"> Avocet (<i>Recurvirostra aveosetta</i>), 104 pairs representing at least 23.1% of the breeding population in Great Britain (5-year mean, 1990-1994) Lesser black-backed gull (<i>Larus fuscus</i>), 14,070 pairs representing at least 11.3% of the breeding Western Europe/Mediterranean/Western Africa population (Count as at 1998) Little tern (<i>Sterna albifrons</i>), 48 pairs representing at least 2.0% of the breeding population in Great Britain (5 count mean, 1993-4,1996-8) Marsh harrier (<i>Circus aeruginosus</i>), 3 pairs representing at least 1.9% of the breeding population in Great Britain (5 year mean, 1993-1997) Sandwich tern (<i>Sterna sandvicensis</i>), 169 pairs representing at least 1.2% of the breeding population in Great Britain (5 year mean 1991-1995)

¹ For Ramsar sites only the criteria applying to bird species are listed

Site name/code	Site description	Qualifying features ¹
		Ramsar: <ul style="list-style-type: none"> Little tern, Marsh harrier and Sandwich tern as for SPA Mediterranean Gull (<i>Larus melanocephalus</i>), 3 pairs representing a Nationally important Great Britain breeding population (Count as at 2000)
Blackwater Estuary SPA UK9009245 / Ramsar UK11007	A large estuary, with mudflats and saltmarshes supporting overwintering wildfowl. Rich mosaic of surrounding terrestrial habitat supports nationally scarce plants and rare invertebrates. There are 16 British Red Data Book species and 94 notable and local species.	SPA: <ul style="list-style-type: none"> Common Pochard (<i>Aythya farina</i>), 15 pairs representing at least 6% of the breeding population in Great Britain (5 year mean 1897-1991) Little Tern (<i>Sterna albifrons</i>), 36 pairs representing at least 1.5% of the breeding population in Great Britain (Count as at 1997) Ringed Plover (<i>Charadrius hiaticula</i>), 135 pairs representing at least 1.6% of the population in Great Britain (5 year mean 1987-1991)
		Ramsar: <ul style="list-style-type: none"> Little tern as for SPA Common tern (<i>Sterna hirundo</i>), 60 pairs representing a Nationally important Great Britain breeding population (Count as at 2000) Mediterranean Gull (<i>Larus melanocephalus</i>), 2 pairs representing a Nationally important Great Britain breeding population (Count as at 2000)
Colne Estuary SPA UK9009243 / Ramsar UK11015	A short branching estuary of international importance to wintering wildfowl and nationally important breeding waders and wildfowl.	SPA: <ul style="list-style-type: none"> Common Pochard (<i>Aythya farina</i>), 15 pairs representing at least 6% of the breeding population in Great Britain (5 year mean 1897-1991) Little Tern (<i>Sterna albifrons</i>), 38 pairs representing at least 1.6% of the breeding population in Great Britain (5-year mean, 1992-1996) Ringed Plover (<i>Charadrius hiaticula</i>), 135 pairs representing at least 1.6% of the breeding population in Great Britain (5-year mean, 1992-1996)
		Ramsar: <ul style="list-style-type: none"> Little tern as for SPA

Site name/code	Site description	Qualifying features ¹
		<ul style="list-style-type: none"> Black-headed gull (<i>Chroicocephalus ridibundus</i>), 10 pairs representing a Nationally important Great Britain breeding population (Count as at 2000) Mediterranean Gull (<i>Larus melanocephalus</i>), 2 pairs representing a Nationally important Great Britain breeding population (Count as at 2000)
Crouch and Roach Estuaries SPA UK9009244 / Ramsar UK11016	Estuaries with tidal mud used by significant numbers of birds. Site is important for wintering wildfowl.	SPA: <ul style="list-style-type: none"> No breeding bird species
		Ramsar: <ul style="list-style-type: none"> As for SPA
Dengie SPA UK9009242 / Ramsar UK11018	Large and remote area of tidal mudflats and saltmarshes. Outstanding assemblage of rare coastal flora. Important for overwintering wildfowl and waders and breeding coastal birds.	SPA: <ul style="list-style-type: none"> No breeding bird species
		Ramsar: <ul style="list-style-type: none"> As for SPA
Stour and Orwell Estuaries SPA UK9009121 / Ramsar UK11067	Important estuary for wintering and passage wildfowl and waders.	SPA: <ul style="list-style-type: none"> Avocet (<i>Recurvirostra avosetta</i>), 21 pairs representing at least 3.6% of the breeding population in Great Britain (5-year mean, 1996-2000)
		Ramsar: <ul style="list-style-type: none"> As for SPA Little Tern (<i>Sterna albifrons</i>), 23 pairs representing a Nationally important Great Britain breeding population (Count as at 2000)
Outer Thames Estuary SPA UK9020309	The Outer Thames Estuary SPA is classified for the protection of the largest aggregation of wintering red-throated diver (<i>Gavia stellata</i>) in the UK	<ul style="list-style-type: none"> No breeding bird species

Site name/code	Site description	Qualifying features ¹
Outer Thames Estuary SPA extension		<ul style="list-style-type: none">• The SPA would retain the feature of the existing SPA (see above), while adding two new qualifying features:• Little tern (breeding)• Common tern (<i>Sterna hirundo</i>) (breeding)

Annex C. Summary of field survey results

Table C.1 Bird species recorded during the 2017 surveys with peak counts for each transect and the study area as a whole

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Blackbird	<i>Turdus merula</i>	-	6	9	13	3	7	4	13	7	22	14	9	9	13	22	9	19	91	108	73	97
Blackcap	<i>Sylvia atricapilla</i>	-	2	5	5	1	1	-	6	6	6	3	11	5	5	5	3	4	53	42	24	36
Black-headed gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber	1	-	3	-	5	1	3	13	17	-	-	3	-	6	-	1	26	15	21	22
Blue tit	<i>Cyanistes caeruleus</i>	-	6	34	24	9	8	7	17	6	11	16	19	21	24	12	5	28	121	127	168	118
Bullfinch	<i>Pyrrhula pyrrhula</i>	Species of principal importance, BoCC Amber, Essex Red Data List	-	-	2	-	-	-	-	-	-	-	2	-	1	-	2	-	1	2	1	6
Canada goose	<i>Branta canadensis</i>	-	-	2	-	-	-	-	-	5	8	1	-	-	-	-	-	-	9	9	3	1
Carrion crow	<i>Corvus corone</i>	-	5	3	6	2	6	2	7	2	6	9	4	5	11	5	5	9	52	58	23	31
Cetti's warbler	<i>Cettia cetti</i>	Schedule 1	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	3	1	-
Chaffinch	<i>Fringilla coelebs</i>	-	5	6	13	3	3	1	9	10	8	4	6	5	11	9	8	13	75	94	39	36

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Chiffchaff	<i>Phylloscopus collybita</i>	-	4	4	4	1	3	1	7	5	8	1	6	4	4	3	2	6	52	41	18	27
Coal tit	<i>Periparus ater</i>	-	-	4	-	-	1	-	2	-	-	2	1	-	2	-	-	-	4	8	1	2
Collared dove	<i>Streptopelia decaocto</i>	-	5	1	3	1	1	4	3	-	2	-	-	5	4	11	1	3	29	6	6	15
Common Buzzard	<i>Buteo buteo</i>	-	-	1	2	-	1	-	1	1	-	1	3	2	2	-	-	1	5	6	6	8
Common tern	<i>Sterna hirundo</i>	BoCC Amber	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	1	1	-	-
Common Whitethroat	<i>Sylvia communis</i>	-	3	4	6	3	4	1	15	8	5	9	6	4	10	6	8	7	2	72	38	41
Coot	<i>Fulica atra</i>	-	-	-	-	1	-	-	-	-	32	-	-	-	-	-	-	-	2	10	32	32
Cormorant	<i>Phalacrocorax carbo</i>	-	2	1	-	-	-	-	-	4	2	-	3	2	2	-	-	1	5	8	4	2
Cuckoo	<i>Cuculus canorus</i>	Species of principal importance, BoCC Red	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Dunnock	<i>Prunella modularis</i>	Species of principal importance, BoCC Amber	3	7	6	2	14	6	8	5	4	5	13	3	4	4	14	5	55	58	34	50
Egyptian goose	<i>Alopochen aegyptiaca</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Feral pigeon	<i>Columba livia</i>	-	1	12	-	-	35	-	-	-	-	-	-	1	-	-	-	12	35	8	12	34
Feral/hybrid mallard type	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	3
Garden warbler	<i>Sylvia borin</i>	-	-	2	1	1	-	-	2	-	2	-	1	-	-	-	-	-	1	3	-	-
Goldcrest	<i>Regulus regulus</i>	-	1	5	1	-	1	-	1	2	4	2	3	4	1	-	-	2	15	6	6	8
Goldfinch	<i>Carduelis carduelis</i>	-	10	8	8	2	7	6	6	2	5	11	11	10	6	8	32	8	58	51	86	73
Great black-backed gull	<i>Larus marinus</i>	BoCC Amber	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	5	-
Great crested grebe	<i>Podiceps cristatus</i>	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2	2	-
Great spotted woodpecker	<i>Dendrocopos major</i>	-	-	4	3	-	1	-	2	1	2	-	1	1	1	-	-	1	8	7	5	5
Great tit	<i>Parus major</i>	-	1	9	18	6	9	2	11	5	7	6	4	4	3	4	6	9	65	65	24	39
Green woodpecker	<i>Picus viridis</i>	-	-	2	1	2	-	-	1	1	2	1	1	2	1	1	1	2	6	7	6	10

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Greenfinch	<i>Chloris chloris</i>	-	2	1	1	-	-	-	3	-	3	4	3	2	8	4	6	10	31	11	15	23
Grey heron	<i>Ardea cinerea</i>	-	1	2	-	-	-	1	-	-	1	-	-	1	1	-	-	-	3	3	-	-
Grey wagtail	<i>Motacilla cinerea</i>	BoCC Red	-	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-	2	-	-	1
Greylag goose	<i>Anser anser</i>	BoCC Amber	-	1	-	2	-	-	-	3	39	2	1	-	-	2	-	-	20	44	1	7
Herring gull	<i>Larus argentatus</i>	Species of principal importance, BoCC Red	1	1	2	-	-	1	2	5	6	-	-	1	-	-	2	5	8	11	6	2
House martin	<i>Delichon urbicum</i>	BoCC Amber, Essex Red Data List	-	1	3	-	54	20	-	-	2	-	-	4	3	-	-	-	-	26	64	21
House sparrow	<i>Passer domesticus</i>	Species of principal importance, BoCC Red	4	1	22	-	15	50	-	-	-	-	-	8	2	22	10	8	61	73	82	35
Jackdaw	<i>Corvus</i>	-	1	34	16	-	6	2	5	-	6	79	-	1	1	-	-	4	55	19	133	57
Jay	<i>Garrulus glandarius</i>	-	2	2	1	2	-	-	2	1	1	3	2	2	-	1	-	-	6	6	2	9
Kestrel	<i>Falco tinnunculus</i>	BoCC Amber	-	-	2	-	-	-	1	-	1	1	1	-	2	2	-	1	3	4	3	4
Kingfisher	<i>Alcedo atthis</i>	Schedule 1, BoCC Amber	-	-	1	-	-	-	1	3	1	-	1	-	-	-	-	-	2	5	1	-

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Lapwing	<i>Vanellus vanellus</i>	Species of principal importance, BoCC Red, Essex Red Data List	-	-	-	-	-	-	-	4	5	-	-	-	-	-	-	-	9	3	3	2
Lesser black-backed gull	<i>Larus fuscus</i>	BoCC Amber	1	-	1	-	1	1	2	-	6	1	-	1	1	-	-	1	3	4	7	10
Lesser whitethroat	<i>Sylvia curruca</i>	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	1	-	3	1	-
Linnet	<i>Carduelis cannabina</i>	Species of principal importance, BoCC Red, Essex Red Data List	4	-	2	-	1	-	4	-	-	-	2	8	5	9	37	10	24	25	42	42
Little egret	<i>Egretta garzetta</i>	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-
Long-tailed tit	<i>Aegithalos caudatus</i>	-	-	9	4	1	2	1	13	10	6	-	5	5	3	4	-	-	7	45	24	38
Magpie	<i>Pica pica</i>	-	1	4	6	2	2	3	2	3	1	1	5	2	4	4	4	7	29	25	24	29
Mallard	<i>Anas platyrhynchos</i>	BoCC Amber	4	11	8	-	5	20	1	7	33	5	14	4	-	-	-	2	66	71	16	34
Meadow pipit	<i>Anthus pratensis</i>	BoCC Amber	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	2	4	-	-	-

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Mistle thrush	<i>Turdus viscivorus</i>	-	1	2	3	1	-	-	1	-	4	2	2	1	-	1	-	1	9	8	4	3
Moorhen	<i>Gallinula chloropus</i>	-	2	-	1	2	-	4	3	1	2	-	5	2	1	-	-	1	7	14	5	8
Mute swan	<i>Cygnus olor</i>	BoCC Amber	-	-	-	-	-	-	1	1	4	-	-	-	-	-	-	-	3	2	4	1
Nuthatch	<i>Sitta europaea</i>	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	0	-
Pheasant	<i>Phasianus colchicus</i>	-	1	3	2	2	1	-	4	3	19	2	12	2	12	3	1	5	55	30	20	6
Pied wagtail	<i>Motacilla alba</i>	-	-	1	-	-	3	4	1	-	2	3	2	1	1	1	4	4	13	10	7	9
Red kite	<i>Milvus milvus</i>	Schedule 1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	1
Red-legged partridge	<i>Alectoris rufa</i>	-	6	6	5	2	6	-	4	10	10	15	7	6	14	11	1	6	62	69	21	6
Lesser redpoll	<i>Acanthis cabaret</i>	Species of principal importance, BoCC Red	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	0	-
Reed bunting	<i>Emberiza schoeniclus</i>	Species of principal importance, BoCC Amber, Essex Red Data List	-	-	-	1	1	-	1	1	-	-	1	-	-	-	3	1	2	2	6	-

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Reed warbler	<i>Acrocephalus scirpaceus</i>	-	-	-	2	-	-	-	3	4	1	-	-	2	-	-	-	-	1	6	7	1
Robin	<i>Erithacus rubecula</i>	-	7	12	14	5	10	4	12	9	18	10	8	11	13	6	8	19	85	144	51	44
Rook	<i>Corvus frugilegus</i>	-	-	-	11	1	26	3	3	-	-	5	1	-	-	-	-	1	42	7	1	3
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-
Shelduck	<i>Tadorna tadorna</i>	BoCC Amber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	-
Shoveler	<i>Anas clypeata</i>	BoCC Amber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3	-	-
Skylark	<i>Alauda arvensis</i>	Species of principal importance, BoCC Red, Essex BAP, Essex Red Data List	1	3	11	11	8	1	1	2	2	5	3	9	11	5	3	20	45	56	62	46
Song thrush	<i>Turdus philomelos</i>	Species of principal importance, BoCC Red, Essex BAP, Essex Red Data List	1	4	4	1	2	1	7	5	12	2	4	2	2	3	2	3	40	29	17	20

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Sparrowhawk	<i>Accipiter nisus</i>	-	-	2	1	-	2	-	-	-	-	-	1	2	-	-	-	-	4	-	1	3
Starling	<i>Sturnus vulgaris</i>	Species of principal importance, BoCC Red	3	1	34	-	26	22	3	-	21	61	40	20	2	37	2	8	24	99	190	76
Stock dove	<i>Columba oenas</i>	BoCC Amber	1	-	4	1	3	-	-	1	-	2	1	1	4	-	-	6	12	6	4	8
Stonechat	<i>Saxicola rubicola</i>	Essex Red Data List	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-
Swallow	<i>Hirundo rustica</i>	-	-	3	5	-	3	-	-	-	9	4	1	4	7	5	6	1	5	31	22	22
Swift	<i>Apus apus</i>	BoCC Amber	-	2	1	-	3	6	5	-	12	-	-	1	5	4	12	-	-	17	29	22
Treecreeper	<i>Certhia familiaris</i>	-	-	2	2	-	-	-	1	6	2	-	1	2	-	-	-	1	8	-	3	12
Tufted duck	<i>Aythya fuligula</i>	-	-	-	-	-	-	2	-	-	23	-	-	-	-	-	-	-	12	15	23	-
Turtle dove	<i>Streptopelia turtur</i>	Species of principal importance, BoCC Red, Essex Red Data List	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2
Willow warbler	<i>Phylloscopus trochilus</i>	BoCC Amber	1	-	-	-	-	-	2	1	1	-	-	1	-	-	-	-	-	4	0	1
Woodpigeon	<i>Columba palumbus</i>	-	37	25	77	61	228	8	42	11	76	28	47	37	51	19	22	91	559	398	211	379

Common name	Scientific name	Conservation / legal status	Transect / peak count																Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4
Wren	<i>Troglodytes troglodytes</i>	-	6	9	18	9	6	3	10	9	15	9	14	8	10	6	6	13	104	130	59	82
Yellowhammer	<i>Emberiza citrinella</i>	Species of principal importance, BoCC Red, Essex Red Data List	1	-	-	2	1	-	-	-	-	-	-	1	2	-	4	5	2	5	12	4
Total Schedule 1 species																						
Total Species of principal importance			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3			
Total BoCC Red species			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14			
Total BoCC Amber species			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12			
Total EBAP species			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19			
Total Essex Red Data List species			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			

Table C.2 Birds recorded during the 2017 survey with assessments of breeding status for each transect and the study area as a whole, where: CB = confirmed breeding; PB = probable breeding; PS = possible breeding, and NB = not breeding

Common name	Scientific name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Blackbird	<i>Turdus merula</i>	NB	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PB
Blackcap	<i>Sylvia atricapilla</i>	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	CB	PS	PS
Black-headed gull	<i>Chroicocephalus ridibundus</i>	NB	-	NB	-	NB	NB	NB	NB	PS	-	-	NB	-	NB	-	NB
Blue tit	<i>Cyanistes caeruleus</i>	PS	CB	PS	CB	PS	PS	PS	PS	PS	PB	PS	PS	PS	PS	PS	PB
Bullfinch	<i>Pyrrhula pyrrhula</i>	-	-	PS	-	-	-	-	-	-	-	PS	-	PS	-	PS	-
Canada goose	<i>Branta canadensis</i>	-	NB	-	-	-	-	-	NB	CB	NB	-	-	-	-	-	-
Carrion crow	<i>Corvus corone</i>	PS	PS	PS	PS	PS	PS	PB	PS	PS	PS	PS	PS	PS	PS	PS	PS
Cetti's warbler	<i>Cettia cetti</i>	-	-	-	-	-	-	-	-	PS	-	-	-	-	-	-	-
Chaffinch	<i>Fringilla coelebs</i>	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Chiffchaff	<i>Phylloscopus collybita</i>	PS	PS	CB	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Coal tit	<i>Periparus ater</i>	-	PS	-	-	PS	-	PS	-	-	CB	PS	-	PS	-	-	-
Collared dove	<i>Streptopelia decaocto</i>	PS	PS	PS	PS	PS	PS	PS	-	PS	-	-	PS	PS	PS	PS	PS
Common buzzard	<i>Buteo buteo</i>	-	NB	NB	-	NB	-	NB	NB	-	NB	NB	CB	NB	-	-	NB
Common tern	<i>Sterna hirundo</i>	-	-	-	-	-	-	-	NB	NB	-	-	-	-	-	-	-
Common whitethroat	<i>Sylvia communis</i>	PS	PS	PS	PS	PS	PS	PB	PS	PS	PS	PS	PS	PS	PS	PS	PS
Coot	<i>Fulica atra</i>	-	-	-	PS	-	-	-	-	PS	-	-	-	-	-	-	-
Cormorant	<i>Phalacrocorax carbo</i>	NB	NB	-	-	-	-	-	NB	NB	-	NB	NB	NB	-	-	NB
Cuckoo	<i>Cuculus canorus</i>	-	-	-	NB	-	-	-	-	-	-	-	-	-	-	-	-
Dunnoek	<i>Prunella modularis</i>	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Egyptian goose	<i>Alopochen aegyptiaca</i>	-	-	-	-	-	-	-	-	NB	-	-	-	-	-	-	-

Common name	Scientific name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Feral pigeon	<i>Columba livia</i>	NB	NB	-	-	NB	-	-	-	-	-	-	-	-	-	-	NB
Feral/hybrid mallard type	-	-	CB	-	-	-	-	-	-	PS	-	-	-	-	-	-	-
Garden warbler	<i>Sylvia borin</i>	-	PS	PS	PS	-	-	PS	-	PS	-	PS	-	-	-	-	-
Goldcrest	<i>Regulus regulus</i>	PS	PS	PS	-	PS	-	PS	PS	PS	PS	NB	PS	PS	-	-	PS
Goldfinch	<i>Carduelis carduelis</i>	PS	PS	PS	PS	PS	PS	PS	NB	PS	PS	PS	PS	PS	PS	PS	PS
Great black-backed gull	<i>Larus</i>	-	-	-	-	-	-	-	-	-	-	-	-	NB	NB	-	-
Great crested grebe	<i>Podiceps cristatus</i>	-	-	-	-	-	-	-	-	PS	-	-	-	-	-	-	-
Great spotted woodpecker	<i>Dendrocopos major</i>	-	PS	PS	-	PS	-	PS	PS	PS	-	PS	PS	PS	-	-	PS
Great tit	<i>Parus major</i>	PS	PS	PS	PB	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	CB
Green woodpecker	<i>Picus viridis</i>	-	PS	PS	PS	-	-	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Greenfinch	<i>Chloris chloris</i>	PS	PS	PS	-	-	-	PS	-	PS	CB	PS	-	PS	PS	CB	PS
Grey heron	<i>Ardea cinerea</i>	NB	NB	-	-	-	NB	-	-	NB	-	-	-	NB	-	-	-
Grey wagtail	<i>Motacilla cinerea</i>	-	-	-	-	-	-	PS	PS	-	PS	-	-	-	-	-	-
Greylag goose	<i>Anser anser</i>	-	NB	-	NB	-	-	-	NB	PS	NB	NB	-	-	NB	-	-
Herring gull	<i>Larus argentatus</i>	NB	NB	NB	-	-	NB	NB	NB	NB	-	-	-	-	-	NB	NB
House martin	<i>Delichon urbicum</i>	-	NB	NB	-	NB	NB	-	-	NB	-	-	NB	PS	-	-	-
House sparrow	<i>Passer domesticus</i>	PS	PS	PS	-	PS	PB	-	-	-	-	-	PS	PS	PS	PS	PS
Jackdaw	<i>Corvus</i>	PS	PB	PS	-	PB	NB	PS	-	PS	PS	-	-	PS	-	-	NB
Jay	<i>Garrulus glandarius</i>	PS	PS	NB	PS	-	-	PS	NB	PS	NB	NB	NB	-	PS	-	-
Kestrel	<i>Falco tinnunculus</i>	-	-	PS	-	-	-	PS	-	PS	CB	PS	-	PS	PS	-	PS

Common name	Scientific name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Kingfisher	<i>Alcedo atthis</i>	-	-	PS	-	-	-	PS	PS	PS	-	PS	-	-	-	-	-
Lapwing	<i>Vanellus vanellus</i>	-	-	-	-	-	-	-	NB	PS	-	-	-	-	-	-	-
Lesser black-backed gull	<i>Larus maritimus</i>	NB	-	NB	-	NB	NB	NB	-	NB	NB	-	NB	NB	-	-	NB
Lesser whitethroat	<i>Sylvia curruca</i>	-	-	-	-	-	-	PS	-	-	-	-	-	-	-	-	-
Linnet	<i>Carduelis cannabina</i>	-	-	-	-	-	-	PS	-	-	-	PS	-	-	-	-	PS
Little egret	<i>Egretta garzetta</i>	NB	-	PS	-	PS	-	NB	-	-	-	NB	NB	PS	PS	PS	PS
Long-tailed tit	<i>Aegithalos caudatus</i>	-	-	-	-	-	-	-	-	-	-	NB	-	-	-	-	-
Magpie	<i>Pica pica</i>	-	PS	PS	PS	PS	PS	PS	PS	PS	-	PS	PS	PS	PS	-	-
Mallard	<i>Anas platyrhynchos</i>	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Meadow pipit	<i>Anthus pratensis</i>	NB	PS	CB	-	PS	CB	PS	NB	PS	NB	PS	NB	-	-	-	NB
Mistle thrush	<i>Turdus viscivorus</i>	-	-	NB	-	NB	-	-	-	-	-	-	-	-	-	-	NB
Moorhen	<i>Gallinula chloropus</i>	PS	PS	PS	PS	-	-	PS	-	PS	NB	PS	PS	-	PS	-	PS
Mute swan	<i>Cygnus olor</i>	PS	-	PS	PS	-	PS	PS	PS	PS	-	PS	PS	PS	-	-	PS
Nuthatch	<i>Sitta europaea</i>	-	-	-	-	-	-	PS	PB	CB	-	-	-	-	-	-	-
Pheasant	<i>Phasianus colchicus</i>	-	PS	PS	-	-	-	-	PS	-	-	-	-	-	-	-	-
Pied wagtail	<i>Motacilla alba</i>	PS	PS	PS	PS	PS	-	PS	PS	PS	PS	PS	PS	PS	NB	PS	PS
Red kite	<i>Milvus milvus</i>	-	NB	-	-	PS	PS	PS	-	PS	NB	NB	NB	NB	NB	CB	PS
Red-legged partridge	<i>Alectoris rufa</i>	-	-	-	-	-	-	-	-	-	-	-	PS	-	PS	-	-
Lesser Redpoll	<i>Acanthis cabaret</i>	PS	PS	PS	PS	PS	-	PS	PS	PS	PS	PS	-	PS	PS	PS	PS
Reed bunting	<i>Emberiza schoeniclus</i>	-	-	-	PS	PS	-	PS	PS	-	-	PS	-	-	-	PS	PS
Reed warbler	<i>Acrocephalus scirpaceus</i>	-	-	PS	-	-	-	PS	PS	PS	-	-	PS	-	-	-	-
Robin	<i>Erithacus rubecula</i>	PS	PB	PS	PS	PS	PS	PS	CB	PS	PS	CB	CB	PS	PS	PS	PS

Common name	Scientific name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Rook	<i>Corvus frugilegus</i>	-	-	NB	NB	NB	NB	NB	-	-	NB	NB	-	-	-	-	NB
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	-	-	-	-	-	-	PS	-	-	-	-	-	-	-	-	-
Shelduck	<i>Tadorna tadorna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NB
Shoveler	<i>Anas clypeata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NB
Skylark	<i>Alauda arvensis</i>	PS	PS	PS	PS	PS	PS	PS	PS	PS	PB	PS	PS	PS	PB	PS	CB
Song thrush	<i>Turdus philomelos</i>	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	CB	PS	PS	PS	PS
Sparrowhawk	<i>Accipiter nisus</i>	-	NB	NB	-	NB	-	-	-	-	-	NB	NB	-	-	-	-
Starling	<i>Sturnus vulgaris</i>	PS	NB	PS	-	PS	PS	PS	-	PS	CB	NB	PS	PS	CB	NB	PB
Stock dove	<i>Columba oenas</i>	NB	-	PS	NB	NB	-	-	NB	-	NB	NB	-	NB	-	-	NB
Stonechat	<i>Saxicola rubicola</i>	-	-	-	PS	-	-	-	-	-	-	-	-	-	-	-	-
Swallow	<i>Hirundo rustica</i>	-	PS	PB	-	NB	-	-	-	PS	NB	NB	PB	NB	NB	PS	NB
Swift	<i>Apus apus</i>	-	NB	NB	-	NB	NB	NB	-	NB	-	-	NB	NB	PS	NB	-
Treecreeper	<i>Certhia familiaris</i>	-	PS	PS	-	-	-	PS	PS	PS	-	PS	PS	-	-	-	PS
Tufted duck	<i>Aythya fuligula</i>	-	-	-	-	-	NB	-	-	PS	-	-	-	-	-	-	-
Turtle dove	<i>Streptopelia turtur</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CB	-
Willow warbler	<i>Phylloscopus trochilus</i>	PS	-	-	-	-	-	PS	PS	PS	-	-	-	-	-	-	-
Woodpigeon	<i>Columba palumbus</i>	PS	PS	PB	PS	PS	PB	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Wren	<i>Troglodytes troglodytes</i>	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PB	PS	PS	PS
Yellowhammer	<i>Emberiza citrinella</i>	PS	-	-	PS	PS	-	-	-	-	-	-	-	PS	-	PS	PS
Total CB		0	2	2	1	0	1	0	1	2	4	1	3	0	2	3	2
Total PB		0	2	2	1	1	2	2	1	0	2	0	1	1	1	0	3
Total PS		28	31	36	27	30	20	42	28	46	20	32	27	33	26	26	29

Common name	Scientific name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total NB		10	12	10	4	11	9	7	12	8	11	13	10	9	6	3	14
Total		38	47	50	33	42	32	51	42	56	37	46	41	43	35	32	48

Table C.3 Bird species recorded during the 2020 surveys with peak counts for each transect and the study area as a whole

Common name	Scientific Name	Conservation / legal status	Transect / peak count											Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	May	Jun	July	TOT
Barn owl	<i>Tyto alba</i>	Schedule 1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Blackbird	<i>Turdus merula</i>	BoCC Green	2	2	3	2	7	3	1	2	2	1	1	14	7	14	35
Blackcap	<i>Sylvia atricapilla</i>	BoCC Green	5	4	3	3	2	8	0	8	7	8	5	48	33	29	110
Black-headed gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber	0	21	180	0	180	0	0	43	40	0	0	2	50	257	309
Blue tit	<i>Cyanistes caeruleus</i>	BoCC Green	12	5	8	3	10	6	0	6	6	10	15	2	36	63	101
Bullfinch	<i>Pyrrhula pyrrhula</i>	BoCC Amber; NERC S41; Essex Red Data List	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Canada goose	<i>Branta canadensis</i>	BoCC Green	0	0	0	0	8	0	0	0	0	0	0	1	8	0	9
Chaffinch	<i>Fringilla coelebs</i>	BoCC Green	2	4	3	4	0	3	0	0	1	3	3	18	12	11	41
Chiffchaff	<i>Phylloscopus collybita</i>	BoCC Green	5	5	4	4	5	5	0	6	1	5	12	21	37	44	102
Coal tit	<i>Periparus ater</i>	BoCC Green	1	1	0	0	0	1	0	0	1	4	0	1	6	2	9
Collared dove	<i>Streptopelia decaocto</i>	BoCC Green	0	1	0	0	3	0	0	0	0	0	4	1	3	7	11

Common name	Scientific Name	Conservation / legal status	Transect / peak count											Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	May	Jun	July	TOT
Common buzzard	<i>Buteo buteo</i>	BoCC Green	2	2	1	1	3	1	0	1	5	2	4	14	7	15	36
Common gull	<i>Larus canus</i>	BoCC Amber	0	0	2	0	5	0	0	0	0	0	0	0	0	7	7
Common sandpiper	<i>Actitis hypoleucos</i>	BoCC Amber	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
Common tern	<i>Sterna hirundo</i>	BoCC Amber	0	0	0	0	0	0	0	2	0	0	0	0	1	2	3
Common whitethroat	<i>Sylvia communis</i>	BoCC Green	6	6	2	0	3	10	0	3	10	4	14	36	34	39	109
Coot	<i>Fulica atra</i>	BoCC Green	0	0	13	0	1	0	0	0	0	0	0	1	1	13	15
Cormorant	<i>Phalacrocorax carbo</i>	BoCC Green	0	0	0	0	0	0	0	0	0	0	9	0	9	8	17
Cuckoo	<i>Cuculus canorus</i>	BoCC Red; NERC S41	1	0	0	0	0	2	0	0	0	0	0	3	0	0	3
Dunnock	<i>Prunella modularis</i>	BoCC Amber; NERC S41	0	4	2	3	1	1	0	3	2	1	4	7	10	18	35
Egyptian goose	<i>Alopochen aegyptiaca</i>	BoCC Green	0	0	0	0	0	0	0	11	0	0	0	9	0	11	20
Garden warbler	<i>Sylvia borin</i>	BoCC Green	0	0	0	0	0	1	0	2	0	0	0	3	2	1	6
Goldcrest	<i>Regulus regulus</i>	BoCC Green	1	1	0	0	0	1	0	0	0	3	0	2	3	4	9
Goldfinch	<i>Carduelis carduelis</i>	BoCC Green	1	1	2	0	7	7	0	8	6	0	6	9	26	22	57
Great black-backed gull	<i>Larus marinus</i>	BoCC Amber	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Great crested grebe	<i>Podiceps cristatus</i>	BoCC Green	0	0	0	0	2	0	0	4	0	0	0	4	2	4	10

Common name	Scientific Name	Conservation / legal status	Transect / peak count											Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	May	Jun	July	TOT
Great spotted woodpecker	<i>Dendrocopos major</i>	BoCC Green	3	1	1	1	1	1	0	2	2	1	3	9	4	9	22
Great tit	<i>Parus major</i>	BoCC Green	1	4	2	4	7	5	0	9	0	0	5	9	20	22	51
Green woodpecker	<i>Picus viridis</i>	BoCC Green	0	1	0	1	0	4	1	1	2	1	2	6	5	10	21
Greenfinch	<i>Chloris chloris</i>	BoCC Green	0	0	0	0	1	1	1	1	1	4	1	8	3	6	17
Grey heron	<i>Ardea cinerea</i>	BoCC Green	0	0	0	0	0	0	0	3	1	0	1	1	1	4	6
Grey wagtail	<i>Motacilla cinerea</i>	BoCC Red	0	0	0	0	2	0	0	2	0	0	0	1	2	2	5
Greylag goose	<i>Anser anser</i>	BoCC Amber	0	0	0	0	1	0	125	0	0	0	0	14	0	125	139
Herring gull	<i>Larus argentatus</i>	BoCC Red; NERC S41	0	0	0	0	2	0	0	1	0	0	1	3	0	3	6
Hobby	<i>Falco subbuteo</i>	Schedule 1	0	0	0	0	2	0	0	0	0	0	1	0	0	3	3
House martin	<i>Delichon urbicum</i>	BoCC Amber	0	0	0	0	0	0	10	0	0	0	2	2	10	7	19
House sparrow	<i>Passer domesticus</i>	BoCC Red; NERC S41	1	0	10	0	2	0	0	0	10	0	8	17	15	19	51
Jackdaw	<i>Corvus</i>	BoCC Green	0	0	0	0	0	0	0	12	5	0	0	0	0	17	17
Jay	<i>Garrulus glandarius</i>	BoCC Green	0	0	0	0	0	1	0	7	2	1	3	5	10	2	17
Kestrel	<i>Falco tinnunculus</i>	BoCC Amber	0	0	0	0	0	2	6	1	1	1	0	3	6	10	19
Kingfisher	<i>Alcedo atthis</i>	BoCC Amber; Schedule 1	0	0	1	0	0	0	0	1	0	0	0	0	0	2	2
Lapwing	<i>Vanellus vanellus</i>	BoCC Red; NERC S41; Essex Red Data List	0	0	0	0	2	0	0	8	4	0	0	6	2	8	16

Common name	Scientific Name	Conservation / legal status	Transect / peak count											Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	May	Jun	July	TOT
Lesser black-backed gull	<i>Larus fuscus</i>	BoCC Amber	1	0	1	3	2	1	0	9	6	0	0	7	11	11	29
Lesser whitethroat	<i>Sylvia curruca</i>	BoCC Green	1	0	2	1	0	0	0	2	0	0	0	5	3	4	12
Linnet	<i>Carduelis cannabina</i>	BoCC Red; NERC S41; Essex Red Data List	2	0	4	4	0	9	0	0	2	0	11	21	3	23	47
Little egret	<i>Egretta garzetta</i>	BoCC Green	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Little ringed plover	<i>Aegithalos caudatus</i>	Schedule 1, Essex Red Data List	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
Long-tailed tit	<i>Pica pica</i>	BoCC Green	6	0	0	0	0	12	0	25	0	0	12	18	39	25	82
Magpie	<i>Anas platyrhynchos</i>	BoCC Green	0	0	0	0	12	0	0	5	0	0	0	0	0	17	17
Mallard	<i>Anas platyrhynchos</i>	BoCC Amber	0	0	10	0	2	0	15	80	0	0	0	2	0	90	92
Marsh tit	<i>Poecile palustris</i>	BoCC Red; NERC S41	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Mistle thrush	<i>Turdus viscivorus</i>	BoCC Red	0	0	0	0	0	0	0	4	2	0	0	6	0	0	6
Moorhen	<i>Gallinula chloropus</i>	BoCC Green	0	0	1	0	0	2	8	6	4	0	1	2	1	11	14
Mute swan	<i>Cygnus olor</i>	BoCC Amber	0	0	0	0	1	0	0	8	0	0	0	3	2	8	13
Nuthatch	<i>Sitta europaea</i>	BoCC Green	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pied wagtail	<i>Motacilla alba</i>	BoCC Green	0	0	0	0	0	2	1	9	1	0	1	3	2	12	17
Red kite	<i>Milvus milvus</i>	Schedule 1	0	0	0	0	0	1	1	1	0	0	0	0	1	2	3

Common name	Scientific Name	Conservation / legal status	Transect / peak count											Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	May	Jun	July	TOT
Reed bunting	<i>Emberiza schoeniclus</i>	BoCC Amber; NERC S41; Essex Red Data List	0	0	1	1	0	0	0	2	2	0	0	3	3	1	7
Reed warbler	<i>Acrocephalus scirpaceus</i>	BoCC Green	0	0	0	0	21	0	0	0	0	0	0	3	1	21	25
Robin	<i>Erithacus rubecula</i>	BoCC Green	4	3	15	3	1	4	2	7	2	6	9	40	14	40	94
Sand martin	<i>Riparia riparia</i>	BoCC Green, Essex Red Data List	0	0	0	0	0	0	0	9	0	0	0	0	9	6	15
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	BoCC Green	0	0	0	0	2	0	0	0	0	0	0	3	0	0	3
Shelduck	<i>Tadorna tadorna</i>	BoCC Amber	0	0	0	0	0	0	0	0	0	0	2	2	0	0	2
Siskin	<i>Spinus spinus</i>	BoCC Green	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Skylark	<i>Alauda arvensis</i>	BoCC Red; NERC S41; LBAP; Essex Red Data List	0	4	4	6	4	4	2	4	4	2	20	38	36	32	106
Song thrush	<i>Turdus philomelos</i>	BoCC Red; NERC S41; LBAP; Essex Red Data List	2	0	1	1	0	4	0	2	1	1	1	6	8	4	18
Sparrowhawk	<i>Accipiter nisus</i>	BoCC Green	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
Starling	<i>Sturnus vulgaris</i>	BoCC Red; NERC S41	0	0	20	0	0	0	0	0	6	0	0	6	20	0	26
Stock dove	<i>Columba oenas</i>	BoCC Amber	2	2	0	0	1	8	0	4	4	0	5	3	1	24	28

Common name	Scientific Name	Conservation / legal status	Transect / peak count											Visit / total count			
			1	2	3	4	5	6	7	8	9	10	11	May	Jun	July	TOT
Swallow	<i>Hirundo rustica</i>	BoCC Green	3	0	0	0	2	14	2	0	1	2	8	23	15	22	60
Swift	<i>Apus apus</i>	BoCC Amber	0	1	2	0	0	18	20	3	2	0	8	3	24	50	77
Treecreeper	<i>Certhia familiaris</i>	BoCC Green	2	1	0	0	0	1	0	2	0	1	1	2	1	5	8
Tufted duck	<i>Aythya fuligula</i>	BoCC Green	0	0	0	0	1	0	0	15	0	0	7	11	4	16	31
Willow warbler	<i>Phylloscopus trochilus</i>	BoCC Amber	0	0	1	1	0	0	0	1	0	0	1	0	3	2	5
Woodpigeon	<i>Columba palumbus</i>	BoCC Green	0	0	0	0	0	6	0	0	0	0	0	6	0	0	6
Wren	<i>Troglodytes troglodytes</i>	BoCC Green	8	3	4	2	6	9	2	12	7	4	10	43	46	46	135
Yellow wagtail	<i>Motacilla flava</i>	BoCC Red; NERC S41; Essex Red Data List	1	1	0	1	0	0	0	1	0	0	0	3	1	1	5
Yellowhammer	<i>Emberiza citrinella</i>	BoCC Red; NERC S41; Essex Red Data List	0	3	1	2	0	4	0	0	0	1	4	11	13	11	35
Total Schedule 1			5														
Total species of principal importance - NERC S41			14														
Total BOCC Red			13														
Total BOCC Amber			19														
Total Essex LBAP			2														
Total Essex Red Data List			11														

Table C.4 Birds recorded during the 2017 survey with assessments of breeding status for each transect and the study area as a whole, where: CB – confirmed breeding; PB = probable breeding; PS = possible breeding, and NB = not breeding

Common name	Scientific Name	Conservation / legal status	1	2	3	4	5	6	7	8	9	10	11	Breeding Status
Barn Owl	<i>Tyto alba</i>	Schedule 1	-	-	-	-	-	PB	-	-	-	-	-	PB
Blackbird	<i>Turdus merula</i>	BoCC Green	PS	PS	CB	PS	PB	PB	PS	PB	PS	PS	PS	CB
Blackcap	<i>Sylvia atricapilla</i>	BoCC Green	PB	CB	PB	PB	PB	PB	-	CB	PB	PB	PB	CB
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber	-	NB	NB	-	NB	-	-	NB	NB	-	-	NB
Blue Tit	<i>Cyanistes caeruleus</i>	BoCC Green	CB	CB	CB	CB	CB	CB	-	CB	CB	CB	CB	CB
Bullfinch	<i>Pyrrhula pyrrhula</i>	BoCC Amber; NERC S41; Essex Red Data List	-	-	-	-	-	-	-	-	-	-	PS	PS
Canada Goose	<i>Branta canadensis</i>	BoCC Green	-	-	-	-	NB	-	-	-	-	-	-	NB
Chaffinch	<i>Fringilla coelebs</i>	BoCC Green	PS	PB	PS	PB	-	PB	-	-	PB	PB	PB	PB
Chiffchaff	<i>Phylloscopus collybita</i>	BoCC Green	CB	CB	PB	CB	NB	PB	-	PB	PS	PB	CB	CB
Coal Tit	<i>Parus ater</i>	BoCC Green	PS	CB	-	-	-	PS	-	-	PS	PB	-	CB
Collared Dove	<i>Streptopelia decaocto</i>	BoCC Green	-	PS	PS	-	-	-	-	-	-	-	CB	CB
Common Buzzard	<i>Buteo buteo</i>	BoCC Green	PB	PB	NB	NB	NB	PB	NB	NB	PS	CB	PB	CB
Common Gull	<i>Larus canus</i>	BoCC Amber	-	-	NB	-	NB	-	-	-	-	-	-	NB
Common Sandpiper	<i>Actitis hypoleucos</i>	BoCC Amber	-	-	-	-	-	-	-	NB	-	-	-	NB
Common Tern	<i>Sterna hirundo</i>	BoCC Amber	-	-	-	-	-	-	-	NB	-	-	-	NB
Common Whitethroat	<i>Sylvia communis</i>	BoCC Green	CB	CB	PB	-	PS	CB	-	CB	CB	CB	CB	CB
Coot	<i>Fulica atra</i>	BoCC Green	-	-	-	-	CB	-	-	-	-	-	-	CB
Cormorant	<i>Phalacrocorax carbo</i>	BoCC Green	-	-	-	-	-	-	-	-	-	-	NB	NB

Common name	Scientific Name	Conservation / legal status	1	2	3	4	5	6	7	8	9	10	11	Breeding Status
Cuckoo	<i>Cuculus canorus</i>	BoCC Red; NERC S41	NB	-	-	-	-	NB	-	-	-	-	-	NB
Dunnock	<i>Prunella modularis</i>	BoCC Amber; NERC S41	-	CB	PB	CB	PS	PB	-	PB	PB	PB	PB	CB
Egyptian Goose	<i>Alopochen aegyptiaca</i>	BoCC Green	-	-	-	-	-	-	-	NB	-	-	-	NB
Garden Warbler	<i>Sylvia borin</i>	BoCC Green	-	-	-	-	-	PS	-	PB	-	-	-	PB
Goldcrest	<i>Regulus regulus</i>	BoCC Green	PS	PS	-	-	-	PB	-	-	-	CB	-	CB
Goldfinch	<i>Carduelis carduelis</i>	BoCC Green	-	CB	PB	-	-	PB	-	PB	PS	-	PB	CB
Great Black-backed Gull	<i>Larus marinus</i>	BoCC Amber	-	-	-	NB	-	-	-	-	-	-	-	NB
Great Crested Grebe	<i>Podiceps cristatus</i>	BoCC Green	-	-	-	-	PB	-	-	CB	-	-	-	CB
Great Spotted Woodpecker	<i>Dendrocopos major</i>	BoCC Green	PS	PS	PS	PS	PS	CB	-	PB	PS	CB	PB	CB
Great Tit	<i>Parus major</i>	BoCC Green	CB	CB	CB	CB	CB	CB	-	CB	-	-	CB	CB
Green Woodpecker	<i>Picus viridis</i>	BoCC Green	-	PB	-	PS	-	PB	PS	PS	PS	PB	PB	PB
Greenfinch	<i>Chloris chloris</i>	BoCC Green	-	-	PS	-	-	PS	PS	PS	PS	PB	PB	PB
Grey Heron	<i>Ardea cinerea</i>	BoCC Green	-	-	-	-	-	-	-	PS	PS	-	PS	PS
Grey Wagtail	<i>Motacilla cinerea</i>	BoCC Red	-	-	-	-	PS	-	-	PS	-	-	-	PS
Greylag Goose	<i>Anser anser</i>	BoCC Amber	-	-	-	-	PS	-	-	PS	-	-	-	PS
Herring Gull	<i>Larus argentatus</i>	BoCC Red; NERC S41	-	-	NB	-	NB	-	-	NB	-	-	NB	NB
Hobby	<i>Falco subbuteo</i>	Schedule 1	-	-	CB	-	-	-	-	-	-	-	PB	CB
House Martin	<i>Delichon urbicum</i>	BoCC Amber	-	-	-	-	-	-	PS	-	-	-	PS	PS
House Sparrow	<i>Passer domesticus</i>	BoCC Red; NERC S41	PS	-	PB	-	-	-	-	-	PB	-	PB	PB
Jackdaw	<i>Corvus</i>	BoCC Green	-	-	-	-	-	-	-	PS	PS	-	-	PS

Common name	Scientific Name	Conservation / legal status	1	2	3	4	5	6	7	8	9	10	11	Breeding Status
Jay	<i>Garrulus glandarius</i>	BoCC Green	-	-	-	-	-	PB	-	CB	PS	PS	PS	CB
Kestrel	<i>Falco tinnunculus</i>	BoCC Amber	-	-	-	-	-	CB	CB	PB	PS	PB	-	CB
Kingfisher	<i>Alcedo atthis</i>	BoCC Amber; Schedule 1	-	-	-	-	PS	-	-	PS	-	-	-	PS
Lapwing	<i>Vanellus vanellus</i>	BoCC Red; NERC S41; Essex Red Data List	-	-	-	-	NB	-	-	NB	CB	-	-	CB
Lesser Black-backed Gull	<i>Larus fuscus</i>	BoCC Amber	NB	-	-	NB	NB	NB	-	NB	NB	-	-	PS
Lesser Whitethroat	<i>Sylvia curruca</i>	BoCC Green	PS	-	PB	PS	-	-	-	PB	-	PB	CB	CB
Linnet	<i>Carduelis cannabina</i>	BoCC Red; NERC S41; Essex Red Data List	PS	-	PB	PS	-	PB	-	-	PB	-	PB	PB
Little Egret	<i>Egretta garzetta</i>	BoCC Green	NB	-	-	-	-	-	-	-	-	-	-	NB
Little Ringed Plover	<i>Aegithalos caudatus</i>	Schedule 1, Essex Red Data List	-	-	-	-	-	-	-	NB	-	-	-	NB
Long-tailed Tit	<i>Pica pica</i>	BoCC Green	PB	-	-	-	-	PS	-	PB	-	-	PS	PB
Magpie	<i>Anas platyrhynchos</i>	BoCC Green	-	-	CB	-	-	-	-	PS	-	-	-	CB
Mallard	<i>Anas platyrhynchos</i>	BoCC Amber	-	-	-	-	PB	-	NB	CB	-	-	-	CB
Marsh Tit	<i>Poecile palustris</i>	BoCC Red; NERC S41	NB	-	-	-	-	-	-	-	-	-	-	NB
Mistle Thrush	<i>Turdus viscivorus</i>	BoCC Red	-	-	-	-	-	-	-	PS	PS	-	-	PS
Moorhen	<i>Gallinula chloropus</i>	BoCC Green	-	-	-	-	PS	PS	CB	CB	CB	-	PS	CB
Mute Swan	<i>Cygnus olor</i>	BoCC Amber	-	-	-	-	PS	-	-	CB	-	-	-	CB
Nuthatch	<i>Sitta europaea</i>	BoCC Green	PS	-	-	-	-	-	-	-	-	-	-	PS
Pied Wagtail	<i>Motacilla alba</i>	BoCC Green	-	-	-	-	-	PS	PS	CB	PB	-	PB	CB
Red Kite	<i>Milvus milvus</i>	Schedule 1	-	-	-	-	-	PS	PS	PS	-	-	-	PS

Common name	Scientific Name	Conservation / legal status	1	2	3	4	5	6	7	8	9	10	11	Breeding Status
Reed Bunting	<i>Emberiza schoeniclus</i>	BoCC Amber; NERC S41; Essex Red Data List	-	-	PS	PS	PS	-	-	PS	PS	-	-	PS
Reed Warbler	<i>Acrocephalus scirpaceus</i>	BoCC Green	-	-	-	-	CB	-	-	-	-	-	-	CB
Robin	<i>Erithacus rubecula</i>	BoCC Green	PS	CB	CB	PB	PS	PB	PS	PB	PB	CB	PB	CB
Sand Martin	<i>Riparia riparia</i>	BoCC Green, Essex Red Data List	-	-	-	-	-	-	-	PB	-	-	-	PB
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	BoCC Green	-	-	-	-	PS	-	-	PS	-	-	-	PS
Shelduck	<i>Tadorna tadorna</i>	BoCC Amber	-	-	-	-	-	-	-	-	-	-	NB	NB
Siskin	<i>Spinus spinus</i>	BoCC Green	-	-	-	-	-	-	-	-	-	-	NB	NB
Skylark	<i>Alauda arvensis</i>	BoCC Red; NERC S41; LBAP; Essex Red Data List	-	PS	PB	PB	PB	PB	PB	PB	PS	PS	CB	CB
Song Thrush	<i>Turdus philomelos</i>	BoCC Red; NERC S41; LBAP; Essex Red Data List	PS	-	PS	PS	PS	PB	-	PB	-	PS	PS	PB
Sparrowhawk	<i>Accipiter nisus</i>	BoCC Green	-	-	-	-	-	PB	PS	-	-	-	-	PB
Starling	<i>Sturnus vulgaris</i>	BoCC Red; NERC S41	-	-	CB	-	-	-	-	-	CB	-	-	CB
Stock Dove	<i>Columba oenas</i>	BoCC Amber	PS	PS	-	-	PS	PB	-	PS	PS	-	PB	PB
Swallow	<i>Hirundo rustica</i>	BoCC Green	NB	-	-	-	NB	CB	PS	-	PS	PS	CB	CB
Swift	<i>Apus apus</i>	BoCC Amber	-	NB	NB	-	-	NB	NB	NB	NB	-	NB	NB
Treecreeper	<i>Certhia familiaris</i>	BoCC Green	PS	PS	-	-	-	PS	-	PS	-	PS	PS	PS
Tufted Duck	<i>Aythya fuligula</i>	BoCC Green	-	-	-	-	PB	-	-	CB	-	-	PB	CB
Willow Warbler	<i>Phylloscopus trochilus</i>	BoCC Amber	-	-	PS	PS	-	-	-	NB	-	-	PB	PB
Woodpigeon	<i>Columba palumbus</i>	BoCC Green	-	-	-	-	PB	-	-	-	-	-	-	PB

Common name	Scientific Name	Conservation / legal status	1	2	3	4	5	6	7	8	9	10	11	Breeding Status
Wren	<i>Troglodytes troglodytes</i>	BoCC Green	PB	PB	PB	PB	PS	PB	PS	PB	PB	PB	PB	PB
Yellow Wagtail	<i>Motacilla flava</i>	BoCC Red; NERC S41; Essex Red Data List	PS	PB	-	PS	-	-	-	PS	-	-	-	PB
Yellowhammer	<i>Emberiza citrinella</i>	BoCC Red; NERC S41; Essex Red Data List	-	PB	PS	PB	-	PB	-	-	-	PS	PB	PB
Total CB			35											
Total PB			16											
Total PS			18											
Total NB			21											
TOTAL			90											

Annex D. Survey Metadata

Table D.1 Weather metadata for 2017 surveys

Transect	Visit Number	Surveyors	Date	Start Time	End Time	Cloud (%)		Temperature (°C)		Wind Speed (Beaufort Scale)		Precipitation	
						Start	End	Start	End	Start	End	Start	End
1	1	RB, SJ	12/04/17	0830	1030	80	80	7	7	2	3	None	None
	2	DM, AB	19/05/17	0535	0745	100	100	9	11	0	0	Light	None
	3	MT, RP	13/06/17	0522	0815	25	2	11	16	1	1	None	None
	4	RP, SJ	04/07/17	0553	0826	5	40	16	16	1	1	None	None
2	1	RB, SJ	13/04/17	0900	1010	50	50	8	8	1	1	None	None
	2	DM, AB	18/05/17	0750	0910	80	60	13	17	0	0	None	None
	3	MT, RP	14/06/17	0841	1100	0	0	18	21	1	1	None	None
	4	DM, JD	04/07/17	0805	0930	16	16	1	2	0	0	None	None
3	1	RB, SJ	13/04/17	0700	0845	10	20	8	8	1	1	None	None
	2	DM, AB	16/05/17	0810	0920	80	80	20	22	2	2	None	None
	3	MT, RP	13/06/17	0854	1013	10	10	16	19	1	1	None	None
	4	RP, SJ	04/07/17	0903	1034	40	50	24	24	1	1	None	None
4	1	RB, SJ	12/04/17	0703	0750	50	80	8	7	1	2	None	None
	2	DM, AB	16/05/17	0550	0725	95	70	16	20	0	2	None	None
	3	MT, RP	14/06/17	0536	0811	5	5	10	18	1	1	None	None
	4	DM, JD	04/07/17	0630	0735	2	10	16	16	0	1	None	None
5	1	DM, TS	19/04/17	0710	0900	40	30	1	11	0	0	None	None

Transect	Visit Number	Surveyors	Date	Start Time	End Time	Cloud (%)		Temperature (°C)		Wind Speed (Beaufort Scale)		Precipitation	
						Start	End	Start	End	Start	End	Start	End
	2	DM, AB	17/05/17	0545	0720	100	100	16	18	0	0	Mode-rate	None
	3	MT, RP	15/06/17	0810	1011	10	10	17	22	1	1	None	None
	4	DM, CM	05/07/17	0540	0720	20	40	13	16	0	0	None	None
6	1	DM, TS	19/04/17	0910	1010	30	50	8	10	0	0	None	None
	2	DM, AB	17/05/17	0840	0930	100	100	17	16	0	0	None	None
	3	MT, RP	16/06/17	0527	0710	20	20	12	13	1	1	None	None
	4	DM, CM	05/07/17	0650	0720	40	40	16	16	0	0	None	None
7	1	RB, SJ	11/04/17	0650	0815	30	50	8	8	0	0	None	None
	2	DM, AB	18/05/17	0540	0715	100	40	11	14	0	0	None	None
	3	MT, RP	16/06/17	0715	0840	15	15	13	16	1	1	None	None
	4	DM, CM	06/07/17	0545	0635	100	90	18	18	2	1	None	None
8	1	DM, TS	20/04/17	0630	0750	100	100	6	6	0	0	None	None
	2	RW, AB	23/05/17	0545	0715	10	5	16	17	1	1	None	None
	3	RW, AW	13/06/17	0530	0630	30	30	14	16	1	1	None	None
	4	DM, CM	06/07/17	0650	0725	90	75	19	20	1	2	None	None
9	1	RB, SJ	11/04/17	0855	1005	20	30	8	10	0	0	None	None
	2	RW, AB	23/05/17	0730	0715	10	5	16	17	1	1	None	None
	3	RW, AW	13/06/17	0700	0900	20	20	14	16	1	1	None	None
	4	RP, SJ	05/07/17	0745	0915	60	60	18	24	0	0	None	None

Transect	Visit Number	Surveyors	Date	Start Time	End Time	Cloud (%)		Temperature (°C)		Wind Speed (Beaufort Scale)		Precipitation	
						Start	End	Start	End	Start	End	Start	End
10	1	DM, JD	12/04/17	0815	0850	100	100	8	7	1	2	None	None
	2	RW, AB	24/05/17	0550	0650	10	15	17	19	0	0	None	None
	3	RW, AW	14/06/17	0530	0620	10	10	14	14	2	2	None	None
	4	RP, SJ	05/07/17	0640	0730	50	60	15	18	0	0	None	None
11	1	DM, JD	12/04/17	0635	0755	40	100	6	1	1	0	None	None
	2	RW, AB	24/05/17	0715	0830	10	5	19	20	0	0	None	None
	3	RW, AW	14/06/17	0700	0815	5	5	19	19	0	0	None	None
	4	RP, SJ	06/07/17	0555	0715	80	70	16	22	0	1	None	None
12	1	DM, JD	12/04/17	0810	0855	5	30	8	8	3	5	None	None
	2	RW, AB	25/05/17	0545	0700	0	0	19	21	0	0	None	None
	3	RW, AW	15/06/17	0800	0930	20	20	16	16	1	1	None	None
	4	RP, SJ	06/07/17	0740	0810	40	30	22	22	1	3	None	None
13	1	DM, JD	11/04/17	0900	1045	60	60	8	10	1	1	None	None
	2	RW, AB	25/05/17	0715	1000	0	0	22	24	0	0	None	None
	3	RW, AW	15/06/17	0530	0730	35	35	14	14	1	1	None	None
	4	DM, CM	07/07/17	0544	0655	15	30	18	21	1	3	None	None
14	1	DM, JD	11/04/17	0650	0850	40	60	4	8	1	1	None	None
	2	RW, AB	26/05/17	0535	0655	0	0	12	13	0	0	None	None
	3	RW, AW	16/06/17	0530	0630	30	30	14	14	2	2	None	None
	4	RP, SJ	07/07/17	0555	0705	15	15	17	19	2	1	None	None

Transect	Visit Number	Surveyors	Date	Start Time	End Time	Cloud (%)		Temperature (°C)		Wind Speed (Beaufort Scale)		Precipitation	
						Start	End	Start	End	Start	End	Start	End
15	1	DM, JD	13/04/17	0645	0740	30	5	5	8	1	2	None	None
	2	RW, AB	26/05/17	0705	N/A	0	0	14	N/A	0	0	None	None
	3	RW, AW	16/06/17	0650	0730	30	30	15	15	2	2	None	None
	4	RP, SJ	07/07/17	0715	0740	60	50	19	20	1	1	None	None
16	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2	DM, AB	17/05/17	0730	0800	100	100	16	20	0	0	None	None
	3	MT, RP	15/06/17	0525	0755	20	20	12	17	1	1	None	None
	4	DM, CM	07/07/17	0800	0935	25	30	21	25	2	1	None	None

Table D.2 Weather metadata for 2020 surveys

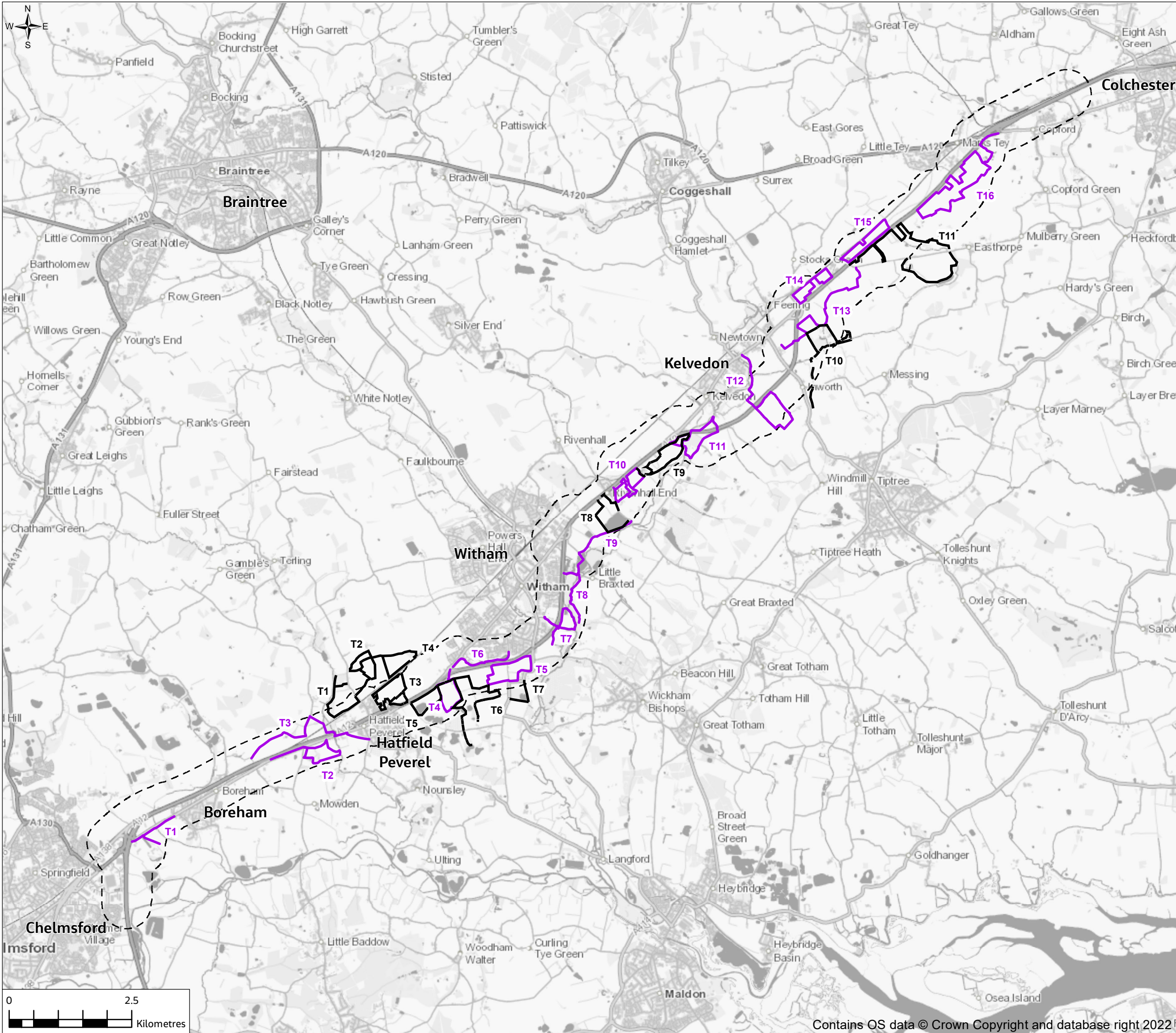
Transect	Visit Number	Surveyors	Date	Start Time	End Time	Cloud (%)		Temperature (°C)		Wind Speed (Beaufort Scale)		Precipitation	
						Start	End	Start	End	Start	End	Start	End
1	1	JN, LH	21/05/20	0604	0727	80	70	16	16	0	0	None	None
	2	JN, LH	16/06/20	0805	0937	10	30	17	19	0	0	None	None
	3	JN, PH	14/07/20	0801	0900	90	90	17	18	2	2	None	None
2	1	JN, LH	21/05/20	0732	0901	70	60	16	21	0	0	None	None
	2	JN, LH	16/06/20	0647	0747	10	10	14	17	0	0	None	None
	3	JN, PH	14/07/20	0647	0746	100	100	16	17	2	2	None	None
3	1	JN, LH	21/05/20	0923	1038	60	50	50	50	0	1	None	None
	2	JN, LH	17/06/20	0749	0957	20	20	16	18	1	1	None	None
	3	JN, JG	23/07/20	0804	1004	90	70	17	19	2	1	None	None
4	1	JN, LH	22/05/20	0544	0641	100	100	17	18	4	3	None	None
	2	JN, LH	16/06/20	0557	0645	10	10	13	14	0	0	None	None
	3	JN, PH	14/07/20	0600	0645	100	90	16	17	2	2	None	None
5	1	JN, LH	22/05/20	0607	0715	100	100	15	17	2	4	Light	None
	2	JN, LH	17/06/20	0606	0713	30	20	14	16	0	1	None	None
	3	JN, JG	23/07/20	0607	0725	40	90	15	17	2	2	None	None
6	1	JN, LH	26/05/20	0605	0932	10	20	13	17	1	1	None	None
	2	JN, LH	18/06/20	1011	1157	100	80	15	18	1	3	Light	Light
	3	JN, JW	16/07/20	0537	0759	100	90	15	17	2	2	None	None

Transect	Visit Number	Surveyors	Date	Start Time	End Time	Cloud (%)		Temperature (°C)		Wind Speed (Beaufort Scale)		Precipitation	
						Start	End	Start	End	Start	End	Start	End
7	1	JN, LH	26/05/20	0937	1058	20	20	17	18	0	0	None	None
	2	JN, LH	18/06/20	1224	1248	80	90	18	19	3	2	Light	None
	3	JN, JW	16/07/20	0838	0945	90	80	19	20	2	2	None	None
8	1	JN, LH	27/05/20	0600	0730	80	10	11	17	0	0	None	None
	2	JN, LH	23/06/20	0529	0738	0	0	12	17	0	1	None	None
	3	JN, JG	21/07/20	0558	0753	0	0	9	16	0	1	None	None
9	1	JN, LH	27/05/20	0805	0923	10	10	17	20	0	0	None	None
	2	JN, LH	23/06/20	0638	0846	0	0	17	21	1	1	None	None
	3	JN, JG	21/07/20	0854	1017	0	50	16	19	1	2	None	None
10	1	JN, LH	27/05/20	0956	1130	10	20	20	22	0	1	None	None
	2	JN, LH	23/06/20	0929	1042	0	0	21	22	1	1	None	None
	3	JN, JG	21/07/20	1046	1129	50	60	19	21	2	2	None	None
11	1	JN, LH	28/05/20	0637	0910	0	10	11	15	1	1	None	None
	2	JN, LH	24/06/20	0601	0808	0	10	14	16	1	1	None	None
	3	JN, JG	22/07/20	0553	0905	80	60	14	17	0	1	None	None

Figures

Figure 1 Breeding birds – 2020 surveys study area

Figure 2 Breeding birds – 2020 surveys notable species



APPENDIX 9.5 - FIGURE 1

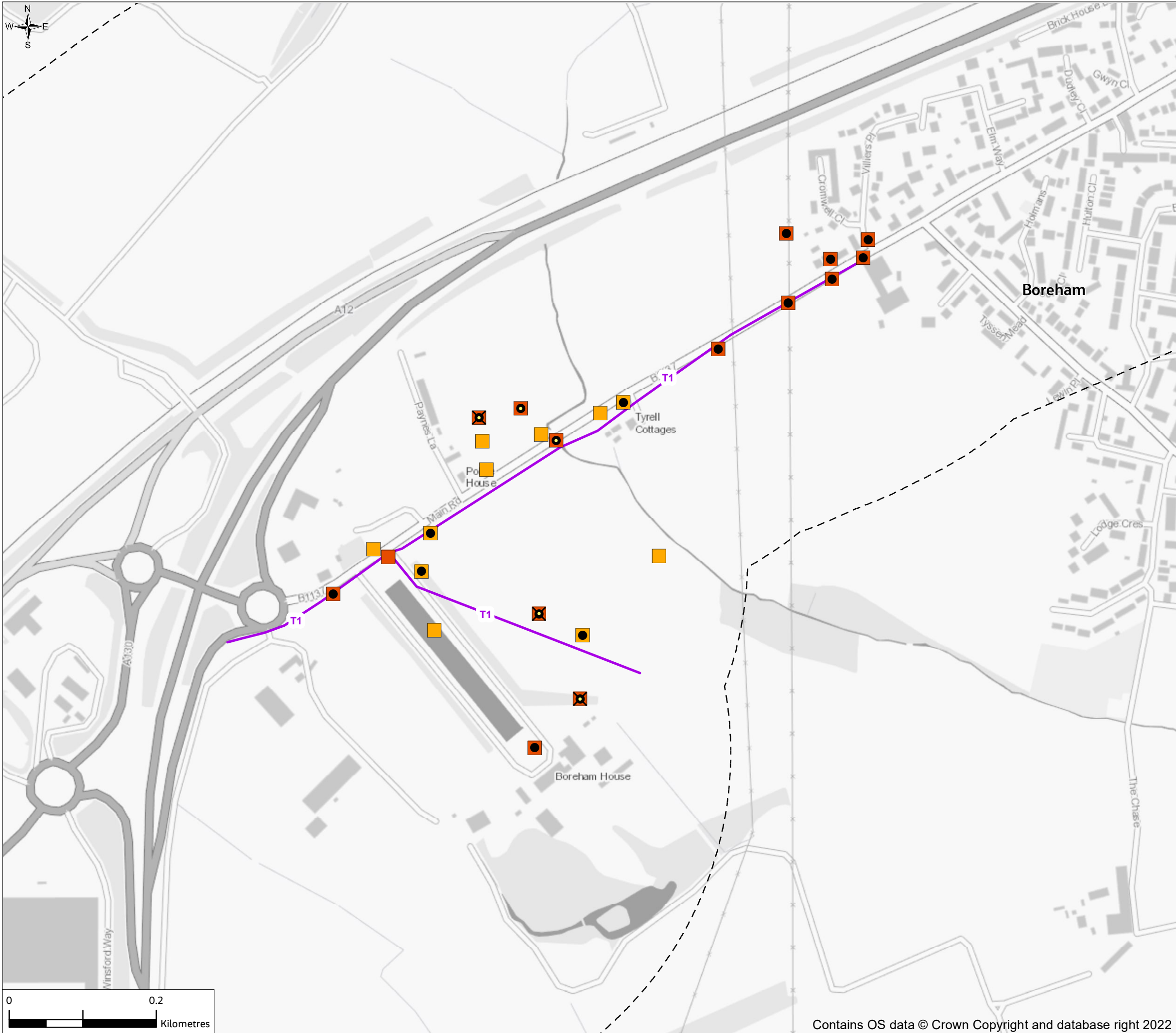
Legend

- [- -] Breeding Bird study area
- Transects from 2020 survey
- Transects from 2017 survey

P01	31/05/22	For DCO application	ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3			APFP Regulation: Regulation 5(2)(l)			
Client						
Project						
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME						
Drawing Title						
ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS STUDY AREA						
Drawing Status						
S4 – SUITABLE FOR STAGE APPROVAL						
Scale @ A3		1:75000		DO NOT SCALE		
Jacobs No.		B36601D1		Rev P01		
Client No.		HE551497				
Drawing Number		HE551497-JAC-LDC-SCHW-SK-GI-0657				

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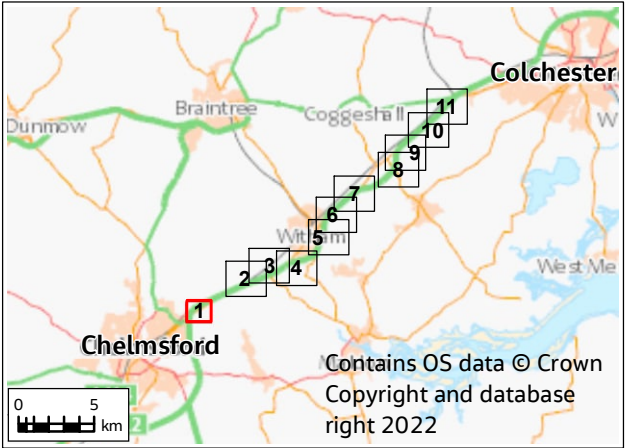
APPENDIX 9.5 - FIGURE 2


Legend

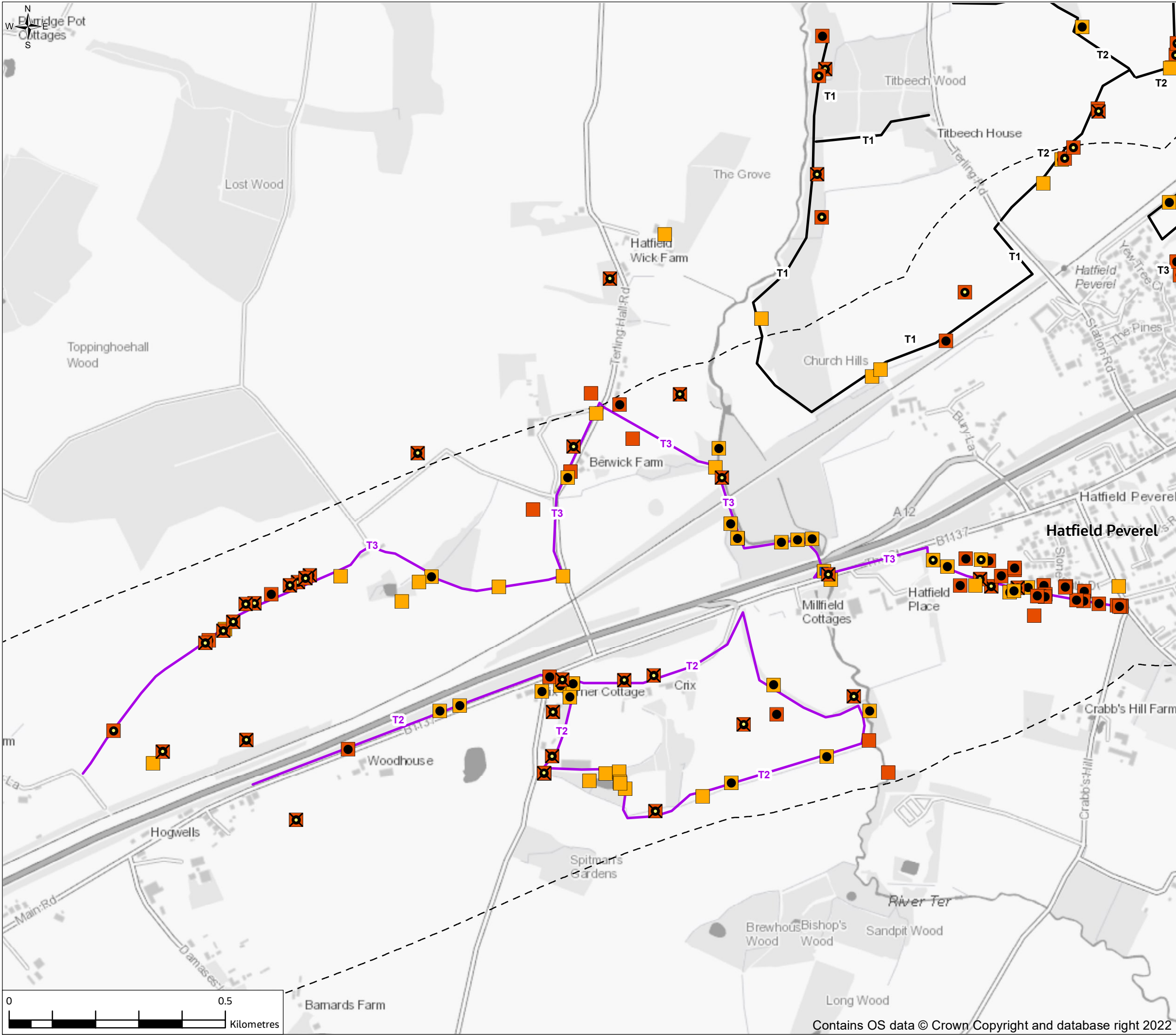
- [] Breeding Bird study area
- Transects from 2020 Surveys
- Transects from 2017 Surveys

Conservation Status/Protection

- Schedule 1
- NERC S41
- BoCC Red
- BoCC Amber
- BoCC Green
- LBAP
- ERL

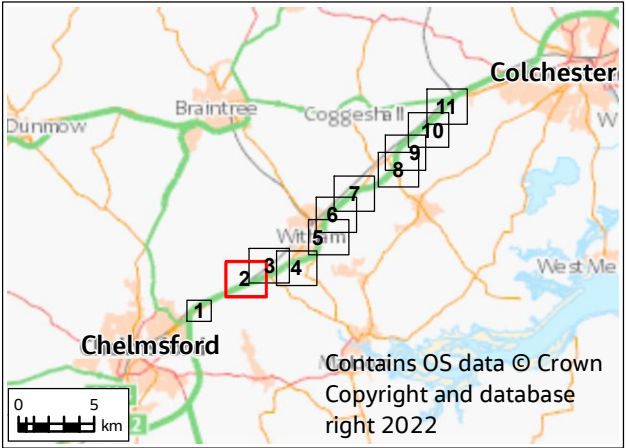


P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
Client							
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title		ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 1 OF 11					
Drawing Status		S4 – SUITABLE FOR STAGE APPROVAL					
Scale @ A3		1:5000				DO NOT SCALE	
Jacobs No.		B36601D1					
Client No.		HE551497					
Drawing Number		HE551497-JAC-LDC-SCHW-SK-GI-0658					
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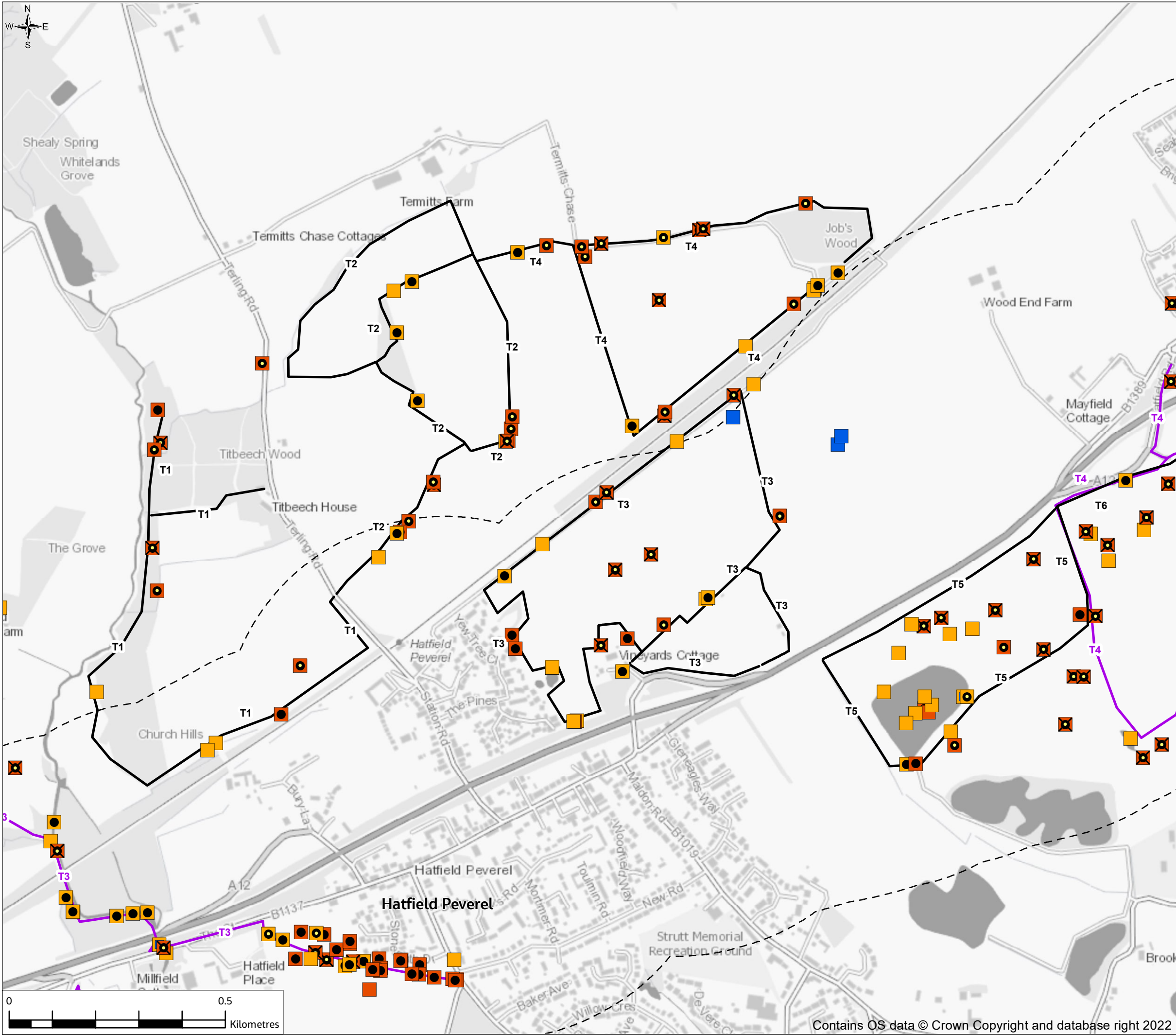


APPENDIX 9.5 - FIGURE 2

- Legend
- Breeding Bird study area
 - Transects from 2020 Surveys
 - Transects from 2017 Surveys
- Conservation Status/Protection
- Schedule 1
 - NERC S41
 - BoCC Red
 - BoCC Amber
 - BoCC Green
 - LBAP
 - ERL

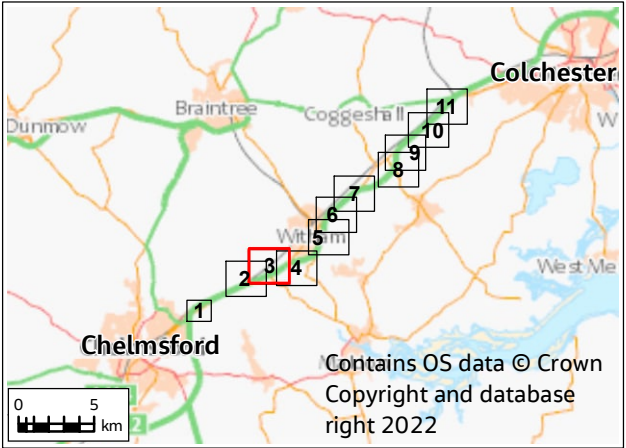



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(I)			
Client							
				national highways			
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title							
ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 2 OF 11							
Drawing Status							
S4 – SUITABLE FOR STAGE APPROVAL							
Scale @ A3		1:8500				DO NOT SCALE	
Jacobs No.		B36601D1				Rev P01	
Client No.		HE551497					
Drawing Number							
HE551497-JAC-LDC-SCHW-SK-GI-0659							
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APPENDIX 9.5 - FIGURE 2

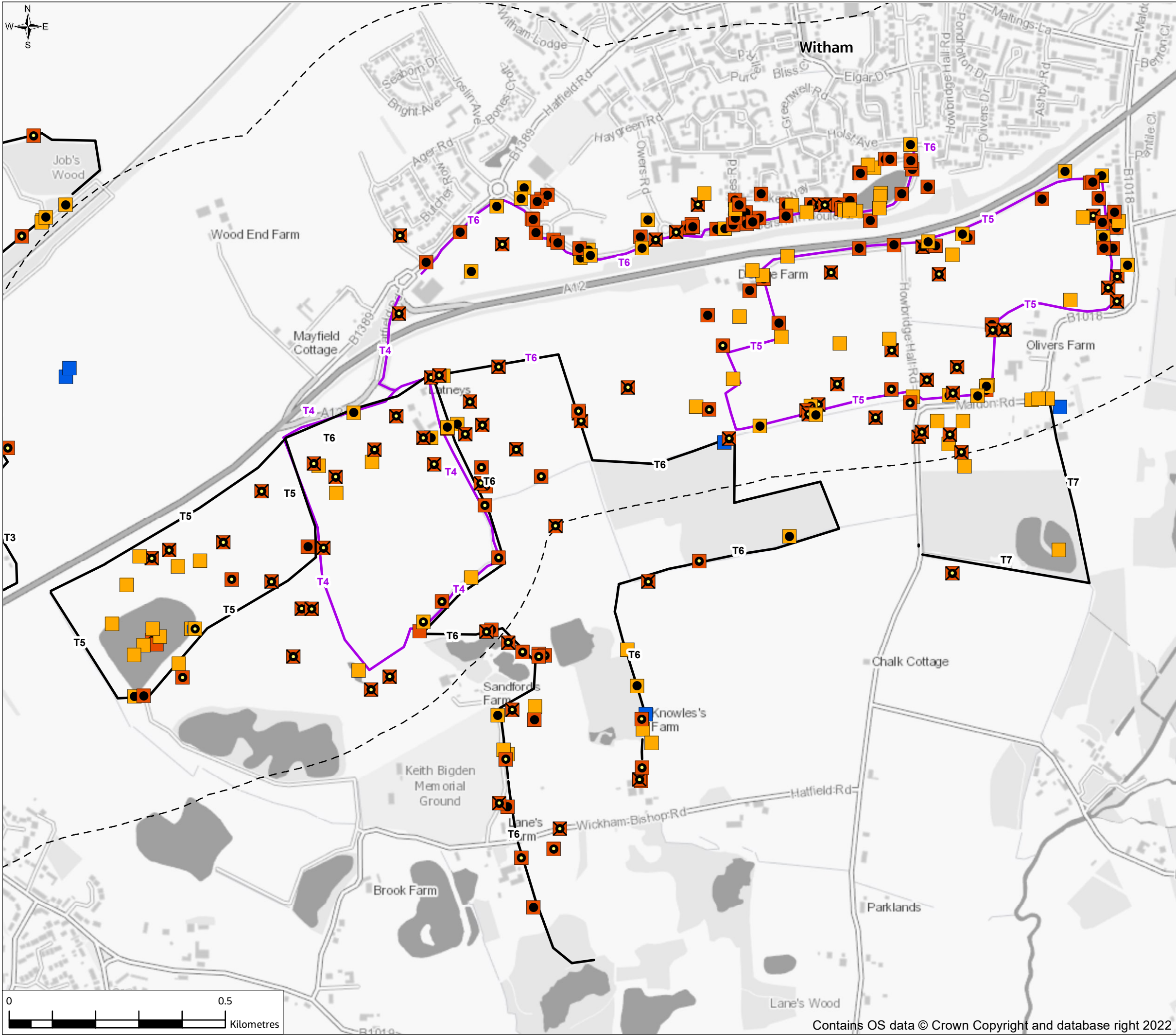
- Legend
- Breeding Bird study area
 - Transects from 2020 Surveys
 - Transects from 2017 Surveys
- Conservation Status/Protection
- Schedule 1
 - NERC S41
 - BoCC Red
 - BoCC Amber
 - BoCC Green
 - LBAP
 - ERL



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
<div>Client</div> <div></div>							
<div>Project</div> <div>REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME</div>							
<div>Drawing Title</div> <div>ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 3 OF 11</div>							
<div>Drawing Status</div> <div>S4 – SUITABLE FOR STAGE APPROVAL</div>							
Scale @ A3		1:8500			DO NOT SCALE		
Jacobs No.		B36601D1					
Client No.		HE551497					
Drawing Number		HE551497-JAC-LDC-SCHW-SK-GI-0660					

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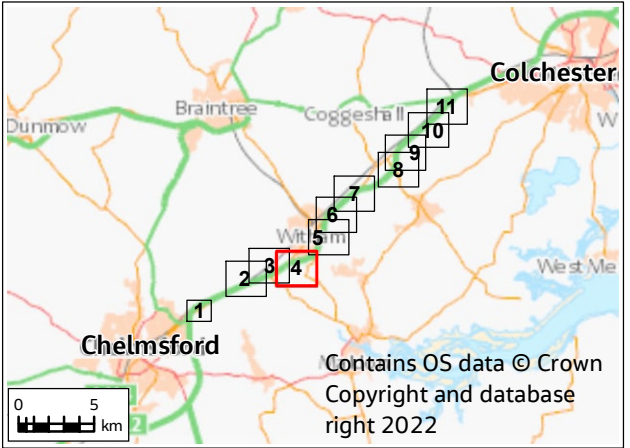
APPENDIX 9.5 - FIGURE 2


Legend

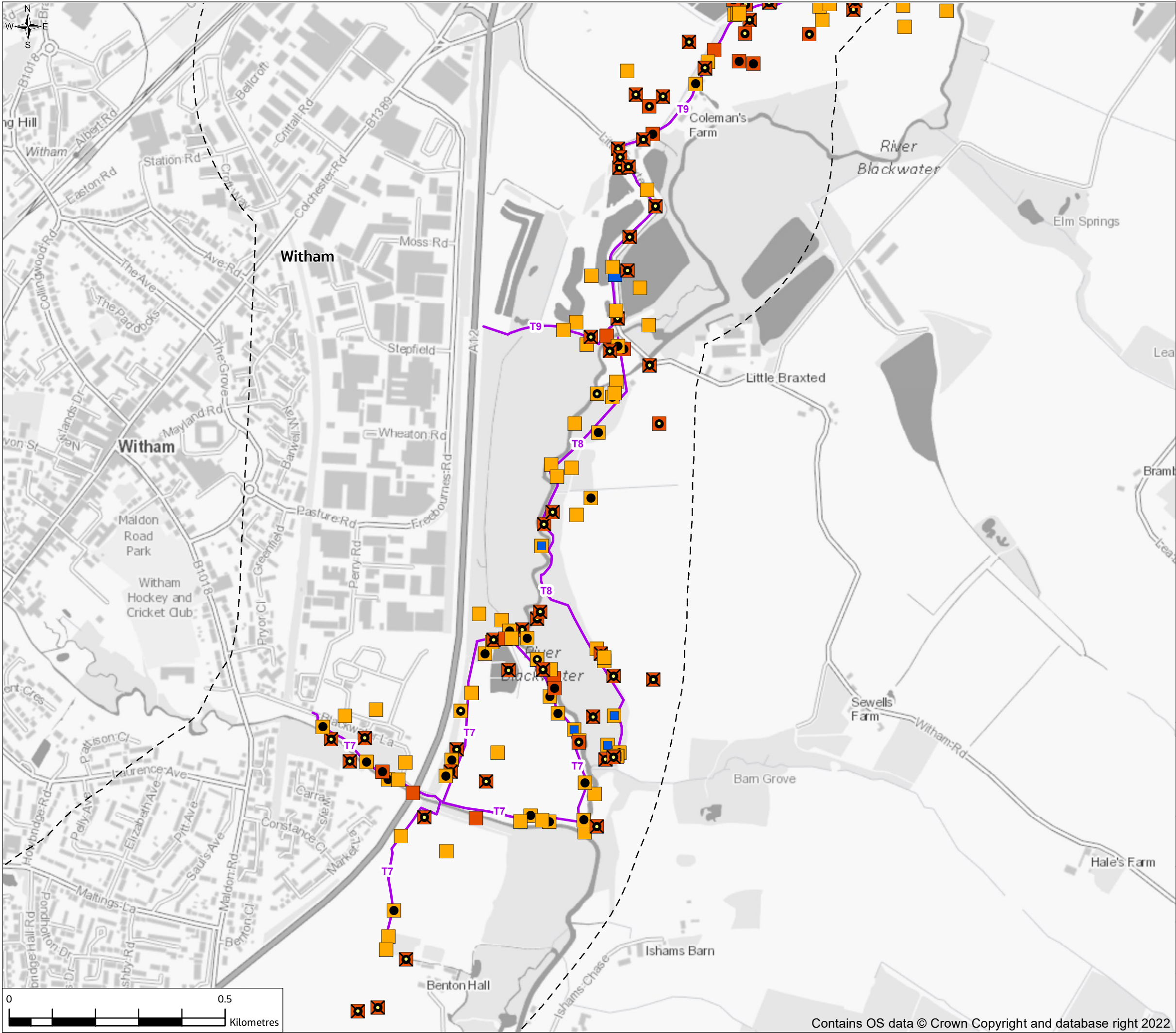
- [] Breeding Bird study area
- Transects from 2020 Surveys
- Transects from 2017 Surveys

Conservation Status/Protection

- Schedule 1
- NERC S41
- BoCC Red
- BoCC Amber
- BoCC Green
- LBAP
- ERL



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR0 10060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
Client							
				national highways			
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title							
ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 4 OF 11							
Drawing Status							
S4 – SUITABLE FOR STAGE APPROVAL							
Scale @ A3		1:8500		DO NOT SCALE			
Jacobs No.		B36601D1					
Client No.		HE551497		Rev		P01	
Drawing Number							
HE551497-JAC-LDC-SCHW-SK-GI-0661							
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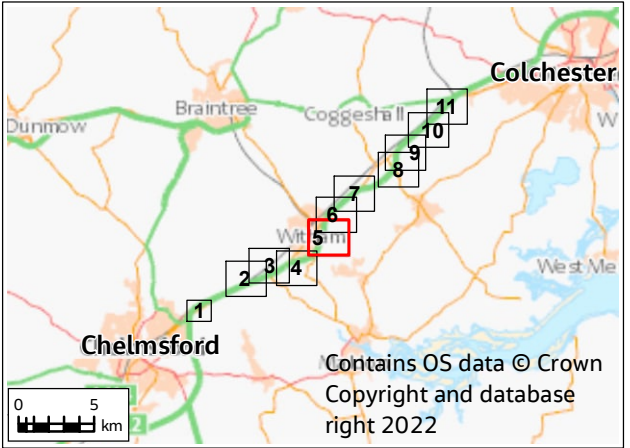
APPENDIX 9.5 - FIGURE 2

Legend

- [- -] Breeding Bird study area
- Transects from 2020 Surveys
- Transects from 2017 Surveys

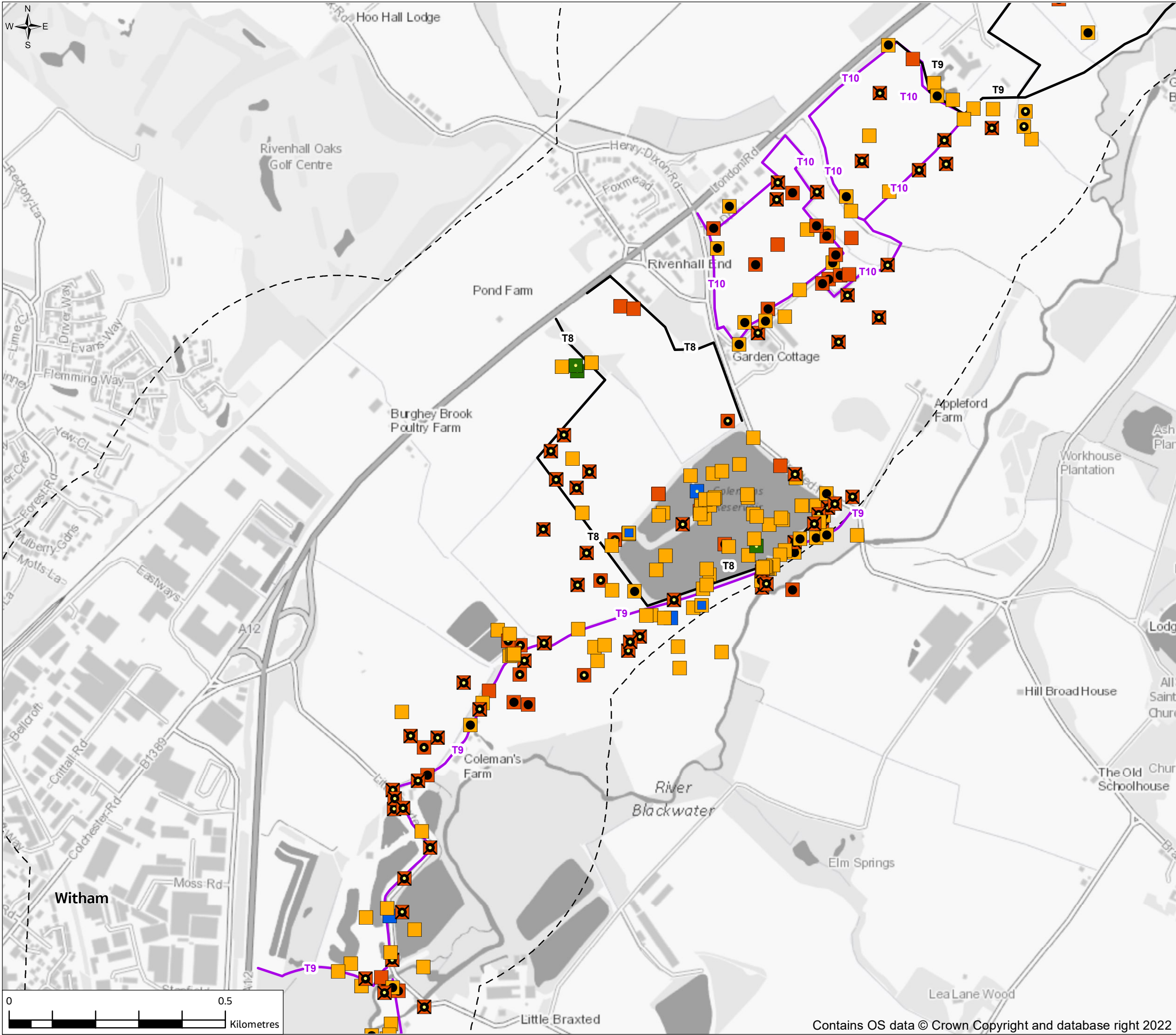
Conservation Status/Protection

- Schedule 1
- NERC S41
- BoCC Red
- BoCC Amber
- BoCC Green
- ✕ LBAP
- ERL



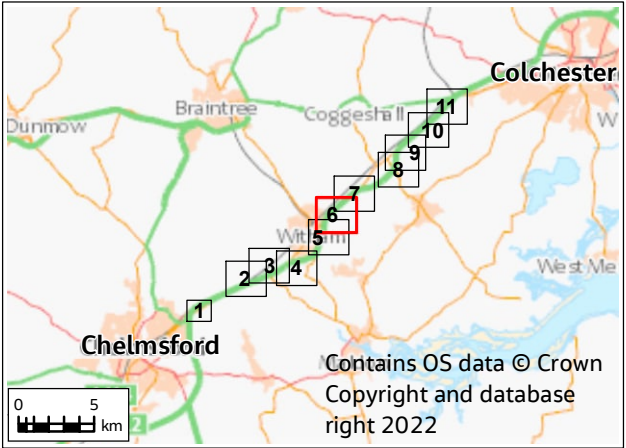
P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
Client							
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title				ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 5 OF 11			
Drawing Status				S4 – SUITABLE FOR STAGE APPROVAL			
Scale @ A3		1:8500				DO NOT SCALE	
Jacobs No.		B36601D1					
Client No.		HE551497		Rev		P01	
Drawing Number				HE551497-JAC-LDC-SCHW-SK-GI-0662			
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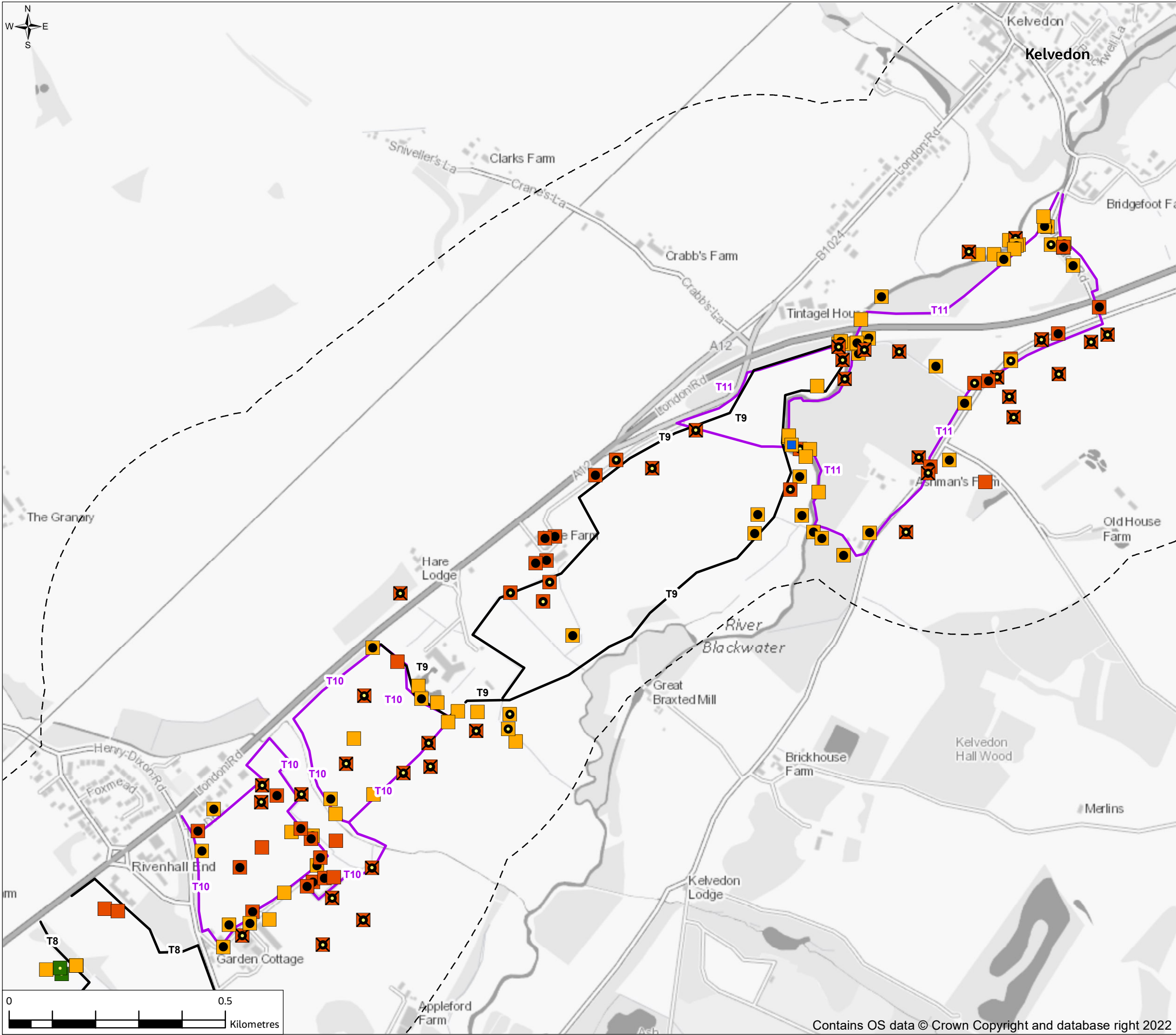


APPENDIX 9.5 - FIGURE 2

- Legend
- Breeding Bird study area
 - Transects from 2020 Surveys
 - Transects from 2017 Surveys
- Conservation Status/Protection
- Schedule 1
 - NERC S41
 - BoCC Red
 - BoCC Amber
 - BoCC Green
 - LBAP
 - ERL



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(I)			
Client							
				national highways			
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title							
ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 6 OF 11							
Drawing Status							
S4 – SUITABLE FOR STAGE APPROVAL							
Scale @ A3		1:8500			DO NOT SCALE		
Jacobs No.		B36601D1					
Client No.		HE551497			Rev P01		
Drawing Number							
HE551497-JAC-LDC-SCHW-SK-GI-0663							
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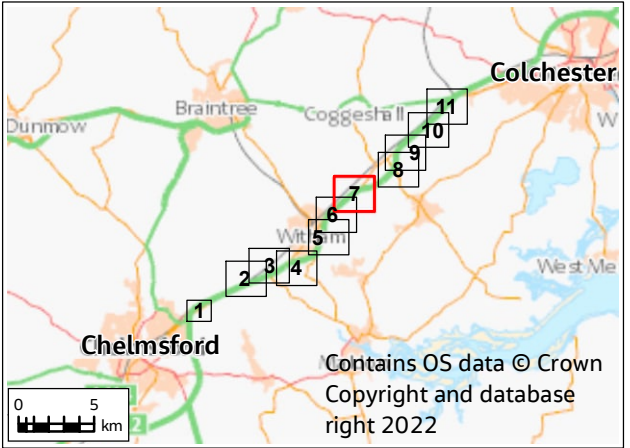
APPENDIX 9.5 - FIGURE 2


Legend

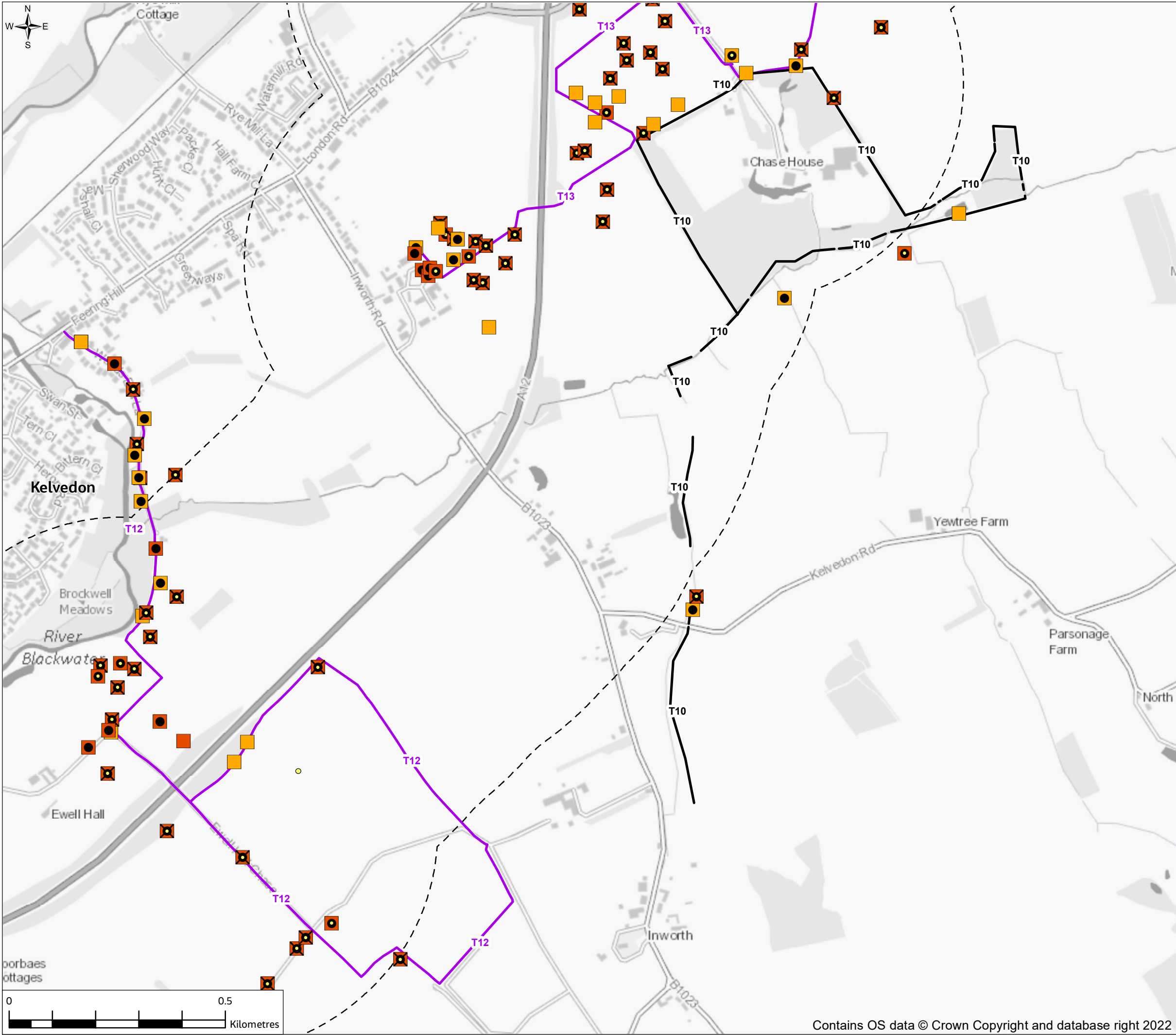
- [] Breeding Bird study area
- Transects from 2020 Surveys
- Transects from 2017 Surveys

Conservation Status/Protection

- Schedule 1
- NERC S41
- BoCC Red
- BoCC Amber
- BoCC Green
- ✕ LBAP
- ERL



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR0 10060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
Client							
				national highways			
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title							
ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 7 OF 11							
Drawing Status							
S4 – SUITABLE FOR STAGE APPROVAL							
Scale @ A3		1:8500			DO NOT SCALE		
Jacobs No.		B36601D1					
Client No.		HE551497			Rev P01		
Drawing Number							
HE551497-JAC-LDC-SCHW-SK-GI-0664							
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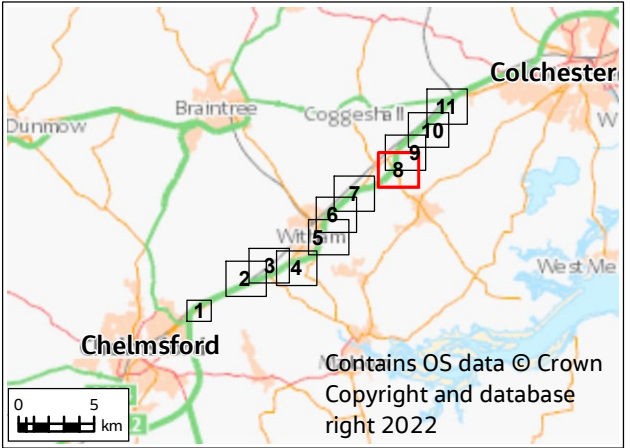
APPENDIX 9.5 - FIGURE 2

Legend

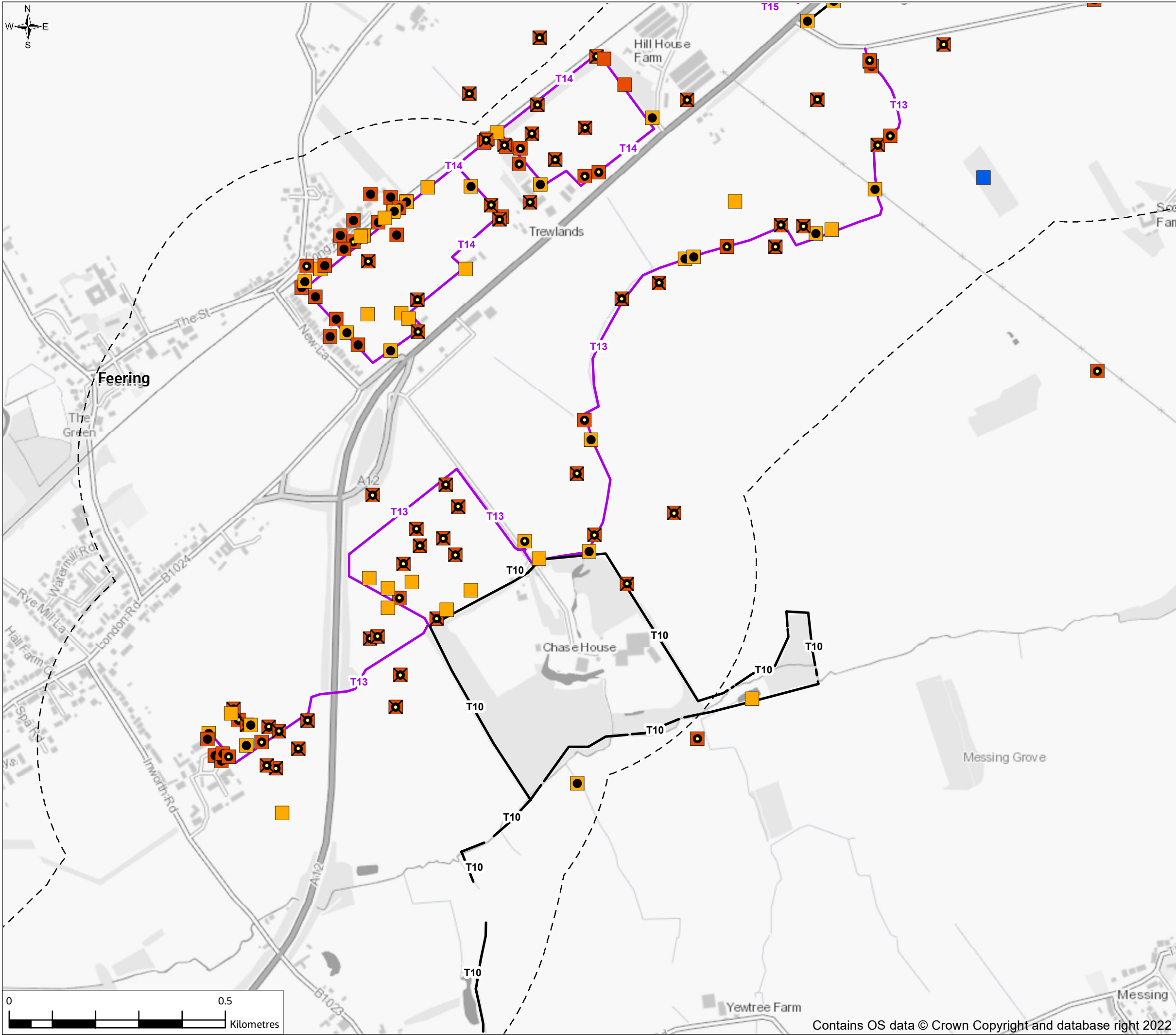
- [] Breeding Bird study area
- Transects from 2020 Surveys
- Transects from 2017 Surveys

Conservation Status/Protection

- Schedule 1
- NERC S41
- BoCC Red
- BoCC Amber
- BoCC Green
- ✕ LBAP
- ERL



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
Client							
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title				ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 8 OF 11			
Drawing Status				S4 – SUITABLE FOR STAGE APPROVAL			
Scale @ A3		1:8500				DO NOT SCALE	
Jacobs No.		B36601D1					
Client No.		HE551497		Rev		P01	
Drawing Number				HE551497-JAC-LDC-SCHW-SK-GI-0665			
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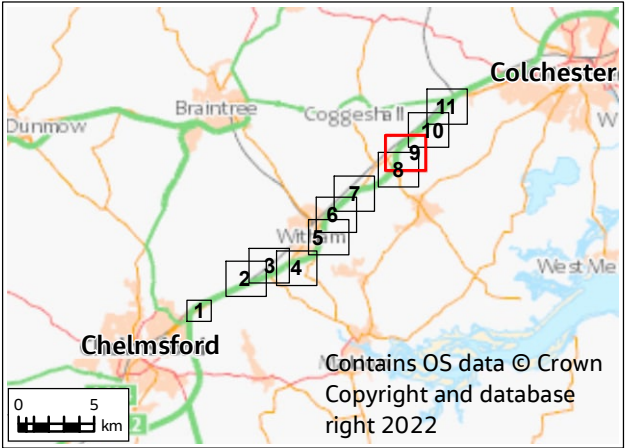
APPENDIX 9.5 - FIGURE 2


Legend

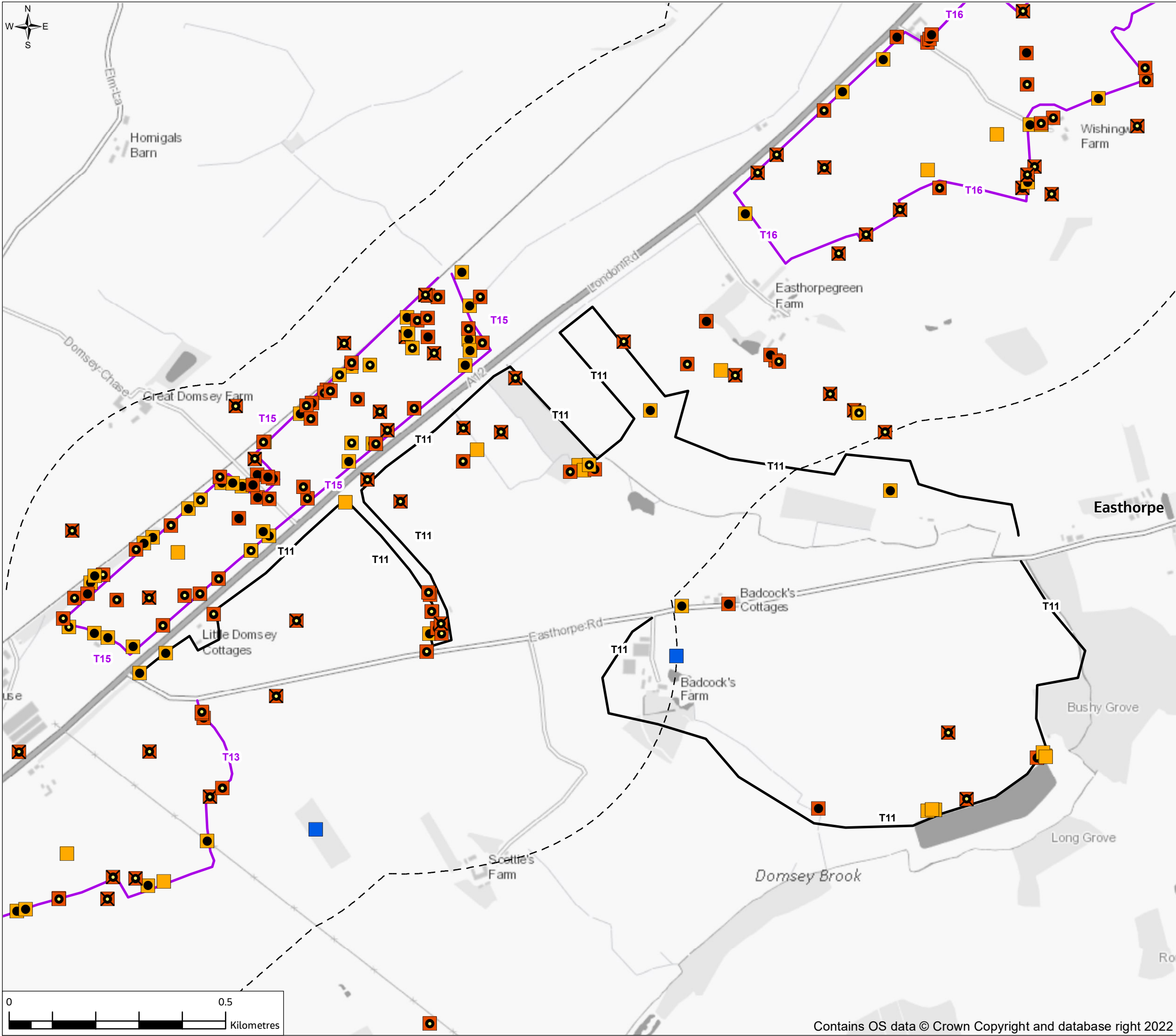
- [] Breeding Bird study area
- Transects from 2020 Surveys
- Transects from 2017 Surveys

Conservation Status/Protection

- Schedule 1
- NERC S41
- BoCC Red
- BoCC Amber
- BoCC Green
- LBAP
- ERL

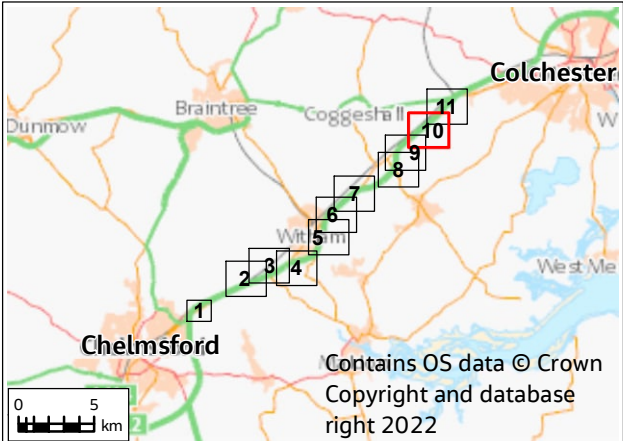



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR0 10060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
Client							
				national highways			
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title							
ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 9 OF 11							
Drawing Status							
S4 – SUITABLE FOR STAGE APPROVAL							
Scale @ A3		1:8500		DO NOT SCALE		Rev P01	
Jacobs No.		B36601D1					
Client No.		HE551497					
Drawing Number							
HE551497-JAC-LDC-SCHW-SK-GI-0666							
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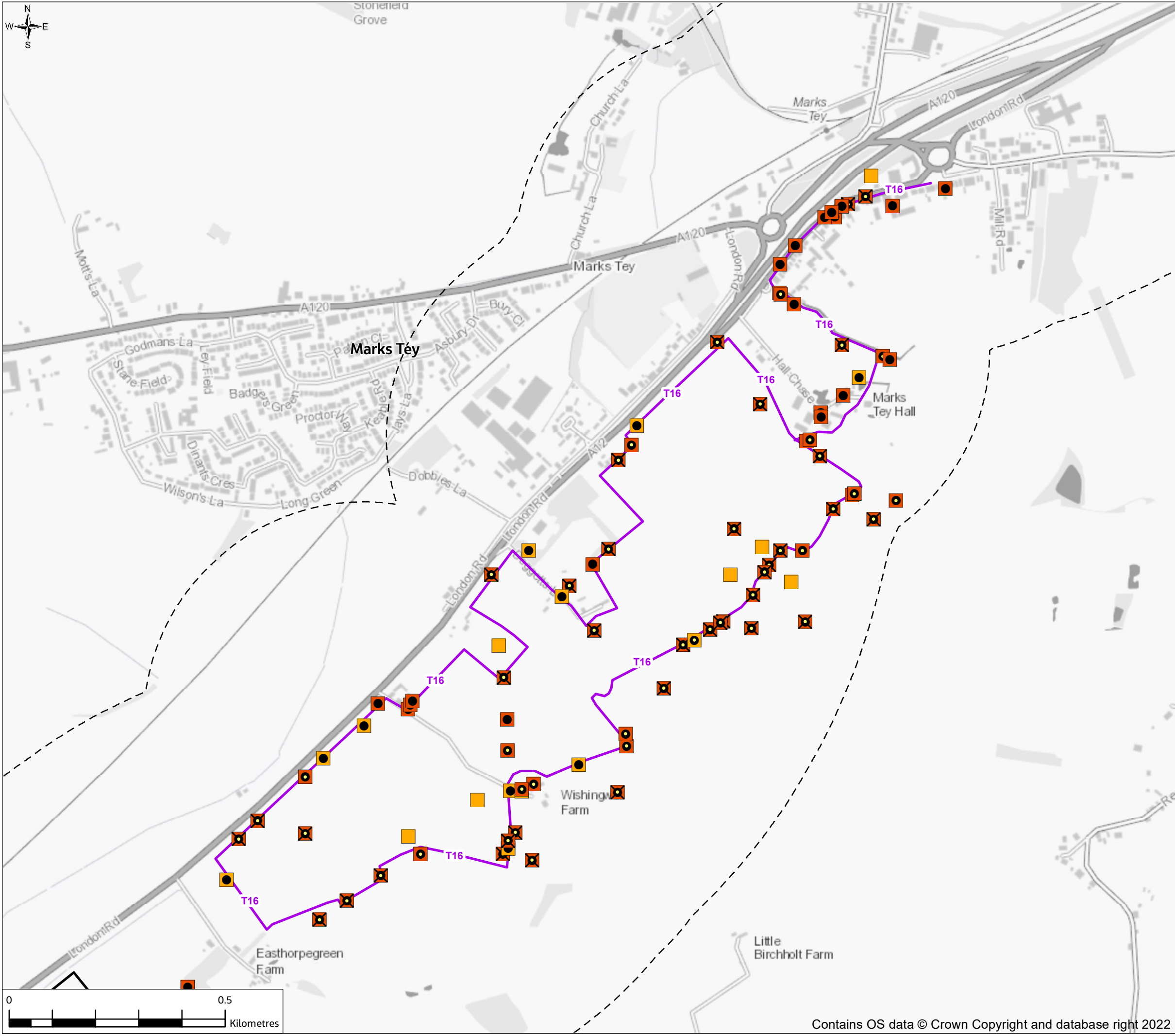
APPENDIX 9.5 - FIGURE 2

- Legend
- Breeding Bird study area
 - Transects from 2020 Surveys
 - Transects from 2017 Surveys
- Conservation Status/Protection
- Schedule 1
 - NERC S41
 - BoCC Red
 - BoCC Amber
 - BoCC Green
 - LBAP
 - ERL



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(l)			
<div>Client</div> <div>national highways</div>							
<div>Project</div> <div>REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME</div>							
<div>Drawing Title</div> <div>ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 10 OF 11</div>							
<div>Drawing Status</div> <div>S4 – SUITABLE FOR STAGE APPROVAL</div>							
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Jacobs No.		B36601D1				Rev P01	
Client No.		HE551497					
<div>Drawing Number</div> <div>HE551497-JAC-LDC-SCHW-SK-GI-0667</div>							

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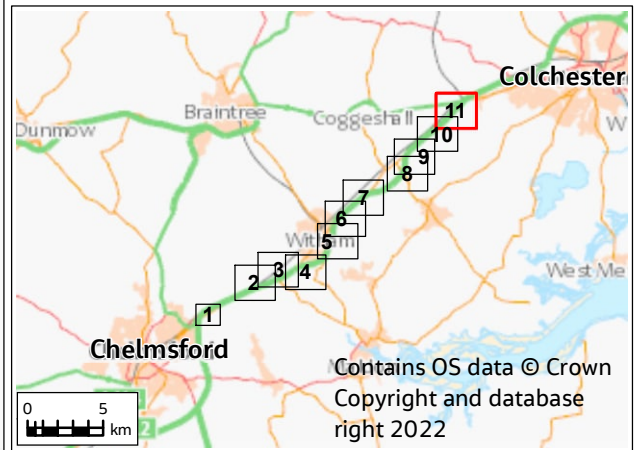
APPENDIX 9.5 - FIGURE 2


Legend

- [] Breeding Bird study area
- Transects from 2020 Surveys
- Transects from 2017 Surveys

Conservation Status/Protection

- Schedule 1
- NERC S41
- BoCC Red
- BoCC Amber
- BoCC Green
- LBAP
- ERL



P01	31/05/22	For DCO application		ML	LW	NP	SG
Rev.	Rev. Date	Purpose of revision		Drawn	Check'd	Rev'd	Appr'd
Development Consent Order Drawing Number: TR010060/APP/6.3				APFP Regulation: Regulation 5(2)(I)			
Client							
				national highways			
Project							
REGIONAL DELIVERY PARTNERSHIP A12 CHELMSFORD TO A120 WIDENING SCHEME							
Drawing Title							
ENVIRONMENTAL STATEMENT BREEDING BIRDS - 2020 SURVEYS NOTABLE SPECIES SHEET 11 OF 11							
Drawing Status							
S4 – SUITABLE FOR STAGE APPROVAL							
Scale @ A3		1:8500				DO NOT SCALE	
Jacobs No.		B36601D1				Rev P01	
Client No.		HE551497					
Drawing Number							
HE551497-JAC-LDC-SCHW-SK-GI-0668							
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Abbreviations

BoCC – Birds of Conservation Concern

BTO – British Trust for Ornithology

BOU – British Ornithological Union

CBD – Convention on Biological Diversity

CIEEM – Chartered Institute of Ecology and Environmental Management

DCO – Development Consent Order

EclA – Ecological Impact Assessment

EIA – Environmental Impact Assessment

ES – Environmental Statement

LBAP – Local Biodiversity Action Plan

NERC S41 – Natural Environment and Rural Communities Section 41

NNNPS – National Networks National Policy Statement

NPPF – National Planning Policy Framework

NSIP – Nationally Significant Infrastructure Project

SoS – Secretary of State

SPA – Special Protection Area

SSSI – Site of Special Scientific Interest