

# A47 Wansford to Sutton Dualling

**Scheme Number: TR010039**

**Volume 6**

## **6.3 Environmental Statement Appendices**

### **Appendix 8.8 – Breeding Bird Survey Report**

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009

July 2021

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009**

A47 Wansford to Sutton  
Development Consent Order 202[x]

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**ENVIRONMENTAL STATEMENT APPENDICES**  
**Appendix 8.8 - Breeding Bird Survey Report**

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## Table of contents

1.	Introduction	1
1.1.	Background	1
1.2.	Scheme description and location	1
1.3.	Aims and objectives	1
1.4.	Relevant bird legislation	2
1.5.	Conservation status and guidance	4
2.	Desk study	6
2.2.	Previous studies	6
2.3.	Designated sites	9
2.4.	Data search	10
3.	Methodology	13
3.2.	Pre-survey constraints	16
4.	Field survey	17
4.2.	Survey data and conditions	17
4.3.	Bird survey records	17
4.4.	Disturbance events	19
4.5.	Survey constraints	19
5.	Results	20
5.2.	Breeding community quality calculations	24
5.3.	Incidental records	24
6.	Assessment and conclusions	25
6.1.	Bird assemblages	25
6.2.	Bird community and conservation value	25
6.3.	Effect of habitat change or loss	25
6.4.	Construction impacts	32
6.5.	Operational impacts	32
6.6.	Mitigation and conservation compensations	33
6.7.	Further surveys	36
7.	References	38
	Annex A. Transect Routes	40
	Annex B. Total individuals recorded	41
	Annex C. Distribution maps of key species	50

## Tables

Table 2-1	All species recorded on the breeding bird survey	6
Table 2-2	Records of bird species and their designations and conservational value	10
Table 3-1	Bird species diversity criteria: The importance of an area based on the number of bird species recorded (Fuller, 1980)	13
Table 3-2	Breeding bird population status categories. Breeding pairs per annum. *species not assessed by RBBP	14
Table 3-3	Example calculation of breeding bird community index	14

Table 3-4 Bird species diversity criteria: The importance of an area based on the breeding bird community index (Fuller, 1980)	14
Table 3-5 Species, value, terms and criteria	15
Table 4-1 Survey data and conditions	17
Table 4-2 Total species recorded which cited on European and UK legislation and of conservation concern.	17
Table 4-3 April 2020 - Total species recorded which cited on European and UK legislation and of conservation concern	18
Table 4-4 May 2020 - Total species recorded which cited on European and UK legislation and of conservation concern.	18
Table 4-5 June 2020 - Total species recorded which cited on European and UK legislation and of conservation concern.	18
Table 4-6 Disturbance events	19
Table 5-1 Key species recorded, their designations, conservation status and breeding status on-site and in Cambridgeshire	21
Table 5-2 Breeding calculator	24
Table 6-1 Habitat requirement and nature conservation value of important species cited on Birds Directive Annex I, WCA 1, NERC, LBAP, BoCC Red/Amber and IUCN species of breeding birds.	26

# 1. Introduction

## 1.1. Background

- 1.1.1. In 2020, Highways England carried out breeding bird surveys on the A47 between Wansford and Sutton. This is to inform the Environmental Statement (ES) Chapter 8 (Biodiversity) (**TR010039/APP/6.1**) at PCF Stage 3 for the A47 Wansford to Sutton Dualling (the Proposed Scheme).
- 1.1.2. The Proposed Scheme is designed to provide a new 2.6km dual carriageway which largely follows the existing A47 at the Wansford end, crossing to the north and running parallel to the existing A47 after Sutton Heath road. There would also be a dedicated free-flow link road from the A1 southbound to the A47 eastbound to alleviate congestion at the Wansford junctions.
- 1.1.3. The Proposed Scheme is located at Wansford and extends eastwards to Sutton and forms a section of Single carriageway that is part of the main arterial highway route connecting to Peterborough and Norwich to the east.
- 1.1.4. This baseline report provides a summary of the results of the breeding bird surveys undertaken between Wansford and Sutton in April, May, and June 2020. Impacts of the Proposed Scheme and proposals for mitigation are addressed in Chapter 6 (Cultural Heritage) (**TR010039/APP/6.1**).

## 1.2. Scheme description and location

- 1.2.1. The Proposed Scheme is designed to provide a new 2.6km dual carriageway which largely follows the existing A47 at the Wansford end, crossing to the north and running parallel to the existing A47 after Sutton Heath road. There will also be a dedicated free-flow link road from the A1 southbound to the A47 eastbound to alleviate congestion at the Wansford junctions.
- 1.2.2. The Proposed Scheme is located at Wansford and extends eastwards to Sutton and forms a section of Single carriageway that is part of the main arterial highway route connecting to Peterborough and Norwich to the east.

## 1.3. Aims and objectives

- 1.3.1. The breeding bird survey aims to determine which species are using the study area during the breeding season (March to August inclusive) and to assess its importance for supporting populations of notable bird species including:
  - species cited on Annex I of the European Commission (EC) Birds Directive

- species protected under Schedule 1 of the Wildlife and Countryside Act (WCA) 1981, as amended
- species of Principal Importance for the purpose of conserving biodiversity covered under Section 41 (S41) of the National Environment and Rural Communities (NERC) Act 2006
- red and Amber listed Birds of Conservation Concern (BoCC) (Eaton, et al., 2015)

1.3.2. The data gathered will assist in determining the potential significant effects on breeding birds and the potential effect on assemblages through the following impacts:

### Construction

- habitat loss (direct impact)
- disturbance from construction, i.e. noise and visual disturbance (indirect impacts)

### Operation

- mortality of breeding birds e.g. traffic collisions (direct impact)
- reduced population size & breeding success due to traffic noise and visual disturbance (indirect impact)

## 1.4. Relevant bird legislation

1.4.1. This legal information is presented in summary form and is intended for general guidance only. The original documentation should be referred to for detailed and definitive information. Website addresses can be found in Chapter 7 (Landscape and Visual effects) (**TR010039/APP/6.1**).

### International Conventions

1.4.2. The Bonn Convention (1979) provides protection to migratory species and their habitats. There are a number of legally binding international agreements, including:

- African Eurasian Migratory Waterbird Agreement (AEWA)
- Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia
- Convention on the Conservation of Migratory Species (CMS)

1.4.3. The Bern Convention (1982) aims to ensure the protection of wild plant and animal species. The obligations of the Convention are transposed into national law by the Wildlife and Countryside Act 1981 (as amended). At the European

level, the obligations are met by means of the Directive 2009/147/EC on the conservation of wild birds (the Birds Directive).

## European legislation

### 1.4.4. The Birds Directive

- The European Union meets its obligations for bird species under the Bern Convention and Bonn Convention by means of Directive 2009/147/EC (Birds Directive) on the conservation of wild birds.
- The Council Directive 2009/147/EC on the conservation of wild birds provides for the conservation and management of all wild bird species naturally occurring in the European Union, their nests, eggs and habitats. The Birds Directive bans activities that directly threaten birds (e.g. deliberate killing and destruction of nests and young), regulates hunting of selected species, bans non-selective and large scale killing of birds, and promotes research for bird conservation and management. Article 4(4) of the Birds Directive requires that member states “should strive to avoid pollution or deterioration of habitats.” Regulation 8 introduces a new Regulation 9A to the Habitats Regulations for duties of appropriate authorities in relation to wild bird habitat. Regulation 9A(3) addresses the transposition of Article 2 of the Birds Directive, while Regulation 9A(8), requiring competent authorities to “use all reasonable endeavours” to “avoid any pollution or deterioration of habitats of wild birds.”
- The Conservation of Habitats and Species Regulations 2017 (as amended) fully transposed the Birds Directive into English law including all Annexes including Annex 1 which also lists rare and vulnerable species of wild birds that are subject to special conservation measures.

## UK and English Legislation

### *Wildlife and Countryside Act (1981)*

- 1.4.5. The primary legislation relating to the protection of British birds lies within Part 1 of the Wildlife and Countryside Act (1981).
- 1.4.6. Under current legislation, it is an offence to:
- kill, injure or take any wild bird
  - take, damage or destroy the nest of any wild bird while that nest is in use or being built
  - take or destroy an egg of any wild bird
- 1.4.7. Schedule 1 of the Act lists a number of species that are protected by special penalties at all times. In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5
- interfere with places used for shelter or protection by a wild animal
- intentionally disturb animals occupying such places
- the Act also prohibits certain methods of killing, injuring, or taking wild animals

1.4.8. In addition to statutory protection, some bird species have been identified within key documents as species of conservation concern.

#### *Local Biodiversity Action Plan (LBAP)*

1.4.1. The Cambridgeshire and Peterborough Biodiversity Partnership lists 26 bird species as priority species requiring conservation action. Local Biodiversity Action Plans identify habitat and species conservation priorities at a local level (typically at the County level) and are usually drawn up by a consortium of local Government organisations and conservation charities.

#### *National Policy Statement for National Networks (NPSNN)*

1.4.2. The NPSNN outlines government planning policies to deliver nationally significant infrastructure projects (NSIPs) and provides planning guidance for these projects and the basis for the examination by the Examination Authority and decisions by the Secretary of State. The NPSNN states that development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.

## **1.5. Conservation status and guidance**

### **Birds of Conservation Concern**

1.5.1. The Birds of Conservation Concern 4: The Red List for Birds was published in December 2015. The document is commonly referred to as the UK Red List for birds. This is the fourth review of the status of birds in the UK, Channel Islands and the Isle of Man, and is an update of the last assessment in 2009. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird non-governmental organisations (NGOs) and assigned to the red, amber or green lists of conservation concern.

- Red list species are those whose breeding population or range is rapidly declining (50% or more in the last 25 years), have declined historically and not recovered, or those of global conservation concern.



- Amber list species are those whose breeding population is in moderate decline (25 – 49% in the last 25 years), breed rarely, are of international importance, are localised species and of unfavourable conservation status in Europe.

### The IUCN Red List of Threatened Species

- 1.5.2. The IUCN Red List of Threatened Species is widely recognized as the most comprehensive, objective global approach for evaluating the conservation status of plant and animal species. The introduction in 1994 of a scientifically rigorous approach to determine risks of extinction that is applicable to all species has become a world standard. Those in the 'threatened categories are Regionally Extinct (RE), Critically Endangered (CE), Endangered (EN) and Vulnerable (VU).

## 2. Desk study

- 2.1.1. In works undertaken to date, breeding bird surveys have been completed and the findings of these reports will be summarised below.
- 2.1.2. Further to this, a data search was carried out using multi-agency geographical information for the countryside (MAGIC) maps for all statutory and non-statutory protected sites and these are summarised in section 2.3.

### 2.2. Previous studies

- 2.2.1. Previously, a breeding bird survey was undertaken by an ornithologist between April to June 2018. On each visit, the ornithologist walked a transect route around the 500m buffer survey area of the proposed new A47 road and recorded bird observations, such as birds in flight. The surveys were undertaken during suitable weather conditions and followed standard methods for bird monitoring including the use of British Trust for Ornithology (BTO) species codes and symbols for bird activity (Bibby *et al.*, 2000).
- 2.2.2. The surveys aimed to determine which species were using the study area during winter and to assess its importance for supporting populations of notable species including:
- species protected under Annex I Birds Directive, Schedule 1 of the Wildlife and Countryside Act (WCA) 1981, as amended
  - species of Principal Importance for the purpose of conserving biodiversity covered under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006
  - red and amber listed Birds of Conservation Concern (BoCC) (Eaton *et al.*, 2015) and IUCN Red List threatened categories
- 2.2.3. In total 69 species were recorded (Table 2-1). This included three species listed on the Wildlife & Countryside Act (1981) Schedule 1, 14 species on the red-listed species of conservation concern and 20 species on the amber list.

Table 2-1 All species recorded on the breeding bird survey

Common name	Scientific name	Designation	Conservation value
Blackbird	<i>Turdus merula</i>	Birds Dir 2.2	N/A
Blackcap	<i>Sylvia atricapilla</i>	N/A	N/A
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Birds Dir 2.2	BoCC Amber
Blue Tit	<i>Cyanistes caeruleus</i>	N/A	N/A

Common name	Scientific name	Designation	Conservation value
Bullfinch	<i>Pyrrhula pyrrhula</i>	NERC, LBAP	BoCC Amber
Buzzard	<i>Buteo buteo</i>	Bonn	N/A
Carrion Crow	<i>Corvus corone</i>	Birds Dir 2.2	N/A
Chaffinch	<i>Fringilla coelebs</i>	N/A	N/A
Chiffchaff	<i>Phylloscopus collybita</i>	N/A	N/A
Coal Tit	<i>Parus ater</i>	N/A	N/A
Common Tern	<i>Sterna hirundo</i>	Bern, Bonn, Birds Dir 1	BoCC Amber
Coot	<i>Fulica atra</i>	Bonn, Birds Dir 2.1	N/A
Cormorant	<i>Phalacrocorax carbo</i>	N/A	N/A
Dunnock	<i>Prunella modularis</i>	Bern, NERC, UKBAP	BoCC Amber
Garden Warbler	<i>Sylvia borin</i>	N/A	N/A
goldcrest	<i>Regulus regulus</i>	N/A	N/A
Goldfinch	<i>Carduelis carduelis</i>	Bern	N/A
Goshawk	<i>Accipiter gentilis</i>	Bonn, Birds Dir 1, WCA 1	N/A
Great Black-backed Gull	<i>Larus marinus</i>	Birds Dir 2.2	BoCC Amber
Great Spotted Woodpecker	<i>Dendrocopos major</i>	Bern	N/A
Great Tit	<i>Parus major</i>	N/A	N/A
Green woodpecker	<i>Picus viridis</i>	Bern	N/A
Greenfinch	<i>Chloris chloris</i>	Bern	N/A
Grey Heron	<i>Ardea cinerea</i>	N/A	N/A
Grey Partridge	<i>Perdix perdix</i>	Bird Dir 2.1, NERC, LBAP	BoCC Red
Grey Wagtail	<i>Motacilla cinerea</i>	Bern	BoCC Red
Greylag Goose	<i>Anser anser</i>	Bonn, Birds Dir 2.1, WCA 1.2	BoCC Amber
Herring Gull	<i>Larus argentatus</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red
House Martin	<i>Delichon urbicum</i>	Bern	BoCC Amber
House Sparrow	<i>Passer domesticus</i>	NERC, UKBAP	BoCC Red
Jackdaw	<i>Corvus monedula</i>	Birds Dir 2.2	N/A
Kestrel	<i>Falco tinnunculus</i>	N/A	N/A

Common name	Scientific name	Designation	Conservation value
Kingfisher	<i>Alcedo atthis</i>	Bern, Birds Dir 1, WCA 1	BoCC Amber, IUCN VU
Lapwing	<i>Vanellus vanellus</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red, IUCN VU
Lesser Black-backed Gull	<i>Larus fuscus</i>	Birds Dir 2.2	BoCC Amber
Lesser Whitethroat	<i>Sylvia curruca</i>	N/A	N/A
Linnet	<i>Linaria cannabina</i>	Bern, NERC, LBAP	BoCC Red
Long-tailed Tit	<i>Aegithalos caudatus</i>	N/A	N/A
Magpie	<i>Pica pica</i>	Birds Dir 2.2	N/A
Mallard	<i>Anas platyrhynchos</i>	Bonn, Birds Dir 2.1	BoCC Amber
Marsh Tit	<i>Poecile palustris</i>	NERC, LBAP	BoCC Red
Mistle Thrush	<i>Turdus viscivorus</i>	Birds Dir 2.2	BoCC Red
Moorhen	<i>Gallinula chloropus</i>	Birds Dir 2.2	N/A
Mute Swan	<i>Cygnus olor</i>	Bonn, Birds Dir 2.2,	BoCC Amber
Pied Wagtail	<i>Motacilla alba</i>	Bern	N/A
Red Kite	<i>Milvus milvus</i>	Bonn, Birds Dir 1, WCA 1	N/A
Redshank	<i>Tringa totanus</i>	Bonn, Birds Dir 2.2	BoCC Amber
Redstart	<i>Phoenicurus phoenicurus</i>	Bern	BoCC Amber
Reed Bunting	<i>Emberiza schoeniclus</i>	Bern, NERC, LBAP	BoCC Amber
Reed Warbler	<i>Acrocephalus scirpaceus</i>	N/A	N/A
Robin	<i>Erithacus rubecula</i>	Bern	N/A
Rook	<i>Corvus frugilegus</i>	Birds Dir 2.2	N/A
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	N/A	N/A
Shag	<i>Phalacrocorax aristotelis</i>	Bern, Birds Dir 1	BoCC Red
Skylark	<i>Alauda arvensis</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red
Song Thrush	<i>Turdus philomelos</i>	Birds Dir 2.2, NERC, UKBAP	BoCC Red
Sparrowhawk	<i>Accipiter nisus</i>	Bonn, Birds Dir 1	N/A
Starling	<i>Sturnus vulgaris</i>	Birds Dir 2.2, NERC, UKBAP	BoCC Red
Stock Dove	<i>Columba oenas</i>	Birds Dir 2.2	BoCC Amber
Swallow	<i>Hirundo rustica</i>	Bern	N/A

Common name	Scientific name	Designation	Conservation value
Swift	<i>Apus apus</i>	Bern	BoCC Amber
Teal	<i>Anas crecca</i>	Bonn, Birds Dir 2.1	BoCC Amber
Treecreeper	<i>Certhia familiaris</i>	N/A	N/A
Whitethroat	<i>Sylvia communis</i>	N/A	N/A
Willow Warbler	<i>Phylloscopus trochilus</i>	N/A	BoCC Amber
Woodpigeon	<i>Columba palumbus</i>	Birds Dir 2.1	N/A
Wren	<i>Troglodytes troglodytes</i>	Bern	N/A
Yellow Wagtail	<i>Motacilla flava</i>	Bern, NERC, LBAP	BoCC Red
Yellowhammer	<i>Emberiza citrinella</i>	Bern, NERC, LBAP	BoCC Red

Bern – Bern Convention (1982)

Bonn – Bonn Convention (1979)

WCA1 – Wildlife and Countryside Act (1981) Schedule One

Birds Dir 1, 2.1 & 2.2 – EC Directive on the Conservation of Wild Birds (791409/EEC) Annex 1, 2.1 and 2.2

NERC – National Environment of Rural Communities Act Section 41

LBAP – Local Action Plan Species

BoCC Red – Birds of Conservation Concern Red List

BoCC Amber - Birds of Conservation Concern Amber List

IUCN VU – IUCN Vulnerable Status (European Status)

## 2.3. Designated sites

2.3.1. A MAGIC search was undertaken for all statutory and non-statutory protected sites within a 500m buffer of the main A47.

2.3.2. Two designated sites were identified within this buffer zone. The closest designated site was Sutton Heath and Bog Site of Special Scientific Interest (SSSI) which is adjacent to the proposed scheme and Wansford Pasture SSSI 265m south of the Proposed Scheme boundary at the western extent.

2.3.3. There are five County Wildlife Sites (CWS) within the 500m buffer zone for the proposed route of the new A47 road:

- Sutton Meadow North – Grid ref TL086996
- Stibbington Pits – Grid ref TL086993
- Sutton Dismantled Railway - TL090994
- River Nene – Grid ref TL081995
- Hell Corner and Top Field Spinney – Grid ref TL102995

2.3.4. These sites are offered some protection from the Proposed Scheme and are managed in Cambridgeshire by the Cambridgeshire Wildlife Trust in partnership with Natural England and Cambridgeshire County Council. The local councils have produced guidance on the scope of future development on these sites to help maintain protection on these sites.

## 2.4. Data search

2.4.1. A data search from the National Biodiversity Network (NBN) Atlas returned 3,558 bird records within 1km of the proposed new A47 road. However, due to licence restrictions, not all these records are allowed to be reported for commercial purposes.

2.4.2. NBN Atlas record sources under the following licences:

- Open Government Licence (OGL)
- Creative Commons Licence with Attribution (CC-BY)
- Creative Commons No rights reserved licence (CC0)

2.4.3. A total of 373 records were identified which could be used for commercial purposes (as above). These have been summarised in Table 2-2.

Table 2-2 Records of bird species and their designations and conservational value

Common name	Scientific name	Number of sightings	Latest Sighting	Designation and conservation status
Blackbird	<i>Turdus merula</i>	7	2005	N/A
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	5	2003	BoCC Amber
Blue Tit	<i>Cyanistes caeruleus</i>	3	2001	N/A
Buzzard	<i>Buteo buteo</i>	3	2012	Bonn
Canada Goose	<i>Branta canadensis</i>	11	2005	N/A
Chaffinch	<i>Fringilla coelebs</i>	1	1987	N/A
Coal Tit	<i>Parus ater</i>	1	1983	N/A
Common Gull	<i>Larus canus</i>	1	2002	BoCC Amber
Common Tern	<i>Sterna hirundo</i>	3	2004	Bern, Bonn, Birds Dir 1, BoCC Amber
Coot	<i>Fulica atra</i>	25	2005	IUCN NT
Cormorant	<i>Phalacrocorax carbo</i>	19	2005	N/A
Corn Bunting	<i>Emberiza calandra</i>	3	2005	NERC, BoCC Red

Common name	Scientific name	Number of sightings	Latest Sighting	Designation and conservation status
Gadwall	<i>Mareca strepera</i>	13	2005	Bonn, Birds Dir 2.1, BoCC Amber
Grasshopper Warbler	<i>Locustella naevia</i>	2	2004	NERC, BoCC Red
Great Crested Grebe	<i>Podiceps cristatus</i>	17	2005	N/A
Great Tit	<i>Parus major</i>	3	2001	N/A
Greenfinch	<i>Chloris chloris</i>	11	2012	Bern
Grey Heron	<i>Ardea cinerea</i>	16	2005	N/A
Grey Partridge	<i>Perdix perdix</i>	2	2004	NERC, BoCC Red
Greylag Goose	<i>Anser anser</i>	5	2004	Bonn, Birds Dir 2.1, WCA 1.2, BoCC Amber
Herring Gull	<i>Larus argentatus</i>	1	2003	NERC, BoCC Red, IUCN NT
House Sparrow	<i>Passer domesticus</i>	3	2003	NERC, BoCC Red
Kestrel	<i>Falco tinnunculus</i>	2	2002	N/A
Kingfisher	<i>Alcedo atthis</i>	12	2004	Bern, Birds Dir 1, WCA 1, BoCC Amber, IUCN VU
Lapwing	<i>Vanellus vanellus</i>	4	2004	NERC, BoCC Red, IUCN VU
Lesser Redpoll	<i>Acanthis cabaret</i>	1	2001	NERC, BoCC Red
Lesser Spotted Woodpecker	<i>Dryobates minor</i>	5	2004	NERC, BoCC Red
Little Grebe	<i>Tachybaptus ruficollis</i>	8	2005	Bern
Long-tailed Tit	<i>Aegithalos caudatus</i>	2	1992	N/A
Mallard	<i>Anas platyrhynchos</i>	25	2005	Bonn, Birds Dir 2.1, BoCC Amber
Mandarin Duck	<i>Aix galericulata</i>	10	2005	N/A
Marsh Tit	<i>Poecile palustris</i>	12	2004	NERC, BoCC Red
Moorhen	<i>Gallinula chloropus</i>	18	2005	N/A
Mute Swan	<i>Cygnus olor</i>	21	2017	Bonn, BoCC Amber
Red-crested Pochard	<i>Netta rufina</i>	4	2005	N/A
Redwing	<i>Turdus iliacus</i>	1	1964	WCA 1, BoCC Red, IUCN NT
Reed Warbler	<i>Acrocephalus scirpaceus</i>	4	2003	N/A
Robin	<i>Erithacus rubecula</i>	1	2001	Bern
Sand Martin	<i>Riparia riparia</i>	7	2001	Bern

Common name	Scientific name	Number of sightings	Latest Sighting	Designation and conservation status
Song Thrush	<i>Turdus philomelos</i>	6	1985	NERC, BoCC Red
Sparrowhawk	<i>Accipiter nisus</i>	6	2002	Bonn, Birds Dir 1
Spotted Flycatcher	<i>Muscicapa striata</i>	3	2004	NERC, BoCC Red
Starling	<i>Sturnus vulgaris</i>	13	1996	NERC, BoCC Red
Stock Dove	<i>Columba oenas</i>	2	2001	BoCC Amber
Swallow	<i>Hirundo rustica</i>	10	2001	Bern
Swift	<i>Apus apus</i>	5	2011	Bern, BoCC Amber
Teal	<i>Anas crecca</i>	10	2005	Bonn, Birds Dir 2.1, BoCC Amber
Tufted Duck	<i>Aythya fuligula</i>	20	2005	Bonn, Birds Dir 2.1
Turtle Dove	<i>Streptopelia turtur</i>	4	2005	Bonn, NERC, BoCC Red, IUCN VU
Water Rail	<i>Rallus aquaticus</i>	1	2002	N/A
Willow Warbler	<i>Phylloscopus trochilus</i>	1	1982	BoCC Amber

#### Legislation

Bern – Bern Convention (1982)

WCA 1 – Wildlife and Countryside Act (1981) Schedule One

Birds Dir 1 – EC Directive on the Conservation of Wild Birds (791409/EEC) Annex 1

NERC – National Environment of Rural Communities Act Section 41

LBAP – Local Action Plan Species

#### Conservation Value

BoCC Red – Birds of Conservation Concern Red List

BoCC Amber - Birds of Conservation Concern Amber List

IUCN VU – IUCN Vulnerable Status (European Status)



### 3. Methodology

- 3.1.1. The site was visited on three occasions through the breeding bird season (March to August inclusive). The 'look-see' method (Gilbert, Gibbons, & Evans, 1998) was used, where all birds observed using the site were counted. The survey method was broadly based on that of territory mapping (Bibby, Burgess, & Hill, 2000) as used for the BTO Common Bird Census (CBC). Standard BTO species codes and symbols for bird activity were used to identify birds and denote activity where appropriate.
- 3.1.2. On each visit, the surveyor, an experienced ornithologist, used binoculars to survey the open habitat whilst walking along a pre-determined transect route (Annex A) at a slow pace so that all birds could be located and recorded.
- 3.1.3. The number of species recorded in the area is a simple measure of diversity that can help indicate the importance at each season of the year. The areas importance in value can be determined by several factors including geographical location, the diversity of habitats present and size of the habitat. Fuller (1980) detailed the diversity criteria, for bird species diversity, as shown in Table 3-1

#### Breeding bird assemblages

- 3.1.4. As Fuller's criteria was written in 1980, bird species have continued to suffer a large-scale decline across the UK. Due to this, consideration of counts which are within the upper limits of each criteria should be assessed using professional judgement to determine whether the count should be upgraded into the lower limits of the next highest criteria.

Table 3-1 Bird species diversity criteria: The importance of an area based on the number of bird species recorded (Fuller, 1980)

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

- 3.1.5. Fuller's criteria and professional judgement have been used to assess the importance of the survey area for breeding birds. In addition to evaluating the area based on the breeding bird assemblages, consideration is given to the value of the area for the populations of individual key species that it supports.

#### Bird community and conservational value

- 3.1.6. A breeding bird community quality assessment calculation can be undertaken through combining data on national breeding pairs per annum against the number of species recorded on-site. Each breeding species is assigned a score based on its national breeding population. These scores are then calculated to

produce an index figure that is set against the criteria outlined by Fuller (1980). The final total illustrates the conservation importance of the site regarding breeding bird communities on-site.

- 3.1.7. All species on-site are assigned a class based on the national abundance of breeding pairs as described by Eaton, Holling and the Rare Breeding Bird Panel (RBBP) (2020) and RBBP species selection criteria<sup>1</sup>.

Table 3-2 Breeding bird population status categories. Breeding pairs per annum. \*species not assessed by RBBP

Very Rare (a)	Rare (b)	Scarce (c)	Less scarce (d)	Not Scarce (e)*
<30	30-300	301-1000	>1000	>1000

- 3.1.8. Species in each class of abundance (Table 3-2) is then assigned a numerical value (5-1). A calculation is then undertaken through multiplying the category value with the number of species on-site to produce an index figure as shown in Table 3-3

Table 3-3 Example calculation of breeding bird community index

Category	A (5)	B (4)	C (3)	D (2)	E (1)	Index
Number of species	1	2	4	9	21	
Category score total	5	8	12	18	21	<b>64</b>

- 3.1.9. The index figure is then checked against the criteria outlined by Fuller (1980) as shown in Table 3-4.

Table 3-4 Bird species diversity criteria: The importance of an area based on the breeding bird community index (Fuller, 1980)

National	Regional	County	Local
60+	59-40	39-20	19-10

- 3.1.10. For the example in Table 3-3, the bird community conservation value would then be considered of national importance.

## Individual species conservation value

- 3.1.11. The conservation value of individual species can be cross-checked by two separate approaches: nature conservation value and conservation status. The Chartered Institute of Ecology and Environmental Management (CIEEM) guidance on ecological impact assessment (CIEEM, 2018) assesses nature

<sup>1</sup> [http://www.rbbp.org.uk/downloads/rbbp\\_species\\_selection\\_criteria.pdf](http://www.rbbp.org.uk/downloads/rbbp_species_selection_criteria.pdf)

conservation value within a geographical context. To attain each level of value, an ornithological resource or one of the features (species population or assemblage of species) should meet the criteria set out in Table 3-5. In some cases, professional judgement may be required to increase or decrease the allocation of specific value, based upon local knowledge.

Table 3-5 Species, value, terms and criteria

Species Value	Selection Criteria
International and European	<p>A species which is part of the cited interest of a SPA and which regularly occurs in internationally or nationally important numbers.</p> <p>A species which is present in internationally important numbers (&gt;1% of international population).</p>
National	<p>A species which is part of the cited interest of an SSSI and which regularly occurs in nationally or regionally important numbers.</p> <p>A nationally important assemblage of breeding or over-wintering species.</p> <p>A species which is present in nationally important numbers (&gt;1% UK population).</p> <p>Rare breeding species (&lt;300 breeding pairs in the UK).</p>
Regional	<p>Species of principal importance under Section 41 of the National Environment and Rural Communities (NERC) Act (2006), which are not covered above, and which regularly occurs in regionally important numbers.</p> <p>Species present in regionally important numbers (&gt;1% of regional population).</p> <p>Sustainable populations of species that are rare or scarce within a region.</p> <p>Species on the BoCC red list and which regularly occur in regionally important numbers.</p>
County	<p>Species of principal importance under Section 41 of the National Environment and Rural Communities (NERC) Act (2006), which are not covered above and which regularly occurs in county important numbers.</p> <p>Species present in county important numbers (&gt;1% of county population).</p> <p>A site designated for its county important assemblage of birds (e.g. a SINC Site).</p> <p>Species on the BoCC Red List and which regularly occur in county important numbers.</p>
District	<p>Species of principal importance under Section 41 of the National Environment and Rural Communities (NERC) Act (2006), which are not covered above, and are rare in the locality or in the relevant natural area profile.</p> <p>Species present in numbers just short of county importance.</p> <p>Sustainable populations of species which are rare or scarce within the locality.</p> <p>A site whose designation falls just short for inclusion in its county important assemblage of birds (e.g. a SINC Site).</p>

Species Value	Selection Criteria
	Other species on the BoCC red list and which are considered to regularly occur in district important numbers.
Local	Other species of conservation interest (e.g. all other species on the BoCC Red and Amber List and listed as of principal importance under Section 41 of the National Environment and Rural Communities (NERC) Act (2006) which are not covered above, regularly occurring in locally sustainable populations.
Site	All other BoCC green-list, common and widespread species.

## 3.2. Pre-survey constraints

- 3.2.1. The pre-designed survey transects were modified from the wintering bird survey transects undertaken in 2017/18 due to access restrictions and inclusion of habitats not previously surveyed.
- 3.2.2. The transects accessed private property after permission was granted and where possible, access was via public rights of way surrounding the site. The transect route chosen targeted higher value areas, rather than attempting to cover the entirety of the site. This is not considered to represent a significant limitation to the survey.
- 3.2.3. There is potential for species to be missed or go unnoticed due to the nature of breeding bird surveys and possibilities of birds not vocalising or being located in dense vegetation. There is also potential to miss nocturnal species.
- 3.2.4. The details of this report will remain valid for a period of two years from the date of the survey, after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the suggestions within this report should be reviewed (and reassessed if necessary) should there be any changes to the Proposed Scheme boundary or development proposals which this report was based upon.

## 4. Field survey

- 4.1.1. The field surveys were undertaken during the breeding bird season (March to August inclusive). All surveys were led by a specialist ornithological ecologist and assisted by members of the ecology team. The survey data and conditions are detailed in table 4-1.

### 4.2. Survey data and conditions

Table 4-1 Survey data and conditions

Survey Number	Date	Weather Conditions
<b>Survey One – April 2020</b>	27	Overcast with bright spell. Temperature 9 – 14°C. Wind NE2
	28	Light rain. Temperature 7 – 8°C. Wind NE3
	29	Bright with clouds. Temperature 6 – 11°C. Wind SW3
<b>Survey Two – May 2020</b>	25	Sunny. Temperature 11 – 24°C. Wind S2
	26	Sunny. Temperature 12 – 23°C. Wind W2
	27	Bright with scattered cloud. Temperature 16 – 23°C. Wind E2
<b>Survey Three - June 2020</b>	29	Bright with scattered cloud. Temperature 13 – 16°C. Wind SW5
	30	Bright with scattered cloud. Temperature 13 – 21°C. Wind SW5
	1 (Jul)	Bright with scattered cloud. Temperature 15 – 20°C. Wind SW3

### 4.3. Bird survey records

- 4.3.1. In total 84 species were recorded during the breeding bird survey between April to June 2020 across the site, detailed in Table 4-2. A breakdown of species and total individuals recorded per survey can be found in Annex B.

Table 4-2 Total species recorded which cited on European and UK legislation and of conservation concern.

Designation	Number of species
<b>Birds Directive</b>	8
<b>Wildlife and Countryside Act</b>	6
<b>NERC</b>	16
<b>BoCC Red List</b>	15
<b>BoCC Amber List</b>	18
<b>LBAP</b>	14
<b>IUCN (Threatened categories)</b>	3

#### Survey one – April 2020

- 4.3.2. Table 4-3 summarises the total number of species recorded in April 2020 which are cited under legislation outlined in chapter one. Some species are cited on multiple legislations. A total of 65 species were observed

Table 4-3 April 2020 - Total species recorded which cited on European and UK legislation and of conservation concern

Designation	Number of species
Birds Directive	5
Wildlife and Countryside Act	3
NERC	12
BoCC Red List	10
BoCC Amber List	12
LBAP	10
IUCN (Threatened categories)	2

## Survey two – May 2020

4.3.3. Table 4-4 summarises the total number of species recorded in May 2020 which are cited under legislation outlined in chapter one. Some species are cited on multiple legislations. A total of 71 species were observed.

Table 4-4 May 2020 - Total species recorded which cited on European and UK legislation and of conservation concern.

Designation	Number of species
Birds Directive	3
Wildlife and Countryside Act	5
NERC	14
BoCC Red List	12
BoCC Amber List	16
LBAP	12
IUCN (Threatened categories)	3

## Survey three – June 2020

4.3.4. Table 4-5 summarises the total number of species recorded in June 2020 which are cited under legislation outlined in Chapter 1 (Introduction) (TR010039/APP/6.1). Some species are cited on multiple legislations. A total of 67 species were observed.

Table 4-5 June 2020 - Total species recorded which cited on European and UK legislation and of conservation concern.

Designation	Number of species
Birds Directive	4
Wildlife and Countryside Act	5
NERC	11
BoCC Red List	9
BoCC Amber List	16

Designation	Number of species
LBAP	9
IUCN (Threatened categories)	1

## 4.4. Disturbance events

- 4.4.1. Disturbance was recorded at numerous points during the bird survey. The main disturbance events include the following detailed in Table 4-6.

Table 4-6 Disturbance events

Activity	Time	Level of disturbance
Agricultural Operations	Occasional activities from ploughing, herbicide application, fertiliser application, reseeding, etc.	Negligible – mainly game birds moving between field boundaries.
Bird Scaring	Use of gas guns throughout the transect.	High – Large scale flushes of woodpigeons across the site. Passerines in cover crops also flushed.
Dog Walkers	Occasional chasing of flocks of birds, and alarm calls heard by birds on footpaths when dogs were present.	Low – alarm calls and low-level flushing from areas adjacent to footpaths.
Game Keeping	Shooting activities	Moderate – flocks of woodpigeons flushed by gunshots and game birds seen to flush.
Arboriculture Operation	Occasional chainsaw operations in woodland areas.	Low – mainly a reduction in bird activity including vocalising.
Boating	Occasional recreational boating activities on the River Nene	Low – birds in scrub on bankside reduced vocalisation
Fishing	Occasional recreational fishing on the River Nene	Low – in areas where fishing occurred there was a decrease activity of birds noted.

## 4.5. Survey constraints

- 4.5.1. Due to the ongoing COVID-19 pandemic access was retracted from a number of points along the transects during survey two and three. The main areas where access was restricted was the fishing lakes south of the River Nene and adjacent habitats to the East, South and West (Haydock Hotel). These areas were not able to be surveyed from any other vantage point. This is not considered to be a significant constraint as they lay outside the Proposed Scheme boundary and disturbance is likely to be significantly reduced at these locations.
- 4.5.2. During survey two and three archaeological trenching was being undertaken. Based on comparisons from surveys since January 2020 compared to those in May and June, it was evident that this disturbance caused species to avoid these areas as there is a clear drop in species diversity and abundance. It was also noted that skylark and lapwing numbers dropped considerably in all these areas from survey one likely both due to general disturbance, nest abandonment and loss of habitat.

## 5. Results

- 5.1.1. A total of 84 species were recorded within the site boundary during the surveys between April and July 2020. Of the 84 species,
- 8 are listed on Annex 1 of the Birds Directive
  - 6 are listed on Schedule 1 of the WCA
  - 16 are cited on the NERC Act
  - 15 are red-listed
  - 18 are amber-listed
  - 14 are listed on LBAP
  - 3 on IUCN red list (threatened categories)
- 5.1.2. Table 5-1 outlines all the key species (those cited on Birds Directive Annex I, WCA Schedule One, NERC Act, LBAP, Birds of Conservation Concern and listed on IUCN) either breeding, probably breeding or possibly breeding on-site. Those classed as non-breeders have been omitted from further evaluation. This information is displayed spatially in Annex C. Full survey results are provided in Annex B.
- 5.1.3. Of the species recorded within the Proposed Scheme boundary:
- 41 species were confirmed as breeding. This was concluded through the identification of recently fledged young, adults visiting the nest and adults carrying food.
  - 22 species were considered probable breeders on the site. This was concluded through pair observed in suitable breeding habitat, bird permanently on territories, agitated behaviour, nest building and performing courtship displays.
  - 11 species were considered as possible breeding on-site. This was concluded by birds either being observed in suitable breeding habitat or singing males present in suitable habitat.
  - 10 species were considered as non-breeders. This includes all birds flying over the site and species which were presumed to still be on migration.



Table 5-1 Key species recorded, their designations, conservation status and breeding status on-site and in Cambridgeshire

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Bullfinch</b>	<i>Pyrrhula pyrrhula</i>	NERC, LBAP	BoCC Amber	1	4	1	Probable	Not Scarce	Common but very local breeder
<b>Cetti's Warbler</b>	<i>Cettia cetti</i>	WCA 1	N/A	4	2	4	Probable	Not Scarce	Fairly common resident
<b>Cuckoo</b>	<i>Cuculus canorus</i>	NERC	BoCC Red	0	2	0	Possible	Not Scarce	Uncommon declined migratory breeder
<b>Dunnock</b>	<i>Prunella modularis</i>	Bern, NERC	BoCC Amber	11	15	21	Breeding	Not Scarce	Widespread and abundant resident
<b>Gadwall</b>	<i>Mareca strepera</i>	Bonn, Birds Dir 2.1	BoCC Amber	1	2	2	Probable	Not Scarce	Fairly common naturalised resident
<b>Grasshopper Warbler</b>	<i>Locustella naevia</i>	NERC, LBAP	BoCC Red	5	0	1	Probable	Not Scarce	Uncommon, declined migratory breeder
<b>Grey Wagtail</b>	<i>Motacilla cinerea</i>	Bern	BoCC Red	0	0	1	Possible	Not Scarce	Uncommon local resident.
<b>Greylag Goose</b>	<i>Anser anser</i>	Bonn, Birds Dir 2.1, WCA 1.2	BoCC Amber	20	0	1	Breeding	Not Scarce	Fairly common resident
<b>House Martin</b>	<i>Delichon urbicum</i>	Bern	BoCC Amber	0	11	19	Breeding	Not Scarce	Common, but declined, migratory breeder
<b>House Sparrow</b>	<i>Passer domesticus</i>	NERC, LBAP	BoCC Red	13	30	27	Breeding	Not Scarce	Abundant but declining resident
<b>Kingfisher</b>	<i>Alcedo atthis</i>	Bern, Birds Dir 1, WCA 1	BoCC Amber, IUCN VU	1	2	2	Breeding	Not Scarce	Fairly common, but local resident
<b>Lapwing</b>	<i>Vanellus vanellus</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red, IUCN VU	6	3	0	Breeding	Not Scarce	Fairly common but decreased resident
<b>Linnet</b>	<i>Linaria cannabina</i>	Bern, NERC, LBAP	BoCC Red	18	15	17	Probable	Not Scarce	Common but declining resident

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Little Ringed Plover</b>	<i>Acanthis cabaret</i>	Bern, Bonn, WCA 1	N/A	0	1	0	Breeding	Scarce	Uncommon migratory breeder
<b>Mallard</b>	<i>Anas platyrhynchos</i>	Bonn, Birds Dir 2.1	BoCC Amber	9	20	18	Breeding	Not scarce	Very common resident
<b>Marsh Tit</b>	<i>Poecile palustris</i>	NERC, LBAP	BoCC Red	3	0	0	Possible	Not Scarce	Fairly common, but declined, local resident
<b>Meadow Pipit</b>	<i>Anthus pratensis</i>	N/A	BoCC Amber	2	1	2	Possible	Not Scarce	Common, somewhat local, resident
<b>Mistle Thrush</b>	<i>Turdus viscivorus</i>	Birds Dir 2.2	BoCC Red	2	2	0	Possible	Not Scarce	Common and widespread resident
<b>Mute Swan</b>	<i>Cygnus olor</i>	Bonn, Birds Dir 2.2	BoCC Amber	6	3	6	Breeding	Not Scarce	Fairly common resident
<b>Red Kite</b>	<i>Milvus milvus</i>	Bonn, Birds Dir 1, WCA 1	N/A	7	15	9	Breeding	Not Scarce	Uncommon but increasing resident, bred since 2004
<b>Reed Bunting</b>	<i>Emberiza schoeniclus</i>	Bern, NERC, LBAP	BoCC Amber	12	23	12	Probable	Not Scarce	Common but declined resident
<b>Skylark</b>	<i>Alauda arvensis</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	37	18	43	Probable	Not Scarce	Abundant, but much declined resident
<b>Song Thrush</b>	<i>Turdus philomelos</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	10	11	17	Probable	Not Scarce	Common but declined resident
<b>Spotted Crake</b>	<i>Porzana porzana</i>	Bern, Bonn, Birds Dir 1, WCA 1	BoCC Amber	0	0	1	Possible	Very rare	Scarce annual summer visitor/passage migrant. Breeding has been confirmed in past years

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Spotted Flycatcher</b>	<i>Muscicapa striata</i>	NERC, LBAP	BoCC Red	0	1	0	Possible	Not Scarce	Uncommon and greatly declined, migratory breeder
<b>Starling</b>	<i>Sturnus vulgaris</i>	Birds Dir 2.2, NERC	BoCC Red	46	100	70	Breeding	Not Scarce	Very common, but declined resident;
<b>Stock Dove</b>	<i>Columba oenas</i>	Birds Dir 2.2	BoCC Amber	5	17	14	Probable	Not Scarce	Common resident
<b>Swift</b>	<i>Apus apus</i>	Bern	BoCC Amber	0	9	5	Breeding	Not Scarce	Common but declining migratory breeder
<b>Willow Warbler</b>	<i>Phylloscopus trochilus</i>	N/A	BoCC Amber	4	3	1	Probable	Not Scarce	Common and widespread migratory breeder
<b>Yellowhammer</b>	<i>Emberiza citrinella</i>	Bern, NERC, LBAP	BoCC Red	24	21	28	Breeding	Not Scarce	Common but declined resident

#### Designation

Bern – Bern Convention (1982)

Bonn – Bonn Convention (1979)

WCA 1 – Wildlife and Countryside Act (1981) Schedule One

Birds Dir 1 – EC Directive on the Conservation of Wild Birds (791409/EEC) Annex I

NERC – Natural Environment and Rural Communities Act (2006)

LBAP – Local Biodiversity Action Plan Species

#### Conservation Status

BoCC Red – Birds of Conservation Concern Red List

BoCC Amber - Birds of Conservation Concern Amber List

IUCN VU – IUCN Vulnerable Status (European Status)

## 5.2. Breeding community quality calculations

- 5.2.1. Based on the process outlined in Chapter 3 (Consideration of alternatives) (**TR010039/APP/6.1**), the following calculation has been undertaken to provide an index score of the breeding community quality. The Breeding calculator is available in Table 5-2. Of the 74 species recorded as either confirmed, probable and possible breeding, each was checked against the national abundance of breeding pairs as described by Eaton, Holling and the RBBP (2020).

Table 5-2 Breeding calculator

Category	A (5)	B (4)	C (3)	D (2)	E (1)	Index
Number of species	1	0	1	0	72	---
Category score total	5	0	3	0	72	<b>80</b>

## 5.3. Incidental records

- 5.3.1. A number of records of kingfisher were received during phase 2 surveys across the site. During a water vole survey, a single active nest site was found.
- 5.3.2. Swifts were present across the Proposed Scheme and during a bat survey, nesting was confirmed at Sacrewell Farm as birds were seen coming and going from a barn.
- 5.3.3. During the barn owl survey, a single adult was flushed out of a nest box in Wansford Meadows SSSI.

## 6. Assessment and conclusions

### 6.1. Bird assemblages

- 6.1.1. The overall assemblage of bird species recorded on-site was typical of the range of habitat which dominates the site including hedgerow, woodland, scrub habitat and agricultural habitat.
- 6.1.2. Fuller (1980) devised a standard where the importance of an area can be assessed by the number of bird species recorded (Table 3-1). The species list for the whole site was 84. This places the site within the range of regional importance. As 84 is the upper threshold and species breeding include Schedule 1 species, professional judgement has been used to upgrade the status to national importance.

### 6.2. Bird community and conservation value

- 6.2.1. Based on the breeding bird community quality calculator, the study area is considered to be of national importance with an index score of 80.
- 6.2.2. On comparing the breeding bird data obtained with national and county populations outlined by Musgrove *et al.* (2013) and in the Cambridgeshire Bird Report 2017 (Cambridgeshire Bird Club 2018) with the guidance on ecological impact assessment (Table 3-5), most of the species recorded within the breeding bird community are resident and regular breeding species within the region. Therefore, at the species value level, the site is of local conservation value.

### 6.3. Effect of habitat change or loss

- 6.3.1. The effects on breeding bird species across the site arising from the impacts of the proposed works is based upon an understanding of each species individual requirements for suitable breeding and foraging habitat.
- 6.3.2. The species recorded on-site that are considered most sensitive to impacts from habitat change are species which are listed under Annex I of the Bird Directive, birds which are cited on the Birds of Conservation Concern red and amber list, LBAP and IUCN Red List 'threatened categories'. The habitat requirements, species status during the surveys and nature conservation value are summarised in Table 6-1. In addition, residual effects arising from the proposed works through habitat loss or change have also been assessed for these species.
- 6.3.3. It is considered that effects on other species that are breeding on the site are expected to be no greater than those listed in Table 6-1.

Table 6-1 Habitat requirement and nature conservation value of important species cited on Birds Directive Annex I, WCA 1, NERC, LBAP, BoCC Red/Amber and IUCN species of breeding birds.

Species <sup>2</sup>	Habitat requirement	Survey account	Nature conservation level <sup>3</sup>	Unmitigated impacts
Bullfinch	Breed mainly in broad-leaved woodland, but also common in dense hedgerow and thickets. Adult birds are vegetarian although invertebrates are important for fledglings.	Small numbers were seen on all three surveys in suitable habitat.	Local	Loss of hedgerow sections and scrub habitat within the site which currently offers nesting habitat.
Cetti's Warbler	Found within and close to wetland habitat. Nesting in scrub or thick cover of reeds. Also found around ditches and streams. Feeds on insects and larvae.	Birds were recorded on all three survey. The majority of the records came from Stibbington Pits CWS and surround habitat and a single record was within Sutton Heath and Bog SSSI	Local	Loss of wetland and scrub habitat surrounding wetlands will reduce suitable nesting availability and foraging opportunities.
Cuckoo	Brood parasites, the females laying their eggs in the nests of other birds, especially meadow pipits, dunnocks and reed warblers. Feed mainly on insects with hairy caterpillars being a preference. Can eat eggs and chicks	Two birds were heard calling during survey two from Stibbington Pits CWS (Nature reserve and fishing lake)	Local	Loss of habitat which supports nesting of those species which cuckoo nest parasitise on (meadow pipit, pied wagtail, reed warbler, dunnock etc.) will reduce nesting opportunities for this species. The loss of habitat may also affect foraging opportunities for both adults and young.
Dunnock	Commonly invades a wide variety of scrub grown situations. Has adapted to field hedgerows, farms, railway embankments, parks, gardens and vacant urban land. Feeds mainly on insects but small seeds are an important winter food.	Birds were recorded throughout the site during all surveys.	Local	Loss of hedgerow and scrub areas within the site which currently offers nesting habitat Loss of arable land will reduce suitable foraging habitat

<sup>2</sup> Greylag Goose has been scoped out of the final assessment. Although a BoCC Amber species, it is considered this species is of a feral population on not the wild population which hold the 'Amber' citation.

<sup>3</sup> Based on criteria set out in Table 3-5 and professional judgement

Species <sup>2</sup>	Habitat requirement	Survey account	Nature conservation level <sup>3</sup>	Unmitigated impacts
Gadwall	Breeds around shallow lakes and gravel pits in vegetation. Feed mainly on aquatic vegetation but also on aquatic invertebrates.	Birds were recorded on all three surveys. Birds were only recorded on the wildlife pond within Sacrewell Farm	Local	Loss of wetland areas across the site will reduce both foraging and nesting habitat.
Grasshopper Warbler	Found in areas of scrub, thick grassland, the edges of reedbeds, new forestry plantations and gravel pits with plenty of scattered bushes. Mainly insectivorous. Chicks are fed on aphids, green caterpillars, woodlice and flies.	Birds were heard calling in survey one within Sutton Heath and Bog SSSI. One confirmed pair. A single male was heard singing in June in Stibbington Pits CWS	Local	Loss of scrub and hedgerow habitat across the site which currently offers nesting habitat.
Grey Wagtail	Breeds along fast flowing water or lakes within gaps in rocks or stones. Diet is mainly small invertebrates	A single bird was present around the Anglian Water pumping station on the Rive Nene during survey three.	Local	Changes in the structures or banking in and adjacent to water courses will reduce potential nesting habitat.
House Martin	Often associated with urbanised areas such as towns and villages, often nesting in the eaves of buildings. Feed on aerial insects.	Birds were seen around suitable habitat during surveys two and three. Nests were observed on houses in Sutton, at Sacrewell Farm and in Thornhaugh	Local	N/A
House Sparrow	Often associated with humans, will avoid dense vegetation. Usually avoid arable crops and areas lacking in shrubs and trees other than during feeding.	Birds were recorded in good numbers during all three survey. Colonies of breeding birds mainly focused around the houses at Thornhaugh, Sutton and within Sacrewell Farm.	Local	Loss of scrub and hedgerow habitat across the site which currently offers nesting habitat.
Kingfisher	Found by still or slow flowing water such as lakes, canals and rivers. Mainly eat fish but can also take aquatic invertebrates, tadpoles etc.	Birds were recorded on all three surveys. Most records came of bird within Stibbington Pits CWS, in vegetation adjacent to River Nene and on the Wittering	Local	Changes to hydrology and vegetation cover along watercourse which are used by kingfisher may have a negative impact on foraging.

Species <sup>2</sup>	Habitat requirement	Survey account	Nature conservation level <sup>3</sup>	Unmitigated impacts
		Brook. An active nest site was present on Wittering Brook		
Lapwing	Breeds on preferably moist open lowland ground. Often associates with farmland preferring spring sown crops. Feed on worms and invertebrates	Birds were recorded on survey one and two. Bird were recorded calling and being territorial in arable fields north of A47 however archaeological trenching started after this survey and all territories were abandoned. Two occupied nests were noted during May within the quarry works at Rutland Oil.	Local	None suggested. Due to their requirements for open grassland or arable fields, it is not possible to compensate for the loss of this type of habitat. Due to the loss of this habitat across the site lapwing is inevitably to be lost as a breeding species.
Linnet	Found on commons, heathland, rough ground, farm hedges, saltmarshes and urbanised areas near parks and gardens. Mainly seed eaters, with invertebrates being consumed during the summer	Birds were present during all three surveys. Birds were mostly found within the scrub habitat adjacent to the quarry works at Rutland Oil and in Sacrewell Farm	Local	Removal of scrub, hedgerow will reduce nesting habitat across the site. The loss of arable land will reduce foraging habitat.
Little Ringed Plover	Nests around gravel pits reservoirs and shingle river banks. Feeds on Insects, also spiders and other invertebrates, just below surface of wet ground.	A single bird was found defending a nest from corvids in the quarry works at Rutland Oil. No other records of the species were noted.	Local	N/A
Mallard	Commonly found in suitable wetland habitats and urban areas such as parks.	Birds were recorded on all three surveys. Most records were from the wildlife pond at Sacrewell Farm and within Stibbinton Pits CWS and associated habitats.	Local	Loss of wetland areas across the site will reduce both foraging and nesting habitat.
Marsh Tit	Found mainly in broadleaved woodland also copses, parks and gardens.	Two birds were recorded during survey one. One bird within Stibbington Pits CWS	Local	Removal of woodland and scrub will reduce nesting and foraging habitat.



Species <sup>2</sup>	Habitat requirement	Survey account	Nature conservation level <sup>3</sup>	Unmitigated impacts
	Nests usually within hole in trees although artificial boxes can be used. Feeds mainly on insects and seeds.	and another north of the River Nene near the petrol station.		
Meadow Pipit	Breeds in open habitats, either uncultivated or low-intensity agriculture and moorland, but also occurs in low numbers in arable croplands. Feeds mostly on insects with some seeds in the winter months.	Birds were recorded in suitable habitat on all three surveys.	Local	Removal of grassland and agricultural areas will reduce suitable nesting and foraging habitat.
Mistle Thrush	Commonly found in woodland and woodland edge, farmland, parkland and gardens. Nesting in trees more than 2m high.	Birds were recorded during survey one and two near suitable woodland habitat.	Local	Loss of woodland edge and parkland will reduce nesting and foraging habitat.
Mute Swan	Can be found in a wide range of wetland habitats ranging from urban parks to river, lakes and reservoirs. Feeds mainly on aquatic vegetation, amphibians, invertebrates and molluscs.	Birds were recorded on all three surveys. Pairs were identified on Stibbington Pits CWS and the wildlife pond at Sacrewell Farm. A nest was built adjacent to the wildlife pond in May however, no young were recorded.	Local	Loss of wetland areas across the site will reduce both foraging and nesting habitat.
Red Kite	Found in woodland habitat and near agricultural land. Nests high in trees. Feeds mainly carrion and worms, but will occasionally take small mammals.	Birds were recorded in good number on all three surveys. A bird was recorded carrying food back to an occupied nest in June within a small woodland north of Sacrewell Farm near Riverford.	Local	Loss of broadleaved woodland habitat will reduce nesting habitat. Loss of agricultural habitat will reduce foraging habitat.
Reed Bunting	Mainly breeds in farmland and wetland habitats including, ditch edges, crops and set aside. Young are	Birds were recorded in suitable habitat on all three surveys. Birds commonly frequents wetland habitats on Sacrewell Farm,	Local	Loss of hedgerow habitat with reduce nesting habitat and the loss of arable land will remove foraging habitat.

Species <sup>2</sup>	Habitat requirement	Survey account	Nature conservation level <sup>3</sup>	Unmitigated impacts
	fed solely on invertebrates until they fledge.	Stibbington Pits CWS and Sutton Heath and Bog SSSI		
Skylark	Ground nesting species which prefer open farmland habitats where short, sparse vegetation provides cover and foraging habitat. Feeds on plant and animal product with insect prey being especially important in the summer.	Birds were present in good number on all three surveys. The majority of records were from all arable land north of the A47	Local	Loss of arable areas where species are currently breeding.
Song Thrush	Often associated with thick hedgerows, native woodland and damp ground, including grazed pasture. Main food source is worms and snails when insect larvae and berry crops are not available.	Birds were recorded in suitable habitat across all three surveys. The majority of records came from woodland habitat associated around Stibbington Pits CWS.	Local	Loss of hedgerows across site which currently offers nesting habitat.
Spotted Crake	Found in wetlands with shallow water and dense vegetation and nest in dry location within marshy vegetation. Feeds on caddis flies, water beetles, snails, and plant material	A single bird was heard calling briefly in marshy habitat north of the River Nene within Sutton Meadows North CWS. Bird was then flushed by a boat and no further sightings were had.	National	Loss of wetland habitat on-site reducing foraging availability and potential nest sites. Increase in noise disturbance will make site unfavourable.
Spotted Flycatcher	Breeds mainly in open woodlands and urban areas. Diet is mainly flying insects especially flies, wasps and bees.	A single bird was seen feeding around wetland habitat west of A1 near the Anglian Water pumping station.	Local	Loss of woodland habitat will reduce nesting and foraging habitat.
Starling	During the breeding season the species will concentrate where small cavities are present, both naturally and man-made. Invertebrates are an important food source for young.	Birds were recorded in good numbers on all three surveys.	Local	Loss of foraging habitat across the site and removal of trees with suitable nest cavities.

Species <sup>2</sup>	Habitat requirement	Survey account	Nature conservation level <sup>3</sup>	Unmitigated impacts
Stock Dove	Often breed in parkland, along woodland edges, near quarries and cliffs. Using nesting cavities in rotten trees and bird boxes.	Birds were recorded on all three surveys. Mainly single birds, with the occasional pair. A flock of ten was recorded in June presumably post breeding birds.	Local	Removal of trees with potential nesting cavities. Loss of foraging habitat across the site.
Swift	Nesting high in eaves of old houses, churches, and areas where birds can drop from the nest into the air.	Birds were recorded during May and June mostly in singles or small groups. Nesting was confirmed during observed on a bat survey within a barn at Sacrewell Farm.	Local	N/A
Willow Warbler	Breeds in pioneer scrub, young woodland and sparsely wooded areas dominated by small-leaved deciduous trees like birch, alder and willow. Diet consists of insects and spiders and berries in autumn.	Birds were recorded on all three surveys with at least six singing males across the Proposed Scheme.	Local	Loss of scrub and hedgerow habitat across the site which currently offers nesting habitat.
Yellowhammer	Traditionally based on edges of open areas or forest and scrub. Breeding sites extend extensively across cultivated land with hedges and plantations. Feeds mainly on seeds, with an increase in invertebrates during the summer.	Birds were recorded in suitable habitat on all three surveys. The main distribution of the species was in the hedgerows at Sacrewell Farm, arable land east of Sutton Heath Road and in agricultural land north of Thornhaugh.	Local	The loss of arable fields will greatly reduce the foraging opportunities. Removal of hedgerows will also reduce the nesting opportunities.

## **6.4. Construction impacts**

- 6.4.1. Construction operations are likely to disturb bird species of nature conservation interest using the site for breeding, roosting and foraging. The construction of the proposed scheme will result in land-take, fragmentation and general habitat loss. The upgrading of the A47 from a single to dual carriageway may also inhibit the movement of species through the landscape due to the increased width of the road and associated landscaping.
- 6.4.2. The loss of some habitats during the construction phase cannot be mitigated and therefore, it is highly likely that birds currently using the site will move away to find alternative suitable breeding grounds.
- 6.4.3. Hedgerows are also likely to be removed, increasing the fragmentation of corridors across the site. This will be unfavourable to many bird species recorded and will likely see a reduction in hedgerow species during the construction phase of the Proposed Scheme including those listed as red and amber species of conservation concern (for example, yellowhammer and reed bunting).
- 6.4.4. Visual (light) and noise disturbance from machinery required during the construction phase will likely lead to desertion or avoidance of the area by breeding bird species. Noise pollution has been found to have a fundamental influence on the population densities of breeding birds. This affects both single species and bird communities. Light pollution will affect crepuscular and nocturnal species, primarily owls. The lighting of construction areas and access routes during times when the owl species are active may cause individual owls to avoid areas and cause a barrier to dispersal. Movement between foraging areas even where lighting is not directed towards nests and roosts will also be impacted.
- 6.4.5. Construction activities have the potential to damage or destroy active birds' nest through vegetation removal, access routes and laydown areas. This would constitute an offence under the Wildlife and Countryside Act 1981.
- 6.4.6. The magnitude of these impacts is considered to be moderate to adverse, relative to the sensitivity of the species.

## **6.5. Operational impacts**

- 6.5.1. Birds are generally considered likely to be affected by an increase in traffic and can be particularly susceptible to noise from the proposed A47 Wansford to Sutton Dualling.

- 6.5.2. Artificial lighting has also been found to affect birds. Under artificial lighting birds may alter their foraging pattern and may leave them susceptible as prey items for various predator species. Artificial lighting can also cause early onset of breeding in the spring. Although this could be conceived as a positive, it is more likely to have a negative impact on the fledgelings whereby the weather conditions prove too adverse, directly impacting food availability and natural survival rates.
- 6.5.3. Birds may also suffer effects from air pollution whereby, the increase in air pollution has a direct effect on the plant and invertebrate communities across the site and thus in turn negatively affects food availability for breeding birds, reducing breeding success.
- 6.5.4. Mortality rates on the proposed A47 Wansford to Sutton dualling route may also have a negative impact on the breeding species across the site. Although no baseline data was gathered in regards to the existing mortality rates, it is proven that where the road is level without screening vegetation, or elevated above the surrounding area birds are more likely to fly into the path of oncoming traffic (Erritzoe, Mazgajski, & Rejt, 2003). Improvements to the traffic flow, which will reduce overall congestion will lead to an increase in average traffic speed through the site, this then also increases the chance of species being struck by vehicles.
- 6.5.5. A lack of tall vegetation alongside the new carriageway and an increase in traffic speed will have an adverse effect on owl species across the site and potentially lead to the loss of barn owl across the site.

## **6.6. Mitigation and conservation compensations**

- 6.6.1. To ensure biodiversity is retained, protected and enhanced within the Proposed Scheme resulting in a net gain for breeding birds the following is required :
- Hedgerow gaps are to be infilled with at least double hedge planting, ideally triple.
  - Ensuring all trees around the site are protected and retained where possible and any trees are afforded a root protection zone.
  - Native planting should be encouraged to attract invertebrates and berry-rich species should be planted away from the new road in the hedgerow and scrub replanting plans.
  - Wetlands should be suitably replanted with reeds to help increase populations of invertebrates.
  - Areas of grassland should be allowed to be unmanaged where practicable, to enable the establishment of rough grassland habitats which will increase both invertebrate and small mammal populations.

- Areas of set aside should be allowed along pre-designated boundary hedgerows and sown with seed rich plant species to provide suitable foraging for breeding birds to promote species moving back into the site after works have completed.

6.6.2. In addition to the above, standardised mitigation and compensation measures, more targeted measures should also be adopted.

### Barn Owl

6.6.3. Where any parts of the proposed scheme traverse linear habitat feature such as drainage ditches, low-flight prevention screening should be installed to help prevent barn owl road casualties. This would consist of high hedges or tree screens being planted on raised banks (bunds) at locations where barn owls regularly cross roads and where potential or known 'blackspots' have been identified. These natural 'screens' can be of value by encouraging low-flying owls to rise above traffic, reducing their vulnerability to collision.

### Vegetation clearance

6.6.4. If it is not possible to retain existing hedgerows, trees and areas of scrub, any vegetation clearance which is required as part of the Proposed Scheme would be undertaken outside of the main breeding bird season (September to February inclusive). If this is not achievable, suitable nesting habitat would be checked immediately before vegetation removal by an ecologist (no more than 48 hours) to confirm no nesting birds are present. Should an active nest be found, an exclusion area around the nest site would be established and works within that area ceased until all young birds are fledged.

### Tree and hedgerow replacement

- 6.6.5. If practicable, any existing important hedgerows to be removed would be translocated to a nearby location or incorporated into the planned landscaping. Where this is not feasible, replanting would be undertaken.
- 6.6.6. To increase the extent and enhance existing hedgerows, gaps would be filled and connectivity between hedgerows increased where practicable.
- 6.6.7. A number of trees would be removed as part of the Proposed Scheme. New native trees would be planted as part of the landscape design.
- 6.6.8. New hedgerows planting and gap filling would be made up of a species-rich mix of typical hedgerow species, for example hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, field maple *Acer campestre*, dogwood *Cornus sanguinea* and buckthorn *Rhamnus cathartica* (Herbert, Samuel, & Patterson, 1999).

## Lighting

- 6.6.9. To minimise light pollution across the site, lighting should only be installed in areas which are critically important for example at junctions and roundabouts. In these locations, lights should be directed downwards to the carriageway and there should be no light spillage away from the main carriageway and junctions.

## Nest boxes

- 6.6.10. The installation of nest boxes on retained trees would mitigate for the loss of nesting habitats such as trees, hedgerows and scrub. It is recommended that between 10 and 40 nest boxes should be installed per hectare in mitigation areas. The types of nest boxes would be distributed as follows:
- 60% with 32 millimetre entrance hole
  - 20% with 26 to 25 millimetre entrance hole
  - 20% to be boxes suitable for species which nest in recesses or cavities
- 6.6.11. To ensure the longevity of the nest boxes, they should be made of durable material and be weather treated.
- 6.6.12. Once the areas of habitat lost have been finally calculated, ecological input into the landscape design will be undertaken to ensure a suitable density of nest boxes per hectare of habitat lost is achieved.
- 6.6.13. The option of installing specific swift nest boxes on suitable buildings adjacent to the new road and any new structure built during the process of the works should be investigated.

## Further enhancement

- 6.6.14. It is recommended that biodiversity enhancements are included within the landscape design, to maintain or enhance connectivity to surrounding habitats. This will assist in ensuring the long-term persistence of breeding bird diversity and abundance in and around the Proposed Scheme boundary. This will also help to fulfil the local planning authority's obligations to maintain or enhance biodiversity through the course of their normal activities under Section 40 of the NERC Act 2006.
- 6.6.15. Where possible, habitat planting would be undertaken before the start of construction to minimise the intervening period between vegetation clearance and the establishment of the new habitat. The planting would be augmented with the provision of habitat piles in key locations, including log piles, partly buried hay and woodchip, to encourage the invertebrate assemblage and promote



ecosystem functionality. This would ensure a more readily available supply of prey species.

- 6.6.16. It is not possible to replace farmland habitat such as arable fields so the enhancement and creation of species-rich semi-improved grassland off-site should be included in the Outline Environmental Management Plan. A matrix of grassland habitats should be created to appeal to a wide variety of breeding birds on-site on what is currently largely low-grade arable land.
- 6.6.17. All enhancement or creation of species-rich semi-improved grassland would be tailored to meet the requirements of farmland birds. Some areas of grassland would be allowed to grow to a long sward length (where possible) to create rough grassland which would provide abundant small mammals for birds of prey. Where practicable, establishment and management in perpetuity, should be in accordance with guidance from the RSPB<sup>4</sup> or until this guidance is superseded.
- 6.6.18. Wetland creation will be undertaken to mitigate the loss of the pre-existing wetland habitat. Wetland creation can be achieved through the incorporation of attenuation ponds as part of the drainage planning, wildlife pond creation and the developed of sustainable drainage systems (SuDS). Ecological input into the landscape planning design will be undertaken to ensure suitable wetland features are planned. Where wetland areas are to be removed, opportunities to replace this habitat should be explored as part of the landscape design. Compensatory wildlife ponds to support other non-bird species could also be considered as part of the landscape design to mitigate the loss of standing water bodies to provide foraging habitat.
- 6.6.19. If larger ponds are to be removed, the option to compensate this loss should be explored as part of the landscape design for the provision of wildlife ponds which are of similar size or greater than those which are lost

## 6.7. Further surveys

- 6.7.1. As there were incidental records of barn owl and potential nesting activities during the breeding bird survey, a comprehensive barn owl survey should be undertaken to gather information on the location of nest and roosts locations in order to offer suitable mitigation.
- 6.7.2. Post-construction monitoring of the site should be undertaken to establish if there has been an increase in road casualties as a result of the proposed works. A breeding bird survey replicating this survey methodology is recommended to

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<sup>4</sup> Winspear, R. and Davis, G. (2005) A management guide to birds of lowland farmland. RSPB, Sandy, Bedfordshire



establish whether there has been a reduction in population size from the works.  
If a reduction is observed, further mitigation will be required.

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## Annex A. Transect Routes

## **Annex B. Total individuals recorded**

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Blackbird</b>	<i>Turdus merula</i>	Birds Dir 2.2	N/A	58	95	72	Breeding	Not Scarce	Widespread and abundant resident
<b>Blackcap</b>	<i>Sylvia atricapilla</i>	N/A	N/A	19	32	26	Breeding	Not Scarce	Very common migratory breeder
<b>Black-headed Gull</b>	<i>Chroicocephalus ridibundus</i>	Birds Dir 2.2	BoCC Amber	0	1	5	Non-breeding	Not Scarce	Common but very local breeder
<b>Blue Tit</b>	<i>Cyanistes caeruleus</i>	N/A	N/A	55	82	53	Breeding	Not Scarce	Common but very local breeder
<b>Bullfinch</b>	<i>Pyrrhula pyrrhula</i>	NERC, LBAP	BoCC Amber	1	4	1	Probable	Not Scarce	Common but very local breeder
<b>Buzzard</b>	<i>Buteo buteo</i>	Bonn	N/A	13	18	18	Breeding	Not Scarce	Fairly common resident (bred since 1999)
<b>Canada Goose</b>	<i>Branta canadensis</i>	Birds Dir 2.1	N/A	12	31	3	Breeding	Not Scarce	Fairly common resident
<b>Carrion Crow</b>	<i>Corvus corone</i>	Birds Dir 2.2	N/A	37	69	87	Breeding	Not Scarce	Fairly common resident
<b>Cetti's Warbler</b>	<i>Cettia cetti</i>	WCA 1	N/A	4	2	4	Probable	Not Scarce	Fairly common resident
<b>Chaffinch</b>	<i>Fringilla coelebs</i>	N/A	N/A	31	44	14	Breeding	Not Scarce	Fairly common resident
<b>Chiffchaff</b>	<i>Phylloscopus collybita</i>	N/A	N/A	24	33	24	Breeding	Not Scarce	Fairly common resident
<b>Coal Tit</b>	<i>Periparus ater</i>	N/A	N/A	0	3	0	Possible	Not Scarce	Fairly common
<b>Collared Dove</b>	<i>Streptopelia decaocto</i>	Birds Dir 2.2	N/A	7	11	11	Probable	Not Scarce	Abundant resident

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Common Tern</b>	<i>Sterna hirundo</i>	Bern, Bonn, Birds Dir 1	BoCC Amber	4	2	0	Possible	Not Scarce	Fairly common migratory breeder
<b>Coot</b>	<i>Fulica atra</i>	Bonn, Birds Dir 2.1	N/A	4	11	5	Breeding	Not Scarce	Very common resident
<b>Cormorant</b>	<i>Phalacrocorax carbo</i>	N/A	N/A	0	0	1	Breeding	Not Scarce	Fairly common resident breeder
<b>Cuckoo</b>	<i>Cuculus canorus</i>	NERC	BoCC Red	0	2	0	Possible	Not Scarce	Uncommon declined migratory breeder
<b>Curlew</b>	<i>Numenius arquata</i>	Bonn, Birds Dir 2.2 NERC, LBAP	BoCC Red, IUCN VU	0	1	0	Non-breeding	Not Scarce	Uncommon passage migrant
<b>Dunnock</b>	<i>Prunella modularis</i>	Bern, NERC	BoCC Amber	11	15	21	Breeding	Not Scarce	Widespread and abundant resident
<b>Feral Pigeon</b>	<i>Columba livia domestica</i>	N/A	N/A	0	22	0	Breeding	Not scarce	Common feral resident
<b>Gadwall</b>	<i>Mareca strepera</i>	Bonn, Birds Dir 2.1	BoCC Amber	1	2	2	Probable	Not Scarce	Fairly common naturalised resident
<b>Garden Warbler</b>	<i>Sylvia borin</i>	N/A	N/A	2	2	1	Possible	Not Scarce	Common, but local, migratory breeder
<b>Goldcrest</b>	<i>Regulus regulus</i>	N/A	N/A	4	2	3	Probable	Not Scarce	Common, but local, resident
<b>Goldfinch</b>	<i>Carduelis carduelis</i>	Bern	N/A	56	49	52	Breeding	Not Scarce	Very common resident
<b>Grasshopper Warbler</b>	<i>Locustella naevia</i>	NERC, LBAP	BoCC Red	5	0	1	Probable	Not Scarce	Uncommon, declined migratory breeder

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Great Spotted Woodpecker</b>	<i>Dendrocopos major</i>	Bern	N/A	7	11	4	Breeding	Not Scarce	Fairly common, increased, resident
<b>Great Tit</b>	<i>Parus major</i>	N/A	N/A	26	13	19	Breeding	Not Scarce	Abundant and widespread resident
<b>Green Woodpecker</b>	<i>Picus viridis</i>	Bern	N/A	9	8	12	Probable	Not Scarce	Fairly common resident
<b>Greenfinch</b>	<i>Chloris chloris</i>	Bern	N/A	2	2	7	Breeding	Not Scarce	Common but declining resident
<b>Grey Heron</b>	<i>Ardea cinerea</i>	N/A	N/A	1	3	4	Breeding	Not Scarce	Fairly common resident
<b>Grey Wagtail</b>	<i>Motacilla cinerea</i>	Bern	BoCC Red	0	0	1	Possible	Not Scarce	Uncommon local resident.
<b>Greylag Goose</b>	<i>Anser anser</i>	Bonn, Birds Dir 2.1, WCA 1.2	BoCC Amber	20	0	1	Breeding	Not Scarce	Fairly common resident
<b>Herring Gull</b>	<i>Larus argentatus</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	0	3	3	Non-breeding	Not Scarce	Scarce breeder since 2005
<b>House Martin</b>	<i>Delichon urbicum</i>	Bern	BoCC Amber	0	11	19	Breeding	Not Scarce	Common, but declined, migratory breeder
<b>House Sparrow</b>	<i>Passer domesticus</i>	NERC, LBAP	BoCC Red	13	30	27	Breeding	Not Scarce	Abundant but declining resident
<b>Jackdaw</b>	<i>Coloeus monedula</i>	Birds Dir 2.2	N/A	35	106	67	Breeding	Not Scarce	Abundant widespread resident
<b>Jay</b>	<i>Garrulus glandarius</i>	Birds Dir 2.2	N/A	4	1	4	Probable	Not Scarce	Fairly common resident



Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Kestrel</b>	<i>Falco tinnunculus</i>	N/A	N/A	1	7	3	Breeding	Not Scarce	Fairly common resident
<b>Kingfisher</b>	<i>Alcedo atthis</i>	Bern, Birds Dir 1, WCA 1	BoCC Amber, IUCN VU	1	2	2	Breeding	Not Scarce	Fairly common, but local resident
<b>Lapwing</b>	<i>Vanellus vanellus</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red, IUCN VU	6	3	0	Breeding	Not Scarce	Fairly common but decreased resident
<b>Lesser Black-backed Gull</b>	<i>Larus fuscus</i>	Birds Dir 2.2	BoCC Amber	0	2	4	Non-breeding	Not Scarce	Uncommon breeder since 1999
<b>Lesser Whitethroat</b>	<i>Sylvia curruca</i>	N/A	N/A	9	0	0	Possible	Not Scarce	Common migratory breeder
<b>Linnet</b>	<i>Linaria cannabina</i>	Bern, NERC, LBAP	BoCC Red	18	15	17	Probable	Not Scarce	Common but declining resident
<b>Little Egret</b>	<i>Egretta garzetta</i>	Bern, Birds Dir 1	N/A	1	0	0	Non-breeding	Less scarce	Fairly common, and increasing, resident. Breeding confirmed from 2004 to 2007 and from 2010.
<b>Little Ringed Plover</b>	<i>Acanthis cabaret</i>	Bern, Bonn, WCA 1	N/A	0	1	0	Breeding	Scarce	Uncommon migratory breeder
<b>Long-tailed Tit</b>	<i>Aegithalos caudatus</i>	N/A	N/A	15	58	13	Breeding	Not Scarce	Widespread and common resident
<b>Magpie</b>	<i>Pica pica</i>	Birds Dir 2.2	N/A	14	12	29	Breeding	Not Scarce	Very common and widespread resident

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Mallard</b>	<i>Anas platyrhynchos</i>	Bonn, Birds Dir 2.1	BoCC Amber	9	20	18	Breeding	Not scarce	Very common resident
<b>Mandarin Duck</b>	<i>Aix galericulata</i>	N/A	N/A	1	5	0	Breeding	Not Scarce	Uncommon naturalised resident and escapee
<b>Marsh Tit</b>	<i>Poecile palustris</i>	NERC, LBAP	BoCC Red	3	0	0	Possible	Not Scarce	Fairly common, but declined, local resident
<b>Meadow Pipit</b>	<i>Anthus pratensis</i>	N/A	BoCC Amber	2	1	2	Possible	Not Scarce	Common, somewhat local, resident
<b>Mistle Thrush</b>	<i>Turdus viscivorus</i>	Birds Dir 2.2	BoCC Red	2	2	0	Possible	Not Scarce	Common and widespread resident
<b>Moorhen</b>	<i>Gallinula chloropus</i>	Birds Dir 2.2	N/A	5	2	2	Probable	Not Scarce	Common resident
<b>Mute Swan</b>	<i>Cygnus olor</i>	Bonn, Birds Dir 2.2	BoCC Amber	6	3	6	Breeding	Not Scarce	Fairly common resident
<b>Osprey</b>	<i>Pandion haliaetus</i>	Bonn, Birds Dir 1, WCA 1	BoCC Amber	0	1	0	Non-breeding	Rare	Uncommon but increasing passage migrant
<b>Peregrine</b>	<i>Falco peregrinus</i>	Bern, Bonn, Birds Dir 1, WCA 1	N/A	0	0	1	Non-breeding	Less Scarce	Scarce resident. Bred from 2007 onwards
<b>Pheasant</b>	<i>Phasianus colchicus</i>	Birds Dir 2.1	N/A	9	11	10	Probable	Not Scarce	Very common naturalised resident
<b>Pied Wagtail</b>	<i>Motacilla alba</i>	Bern	N/A	7	8	3	Breeding	Not Scarce	Common resident
<b>Red Kite</b>	<i>Milvus milvus</i>	Bonn, Birds Dir 1, WCA 1	N/A	7	15	9	Breeding	Not Scarce	Uncommon but increasing resident, bred since 2004

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Red-legged Partridge</b>	<i>Alectoris rufa</i>	Birds Dir 2.1	N/A	6	4	2	Probable	Not Scarce	Very common naturalised resident
<b>Reed Bunting</b>	<i>Emberiza schoeniclus</i>	Bern, NERC, LBAP	BoCC Amber	12	23	12	Probable	Not Scarce	Common but declined resident
<b>Reed Warbler</b>	<i>Acrocephalus scirpaceus</i>	N/A	N/A	5	9	1	Probable	Not Scarce	Very common migratory breeder
<b>Robin</b>	<i>Erithacus rubecula</i>	Bern	N/A	47	56	28	Breeding	Not Scarce	Widespread and abundant resident
<b>Rook</b>	<i>Corvus frugilegus</i>	Birds Dir 2.2	N/A	67	42	111	Breeding	Not Scarce	Abundant widespread resident
<b>Sand Martin</b>	<i>Riparia riparia</i>	Bern	N/A	0	7	45	Probable	Not Scarce	Fairly common, but declined, migratory breeder
<b>Sedge Warbler</b>	<i>Acrocephalus schoenobaenus</i>	N/A	N/A	0	4	2	Probable	Not Scarce	Very common migratory breeder
<b>Siskin</b>	<i>Spinus spinus</i>	Bern	N/A	0	0	3	Non-breeding	Not Scarce	Scarce resident. Occasional breeder
<b>Skylark</b>	<i>Alauda arvensis</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	37	18	43	Probable	Not Scarce	Abundant, but much declined resident
<b>Snipe</b>	<i>Gallinago gallinago</i>	Bonn, Birds Dir 2.1	N/A	1	0	0	Non-breeding	Not Scarce	Uncommon local breeder
<b>Song Thrush</b>	<i>Turdus philomelos</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	10	11	17	Probable	Not Scarce	Common but declined resident

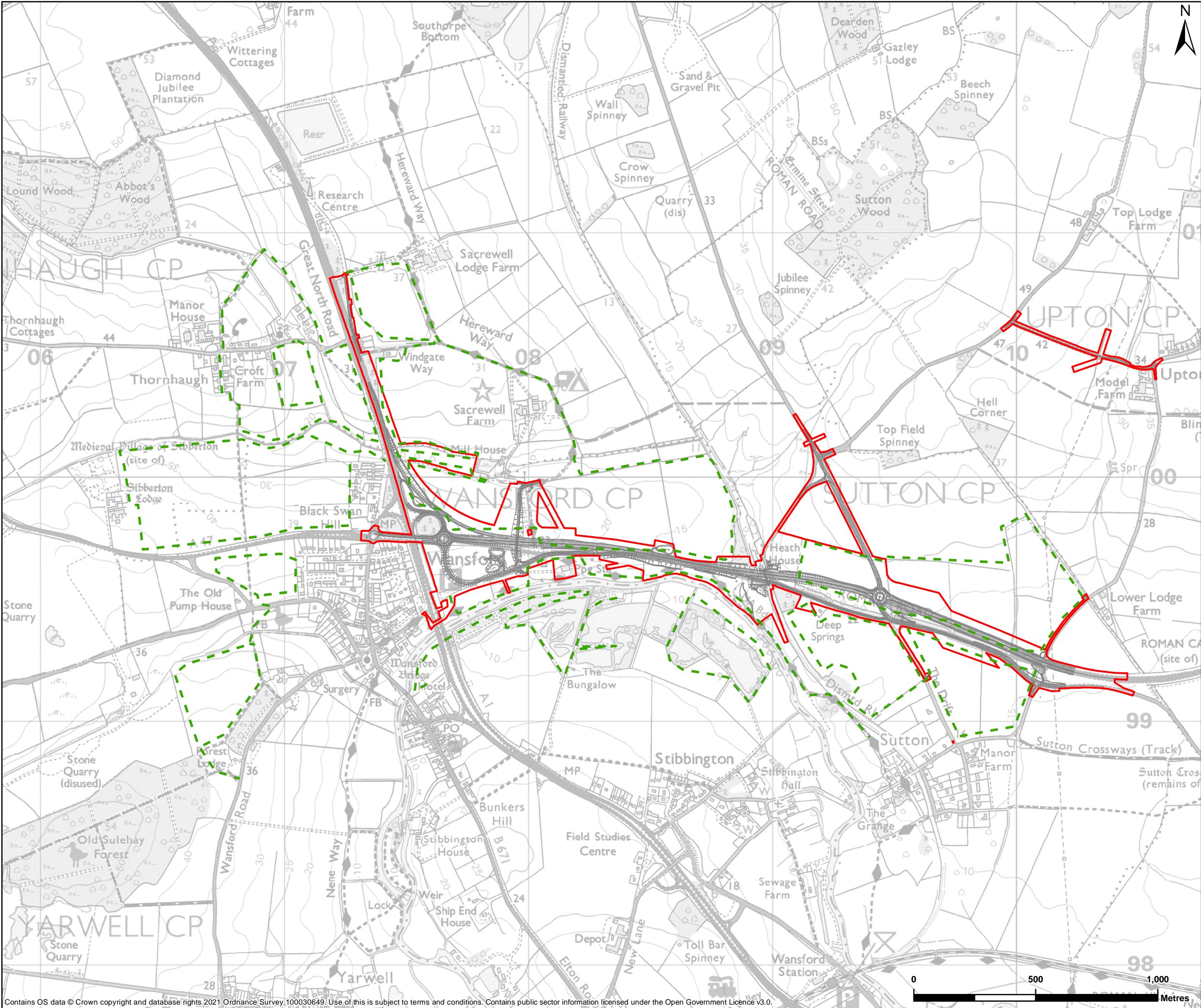
Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Sparrowhawk</b>	<i>Accipiter nisus</i>	Bonn, Birds Dir 1	N/A	1	0	0	Non-breeding	Not Scarce	Fairly common resident
<b>Spotted Crake</b>	<i>Porzana porzana</i>	Bern, Bonn, Birds Dir 1, WCA 1	BoCC Amber	0	0	1	Possible	Very rare	Scarce annual summer visitor/passage migrant. Breeding has been confirmed in past years
<b>Spotted Flycatcher</b>	<i>Muscicapa striata</i>	NERC, LBAP	BoCC Red	0	1	0	Possible	Not Scarce	Uncommon and greatly declined, migratory breeder
<b>Starling</b>	<i>Sturnus vulgaris</i>	Birds Dir 2.2, NERC	BoCC Red	46	100	70	Breeding	Not Scarce	Very common, but declined resident;
<b>Stock Dove</b>	<i>Columba oenas</i>	Birds Dir 2.2	BoCC Amber	5	17	14	Probable	Not Scarce	Common resident
<b>Swallow</b>	<i>Hirundo rustica</i>	Bern	N/A	8	37	23	Breeding	Not Scarce	Very common, but declined, migratory breeder
<b>Swift</b>	<i>Apus apus</i>	Bern	BoCC Amber	0	9	5	Breeding	Not Scarce	Common but declining migratory breeder
<b>Treecreeper</b>	<i>Certhia familiaris</i>	N/A	N/A	1	3	1	Probable	Not Scarce	Fairly common resident
<b>Tufted Duck</b>	<i>Aythya fuligula</i>	Bonn, Birds Dir 2.1	N/A	2	0	0	Probable	Not Scarce	Fairly common breeder
<b>Whitethroat</b>	<i>Sylvia communis</i>	N/A	N/A	27	29	20	Breeding	Not Scarce	Very common migratory breeder
<b>Willow Warbler</b>	<i>Phylloscopus trochilus</i>	N/A	BoCC Amber	4	3	1	Probable	Not Scarce	Common and widespread

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
									migratory breeder
<b>Woodpigeon</b>	<i>Columba palumbus</i>	Birds Dir 2.1	N/A	113	430	267	Breeding	Not Scarce	Abundant resident
<b>Wren</b>	<i>Troglodytes troglodytes</i>	Bern	N/A	41	56	48	Breeding	Not Scarce	Widespread and abundant resident
<b>Yellowhammer</b>	<i>Emberiza citrinella</i>	Bern, NERC, LBAP	BoCC Red	24	21	28	Breeding	Not Scarce	Common but declined resident

## **Annex C. Distribution maps of key species**

## Annex A. Transect Routes





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Proposed DCO Boundary

Proposed Scheme Design

Survey transect

REFERENCE MAP

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2021

P01	18/05/2021	FIRST EDITION	AC	RMC	IC
REV	DATE	REVISION NOTE	ORG	CHKD	APPD

DESIGNER

CONTRACTOR

CLIENT

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PCF STAGE 3

DRAWING TITLE

ANNEX A: TRANSECT ROUTE  
TR010039/APP/6.2

SUITABILITY

FOR INFORMATION

SHEET SIZE	A3	SCALE	1:15,000	STATUS	S2
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DRAWING NUMBER

HE551494-GTY-EGN-000-DR-GI-30098



## **Annex B. Total individuals recorded**

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Blackbird</b>	<i>Turdus merula</i>	Birds Dir 2.2	N/A	58	95	72	Breeding	Not Scarce	Widespread and abundant resident
<b>Blackcap</b>	<i>Sylvia atricapilla</i>	N/A	N/A	19	32	26	Breeding	Not Scarce	Very common migratory breeder
<b>Black-headed Gull</b>	<i>Chroicocephalus ridibundus</i>	Birds Dir 2.2	BoCC Amber	0	1	5	Non-breeding	Not Scarce	Common but very local breeder
<b>Blue Tit</b>	<i>Cyanistes caeruleus</i>	N/A	N/A	55	82	53	Breeding	Not Scarce	Common but very local breeder
<b>Bullfinch</b>	<i>Pyrrhula pyrrhula</i>	NERC, LBAP	BoCC Amber	1	4	1	Probable	Not Scarce	Common but very local breeder
<b>Buzzard</b>	<i>Buteo buteo</i>	Bonn	N/A	13	18	18	Breeding	Not Scarce	Fairly common resident (bred since 1999)
<b>Canada Goose</b>	<i>Branta canadensis</i>	Birds Dir 2.1	N/A	12	31	3	Breeding	Not Scarce	Fairly common resident
<b>Carrion Crow</b>	<i>Corvus corone</i>	Birds Dir 2.2	N/A	37	69	87	Breeding	Not Scarce	Fairly common resident
<b>Cetti's Warbler</b>	<i>Cettia cetti</i>	WCA 1	N/A	4	2	4	Probable	Not Scarce	Fairly common resident
<b>Chaffinch</b>	<i>Fringilla coelebs</i>	N/A	N/A	31	44	14	Breeding	Not Scarce	Fairly common resident
<b>Chiffchaff</b>	<i>Phylloscopus collybita</i>	N/A	N/A	24	33	24	Breeding	Not Scarce	Fairly common resident
<b>Coal Tit</b>	<i>Periparus ater</i>	N/A	N/A	0	3	0	Possible	Not Scarce	Fairly common
<b>Collared Dove</b>	<i>Streptopelia decaocto</i>	Birds Dir 2.2	N/A	7	11	11	Probable	Not Scarce	Abundant resident

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Common Tern</b>	<i>Sterna hirundo</i>	Bern, Bonn, Birds Dir 1	BoCC Amber	4	2	0	Possible	Not Scarce	Fairly common migratory breeder
<b>Coot</b>	<i>Fulica atra</i>	Bonn, Birds Dir 2.1	N/A	4	11	5	Breeding	Not Scarce	Very common resident
<b>Cormorant</b>	<i>Phalacrocorax carbo</i>	N/A	N/A	0	0	1	Breeding	Not Scarce	Fairly common resident breeder
<b>Cuckoo</b>	<i>Cuculus canorus</i>	NERC	BoCC Red	0	2	0	Possible	Not Scarce	Uncommon declined migratory breeder
<b>Curlew</b>	<i>Numenius arquata</i>	Bonn, Birds Dir 2.2 NERC, LBAP	BoCC Red, IUCN VU	0	1	0	Non-breeding	Not Scarce	Uncommon passage migrant
<b>Dunnock</b>	<i>Prunella modularis</i>	Bern, NERC	BoCC Amber	11	15	21	Breeding	Not Scarce	Widespread and abundant resident
<b>Feral Pigeon</b>	<i>Columba livia domestica</i>	N/A	N/A	0	22	0	Breeding	Not scarce	Common feral resident
<b>Gadwall</b>	<i>Mareca strepera</i>	Bonn, Birds Dir 2.1	BoCC Amber	1	2	2	Probable	Not Scarce	Fairly common naturalised resident
<b>Garden Warbler</b>	<i>Sylvia borin</i>	N/A	N/A	2	2	1	Possible	Not Scarce	Common, but local, migratory breeder
<b>Goldcrest</b>	<i>Regulus regulus</i>	N/A	N/A	4	2	3	Probable	Not Scarce	Common, but local, resident
<b>Goldfinch</b>	<i>Carduelis carduelis</i>	Bern	N/A	56	49	52	Breeding	Not Scarce	Very common resident
<b>Grasshopper Warbler</b>	<i>Locustella naevia</i>	NERC, LBAP	BoCC Red	5	0	1	Probable	Not Scarce	Uncommon, declined migratory breeder

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Great Spotted Woodpecker</b>	<i>Dendrocopos major</i>	Bern	N/A	7	11	4	Breeding	Not Scarce	Fairly common, increased, resident
<b>Great Tit</b>	<i>Parus major</i>	N/A	N/A	26	13	19	Breeding	Not Scarce	Abundant and widespread resident
<b>Green Woodpecker</b>	<i>Picus viridis</i>	Bern	N/A	9	8	12	Probable	Not Scarce	Fairly common resident
<b>Greenfinch</b>	<i>Chloris chloris</i>	Bern	N/A	2	2	7	Breeding	Not Scarce	Common but declining resident
<b>Grey Heron</b>	<i>Ardea cinerea</i>	N/A	N/A	1	3	4	Breeding	Not Scarce	Fairly common resident
<b>Grey Wagtail</b>	<i>Motacilla cinerea</i>	Bern	BoCC Red	0	0	1	Possible	Not Scarce	Uncommon local resident.
<b>Greylag Goose</b>	<i>Anser anser</i>	Bonn, Birds Dir 2.1, WCA 1.2	BoCC Amber	20	0	1	Breeding	Not Scarce	Fairly common resident
<b>Herring Gull</b>	<i>Larus argentatus</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	0	3	3	Non-breeding	Not Scarce	Scarce breeder since 2005
<b>House Martin</b>	<i>Delichon urbicum</i>	Bern	BoCC Amber	0	11	19	Breeding	Not Scarce	Common, but declined, migratory breeder
<b>House Sparrow</b>	<i>Passer domesticus</i>	NERC, LBAP	BoCC Red	13	30	27	Breeding	Not Scarce	Abundant but declining resident
<b>Jackdaw</b>	<i>Coloeus monedula</i>	Birds Dir 2.2	N/A	35	106	67	Breeding	Not Scarce	Abundant widespread resident
<b>Jay</b>	<i>Garrulus glandarius</i>	Birds Dir 2.2	N/A	4	1	4	Probable	Not Scarce	Fairly common resident

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Kestrel</b>	<i>Falco tinnunculus</i>	N/A	N/A	1	7	3	Breeding	Not Scarce	Fairly common resident
<b>Kingfisher</b>	<i>Alcedo atthis</i>	Bern, Birds Dir 1, WCA 1	BoCC Amber, IUCN VU	1	2	2	Breeding	Not Scarce	Fairly common, but local resident
<b>Lapwing</b>	<i>Vanellus vanellus</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red, IUCN VU	6	3	0	Breeding	Not Scarce	Fairly common but decreased resident
<b>Lesser Black-backed Gull</b>	<i>Larus fuscus</i>	Birds Dir 2.2	BoCC Amber	0	2	4	Non-breeding	Not Scarce	Uncommon breeder since 1999
<b>Lesser Whitethroat</b>	<i>Sylvia curruca</i>	N/A	N/A	9	0	0	Possible	Not Scarce	Common migratory breeder
<b>Linnet</b>	<i>Linaria cannabina</i>	Bern, NERC, LBAP	BoCC Red	18	15	17	Probable	Not Scarce	Common but declining resident
<b>Little Egret</b>	<i>Egretta garzetta</i>	Bern, Birds Dir 1	N/A	1	0	0	Non-breeding	Less scarce	Fairly common, and increasing, resident. Breeding confirmed from 2004 to 2007 and from 2010.
<b>Little Ringed Plover</b>	<i>Acanthis cabaret</i>	Bern, Bonn, WCA 1	N/A	0	1	0	Breeding	Scarce	Uncommon migratory breeder
<b>Long-tailed Tit</b>	<i>Aegithalos caudatus</i>	N/A	N/A	15	58	13	Breeding	Not Scarce	Widespread and common resident
<b>Magpie</b>	<i>Pica pica</i>	Birds Dir 2.2	N/A	14	12	29	Breeding	Not Scarce	Very common and widespread resident

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Mallard</b>	<i>Anas platyrhynchos</i>	Bonn, Birds Dir 2.1	BoCC Amber	9	20	18	Breeding	Not scarce	Very common resident
<b>Mandarin Duck</b>	<i>Aix galericulata</i>	N/A	N/A	1	5	0	Breeding	Not Scarce	Uncommon naturalised resident and escapee
<b>Marsh Tit</b>	<i>Poecile palustris</i>	NERC, LBAP	BoCC Red	3	0	0	Possible	Not Scarce	Fairly common, but declined, local resident
<b>Meadow Pipit</b>	<i>Anthus pratensis</i>	N/A	BoCC Amber	2	1	2	Possible	Not Scarce	Common, somewhat local, resident
<b>Mistle Thrush</b>	<i>Turdus viscivorus</i>	Birds Dir 2.2	BoCC Red	2	2	0	Possible	Not Scarce	Common and widespread resident
<b>Moorhen</b>	<i>Gallinula chloropus</i>	Birds Dir 2.2	N/A	5	2	2	Probable	Not Scarce	Common resident
<b>Mute Swan</b>	<i>Cygnus olor</i>	Bonn, Birds Dir 2.2	BoCC Amber	6	3	6	Breeding	Not Scarce	Fairly common resident
<b>Osprey</b>	<i>Pandion haliaetus</i>	Bonn, Birds Dir 1, WCA 1	BoCC Amber	0	1	0	Non-breeding	Rare	Uncommon but increasing passage migrant
<b>Peregrine</b>	<i>Falco peregrinus</i>	Bern, Bonn, Birds Dir 1, WCA 1	N/A	0	0	1	Non-breeding	Less Scarce	Scarce resident. Bred from 2007 onwards
<b>Pheasant</b>	<i>Phasianus colchicus</i>	Birds Dir 2.1	N/A	9	11	10	Probable	Not Scarce	Very common naturalised resident
<b>Pied Wagtail</b>	<i>Motacilla alba</i>	Bern	N/A	7	8	3	Breeding	Not Scarce	Common resident
<b>Red Kite</b>	<i>Milvus milvus</i>	Bonn, Birds Dir 1, WCA 1	N/A	7	15	9	Breeding	Not Scarce	Uncommon but increasing resident, bred since 2004

Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Red-legged Partridge</b>	<i>Alectoris rufa</i>	Birds Dir 2.1	N/A	6	4	2	Probable	Not Scarce	Very common naturalised resident
<b>Reed Bunting</b>	<i>Emberiza schoeniclus</i>	Bern, NERC, LBAP	BoCC Amber	12	23	12	Probable	Not Scarce	Common but declined resident
<b>Reed Warbler</b>	<i>Acrocephalus scirpaceus</i>	N/A	N/A	5	9	1	Probable	Not Scarce	Very common migratory breeder
<b>Robin</b>	<i>Erithacus rubecula</i>	Bern	N/A	47	56	28	Breeding	Not Scarce	Widespread and abundant resident
<b>Rook</b>	<i>Corvus frugilegus</i>	Birds Dir 2.2	N/A	67	42	111	Breeding	Not Scarce	Abundant widespread resident
<b>Sand Martin</b>	<i>Riparia riparia</i>	Bern	N/A	0	7	45	Probable	Not Scarce	Fairly common, but declined, migratory breeder
<b>Sedge Warbler</b>	<i>Acrocephalus schoenobaenus</i>	N/A	N/A	0	4	2	Probable	Not Scarce	Very common migratory breeder
<b>Siskin</b>	<i>Spinus spinus</i>	Bern	N/A	0	0	3	Non-breeding	Not Scarce	Scarce resident. Occasional breeder
<b>Skylark</b>	<i>Alauda arvensis</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	37	18	43	Probable	Not Scarce	Abundant, but much declined resident
<b>Snipe</b>	<i>Gallinago gallinago</i>	Bonn, Birds Dir 2.1	N/A	1	0	0	Non-breeding	Not Scarce	Uncommon local breeder
<b>Song Thrush</b>	<i>Turdus philomelos</i>	Birds Dir 2.2, NERC, LBAP	BoCC Red	10	11	17	Probable	Not Scarce	Common but declined resident

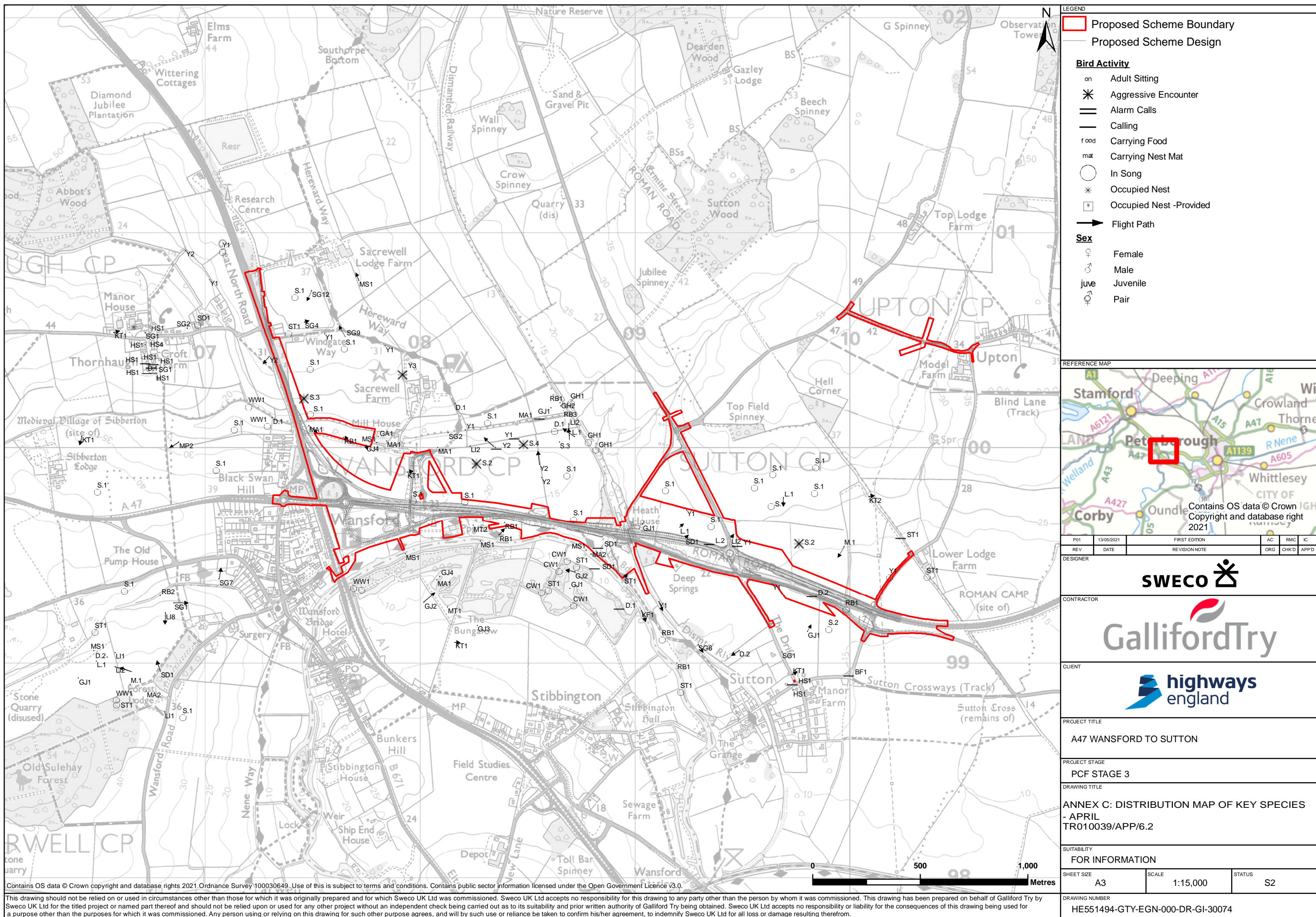
Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
<b>Sparrowhawk</b>	<i>Accipiter nisus</i>	Bonn, Birds Dir 1	N/A	1	0	0	Non-breeding	Not Scarce	Fairly common resident
<b>Spotted Crane</b>	<i>Porzana porzana</i>	Bern, Bonn, Birds Dir 1, WCA 1	BoCC Amber	0	0	1	Possible	Very rare	Scarce annual summer visitor/passage migrant. Breeding has been confirmed in past years
<b>Spotted Flycatcher</b>	<i>Muscicapa striata</i>	NERC, LBAP	BoCC Red	0	1	0	Possible	Not Scarce	Uncommon and greatly declined, migratory breeder
<b>Starling</b>	<i>Sturnus vulgaris</i>	Birds Dir 2.2, NERC	BoCC Red	46	100	70	Breeding	Not Scarce	Very common, but declined resident;
<b>Stock Dove</b>	<i>Columba oenas</i>	Birds Dir 2.2	BoCC Amber	5	17	14	Probable	Not Scarce	Common resident
<b>Swallow</b>	<i>Hirundo rustica</i>	Bern	N/A	8	37	23	Breeding	Not Scarce	Very common, but declined, migratory breeder
<b>Swift</b>	<i>Apus apus</i>	Bern	BoCC Amber	0	9	5	Breeding	Not Scarce	Common but declining migratory breeder
<b>Treecreeper</b>	<i>Certhia familiaris</i>	N/A	N/A	1	3	1	Probable	Not Scarce	Fairly common resident
<b>Tufted Duck</b>	<i>Aythya fuligula</i>	Bonn, Birds Dir 2.1	N/A	2	0	0	Probable	Not Scarce	Fairly common breeder
<b>Whitethroat</b>	<i>Sylvia communis</i>	N/A	N/A	27	29	20	Breeding	Not Scarce	Very common migratory breeder
<b>Willow Warbler</b>	<i>Phylloscopus trochilus</i>	N/A	BoCC Amber	4	3	1	Probable	Not Scarce	Common and widespread



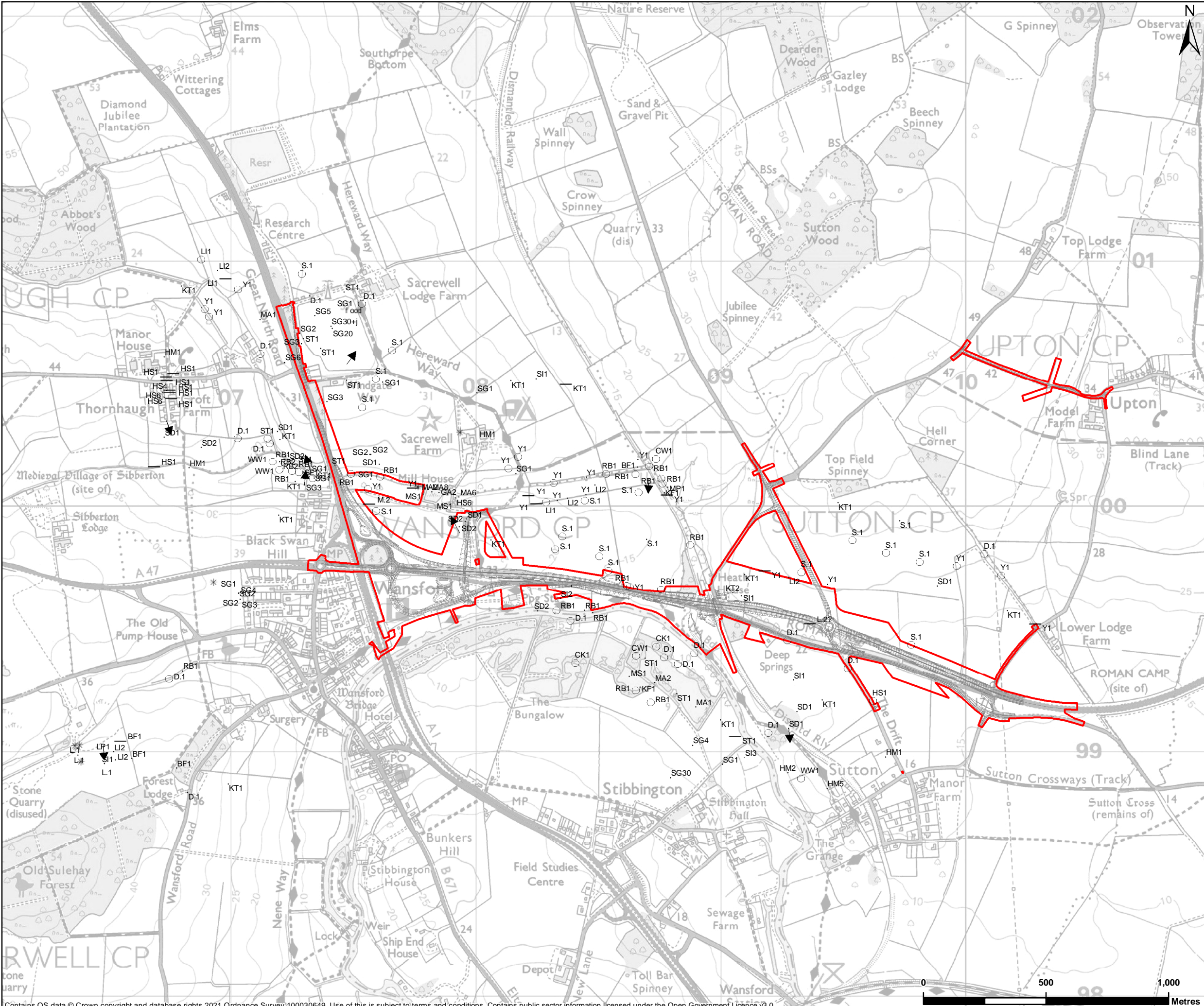
Common Name	Scientific Name	Designation	Conservation Status	Total individuals			Breeding Status	UK Breeding Status	Status in Cambridgeshire
				April	May	June			
									migratory breeder
<b>Woodpigeon</b>	<i>Columba palumbus</i>	Birds Dir 2.1	N/A	113	430	267	Breeding	Not Scarce	Abundant resident
<b>Wren</b>	<i>Troglodytes troglodytes</i>	Bern	N/A	41	56	48	Breeding	Not Scarce	Widespread and abundant resident
<b>Yellowhammer</b>	<i>Emberiza citrinella</i>	Bern, NERC, LBAP	BoCC Red	24	21	28	Breeding	Not Scarce	Common but declined resident

## **Annex C. Distribution maps of key species**









Proposed Scheme Boundary

Proposed Scheme Design

on

Adult Sitting

\*

Aggressive Encounter

==

Alarm Calls

—

Calling

food

Carrying Food

mat

Carrying Nest Mat

○

In Song

\*

Occupied Nest

⊠

Occupied Nest -Provided

→

Flight Path

Sex

♀

Female

♂

Male

juve

Juvenile

♀♂

Pair

REFERENCE MAP

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P01	13/05/2021	FIRST EDITION	AC	RMC	IC
REV	DATE	REVISION NOTE	ORG	CHKD	APPD

DESIGNER

CONTRACTOR

CLIENT

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PCF STAGE 3

DRAWING TITLE

ANNEX C: DISTRIBUTION MAP OF KEY SPECIES - MAY  
TR010039/APP/6.2

SUITABILITY

FOR INFORMATION

SHEET SIZE	A3	SCALE	1:15,000	STATUS	S2
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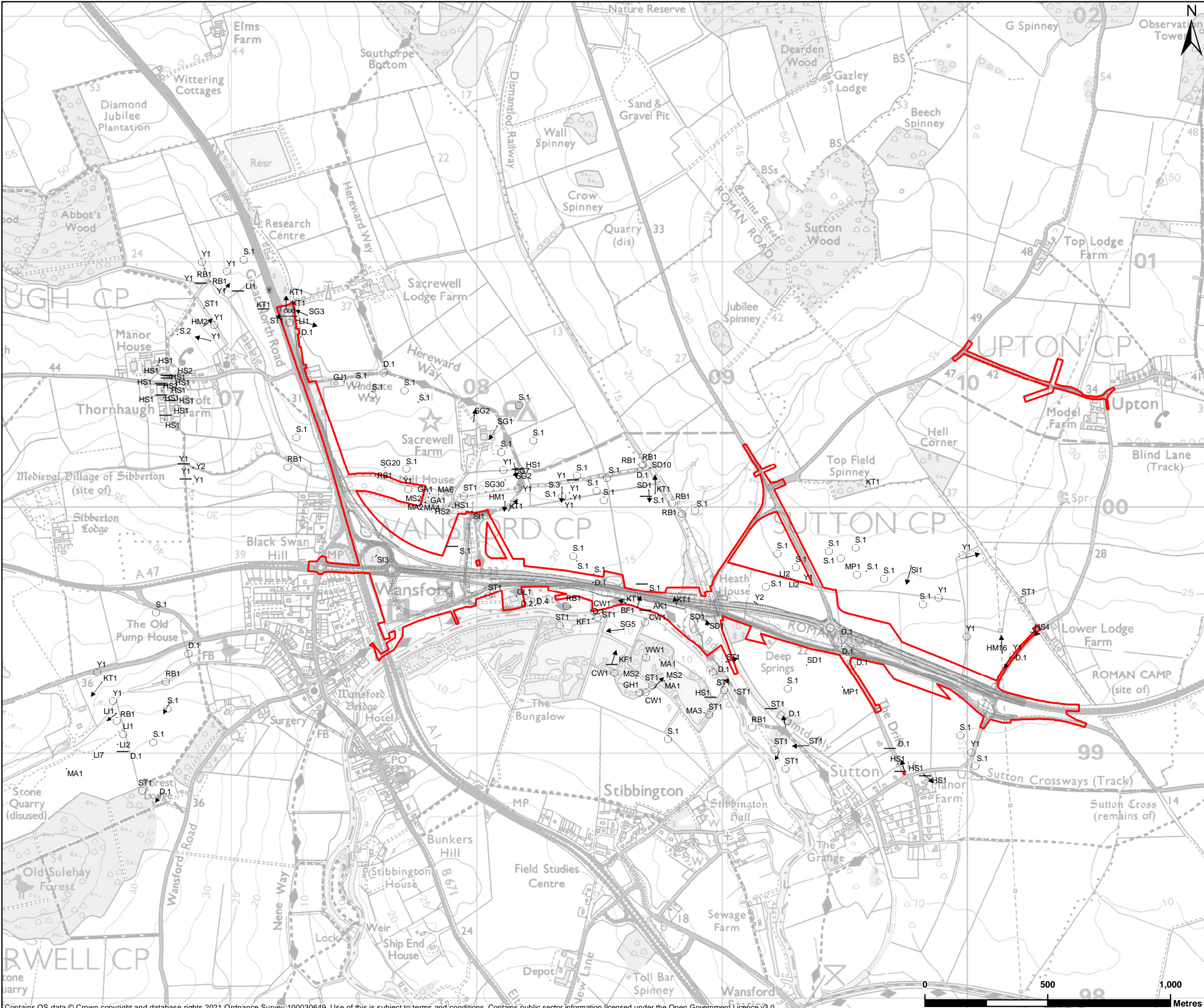
DRAWING NUMBER

HE551494-GTY-EGN-000-DR-GI-30075

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Proposed Scheme Boundary

Proposed Scheme Design

on

Adult Sitting

\*

Aggressive Encounter

==

Alarm Calls

—

Calling

food

Carrying Food

mat

Carrying Nest Mat

○

In Song

\*

Occupied Nest

⊠

Occupied Nest -Provided

→

Flight Path

Sex

♀

Female

♂

Male

juve

Juvenile

♀♂

Pair

REFERENCE MAP

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P01	13/05/2021	FIRST EDITION	AC	RMC	IC
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DESIGNER

CONTRACTOR

CLIENT

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PCF STAGE 3

DRAWING TITLE

ANNEX C: DISTRIBUTION MAP OF KEY SPECIES - JUNE TR010039/APP/6.2

SUITABILITY

FOR INFORMATION

SHEET SIZE	A3	SCALE	1:15,000	STATUS	S2
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DRAWING NUMBER

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