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**South West Milton Keynes**

## **Breeding and Wintering Bird Survey Report**

February 2014

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Rev	Issue Status	Prepared / Date	Approved/Date
-	Draft 1	TJM / 03.02.14	

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## 1.0 INTRODUCTION

- 1.1 This report has been produced by FPCR Environment & Design Ltd. on behalf of Hallam Land Management Ltd. and presents the results of a series of breeding and wintering bird surveys undertaken at a site located at the southwest edge of residential development of Bletchley, Milton Keynes (Central OS Grid Ref: SP 835 324).
- 1.2 This study follows on from previous survey work undertaken by Aspect Ecology in 2008 and Phase 1 surveys undertaken by FPCR in 2013 and forms part of a series of baseline ecological surveys, the results of which will be used to assess the impacts of the proposed mixed development on protected species.

### Site Location and Context

- 1.3 The majority of the application site comprises heavily managed arable farmland and a small number of poor semi-improved grassland fields. Hedgerows form the predominant boundary type and support a good resource of mature trees. A small woodland compartment and wooded belt is located in the north. Buildings within the site are limited to agricultural sheds and derelict structures. Surrounding land-use comprises residential, heavily trafficked roads and farmland.

### Survey Objectives

- 1.4 To identify areas of ornithological interest and make recommendations to minimise the potential impact of development and where feasible to consider opportunities for additional habitat creation. The objectives of the survey were to:
- Identify the presence and distribution of breeding and wintering birds on the site;
  - Evaluate the importance of local bird populations and their habitat requirements;
  - Evaluate the conservation importance of the site;
  - To identify areas of ornithological interest and make recommendations to minimise the potential impact of development and where feasible to consider opportunities for additional habitat creation.

## 2.0 LEGISLATION

- 2.1 The Wildlife and Countryside Act 1981 (as amended) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions to recklessly or intentionally:
- Kill, injure or take any wild bird;
  - Take, damage or destroy the nest of any wild bird while in use or being built;
  - Take or destroy the egg of any wild bird.
- 2.2 Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are specially protected at all times.

- 2.3 A number of birds feature on the Natural Environment and Rural Communities (NERC) Act, Section 41 (S41) as species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.
- 2.4 In addition to statutory protection, some bird species are classified according to their conservation status, such as their inclusion on the Red and Amber lists of Birds of Conservation Concern (BoCC) in the UK (Eaton et al 2009)<sup>1</sup>:
- Red list (high conservation concern) species are those that are Globally Threatened according to IUCN criteria; those whose population has declined rapidly (50% or more) in recent years; and those that have declined historically and not shown a substantial recent recovery.
  - Amber list (medium conservation concern) species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately (between 25% and 49%) in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
  - Green list (low conservation concern) species fulfil none of the above criteria.
- 2.5 The site falls within the area covered by the Wiltshire Local Biodiversity Action Plan (LBAP). A number of bird species are covered within this BAP under a number of different Habitat Action Plans (HAPs). Relevant HAPs on site would include; built environment, rivers and streams, farmland, woodland and hedgerows.

### 3.0 METHODOLOGY

#### *Breeding Bird Survey*

- 3.1 The survey methodology employed was broadly based on that of territory mapping<sup>2</sup> as used for the British Trust for Ornithology (BTO) Common Bird Census (CBC). Standard BTO species codes and symbols for bird activities were used to identify birds and denote activity, sex and age where appropriate. The criteria used in the assessment of breeding birds has been adapted from the standard criteria proposed by the European Ornithological Atlas Committee (EOAC 1979) and are grouped into three categories: possible breeder e.g. birds observed in suitable habitat or singing male recorded, probable breeder e.g. pair in suitable habitat, territory defended, agitated behaviour or nest building and confirmed breeder e.g. recently fledged young observed, adult birds carrying food for young. Birds that were considered to be not using the site for breeding were categorised as 'non breeders' e.g. flying over the site, migrant, habitat not suitable.
- 3.2 To provide a reasonable level of accuracy for determining the population status of the breeding birds on the site, three surveys were undertaken between 05.00 and 11.00 during the period

<sup>1</sup> Eaton, M.A. et al. 2009. Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 102:296-341

<sup>2</sup> Bibby et al. 1992

April and June 2013. A route was mapped out prior to the surveys being undertaken, paying particular attention to any linear features, such as hedgerows and tree lines, and natural features such as ponds, lakes, areas of scrub and woodland. Bird surveys were not undertaken in unfavourable conditions such as heavy rain or strong wind, which may negatively affect the results. Table 1 provides details of the survey dates and weather conditions.

**Table 1. Breeding Bird Survey Dates and Conditions**

Date	Cloud Cover	Rain	Wind	Visibility
16.04.13	60%	None	Gentle Breeze	Good
23.05.13	60%	None	Light Air	Good
27.06.13	70%	None	Light Breeze	Excellent

### Wintering Bird Survey

- 3.3 A total of four winter bird surveys were undertaken during the winter period of 2012/13 to determine winter bird use and assess the sites importance to local bird populations. Particular attention focused on the presence of over wintering or passage waders and passerines. Standard BTO species codes and symbols for bird activities were used as with the breeding bird surveys. Table 2 provides details of the surveys dates and weather conditions.

**Table 2. Wintering Bird Survey Dates and Conditions**

Date	Cloud Cover	Rain	Wind	Visibility
15.11.12	100%	None	Calm	Good
05.12.12	100%	None	Light Breeze	Good
24.01.13	100%	None	Calm	Good
21.02.13	100%	None	Gentle Breeze	Good

### Species and Assemblage Assessment

- 3.4 The conservation value of bird populations has been measured using two separate approaches: nature conservation value and conservation status. The IEEM guidance on ecological impact assessment assesses nature 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. In some cases, professional judgement may be required to increase or decrease the allocation of specific value, based upon local knowledge.
- 3.5 The recent county annual bird report, the Buckinghamshire Bird Report 2010 as published by the Buckinghamshire Bird Club was consulted to inform the assessment.

Table 3. Definition of Terms Relating to Nature Conservation Value

Nature Conservation Value	Examples of Selection Criteria
International	<p>A species which is part of the cited interest of an SPA and which regularly occurs in internationally or nationally important numbers.</p> <p>A species present in internationally important numbers (&gt;1% of international population).</p>
National	<p>A species which is part of the cited interest of a 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 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 principle importance under S41 of the NERC Act, which are not covered above, and which regularly occur in regionally important numbers.</p> <p>Species present in regionally important numbers (&gt;1% of regional population).</p> <p>Sustainable populations of rare or scarce species within a region.</p> <p>Species on the BoCC Red List and which regularly occurs in regionally important numbers.</p>
County	<p>Species of principle importance under S41 of the NERC Act, which are not covered above, and which regularly occur in county important numbers.</p> <p>Species present in county important numbers (&gt;1% of county population).</p> <p>Sustainable populations of rare or scarce species within a county or listed in a county BAP.</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 principle importance under S41 of the NERC Act, 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 rare or scarce species within the locality.</p> <p>A site whose designation falls just short for inclusion for its county important assemblage of birds (e.g. a SINC Site).</p> <p>Other species on the BoCC Red List and which are considered to regularly occur in district important numbers.</p>
Local	<p>Other species of conservation interest (e.g. all other species of principle importance under S41 of the NERC Act and on the BoCC Red and Amber lists which are not covered above) regularly occurring in locally sustainable populations.</p>
Site	<p>All other BoCC Green-listed common and widespread species.</p>

## 4.0 RESULTS

### Breeding Bird Survey 2013

#### Summary

- 4.1 A total of 46 bird species were recorded during the breeding bird surveys within the site. Of the species observed, 19 are either protected, appear on the RSPB BoCC as declining (red or amber lists) or are listed as Species of Principal Importance. A full list of results can be found in Appendix A, whilst the recorded locations of the 19 notable species can be found on Figure 1 and detailed in Table 4.
- 4.2 Of the 46 species recorded, 4 were confirmed as breeding including dunnoek *Prunella modularis* and kestrel *Falco tinnunculus*, both of which are BoCC amber listed and in the case of dunnoek are a priority species under Section 41 of the NERC Act. A further 20 species were considered probable breeders, whilst the remaining 22 species were considered possible breeders or non-breeders.

**Table 4. Species of Principal Importance, BoCC Red and Amber Listed Bird Species Recorded at Saldon Chase during Breeding Bird Surveys 2013, and their Recent Status within Buckinghamshire.**

Species	Legal/ Conservation status	Maximum Count / Survey Occasions Recorded	Breeding Status	Recent Status in Buckinghamshire
Black-headed Gull <i>Larus ridibundus</i>	Amber List	1 / 1	Non breeder	Abundant passage and winter migrant, and recent successful breeder
Bullfinch <i>Pyrrhula pyrrhula</i>	Amber List NERC S.41	8 / 3	Probable	Common resident breeder
Dunnoek <i>Prunella modularis</i>	Amber List NERC S.41	7 / 3	Confirme d	Abundant resident
Green Woodpecker <i>Picus viridis</i>	Amber List	3 / 3	Probable	Common resident breeder
Grey Partridge <i>Perdix perdix</i>	Red List NERC S.41	2 / 1	Possible	Scarce resident breeder
House Sparrow <i>Passer domesticus</i>	Red List NERC S.41	2 Colonies / 3	Possible	Common but declining resident
Kestrel <i>Falco tinnunculus</i>	Amber List	1 Family / 2	Confirme d	Fairly common resident breeder
Lesser Black- backed Gull	Amber List	1 / 1	Non breeder	Abundant passage migrant, common winter visitor. Has



Larus fuscus				recently bred in small numbers.
Linnet Carduelis cannabina	Red List NERC S.41	13 / 2	Probable	Fairly common resident breeder and migrant
Meadow Pipit Anthus pratensis	Amber List	7 / 1	Non breeder	Common passage migrant, fewer in winter, scarce
Skylark Alauda arvensis	Red List NERC S.41	21 / 3	Probable	Fairly common breeder, migrant and winter visitor
Song Thrush Turdus philomelos	Red List NERC S.41	5 / 2	Probable	Fairly common resident and migrant
Starling Sturnus vulgaris	Red List NERC S.41	23 / 3	Possible	Abundant resident and migrant
Stock Dove Columba oenas	Amber List	6 / 1	Possible	Common resident
Swallow Hirundo rustica	Amber List	4 / 3	Possible	Common, but declining, summer migrant and breeder
Swift Apus apus	Amber List	23 / 1	Non breeder	Common summer migrant breeder
Wheatear Oenanthe oenanthe	Amber List	1 / 1	Non breeder	Common passage migrant
Whitethroat Sylvia communis	Amber List	9 / 3	Probable	Common summer migrant breeder
Yellowhammer Emberiza citronella	Red List NERC S.41	6 / 3	Probable	Thinly distributed resident breeder

#### Description

- 4.3 The majority of bird species recorded are typical of the range of habitats which predominate within the site being heavily influenced by the current agricultural management of the site. Arable field compartments north of Weasel Lane which cuts through the centre of the site in a west to east direction are relatively small and bounded in the most part by hedgerows. Those arable field compartments south of Weasel Lane are generally larger and more often separated by field drains particularly to the west of the site. These habitats attracted a range of nationally common and widespread, although declining farmland bird species including linnet, skylark and yellowhammer in small numbers, all of which are BoCC red list and species of principal importance. Yellowhammer is considered a thinly distributed resident in Buckinghamshire and along with linnet occurred within the hedgerows throughout the site.

- 4.4 Skylark occurred in moderate numbers within the field compartments throughout the site and most frequently encountered within the larger open field compartments to the south of the site where breeding by several pairs was considered probable.
- 4.5 Grey partridge, a traditional arable farmland bird and typically more localised in occurrence was recorded on one occasion when a pair was observed centrally within the site. Given the lack of registrations, it is not thought that they bred on site.
- 4.6 The open arable fields offered little opportunities to other bird species, however, they did provide occasional foraging for stock dove and wheatear, the latter of which was recorded on passage.
- 4.7 Hedgerows present on site varied in size and structure resulting from different management methods, with many supporting tree standards. Those hedgerows to the south of Weasel Lane tended to support fewer birds but did support a small number of dunnock and whitethroat territories. Hedgerows north of Weasel Lane and along Weasel Lane itself tended to be of improved structure and with greater connectivity providing opportunities for a greater number of species typical of woodland edge and scrub including many of the generalist species but also bullfinch, dunnock and song thrush. A short narrow length of woodland also provided good opportunities to these species.

### Wintering Bird Surveys 2012/13

#### Summary

- 4.8 A total of 41 bird species were recorded during the wintering bird surveys within the site. Of the species observed, 18 are either protected, appear on the RSPB BoCC as declining (red or amber lists) or are listed as Species of Principal Importance. A full list of results can be found in Appendix B, whilst the recorded locations of the 18 notable species can be found on Figure 2 and detailed in Table 5.

**Table 5: Species of Principal Importance, BoCC Red and Amber Listed Bird Species Recorded at Saldon Chase during Wintering Bird Surveys 2012/13, and their Recent Status within Buckinghamshire.**

Species	Legal / Conservation status	Maximum Count / Survey Occasions Recorded	Recent Status in Buckinghamshire
Black-headed Gull <i>Larus ridibundus</i>	Amber List	5 / 1	Abundant passage and winter migrant, and recent successful breeder
Bullfinch <i>Pyrrhula pyrrhula</i>	NERC S.41 Amber List	8 / 4	Common resident breeder
Dunnock <i>Prunella modularis</i>	NERC S.41 Amber List	7 / 4	Abundant resident
Fieldfare <i>Turdus pilaris</i>	Schedule 1 Red List	79 / 4	Abundant winter migrant
Green Woodpecker <i>Picus viridis</i>	Amber List	1 / 2	Common resident breeder

House Sparrow Passer domesticus	NERC S.41 Red List	3 Colonies / 3	Common but declining resident
Kestrel Falco tinunculus	Amber List	2 / 2	Fairly common resident breeder
Lesser Black-backed Gull Larus fuscus	Amber List	1 / 1	Abundant passage migrant, common winter visitor. Has recently bred in small numbers.
Linnet Carduelis cannabina	NERC S.41 Red List	6 / 2	Fairly common resident breeder and migrant
Little Egret Egretta garzetta	Amber List	1 / 1	Formerly a scarce vagrant, now a localised breeder and increasingly familiar resident
Meadow Pipit Anthus pratensis	Amber List	3 / 1	Common passage migrant, fewer in winter, scarce
Mistle Thrush Turdus viscivorus	Amber List	1 / 1	Fairly common resident
Red Kite Milvus milvus	Schedule 1 Amber List	1 / 2	Resident breeder from introduced stock
Redwing Turdus iliacus	Schedule 1 Red List	58 / 4	Abundant winter migrant
Skylark Alauda arvensis	NERC S.41 Red List	105 / 4	Fairly common breeder, migrant and winter visitor
Song Thrush Turdus philomelos	NERC S.41 Red List	7 / 3	Fairly common resident and migrant
Starling Sturnus vulgaris	NERC S.41 Red List	104 / 4	Abundant resident and migrant
Yellowhammer Emberiza citrinella	NERC S.41 Red List	18 / 3	Thinly distributed resident breeder

#### Description

- 4.9 As per the breeding bird surveys, the site supported an assemblage of birds typical of the habitats available. The farmland bird assemblage comprised linnet, meadow pipit, skylark and yellowhammer. Linnet occurred only in small numbers and on two survey occasions only whilst meadow pipit occurred only on one survey occasion. Of particular note was the presence of a large flock of skylark observed foraging within a large arable field supporting cereal stubble to the east of the site. Approximately a hundred birds were flushed from this field during the first survey occasion. This was followed by very low counts of skylark on the subsequent three surveys. Yellowhammer was encountered throughout the site in varying numbers ranging from none during the third survey to 18 on the final survey.
- 4.10 The arable fields also attracted large numbers of woodpigeon in flocks approaching around two thousand birds which were observed feeding on brassica crops along with mixed corvid flocks.
- 4.11 As was noted during the breeding season, those hedgerows both along and to the north of Weasel Lane were most productive, but all were noted to support a range of common and widespread bird species associated with woodland edge habitats including small to moderate numbers of bullfinch, dunnoek, fieldfare, redwing and song thrush in addition to a range of generalist species of which blackbird were recorded in reasonable numbers.

- 4.12 Flocks of starling were occasionally recorded foraging within the arable fields and also occurred locally along the eastern residential boundary with house sparrow. Further house sparrow colonies were observed along those hedgerows adjacent to The Leys and Bletchley Leys Farm.
- 4.13 Little egret and red kite, both a locally occurring species but becoming increasingly common were observed to fly over the site only on one occasion and on two occasions respectively.

## **5.0 DISCUSSION**

### **Impacts of Habitat Loss to Breeding and Wintering Birds**

- 5.1 The impact on breeding and wintering bird species arising from the potential effects of development is based upon an understanding of each species' ecological requirements, the type of development, number of birds recorded on site, their nature conservation status based on legislation and current guidance (e.g. Red and Amber listed Birds of Conservation Concern 3 (2009); Species listed as principal importance (S.41 NERC Act) and Local BAP species), their county status according to The Buckinghamshire Annual Bird Report 2010 and professional judgement.
- 5.2 The species recorded during the most recent surveys on site that are arguably the most vulnerable to impacts are the twelve notable species that appear on Schedule 1 of the W&CA, the BoCC Red list and are listed as species of principal importance (Tables 4 & 5). The habitat requirements, species account and nature conservation value of these species are summarised in Table 6. In addition residual impacts associated with habitat loss have been assessed against the proposals as set out in the Development Framework Plan (drawing number SWMK03\073).

### **Development Proposals**

- 5.3 The application boundary forming 143.32ha is to comprise new housing, (54.16ha), infrastructure (5.18ha), proposed local centre (5.18ha), education sites (8.2ha), allotments (1.22ha) employment land (2ha), green open space (55.55ha), grid road reserve (7.24ha), highway improvements (4.09ha) and water attenuation (4.84ha). Green infrastructure comprising formal recreational areas and less formal areas managed for the benefit of wildlife will stretch throughout the site linking up a number of existing and retained semi-natural habitats and will equate to over a third of the total site area.

Table 6. Evaluation of Species Considered Potentially Sensitive to Habitat Loss/Change

Species	Habitat Requirements	Species Account	Nature Conservation Value <sup>†</sup>	Characterisation of Unmitigated Impact	Suggested Possible Mitigation/ Compensation/ Enhancements	Residual Impact <sup>††</sup>
Bullfinch	Breeds mainly in broad-leaved woods, but also commonly in dense hedgerows and thickets. Adults forage on seeds and vegetation, but invertebrates are important in diet of young.	Moderate numbers recorded on each survey occasion in both the summer and winter. Greatest numbers recorded within hedgerows north of Weasel Lane which are of greater value and connectivity than those to the south.	Local	Loss of hedgerow sections which provide suitable foraging and nesting opportunities. The retention of linear habitats along Weasel Lane will ensure a suitable movement corridor through the centre of the site is maintained.	Wherever feasible, scrub habitat will be retained particularly along the boundaries of the site. Strategic planting should include native seed and fruit-bearing species such as ash, rowan and crab apple.	Negligible
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	Recorded within hedgerows throughout the site during both the summer and winter in consistent numbers. Most frequently recorded along the southern boundary associated with the disused railway and within the hedgerows north of Weasel Lane.	Local	As with bullfinch, the loss of hedgerow sections which provide suitable foraging and nesting opportunities.	The inclusion of new planting throughout the Green Infrastructure will continue to provide suitable conditions to support moderate populations of dunnock throughout the site. Dunnock will also use established habitats around the more formal areas of green	Positive

	food.				infrastructure including parks, allotments and gardens.	
Fieldfare	Widespread winter visitor occurring almost anywhere. Feeds along hedgerows and in orchards, pastures and other areas of short grass, and on arable fields. Feeding sites are often close to woodland and tall hedges. Nomadic in winter as they travel the countryside for food, sometimes joined by other thrushes and starlings.	Wintering – Recorded in small numbers throughout the site in small numbers foraging within hedgerows and also open arable field compartments.	Local	Loss of hedgerow sections and open arable fields as a foraging resource.	Provision of new planting should include fruiting species which will continue to provide further foraging opportunities to fieldfare. Allotments, amenity sports fields are new features of the proposed development which will provide foraging habitat for the species.	Negligible
Grey Partridge	Breeds in lowlands, mostly in central and eastern England. Prefers open areas of low grass with dense cover.	Breeding – A single pair were flushed on one survey occasion south of Weasel Lane. Although breeding is possible, given the lack of other observations, breeding is considered unlikely.	Local	Loss of open arable field compartments which provide potential breeding and foraging habitat.	None suggested. Given the loss of arable habitat, grey partridge is inevitably to be lost as a possible breeding species.	Negative

House Sparrow	Often associated with man, will avoid closed or dense vegetation, and except for seasonal foraging in corn fields and other crops, will usually avoid open terrain lacking in shrubs, trees and other cover.	Colonies were consistently recorded along the eastern residential boundary, adjacent to The Leys and Bletchley Leys Farm at the western extent of the site.	Local	Areas where house sparrows have been recorded are largely to be retained within the proposals.	House sparrows will readily habituate to new residential areas. Strategic placement of house sparrow nest-box terraces around the development will provide new breeding sites. The retention of boundary trees and hedgerows combined with new residential gardens, allotments and buildings will increase nesting and foraging opportunities.	Positive
Linnet	Nests in areas of dense scrub or hedgerows. Feeds on small to medium sized seeds. Particularly dependent on weeds of open country and waste ground.	Breeding – Absent on the first occasion but recorded in small numbers subsequently either flying over the site or in hedgerows bisecting arable fields. Wintering – Recorded on two survey occasions in small numbers foraging within arable fields.	Local	Loss of potential nesting and foraging habitat through the loss of hedgerow sections and the loss of the arable landscape within the site.	Once mature, areas within the green space where scrub patches and ruderal weedy vegetation is allowed to establish are likely to continue to provide nesting and foraging opportunities for linnet, particularly along the western boundary and lying adjacent to further off site arable habitat.	Negligible
Red Kite	Breed in small to medium sized deciduous woodland in rolling grassland and arable farmland areas. Both the native	Wintering – One individual recorded on two survey occasions to fly over the site only.	Site	Due to the lack of suitably established woodland habitat present within the site, it is considered that the site offers	None suggested	Negligible

	welsh and reintroduced programmes have done remarkably well and numbers are increasing.			no breeding opportunities to red kite. The site provides some potential foraging opportunities for the small local population or individual passing birds.		
Redwing	Widespread winter visitor in Britain and Ireland between October and March. Generally rather shy feeding in hedges and orchards and open areas of short grass. Visits farmland, parks and large gardens.	Wintering – Recorded in small numbers within hedgerows on site. Numbers decreased on each survey occasion.	Local	Loss of foraging habitat in the form of open arable field compartments and hedgerow sections	Provision of new planting should include the provision of fruiting species which will provide further foraging habitat for moderate numbers of redwing.	Negligible
Skylark	Ground nesting birds favouring open farmland habitats where short, grassy or sparse vegetation provides nesting cover and foraging opportunities. Plant and animal material taken at all times of the year, but insects especially important	Breeding – Reasonable numbers recorded within the larger arable field compartments south of Weasel Lane with smaller numbers recorded in those field compartments north of Weasel Lane. Wintering – A large single flock of approximately 100 birds	Local	Given the loss of arable habitats from site it is considered that they will inevitably be lost from the site as a potential breeding and wintering species.	None suggested, however it is possible that discreet areas of the green infrastructure if free from disturbance and managed appropriately may provide suitable habitat for skylark both in the winter and breeding season. It is however realised that numbers of skylark the site supports is highly likely to	Negative



	in summer, cereal grain and weed seeds in autumn, leaves and weed seeds in winter, and cereal grain in spring.	was recorded during the first survey occasion at the east of the site foraging within a stubble field. This was however an exception and only small numbers were recorded during subsequent surveys.			be significantly reduced.	
Song Thrush	Requires a mixture of trees or bushes and open habitat. Can be found in human habitat such as parkland, hedgerows, roadsides or other areas that satisfy the above criteria. Forages on a wide variety of invertebrates, including snails, supplemented by fruit when seasonally available.	Breeding – Recorded in small numbers within hedgerows throughout the site but more frequently along the more established less managed hedgerows both along and north of Weasel Lane. Wintering – Small numbers observed at the northern extent of the site. Absent south of Weasel Lane.	Local	Loss of hedgerow sections leading to loss of potential nesting, foraging habitat and cover. The retention of linear habitats along Weasel Lane will ensure a suitable movement corridor through the centre of the site is continued.	New areas of planting will provide compensatory foraging and nesting habitat throughout the site. Newly created surface water attenuation features will provide an important foraging resource.	Negligible
Starling	Foraging occurs on grassland, arable crops and grazed pastureland, for a mixture of plant and invertebrate food sources. Invertebrate	Breeding – Recorded along the eastern boundary with residential properties within which breeding is likely to occur within the wider estate. Other	Local	Loss of some existing foraging habitat in the form of arable field compartments.	The inclusion of starling boxes within the built environment would present the species with much improved nesting opportunities. Areas of grassland and wetland	Positive

	uptake increases during breeding season. Breeds in cavities, either natural hollow trees or gaps in building structures.	observations were limited to the very western boundary at Bottle Dump Roundabout. Wintering – Again recorded along the eastern residential boundary and within arable fields at the north of the site.			habitats will continue to provide suitable foraging opportunities for the species.	
Yellow-hammer	Traditionally based on edges of open areas of forest and fringing scrub of gorse, broom and hawthorn. Extends widely across cultivated land with hedges, plantations, and paths. Feeds mainly on grass seeds, invertebrates in the breeding season. Feeds wholly on the ground by hedges, tracks and newly sown fields.	Breeding – Recorded throughout the site in hedgerows in small numbers. Breeding considered probable. Wintering – Widespread throughout the site. Recorded in small flocks foraging within arable field compartments.	Local	Loss of hedgerow sections and arable farmland is likely to significantly reduce the nesting and foraging opportunities to yellowhammer.	Some features of the green infrastructure proposals where habitat management is less formal may provide some foraging opportunities to surrounding populations. Although boundary features may continue to provide some limited nesting opportunities, the value of the developed site to yellowhammer is likely to be significantly reduced.	Negative

† Based upon criteria set out in Table 3 and professional judgement.

†† Assumes that any suggested or proposed mitigation, compensation or enhancements are undertaken in full.

### Impacts of Habitat Loss on Other Species

- 5.4 It is identified that the nest site used by a pair of kestrels (BoCC amber list) comprising a mature tree north of the Leys is to be lost or incorporated in to residential gardens and subsequently to become unsuitable as a nest site. The provision of purpose built kestrel nest boxes in areas of lower disturbance is considered sufficient to compensate this loss. Meadow pipit and wheatear have both been recorded using the arable fields during the first survey occasion and are considered to be on passage only. The loss of arable habitat is unlikely to impact significantly upon these two species. Given the provision of areas of grassland and wetland habitat throughout the green infrastructure, these features will also provide suitable foraging opportunities for swift (BoCC amber list, LBAP) and house martin (BoCC amber list). The provision of suitable swift and house martin nest boxes throughout the built environment will lead to positive residual impacts on these two species.
- 5.5 Impacts from the loss of hedgerows are also identified on the range of common and widespread species including a range thrushes, finches and warblers. The loss of hedgerow sections has the potential to remove nesting habitat and winter forage and cover. The provision of further structural planting within the green infrastructure will in most part compensate the loss of hedgerows and residual impacts on the more generalist species on habitat loss is considered negligible.
- 5.6 The provisions of water attenuation basins are likely to benefit the local swallow and swift population by providing enhanced foraging habitat. Such wetland features will provide additional habitat for grey heron and little egret along with potentially attracting new species including a range of common waterfowl and other wetland specialist such as reed bunting *Emberiza schoeniclus*.

### Disturbance Impacts

- 5.7 Construction operations have the potential to disturb birds using the site for roosting, foraging, and breeding. Operations which will disturb breeding birds include noise from vegetation clearance, initial ground works and some construction activities such as piling, which are of low frequency but of high amplitude. Active, high level, infrequent disturbance causes most birds to be displaced for short periods (Treweek 1999). During the breeding season disturbance may lead to nest desertion or the avoidance of the area and reduce the suitability of retained nesting areas such as the hedgerows. Where necessary, the use of buffer zones around any active nests will minimise potential effects. Ground clearance works across the site are likely to be phased and will follow the phasing of the development, both staggering removal and allowing for some habituation of breeding birds, minimising effects from the outset. Whilst there is some potential for breeding success to be reduced, this is not expected to affect the local conservation status on the majority of the bird species using the site for breeding. Disturbance effects on the majority of birds are therefore expected to be short-term and temporary and are significant at a site level only.

### Bird Predation

- 5.8 The increase in domestic animals during the operational phase, particularly cat, may lead to an effect on small bird populations. Recent research is inconclusive as to the actual effect that domestic cats can have on wild populations, however, a precautionary approach is advised (Gibbons *et al* 2007). In some cases the warning provided by the use of collar-mounted devices, such as bells, has been shown to significantly reduce the success of bird predation by cats (Nelson *et al* 2005). It is considered probable that in the absence of mitigation development will result in a minor site level impact to the breeding bird assemblage.

### Mitigation

- 5.9 To avoid disturbance to breeding birds, ground clearance works and vegetation will be undertaken prior to the bird-breeding season (March to September inclusive). If this is not possible, vegetation will be checked prior to removal by an experienced ecologist. If active nests are found, vegetation will be left untouched and suitably buffered from works until all birds have fledged. Specific advice will be provided prior to undertaking the clearance. This would be a statutory requirement due to the protection of all nesting birds and their nests under the Wildlife and Countryside Act, 1981. A suitably qualified ecologist would supervise this.
- 5.10 In order to reduce the potential impact of bird predation, it is recommended that steps should be taken to encourage future residents to ensure that all cats wear bell-collars. Further reductions to levels of predation may be achieved by also encouraging owners to keep their cats indoors at night. If implemented these measures would reduce the potential impacts of predation to a negligible level.

### Other Enhancements

- 5.11 Additional enhancements that could be integrated with the ongoing management of the site include the erection of a mixture of nest box types in addition to those already mentioned (house sparrow terraces and starling boxes). The following provides details of other suitable nest box types to be included within the scheme:
- A mixture of small hole (26mm and 32mm) boxes placed throughout the site on suitable trees and buildings will provide nesting opportunities for blue tit and great tit. These boxes generally have a high uptake rate.
  - Small open fronted nest boxes again should be placed throughout the site especially on trees which support a climber such as ivy which provides a degree of concealment. These boxes typically attract robin, blackbird and spotted flycatcher *Muscicapa striata*.
  - Specific swift boxes to be incorporated within the built environment.
  - A mixture of more specialised nest boxes should be placed within the more established boundary habitats and should include boxes for stock dove, tawny owl *Strix aluco* and kestrel.

## 6.0 CONCLUSION

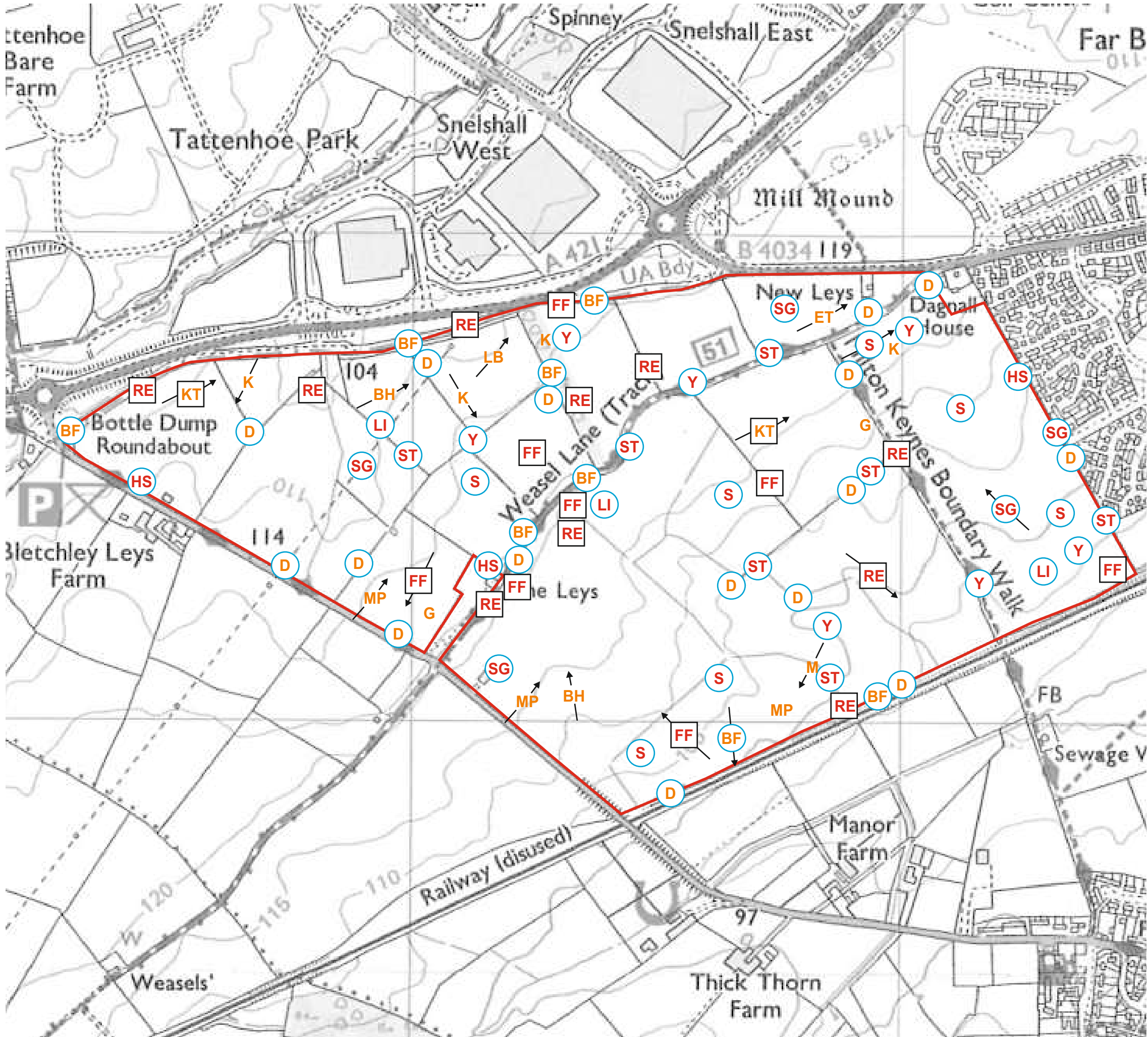
- 6.1 The results of the breeding and wintering bird surveys show that the site supports a species assemblage consisting in the most part of widespread, common and abundant species associated with arable farmland and woodland edge habitats. No significant populations of any notable species were recorded, although it was recognised that the site supported moderate flocks of farmland birds during the winter, for which negative residual impacts have been recognised.
- 6.2 Given the presence of a number of NERC S41 and BoCC red and amber listed species and only the occasional use of the site by more specialised species, the overall bird assemblage is considered to be of Local nature conservation value.
- 6.3 It is recognised that the species assemblage is likely to change in composition and diversity with the proposed development benefiting birds of more urban environs. In addition, habitat creation throughout the green infrastructure including areas of wetland, tree, and shrub planting is likely to provide further opportunities for other notable species currently absent from the site. The resultant bird assemblage that develops is likely to equivalent in value to that recorded.

## **Figures**

**Figure 1: Breeding Bird Survey 2013 – Location of Notable Species**

**Figure 2: Wintering Bird Survey 2012/13 - Location of Notable Species**





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**BoCC Red Listed Species**

FF	FIELDFARE
HS	HOUSE SPARROW
LI	LINNET
RE	REDWING
S	SKYLARK
ST	SONG THRUSH
SG	STARLING
Y	YELLOWHAMMER

**BoCC Amber Listed Species**

BH	BLACK-HEADED GULL
BF	BULLFINCH
D	DUNNOCK
G	GREEN WOODPECKER
K	KESTREL
LB	LESSER BLACK-BACKED GULL
ET	LITTLE EGRET
MP	MEADOW PIPIT
M	MISTLE THRUSH
KT	RED KITE

	SCHEDULE 1
	PRIORITY SPECIES (NERC S.41)
	BIRD ONLY SEEN TO FLY OVER THE SITE AT THIS LOCATION
	SITE BOUNDARY

Hallam Land Management Ltd

South West Milton Keynes  
Buckinghamshire



WINTERING BIRD SURVEYS 2012-13  
LOCATIONS OF NOTABLE SPECIES

Not to Scale @ A3 TJM / 05.09.2013



**Figure 2**



## Appendix A: 2013 Breeding Bird Survey Results

Species	Latin	Survey 1 16.04.13	Survey 2 23.05.13	Survey 3 27.06.13	Conservation Status	Breeding status
Blackbird	<i>Turdus merula</i>	15	12	19	Green list	Confirmed
Blackcap	<i>Sylvia atricapilla</i>	0	4	2	Green list	Probable
Black - headed Gull	<i>Larus ridibundus</i>	1	0	0	Amber list	Non- breeder
Blue Tit	<i>Cyanistes caeruleus</i>	5	5	15 + 7 Families	Green list	Confirmed
Bullfinch	<i>Pyrrhula pyrrhula</i>	8	3	3	Amber list NERC S.41	Probable
Buzzard	<i>Buteo buteo</i>	1	0	2	Green list	Possible
Carrion Crow	<i>Corvus corone</i>	13	2	29	Green list	Probable
Chaffinch	<i>Fringilla coelebs</i>	18	12	22	Green list	Probable
Chiffchaff	<i>Phylloscopus collybita</i>	7	3	5	Green list	Probable
Coal Tit	<i>Parus ater</i>	0	0	2	Green list	Possible
Collared Dove	<i>Streptopelia decaocto</i>	2	0	4	Green list	Possible
Dunnock	<i>Prunella modularis</i>	5	5	7	Amber list NERC S.41	Confirmed
Garden Warbler	<i>Sylvia borin</i>	0	1	0	Green list	Possible
Goldcrest	<i>Regulus regulus</i>	1	0	0	Green list	Possible
Goldfinch	<i>Carduelis carduelis</i>	4	9	24	Green list	Probable
Great - spotted Woodpecker	<i>Dendrocopos major</i>	0	0	2	Green list	Possible
Great Tit	<i>Parus major</i>	13	3	8	Green list	Probable
Green woodpecker	<i>Picus viridis</i>	3	2	3	Amber list	Probable
Greenfinch	<i>Carduelis chloris</i>	2	6	11	Green list	Probable
Grey Heron	<i>Ardea cinerea</i>	0	0	1	Green list	Non- breeder
Grey Partridge	<i>Perdix perdix</i>	0	2	0	Red list NERC S.41	Possible
House Sparrow	<i>Passer domesticus</i>	2 Colonies	1 Colony	2 Colonies	Red list NERC S.41	Possible

Species	Latin	Survey 1 16.04.13	Survey 2 23.05.13	Survey 3 27.06.13	Conservation Status	Breeding status
Jackdaw	<i>Corvus monedula</i>	5	1	4	Green list	Probable
Kestrel	<i>Falco tinnunculus</i>	0	1 Family	1	Amber list	Confirmed
Lesser Black-backed Gull	<i>Larus fuscus</i>	1	0	0	Amber list	Non-breeder
Lesser Whitethroat	<i>Sylvia curruca</i>	0	1	0	Green list	Possible
Linnet	<i>Carduelis cannabina</i>	0	4	13	Red list NERC S.41	Probable
Long-tailed Tit	<i>Aegithalos caudatus</i>	0	2	1	Green list	Possible
Magpie	<i>Pica pica</i>	2	23	24	Green list	Probable
Meadow Pipit	<i>Anthus pratensis</i>	7	0	0	Amber list	Non-breeder
Nuthatch	<i>Sitta europaeus</i>	3	0	0	Green list	Possible
Pheasant	<i>Phasianus colchicus</i>	3	3	1	Not listed	Probable
Robin	<i>Erithacus rubecula</i>	6	9	5	Green list	Probable
Rook	<i>Corvus frugilegus</i>	0	6	1	Green list	Possible
Skylark	<i>Alauda arvensis</i>	14	11	21	Red list NERC S.41	Probable
Song Thrush	<i>Turdus philomelos</i>	0	2	5	Red list NERC S.41	Probable
Starling	<i>Sturnus vulgaris</i>	5	6	23	Red list NERC S.41	Possible
Stock Dove	<i>Columba oenas</i>	0	6	0	Amber list	Possible
Swallow	<i>Hirundo rustica</i>	4	2	1	Amber list	Possible
Swift	<i>Apus apus</i>	0	0	23	Amber list	Non-breeder
Treecreeper	<i>Certhia familiaris</i>	1	0	0	Green list	Possible
Wheatear	<i>Oenanthe oenanthe</i>	1	0	0	Amber list	Non-breeder
Whitethroat	<i>Sylvia communis</i>	2	4	9	Amber list	Probable
Woodpigeon	<i>Columba palumbus</i>	39	90	63	Green list	Probable
Wren	<i>Troglodytes troglodytes</i>	14	10	17	Green list	Probable

Species	Latin	Survey 1 16.04.13	Survey 2 23.05.13	Survey 3 27.06.13	Conservation Status	Breeding status
Yellowhammer	<i>Emberiza citronella</i>	6	5	5	Red list NERC S.41	Probable
<b>Total No. Species</b>	<b>46</b>	<b>32</b>	<b>33</b>	<b>35</b>		

**Breeding Status evidence can be broken down into four sections, each with their own codes:**

**Confirmed breeder**

**DD** – distraction display or injury feigning

**UN** – used nest or eggshells found from this season

**FL** – recently fledged young or downy young

**ON** – adults entering or leaving nest-site in circumstances indicating occupied nest

**FF** – adult carrying faecal sac or food for young

**NE** – nest containing eggs

**NY** – nest with young seen or heard

**Probable breeder** - Evidence accumulated during the survey indicates that the bird species is breeding on site.

**P** – pair in suitable nesting habitat

**T** – permanent territory (defended over at least 2 survey occasions)

**D** – courtship and display

**N** – visiting probable nest site

**A** – agitated behaviour

**I** – brood patch of incubating bird (from bird in hand)

**B** – nest building or excavating nest-hole

**Possible breeder** - Evidence accumulated during the survey indicates that the bird species could be breeding on site, but the evidence is less conclusive than that obtained for probable breeders.

**H** – observed in suitable nesting habitat

**S** – singing male

**Non-breeder**

**F** – flying over

**M** – migrant

**U** – summering non-breeder

**UH** – observed in unsuitable nesting habitat

## Appendix B: 2012/13 Wintering Bird Survey Results

Species	Latin	Survey 1 15.11.12	Survey 2 05.12.12	Survey 3 24.01.13	Survey 4 21.02.13	Conservation Status
Blackbird	<i>Turdus merula</i>	32	11	22	11	Green list
Black - headed Gull	<i>Larus ridibundus</i>	0	5	0	0	Amber list
Blue Tit	<i>Parus caeruleus</i>	14 + 1 Flock	12	13	4	Green list
Bullfinch	<i>Pyrrhula pyrrhula</i>	4	8	4	4	Amber list NERC S.41
Buzzard	<i>Buteo buteo</i>	0	1	0	1	Green list
Carrion Crow	<i>Corvus corone</i>	23	8	5	8	Green list
Chaffinch	<i>Fringilla coelebs</i>	10	7	11	8	Green list
Collared Dove	<i>Streptopelia decaocto</i>	0	1	0	2	Green list
Dunnock	<i>Prunella modularis</i>	7	7	7	6	Amber list NERC S.41
Fieldfare	<i>Turdus pilaris</i>	79	44	24	15	Schedule 1 Red list
Feral Pigeon	<i>Columba livia</i>	30	0	0	0	Green list
Goldcrest	<i>Regulus regulus</i>	3	0	3	1	Green list
Goldfinch	<i>Carduelis carduelis</i>	4	11	6	9	Green list
Great - spotted Woodpecker	<i>Dendrocopos major</i>	1	1	1	0	Green list
Great Tit	<i>Parus major</i>	4	4	8	4	Green list
Greenfinch	<i>Carduelis chloris</i>	2	0	1	3	Green list
Green Woodpecker	<i>Picus viridis</i>	0	1	1	0	Amber list
Grey Heron	<i>Ardea cinerea</i>	0	0	0	1	Green list
House Sparrow	<i>Passer domesticus</i>	0	3 Colonies	1 + 1 Colony	1 Colony	Red List NERC S.41
Jackdaw	<i>Corvus monedula</i>	2	c.260	0	9	Green list

Species	Latin	Survey 1 15.11.12	Survey 2 05.12.12	Survey 3 24.01.13	Survey 4 21.02.13	Conservation Status
Jay	<i>Garrulus glandarius</i>	0	2	0	0	Green list
Kestrel	<i>Falco tinnunculus</i>	0	2	0	2	Amber list
Lesser Black - backed Gull	<i>Larus fuscus</i>	0	0	1	0	Amber list
Linnet	<i>Carduelis cannabina</i>	0	6	3	0	Red list NERC S.41
Little Egret	<i>Egretta garzetta</i>	0	0	0	1	Amber list
Long - tailed Tit	<i>Aegithalos caudatus</i>	1 Flock	4 Flocks	0	2	Green list
Magpie	<i>Pica pica</i>	8	5	9	13	Green list
Meadow Pipit	<i>Anthus pratensis</i>	3	0	0	0	Amber list
Mistle Thrush	<i>Turdus viscivorus</i>	0	0	1	0	Amber list
Pheasant	<i>Phasianus colchicus</i>	12	9	13	2	Introduced
Pied Wagtail	<i>Motacilla alba</i>	2	1	0	0	Green list
Red Kite	<i>Milvus milvus</i>	0	0	1	1	Schedule 1 Amber list
Redwing	<i>Turdus iliacus</i>	58	28	7	2	Schedule 1 Red List
Robin	<i>Erithacus rubecula</i>	10	7	6	3	Green list
Rook	<i>Corvus frugilegus</i>	50	0	8	0	Green list
Skylark	<i>Alauda arvensis</i>	105	2	4	2	Red list NERC S.41
Song Thrush	<i>Turdus philomelos</i>	7	2	0	2	Red list NERC S.41
Starling	<i>Sturnus vulgaris</i>	20	104	5	13	Red list NERC S.41
Wood Pigeon	<i>Columba palumbus</i>	c.2000	c.1520	43	38	Green list
Wren	<i>Troglodytes troglodytes</i>	7	2	3	1	Green list
Yellowhammer	<i>Emberiza citrinella</i>	6	8	0	18	Red list NERC S.41

Species	Latin	Survey 1 15.11.12	Survey 2 05.12.12	Survey 3 24.01.13	Survey 4 21.02.13	Conservation Status
Total Species	41	28	31	27	30	