

# WINCHESTER SCIENCE CENTRE

# Bird Survey Technical Note

## 1 INTRODUCTION

#### 1.1 BACKGROUND

Johns Associates Ltd was commissioned by Wonderseekers to undertake a series of surveys across the Winchester Science Centre site to establish an ecological baseline. This data was required to inform future development proposals at the site, and the conservation management of semi-natural habitats present to maximise their biodiversity value.

The land associated with Winchester Science Centre is hereafter referred to as 'the Site'. The Site has the postcode SO21 1HZ and the central grid reference is SU 51592 29151. A plan showing the Site location and context and the red line survey area boundary is provided as Figure 1.

Suitable bird habitat was identified during the Preliminary Ecological Appraisal (PEA) within areas of grassland, woodland, scrub and hedgerows. Surveys were conducted in 2025 to identify the bird species regularly using the Site over the summer breeding period. This information can be used to inform future development proposals across the Site, and to highlight options for targeted habitat management to maximise the opportunities for a range of bird species within the Winchester Science Centre site..

### 1.2 PURPOSE OF THE SURVEY AND REPORT

The purpose of the survey and subsequent Technical Note is to:

- Undertake bird surveys within the Site boundary (as shown in Figure 1).
- Present the results of the bird surveys.
- Present the results of a desk study, which included bird records held by Hampshire Biodiversity Information Centre (HBIC) for the area extending 2 km from the Site.

#### 1.3 PERSONNEL

The survey work was managed by Tessa Pepler, a Principal Ecologist at Johns Associates, who has worked as an ecological consultant since 2005. Tessa has a BSc (Hons) in Environmental Studies and a MSc in Ecology and Management of the Natural Environment. Tessa is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and holds a Natural England Class 1 survey licence for bats (2019-40584-CLS-CLS-1), great crested newt (2015-18828-CLS-CLS), and dormice (2016-20745-CLS-CLS).

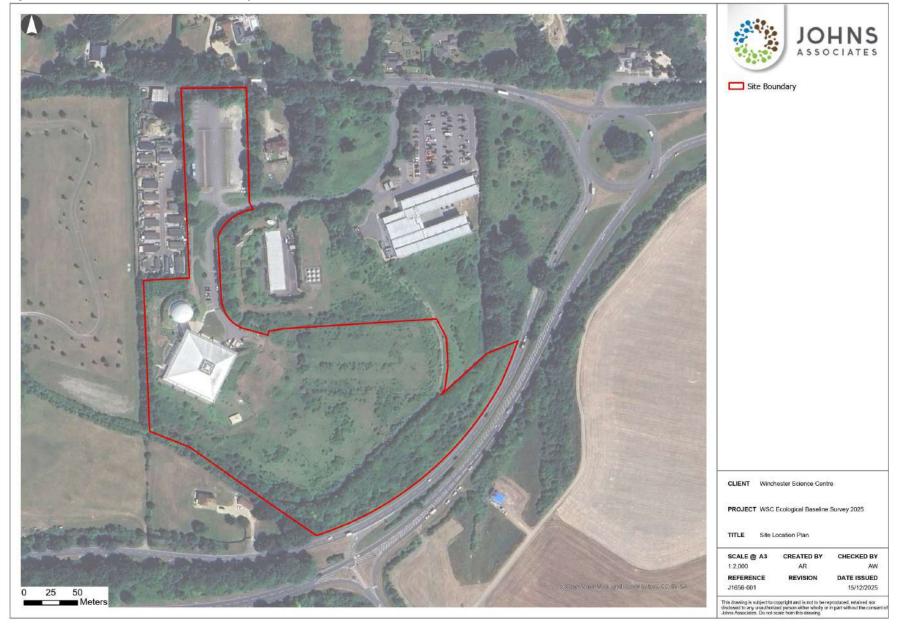
The survey work was carried out by Tessa Pepler BSc (Hons) MSc MCIEEM, Myles Sedgwick BSc (Hons), Benjamin Hough BSc (Hons) ResM, and George Jones BSc (Hons), who are all experienced ecological surveyors. The bird call analysis and subsequent technical note were undertaken by Benjamin Hough and reviewed by Liz Johns BSc (Hons) MSc CEnv MCIEEM MRSB.

### 1.4 SITE DECRIPTION AND LOCATION

Winchester Science Centre is located approximately 2 km east of Winchester in Hampshire and 1 km northeast of Chilcomb. The Site is located within the South Downs National Park and Wykheham Park and Magdalen Hill Cemetery are located to the west of the Site.

At the landscape level, the Site is surrounded by a matrix of agricultural fields, woodlands, hedgerows, roads and scattered buildings and settlements. The River Itchen flows in a westerly direction and is located 3km to the north of the Site. The A31 is situated to the east and south immediately adjacent to the Site, whilst the B3404 is located immediately adjacent to the north. The Site is in a sub-urban setting; connectivity to the wider landscape is suitable for mobile species via linear features including hedgerows and scattered scrub, although the A31 road represents a significant barrier to the movement of some species, including amphibians and reptiles.

Figure 1: Site Location and Red Line Boundary



# 2 LEGAL PROTECTION OF BIRDS

All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally kill, injure or take any wild bird, and to take, damage or destroy the nest of any wild bird while it is in use or being built, or to take or destroy their eggs.

Additional offences apply to certain bird species listed on Schedule 1 of the Act, which receive enhanced protection during the breeding season. For these species, it is an offence to intentionally or recklessly disturb adults while they are building a nest, are at or near a nest containing eggs or young, or to disturb dependent young.

Examples of Schedule 1 species include (but are not limited to):

- Barn owl Tyto alba
- Kingfisher Alcedo atthis
- Peregrine falcon Falco peregrinus
- Firecrest Regulus ignicapilla
- Hobby Falco subbuteo

Under the Natural Environment and Rural Communities (NERC) Act 2006, several bird species are also listed as Species of Principal Importance for biodiversity conservation in England (Section 41). Public bodies have a duty under Section 40 to consider the conservation, restoration and enhancement of these species and their habitats when exercising their functions.

Many bird species are further protected through international legislation, including:

- The Conservation of Habitats and Species Regulations 2017 (as amended), which implements the EU Birds Directive and protects rare and vulnerable species as well as migratory birds.
- The designation of Special Protection Areas (SPAs), which safeguard habitats important for rare, vulnerable and/or significant migratory bird populations.

#### It is an offence to:

- Intentionally kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird while in use or under construction.
- Take or destroy the eggs of any wild bird.
- Intentionally or recklessly disturb Schedule 1 species while breeding.
- Damage or destroy breeding or resting places of species protected under the Habitats Regulations.

Bird species recorded or potentially present at the Site would therefore receive the level of protection relevant to their status under this legislation. Any works with potential to impact nesting birds must take account of these legal obligations, including the need to avoid disturbance during the breeding season (typically March–August inclusive, though this may vary by species).

# 3 HABITAT SUITABILITY

Suitable bird habitat is present within and immediately adjacent to the Site. The habitat mosaic includes grassland, hedgerows, scrub and areas of mature woodland, all of which provide opportunities for nesting, foraging and shelter for a range of species. Woodland and scrub offer suitable nesting sites and cover, while the more open grassland areas may support ground-nesting birds and provide valuable foraging habitat. Hedgerows function as important commuting and feeding corridors and are also used for nesting. Less suitable habitats include areas of sealed or heavily disturbed ground, which offer limited opportunities for nesting or foraging. However, birds may still utilise buildings and built structures for nesting or roosting, particularly species adapted to urban or semi-urban environments.

# 4 METHODOLOGY

### 4.1 DESK STUDY

A desk study was conducted to collate all relevant existing information relating to the Site and its surrounding area. The data was used to inform the scope of the Site survey and to enable a full assessment of the likely effects of any development at the Site on any sites, habitats, or species of conservation interest to be carried out. The Multi Agency Geographic Information for the Countryside (MAGIC) website was used to conduct the following desk study searches with regards to birds on 10 July 2025:

- Records and citations to a 2 km radius of international statutory designated wildlife sites including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar Sites that support bird species.
- Records and citations to a 2 km radius for national statutory sites designated for birds including Sites of Special Scientific Interest (SSSI), Local Nature Reserves (LNR) and National Nature Reserves (NNRs).

Google Maps aerial images were used to assess habitats at a landscape level (www.maps.google.com) in proximity to the Site to assess wider connectivity and habitat size to help determine whether the site is suitable to support functional populations of bird species.

#### 4.2 DATA SFARCH

A data search was conducted with the Hampshire Biodiversity Information Centre (HBIC) on 7 May 2025 to identify records of bird species within 2 km of the proposed Site.

### 4.3 BIRD SURVEYS

Bird surveys were conducted using two Song Meter Micro 2 static bird detectors. Data was collected from May to August 2025 inclusive along the eastern and western boundaries of the Site, with detectors programmed to record sound files every 5 minutes for two hours around sunrise and two hours around sunset each day.

To ensure consistent analytical effort across months with differing recording durations, a temporal subsampling approach was applied. Individual monthly recording periods varied in length (6, 7, 11, or 14 days). To maintain comparability, all months were standardised to six sampled days with 2.5 minutes being listend to per 5 minutes recording, thereby reducing listening effort while preserving representative temporal coverage. This ensured that sampling intensity remained equivalent across months, even when the total number of available recording days differed. Each month's recording window was divided into temporal blocks, from which six days were selected using a combination of randomisation and stratification. Crucially, each month included at least one three-day consecutive run to capture short-term temporal dependence in vocal behaviour, with remaining days spaced across the wider period to maximise temporal spread and reduce bias from weather events or day-to-day variation. Months with exactly six available recording days were fully sampled without further subsampling. This temporal subsampling strategy ensured uniform sampling effort, reduced manual listening time, and retained sufficient temporal structure to reliably detect patterns in species presence and activity.

The final sampled dates were:

May: 15, 17, 19, 20, 21, 22

• June: 10, 12, 13, 14, 15, 17

July: 16, 17, 18, 19, 20, 21

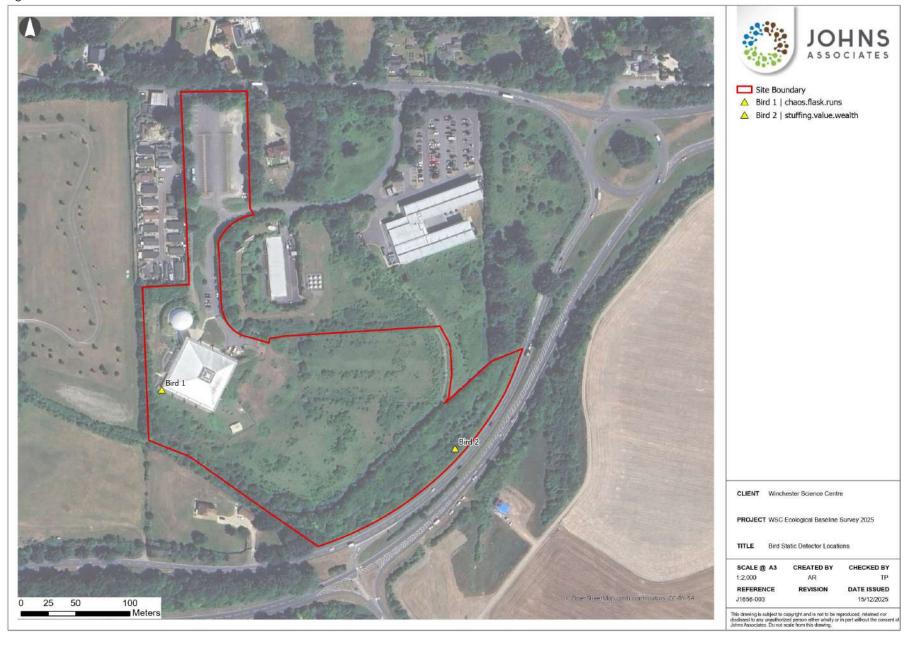
August: 14, 15, 16, 17,18, 19

## 4.4 SURVEY LIMITATIONS/CONSTRAINTS

For Town & Country Planning purposes, the findings of this report are considered valid for a period of 18 months from the date of the final survey (19 August 2025), in accordance with CIEEM advice (Advice Note on the Lifespan of Ecological Reports & Surveys, CIEEM April 2019). Should conditions on-Site largely remain the same, this survey data may be considered valid for a period of up to 3 years, although this should be confirmed by a suitably qualified ecologist (SQE).

Both bird detectors operated throughout the survey period, the eastern detector (Bird 2) collected data throughout the survey period, however due to data corruption, data was only obtained for the western detector (Bird 1) during July and August.

Figure 2: Location of Bird Statics



# 5 RESULTS

## 5.1 STATUTORY SITES

There was one statutory site located within 2 km of the Site: Cheesefoot Head SSSI, which is designated due to the lowland calcareous grassland on site. This site is located 880 m to the southeast at its closest point.

## 5.2 NON-STATUTORY SITES

A total of 15 non-statutory Sites of Importance for Nature Conservation (SINC) were highlighted by the data search, all of which have potential to support bird species. Table 1 provides a summary of these designations and Table 2 provides the SINC Criteria descriptions.

Table 1: Non-Statutory SINCs within 2 km

LWS Name	Reason for designation	SINC Criteria	Central Grid Ref	Area Size (ha)	Approximate Location from the Site boundary
RV170 – A31 Petersfield Road (East) Chilcomb	A Road Verge of Ecological Importance (RVEI) and SINC. Calcareous flora and fauna including Ophrys apifera (Bee Orchid), Anacamptis pyramidalis (Pyramidal Orchid), Dactylorhiza fucsii (Common Spotted-Orchid), Cupido minimus (Small blue).	2B/6A	SU51952922	606m/1.75 ha	10m east
Morn Down, East of A31	Unknown SINC.	2B	SU51802910	0.32 ha	50m east
Magdalen Hill Down	A butterfly conservation site SINC with rare and notable plant and lepidoptera species.	2A/2B/6A	SU50502920	22.98 ha	100m west
Magdalen Hill Down North	A butterfly conservation site SINC with rare and notable plant and lepidoptera species.	2B	SU50472932	21.85 ha	430m west
A31 Petersfield Road, Chilcomb	A Road Verge of Ecological Importance (RVEI) and SINC. Known presence of striped lychnis moth.	6A	SU50502907	924m/368 ha	500m southwest
A272 Petersfield Road, Chilcomb Down	A Road Verge of Ecological Importance (RVEI) and SINC with a known population of Ditrichum flexicaule.	2B/6A	SU52582821	0.64h a	815m southeast
Chilcomb Wood & Downland	Unknown SINC.	1A/2B	SU51002780	6.87 ha	1km southwest
Little Hampage Wood	Unknown SINC.	1A	SU53802970	30.01	1.17km east
The Knoll, Chilcomb	Unknown SINC.	2B	SU50952790	2.45 ha	1.2km southwest
St. Andrew's Church, Chilcomb	SINC with a known population of Saxifraga granulate.	2B/6A	SU50702790	0.31 ha	1.38km southwest
Longwood Warren	SINC with a known population of Argynnis aglaja.	2A/2B/6A	SU52502700	7.27 ha	1.77km southeast

LWS Name	Reason for designation	SINC Criteria	Central Grid Ref	Area Size (ha)	Approximate Location from the Site boundary
Chilcomb Ranges, Area	Unknown SINC.	2B	SU50182777	1.8 ha	1.81km
А					southwest
Beech Hill	Unknown SINC.	1A/1B	SU52403180	30.48 ha	1.85km north
Fawley Down	Known population of	2B/6A	SU51002670	9.03 ha	1.95km south
	Cynoglossum officinale.				
Deacon Hill	Known population of	2A/6A	SU49602760	15.15 ha	1.96km
	Coenonympha pamphilus,				southwest
	Hamearis lucina, Cirsium				
	eriophorum, Pyrgus malvae				

Table 2: SINC Citeria

Classification	Main Type	Criteria
1A	Woodland	Ancient semi-natural woodlands.
2A	Grassland	Agriculturally unimproved grasslands
2B	Grassland	Semi-improved grasslands which retain a significant element of unimproved grassland.
6A	Species and	Sites which support one or more notable species.
	assemblages	

#### 5.3 DATA SFARCH

A total of 767 bird records were returned by Hampshire Biodiversity Information Centre (HBIC), which represented 89 species within 2 km of the Site over the past ten years. These included NERC Section 41 species of principal importance from within the Site itself, comprising ground nesting birds including skylark Alauda arvensis and lapwing Vanellus vanellus. Other Section 41 species included yellowhammer Emberiza citrinella, spotted flycatcher Muscicapa striata and house sparrow Passer domesticus. Wildlife and Countryside Act Schedule 1 species have also been recorded within the Site boundary including barn owl Tyto alba, firecrest Regulus ignicapilla, red kite Milvus milvus, hobby Falco subbuteo and peregrine falcon Falco peregrinus. Other species recorded on Site are swift Apus apus, kestrel Falco tinnunculus, linnet Linaria cannabina and house martin Delichon urbicum. The records show a number of BOCC5 Red Listed species, whose populations nationally are declining (such as linnet, house martin, skylark and lapwing)

#### 5.4 BIRD SURVEY RESULTS

A total of 2,377 bird records were analysed across the two static detectors from May – August 2025. Notable and statutory and non-statutory protected species are presented in Table 3. The static number, the months that the bird calls were recorded and the time of day recorded is presented.

Table 3: Bird Survey Results for Species with

Species	Months Present	Time of day	Total Number of Calls Recorded	Static detector	Statutory/Non-Statutory Protection
Common Firecrest	May, June, July, August	Morning and evening	12	Mainly Bird 2	Schedule 1 WCA 1981 BoCC5 Amber status
Eurasian Bullfinch	July, August	Morning and evening	4	Bird 1	UK BAP Priority Species BoCC5 Amber status
Dunnock	May, June, July	Morning	5	Bird 2	UK BAP Priority Species BoCC5 Amber status

Species	Months Present	Time of day	Total Number of Calls Recorded	Static detector	Statutory/Non-Statutory Protection
Eurasian Linnet	July, August	Morning and evening	10	Bird 1	UK BAP Priority Species BoCC5 Red status
Eurasian Skylark	May, June, July	Morning and evening	17	Bird 2	UK BAP Priority Species BoCC5 Red status
European Greenfinch	May, June, July	Morning and evening	5	Bird 2	UK BAP Priority Species BoCC5 Red status
House sparrow	May, July	Morning and evening	2	Bird 2	UK BAP Priority Species BoCC5 Red status
Song Thrush	May, June, July, August	Morning and evening	84	Bird 1, Bird 2	UK BAP Priority Species BoCC5 Amber status

The full list of species recorded across the surveys and the static detector number that the calls were recorded on and the time of day recorded is provided in Table 4. In total 27 species of bird were recorded on the two static detectors. Only one bird call was recorded for the following species: coal tit, raven, collard-dove nd northern shoveler. Low numbers of bird calls (<5) were recorded for dunnock, bullfinch, greenfinch and house sparrow. High numbers of bird calls (>200) were recorded for chiffchaff, wood pigeon, blackbird, blackcap and robin.

Table 4: All Bird Species Recorded during the Surveys

Species	Months Present	Time of day	Total Number of Calls Recorded	Static detector	Statutory/Non-Statutory Protection
Carrion Crow	May, July, August	Morning and evening	8	Bird 1, Bird 2	
Coal Tit	July	Morning	1	Bird 1	
Common chaffinch	May, June, July, August	Morning and evening	40	Bird 2	
Common chiffchaff	May, June, July, August	Morning and evening	277	Mainly Bird 2	
Common Firecrest	May, June, July, August	Morning and evening	12	Mainly Bird 2	Schedule 1 WCA 1981 BoCC5 Amber status
Common Raven	August	Morning	1	Bird 1	
Common wood pigeon	May, June, July, August	Morning and evening	214	Bird 1, Bird 2	
Dunnock	May, June, July	Morning	5	Bird 2	UK BAP Priority Species BoCC5 Amber status
Eurasian Blackbird	May, June, July, August	Morning and evening	305	Mainly Bird 2	
Eurasian Blackcap	May, June, July, August	Morning and evening	225	Mainly Bird 2	
Eurasian Blue Tit	May, June, July, August	Morning and evening	50	Mainly Bird 2	
Eurasian Bullfinch	July, August	Morning and evening	4	Bird 1	UK BAP Priority Species BoCC5 Amber status
Eurasian Collared- Dove	July	Morning	1	Bird 1	
Eurasian Linnet	July, August	Morning and evening	10	Bird 1	UK BAP Priority Species BoCC5 Red status
Eurasian Magpie	July, August	Morning and evening	76	Bird 1	

Species	Months Present	Time of day	Total Number of Calls Recorded	Static detector	Statutory/Non-Statutory Protection
Eurasian Skylark	May, June, July	Morning and evening	17	Bird 2	UK BAP Priority Species BoCC5 Red status
Eurasian Wren	May, July, August	Morning and evening	160	Bird 1, Bird 2	
European Goldfinch	June, July, August	Morning and evening	19	Bird 1, Bird 2	
European Greenfinch	May, June, July	Morning and evening	5	Bird 2	UK BAP Priority Species BoCC5 Red status
European Robin	May, June, July, August	Morning and evening	657	Bird 1, Bird 2	
Great Tit	May, June, July, August	Morning and evening	72	Bird 1, Bird 2	
House sparrow	July	Morning and evening	2	Bird 2	UK BAP Priority Species BoCC5 Red status
Long-tailed Tit	May, June, July, August	Morning and evening	17	Mainly Bird 2	
Northern Shoveler	July	Evening	1	Bird 1	
Rook	May, June, July, August	Morning and evening	107	Mainly Bird 2	
Song Thrush	May, June, July, August	Morning and evening	84	Bird 1, Bird 2	UK BAP Priority Species BoCC5 Amber status
White Wagtail	June, July, August	Morning and evening	7	Bird 1, Bird 2	
		TOTAL	2,377		

# 6 ASSESSMENT OF FINDINGS

A total of 767 records of 89 bird species were returned by Hampshire Biodiversity Information Centre (HBIC) within 2 km of the Site over the past ten years. Several species of elevated conservation importance have been recorded within the Site, including Section 41 Priority Species such as skylark, lapwing, yellowhammer, spotted flycatcher and house sparrow. Schedule 1 species recorded on or near the Site include barn owl, firecrest, red kite, hobby and peregrine. Additional notable species such as swift, kestrel, linnet and house martin further highlight the ornithological value of the area.

Static detector surveys undertaken from May to August 2025 generated 2,378 bird call records. Species of conservation concern identified during this survey include Common Firecrest (Schedule 1) and multiple UK BAP Priority species, namely bullfinch, dunnock, linnet, skylark, greenfinch, house sparrow and song thrush. Notably, skylark, song thrush and dunnock were recorded frequently and across multiple months, indicating likely breeding activity within or adjacent to the Site. Firecrest was recorded consistently throughout the survey period, suggesting potential local territory establishment.

Overall, the findings confirm that the Site supports a range of nationally important and declining bird species, including ground-nesting and disturbance-sensitive species. Any future works will require careful consideration of breeding seasons, habitat value and relevant legal protections. Table 5 provides the key habitat requirements for the protected and notable species of birds that have been recorded within the Site to inform the ongoing habitat management of the Site for these species.

A key requirement across all species will be a source of nectare, berries and seeds throughout the year to provide a constant food source. There will need to be a balance between enhancing the grassland at the Site though scrub removal and retaining areas of dense scrub which support the bird species. A source of water e.g. a created pond would provide water for bathing and drinking for all species. Nest boxes with different size holes for different species could be installed within suitable trees and on fencelines around the Site to increase bird nesting habitat.

Table 5: Key Habitat Requirements for Protected and Notable Bird Species at the WSC Site

Bird Species Name	Key Habitat Requirements	What to Avoid	Potential Stakeholder Involvement
Common firecrest	<ul> <li>Norway spruce, Douglas fir, Scot's pine, oak, beech, alder, ivy, holly, yew.</li> <li>Dense canopy for foraging, nesting and shelter.</li> <li>Mature hedgerows</li> <li>Insect food: springtails, aphids, spiders</li> </ul>	<ul> <li>Dense dark plantations</li> <li>Oak and beech         plantations without         dense scrub undergrowth</li> <li>Over trimming         hedgerows.</li> <li>Removal of too much         scrub.</li> </ul>	- Retaining area of dense scrub and mature hedgerows
Bullfinch	<ul> <li>Dense cover with native scrub with hawthorn, blackthorn, birch, rowan, ash for cover foraging and nesting.</li> <li>Tall, untrimmed hedgerows.</li> </ul>	<ul><li>Over trimming hedgerows.</li><li>Removal of too much scrub.</li></ul>	<ul> <li>Increase diversity of mixed scrub species through planting.</li> <li>Retaining area of dense scrub and mature hedgerows.</li> </ul>

Dunnock	<ul> <li>Access to ground level food for foraging in undergrowth.</li> <li>Hawthorn and bramble.</li> <li>Dense undergrowth.</li> <li>Low shrubs, dense bushes</li> </ul>	Over trimming     hedgerows.     Removal of too much     scrub.	
Linnet	<ul> <li>Abundant seed availability year-round e.g. dandelion.</li> <li>Dense, thorny vegetation e.g. bramble, hawthorn, blackthorn, gorse.</li> </ul>		- Retaining area of dense scrub and mature hedgerows.
Skylark	<ul> <li>Short grassland for nesting (20-50cm high) in spring/summer.</li> <li>Seeds, leafy plants, insects/spiders.</li> </ul>	- Skylark avoid small (<5 ha) fields with hedgerows and Site may not be used for nesting as not suitable.	
Greenfinch	<ul> <li>Mix of dense scrub and open spaces for foraging.</li> <li>Hedgerows and scattered trees.</li> <li>Fruit bushes</li> <li>Hawthorn, holly, yew, birch, alder.</li> <li>Dandelions and thistles.</li> </ul>	<ul><li>Over trimming hedgerows.</li><li>Removal of too much scrub.</li></ul>	
House sparrow	<ul><li>Dense hedgerows</li><li>Nest boxes.</li><li>Hawthorn, elder</li></ul>	<ul><li>Over trimming hedgerows.</li><li>Removal of too much scrub.</li></ul>	

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