

Ornithology Technical Report
Low Spinney Wind Farm, Leicestershire

Andrew McCarthy Associates



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NON-TECHNICAL SUMMARY

Andrew McCarthy Associates Ltd undertook a summer and winter vantage point bird survey and Common Bird Census breeding bird survey of farmland at Low Spinney Farm, Leicestershire. The surveys were undertaken between April and July 2007 (summer surveys) and October 2007 to March 2008 (winter survey).

The results of the summer surveys indicate that the site is locally important for a range of farmland bird species, which are present at low to moderate breeding densities. Eight Red List species were recorded on and around the site, namely: tree sparrow, skylark, yellowhammer, reed bunting, linnet, song thrush, starling and grey partridge. Most of these species breed or are likely to breed within and around the site boundaries. Six of these species also have species action plans written for them under the provisions of the UK Biodiversity Action Plan (UKBAP).

A number of raptor species were noted during summer vantage point surveys and included regular sightings of resident kestrel and buzzard. Both of these species were noted to be breeding within or on the boundary in the southern half of the site. Other raptor species comprised four Wildlife & Countryside Act Schedule 1 species, all observed as single birds only once from vantage points, namely: red kite, osprey, peregrine and hobby. Only one species of wader was recorded (lapwing), with the few sightings of 1-2 birds restricted mainly to the north of the survey area.

Some forty-four species were recorded during the winter vantage point survey which comprised an assemblage of common and widespread farmland and woodland birds. Three Wildlife & Countryside Act Schedule 1(i) species were recorded during the survey namely, peregrine, fieldfare and redwing. Six other Biodiversity Action Plan / Red-listed species were recorded these being lapwing, skylark, song thrush, starling, tree sparrow, and yellowhammer. In addition, ten other Amber-listed species of national conservation concern were recorded.

CONTENTS

1	INTRODUCTION	4
2	METHODOLOGY	5
2.1	FIELD SURVEY	5
2.1.1	Common Bird Census (CBC) Surveys	5
2.1.2	Summer Vantage Point Surveys	5
2.1.3	Winter Vantage Point Survey	7
2.2	DESK STUDY	8
2.3	COLLISION RISK ASSESSMENT	8
2.4	LIMITATIONS	11
2.5	QUALITY ASSURANCE & ENVIRONMENTAL MANAGEMENT	11
3	RESULTS	12
3.1	DESK STUDY	12
3.2	FIELD SURVEY	12
3.1.1	Habitat Summary	12
3.1.2	Common Bird Census (CBC).....	12
3.1.3	Summer Vantage Point Surveys	13
3.1.4	Winter Vantage Point Survey	15
3.1.5	Collision Risk Analysis.....	16
4	RELEVANT LEGISLATION & POLICY	20
4.1	LEGISLATION	20
4.2	POLICY.....	20
5	DISCUSSION & RECOMMENDATIONS	21
5.1	SUMMER BIRD ASSEMBLAGE	21
5.2	WINTER BIRD ASSEMBLAGE.....	22
	REFERENCES & BIBLIOGRAPHY	24
	APPENDIX 1 - FIGURES	26
	APPENDIX 2 –BIRD SPECIES RECORDED	27
	APPENDIX 3 – DESK STUDY DATA	43

1 INTRODUCTION

Andrew McCarthy Associates Ltd was commissioned by Broadview Energy Developments Ltd to undertake a suite of bird surveys comprising a Common Bird Census style breeding bird survey and summer and winter vantage point surveys of land at Low Spinney Farm, Leicestershire in support of an application for the installation of wind turbines. The site is located at OS Grid Reference SP 559 895. The survey area included the current application site and a larger area of land, mainly to the south of the application site.

The aim of the surveys was to determine the presence/absence of bird species potentially sensitive to wind power development and to assess bird activity levels (i.e. regular flight patterns and relative levels of abundance) across the site and in habitat adjacent to it. In addition a collision risk assessment was undertaken for peregrine *Falco peregrinus* common buzzard *Buteo buteo* and golden plover *Pluvialis apricaria*; the only three species which were recorded with sufficient frequency to enable analysis to be undertaken.

2 METHODOLOGY

2.1 Field Survey

2.1.1 Common Bird Census (CBC) Surveys

CBC style surveys were undertaken on 25 April, 24 May and 13 June 2007. Jim Flanagan AIEEM, Syd Cochrane and Tim Palmer, MIEEM of Andrew McCarthy Associates carried out CBC survey work. Methodologies follow those described by Marchant *et al.* 1983 for the Common Bird Census (CBC). The CBC allows the objective analysis of territories for breeding birds, based on successive visits to a site and subsequent mapping of their location and behaviour. Species maps were drawn up from the field maps, showing all the data gathered from the field surveys (see Figures E1-E6 in Appendix 1). Territory analysis was then undertaken by circling groups of registrations which refer to single breeding territories. For this survey territories have been identified mainly for farmland bird species of conservation concern (see Figure E7, Appendix 1).

Table 1: Summary of CBC visits showing the dates and weather conditions on each survey visit.

	Date	Survey period	Wind direction and strength Beaufort scale (0 -11)	Temperature °C	Cloud amount (Octas)
Visit 1	25-04-07	08.00-16.00	North 3-4	12-15°C	3/8 to 4/8
Visit 2	24-05-07	08.00-11.00	Southwest 2-4	13-15°C	8/8 to 5/8
Visit 3	13-06-07	05.30-08.15	South-southwest 3-5	12-14°C	3/8 to 6/8

2.1.2 Summer Vantage Point Surveys

Summer vantage point surveys were carried out in line with methodology and guidance produced by Scottish Natural Heritage '*Survey Methods for use in Assessing the Impacts of Proposed Onshore Wind Farms on Bird Communities*' (2006). Two

locations (at OS grid references SP55898946 and SP55968858) were chosen, and two surveyors recorded bird activity during six visits throughout the summer of 2007.

Data was obtained for activity within the red-line site boundary and an area up to 200m distance from this boundary. For each survey visit, twelve hours of data was collected with each surveyor spending three hours at each vantage point, and then swapping vantage points. A total of 72 hours of data was thus logged on standard vantage point recording forms (36 hours for each vantage point in total). The data contained a record of species, numbers of birds, and the timing, direction and duration of flight.

Target bird species were identified in line with established guidance including '*Survey Methods for use in Assessing the Impacts of Proposed Onshore Wind Farms on Bird Communities*' (Scottish Natural Heritage, 2006) and included birds listed under Schedule 1 of the Wildlife and Countryside Act 1981 (and subsequent amendments), as well as species identified as being of moderate or high conservation concern by the RSPB (comprising 'amber-list' and 'red-list' species) in Gregory, RD *et al.* (2002). Bird species listed within national or local biodiversity action plans (BAP) were also targeted, along with all raptor, wildfowl and wader species.

The timing of the survey visits was undertaken to ensure that all periods of daily activity were sampled with sessions ranging from early morning to evening. Survey dates were also selected to coincide with a range of weather conditions.

Flight line maps for individual survey visits are appended to this report in Figures E8-E19 of Appendix 1. The survey data is summarised in the results section below.

Table 2: Summary of summer vantage point surveys showing dates and weather conditions on each survey visit

	Date	Survey period	Wind direction and strength Beaufort scale (0 -11)	Temperature °C	Cloud amount (Octas)
Visit 1	26-04-07	08.30-11.30 & 12.45-15.45	North to northeast 4-5	12-14°C	<2/8 to 4/8
Visit 2	24-05-07	12.00-15.00 & 15.30-18.30	Southwest 2-5	15-18°C	8/8 to <2/8
Visit 3	12-06-07	13.25-16.25 & 16.45-19.45	Southwest 3-5	20-22°C	2/8 to 8/8
Visit 4	21-06-07	06.20-09.20 & 09.48-12.48	South to southeast 5-6	16-18°C	2/8 to 7/8
Visit 5	04-07-07	10.00-13.00 & 13.30-16.30	West to southwest 5-6	15-16°C	5/8 to <7/8
Visit 6	18-07-07	09.10-12.10 & 12.35-15.35	South 2-5	15-16°C	<4/8 to <8/8

2.1.3 Winter Vantage Point Survey

Winter vantage point surveys were undertaken over a total of 36 hours for each vantage point, comprising 12 three-hour sessions covering the dawn, dusk and midday periods following best practice guidelines (SNH 2005 and 2006). flight-line maps of all target species records given as Figures E20 to E31 inclusive. A full list of the bird species recorded, together with their winter status on site, is provided in Table 2 (Appendix 2).

The field data was gathered by an experienced team of ornithologists, namely Tim Palmer MIEEM (Senior Consultant at AMA), Jim Flanagan (Senior Field Ecologist at

AMA), and Graham Catley (sub-consultant of Nyctea Ltd). The target species¹ comprised:

Mute swan	<i>Cygnus olor</i>
Cormorant	<i>Phalacrocorax cabro</i>
Grey Heron	<i>Ardea cinerea</i>
Fieldfare	<i>Turdus pilaris</i>
Redwing	<i>Turdus iliacus</i>
Skylark	<i>Alauda arvensis</i>
Mallard	<i>Anas platyrhynchos</i>
Sparrowhawk	<i>Accipiter nisus</i>
Common buzzard	<i>Buteo buteo</i>
Kestrel	<i>Falco tinnunculus</i>
Peregrine	<i>Falco peregrinus</i>
Golden plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Snipe	<i>Gallinago gallinago</i>

2.2 Desk Study

A desk study was commissioned as part of the initial Phase 1 Habitat Survey (see the Ecology Technical Report) and existing ecological data for the site was sought from the Leicestershire Environmental Records Centre. In addition to the site itself, information was requested on protected species and statutory/non-statutory sites for nature conservation within a 2 kilometre zone of the site survey boundary.

2.3 Collision risk assessment

The risk of birds colliding with the turbine rotors has been assessed using a model developed by W. Band (Band *et al.* 2007), which estimates the number of bird collisions with the turbine rotors during a specified time period. Collision risk was calculated in two stages:

- Estimating the number of birds passing through the area or volume swept by the rotors.

¹ Target species were selected based on standard criteria including conservation status and high wing loading/flight characteristics, as described in Scottish Natural Heritage (2005) *Survey methods for the use in assessment of the impacts of proposed onshore wind farms on bird communities*.

- Estimating the probability that a bird will be struck by a rotor blade when passing through the area swept by the rotors.

The modeling method for raptors and other species with irregular flight activity requires the calculation of the amount of time birds were observed flying per unit of area surveyed. This level of flight activity is then applied to the wind farm area in subsequent calculations of the collision risk.

The area surveyed from the vantage point (Avp) was calculated by producing a predicted "viewshed" from each VP using a Geographical Information System (see Figure E32). The viewshed was calculated as the area visible 25 m above ground level from 1.5 m height at the vantage point, to a distance of 250 m from the site boundary. Clearly, it is also possible for observers to record birds seen outside this zone, although these records were not included in the assessment. Collision risk was calculated for the whole survey period October 2007 to March 2008.

Of the target species recorded, modeling has not been undertaken for most species, as based on the small number of observations made during vantage point watches, estimated collision risk would be zero or negligible, or indeed not statistically viable. Collision risk modeling has been carried out for peregrine, common buzzard and golden plover the only species recorded with sufficient frequency to warrant an estimate of collision risk to be made.

For the entire survey period the proportion of the total survey time that birds were observed flying in the risk height band 10 m-100 m was calculated (t). Flight activity at risk height per hectare of visible area (F) was therefore t/AVP . The average flight activity was used in subsequent calculations of collision risk applied to the wind farm area. The turbines proposed for the Low Spinney site have a hub height of 80 m, with a rotor diameter of 92.5 m and an overall height of 125 m. The surveys were therefore carried out with a height risk band of 40-125 m.

The turbines are to be located in two linear formations, but are not separated by distances that would allow birds to fly between them without risk of collision; the size of the flight risk area (A_{risk}) was assumed to be the areas of a individual circles with a diameter of 200 m, centered on each of the turbine locations (See Figure E33). From this, the proportion of time (t_{risk}) that birds spent at risk height in the area occupied by the wind turbines was calculated by multiplying the average flight activity by the flight risk area.

Bird occupancy (n) of the flight risk area throughout the year was calculated by multiplying trisk by the number of hours they are potentially active in the study area during the season (estimated using sunrise/sunset times and calculating an approximate average per month). Common Buzzard was assumed to be potentially active half the daylight hours in winter, and three quarters of daylight hours in summer. Peregrine and golden plover were assumed to be potentially active between sunrise and sunset.

The flight risk volume (o) was calculated by multiplying the flight risk area by the diameter of the rotors. The volume of air swept by the rotors of all proposed turbines in the wind farm was calculated by multiplying the number of turbines by the volume of air swept by one rotor ($R^2(d + l)$, where R is the rotor radius, d is the maximum depth of the blade and l is the length of the bird). Bird occupancy of the volume swept by all rotors each year (b) was calculated by multiplying the bird occupancy of the flight risk area (n) by the proportion of the flight risk volume swept by the rotors. By allowing for a typical speed of a bird (v) flying in the volume of air swept by the rotors, the number of transits (Ntransit) made by birds through the rotors each year was calculated.

The probability of a bird that flies through the area swept by the rotors being hit by a rotor blade depends on a number of parameters: the dimensions of the bird and type of flight (speed, and flapping or gliding), and the size and rotation speed of the rotors. For this assessment, birds were assumed to use flapping flight, which gives a higher (worst-case) probability of being struck by a blade. These parameters were input into a bespoke Excel spreadsheet that calculates the average collision risk for each species passing through the rotor volume, expressed as a percentage.

From the above results, the number of birds colliding with the rotors during the year was calculated, assuming that birds take no avoiding action. Note that the assumption has been made that turbines are operational for a maximum of 85% of the time; therefore the collision risk has been reduced by 15%, as birds would not be at risk from collision mortality with the stationary turbine structure. The above calculations make an estimate of collision risk, assuming that birds take no action to avoid being struck by the operating rotor blades. In reality, a very high proportion of birds are likely to take avoiding action. There is very little information available regarding turbine avoidance behaviour by peregrine, as there has been only one documented collision incident in the UK (Meek 1993) although it should be noted that

this does not necessarily mean that they are not vulnerable. There is therefore no reliable information on which to base an avoidance rate but given that avoidance rates for birds prey are estimated to be between 98 and 100% (Whitfield and Madders 2006) and that this species has particularly high visual acuity and aerial mobility the avoidance rate is assessed as being at least 99%, along with golden plover. Common buzzard is assessed as being at least 98%.

2.4 Limitations

There were no significant limitations to survey, although no nocturnal observations were made. The survey was conducted during the core winter months and incorporated dusk and dawn observations through a range of weather conditions. It was considered unlikely that further survey visits would have yielded additional pertinent information on the winter status of birds.

2.5 Quality Assurance & Environmental Management

All ecologists employed by Andrew McCarthy Associates are members of, or are under application for, membership of the Institute of Ecology and Environmental Management (IEEM) and follow the Institute's code of professional conduct when undertaking ecological work.

3 RESULTS

3.1 Desk Study

The results of the desk study are provided in Appendix 3.

3.2 Field Survey

3.1.1 Habitat Summary

The site consists of gently undulating topography in rural Leicestershire, to the east of and immediately adjacent to the M1 motorway. Much of the site lies within the holdings of Low Spinney Farm. Habitats on site consist of arable, semi-natural woodland and grazed semi-improved grassland with a network of mature hedgerows as field boundaries (see the Ecology Technical Report in Appendix D for a full account of habitats).

3.1.2 Common Bird Census (CBC)

The three CBC surveys undertaken between 25 May and 13 June 2007 resulted in 55 species of bird being recorded within the red line site boundary and in neighbouring areas of land up to 200m from the site boundary (see Figures E1 -E7, Appendix 1 for further details of species and frequency of sightings). Of these, 8 species were of high conservation concern ('red list') and 16 of moderate conservation concern ('amber list').

On the basis of the CBC data gathered from the surveys there was evidence of confirmed breeding for 6 species (including kestrel *Falco tinnunculus* and buzzard *Buteo buteo*) and probable breeding for 18 other species. Potential for additional species to also possibly breed on the site was noted.

3.1.2.1 Red list and Biodiversity Action Plan species

The most significant breeding species were: tree sparrow *Passer montanus*, song thrush *Turdus philomelos* and kestrel. At least one pair of tree sparrows is likely to have successfully bred (with young accompanying adults noted on 24 May 2007) in the southern part of the site. Mature ash trees occur throughout the site, many having holes of value to nesting tree sparrow, as well as starling *Sturnus vulgaris*, kestrel, jackdaw *Corvus monedula* and little owl *Athene noctua*. Yellowhammer *Emberiza citrinella* was also frequently recorded on the site with several males singing and calling territorially and females also seen, suggesting probable breeding.

Skylark *Alauda arvensis* was widely recorded across the survey area (usually as singing territorial males) but not in significant numbers. There is likely to have been in the order of 3-4 breeding pairs of skylark present but successful breeding was not observed and may have been disrupted due to the pattern of cropping and the grazing activities of sheep and cattle.

Grey partridge *Perdix perdix* was recorded in the southern half of the site, and may have bred in hedge bottoms. Reed bunting *Emberiza schoeniclus* and yellow wagtail *Motacilla flava* (including pairs) were noted in the northern half of the site on a few occasions with sightings usually in oil seed rape fields; both species are known to breed in this crop, and breeding is therefore suspected, but was not confirmed. Yellow wagtail was recorded mainly in the early visits (mostly in the eastern part of the site occupied by oil seed rape fields) and this may indicate a period of passage to breeding sites further north.

3.1.2.2 Other species

Buzzard was, until comparatively recently, considered rare in the county of Leicestershire (Lott, 1997) but this species has undergone a significant expansion in the last decade and is now one of the most common raptors throughout England. It is well-established in Leicestershire and the CBC surveys showed an established active nest site in the southern half of the survey area with other breeding territories present in the wider area. Only one species of wader was recorded – lapwing *Vanellus vanellus*. The few sightings of this species included an individual observed sitting on a nest in an arable field at the northern end of the site during the second CBC visit of 24 May 2007.

3.1.3 Summer Vantage Point Surveys

A total of 47 species were recorded during the six vantage point surveys undertaken between 26 April and 18 July 2007 (see Appendix 1, Figures E9- E19). Of these, 8 species were of high conservation concern ('red list') and 16 of moderate conservation concern ('amber list').

3.1.3.1 *Wildlife & Countryside Act Schedule 1 and birds of high conservation concern ('red list')*

Four Schedule 1 species were recorded during survey – all raptors comprising single sightings of peregrine *Falco peregrinus*, red kite *Milvus milvus*, osprey *Pandion*

haliaetus and hobby *Falco subbuteo*. Red listed species comprised grey partridge, skylark, song thrush, starling, tree sparrow, linnet *Carduelis cannabina*, yellowhammer and reed bunting. Of these, only skylark was observed flying at height and only starling was observed in large numbers. At vantage point 1 starling numbers were noted to build up and form a roost around Pond 2 with numbers on some occasions in excess of 150. Similarly from vantage point 2 there were starling flocks of around 50-60 birds and these were mostly active to the west of the site on land around Cotes-de-Val.

3.1.3.2 UK/Local BAP species (excluding raptors and waders)

Six UK BAP species were recorded: grey partridge, skylark, song thrush, tree sparrow, linnet and reed bunting. In total, 22 Leicestershire Key/BAP species were recorded (see Appendix 2 for details of these).

3.1.3.3 Raptors

Seven species of raptor were recorded during the vantage point surveys. Buzzard and kestrel were recorded on every visit, and both bred within or on the boundary of the site survey area (nest sites located within the southern half of the survey area) with sparrowhawk also frequently recorded.

Peregrine, red kite, osprey and hobby were observed only once, the first three seen from vantage point 2. The sighting of hobby was considered to be a bird passing through on migration flying north, although the species is known to be an uncommon breeding bird within Leicestershire. The single osprey sighting may have been a wandering bird from the breeding site at Rutland water (40 km to the northeast) and the single red kite will have probably been one of the birds originating from the release programme for this species in the Midlands region (also seen regularly at Rutland water). The single peregrine sighting most likely relates to a wandering adult from a breeding site elsewhere.

3.1.3.4 Waders

Only one species of wader was recorded through the vantage point surveys, this being lapwing. Sightings were confined mainly in the early survey visits and during visits 5 and 6 this species was not recorded at all on site. Some of the sightings involved two or more birds to the north and northeast of the survey area, suggesting

at least two breeding territories in that locality (a single lapwing was noted on its nest in an arable field at the northern end of the site on the second CBC visit).

3.1.4 Winter Vantage Point Survey

Some 44 bird species were recorded on or over the survey area; these comprised an assemblage of mostly common and widespread farmland and woodland species, typical of the region in winter.

3.1.4.1 Wildlife & Countryside Act Schedule 1 species

Three specially protected species, i.e. listed on Schedule 1, Part 1, of the WCA (1981), as amended, were recorded during the winter survey period, these being peregrine *Falco peregrinus*, fieldfare *Turdus pilaris*, and redwing *T. iliacus*.

Single, hunting peregrine were recorded on November 6 2007 and on March 18 2008 at considerable altitude along the M1 corridor.

Fieldfare and redwing were recorded in feeding flocks of various sizes throughout the survey period and at various locations within the survey area. Flights were generally of a short distance, and below 10m in altitude, although they occasionally occurred at greater heights.

3.1.4.2 Birds Directive Annex 1 species (not on Schedule 1 WCA)

Golden plover *Pluvialis apricaria* was recorded on six occasions in the survey area. The largest flock of c.200 birds was recorded wheeling over arable land some 800m to the east of the application site. Other smaller flocks of between 10 and 50 birds were recorded at times closer to the application site, and occasionally within it. A single large arable field in the eastern half of the application site held foraging/roosting birds on three occasions.

3.1.4.3 Biodiversity Action Plan Priority and 'Red List' Species

Besides the Schedule 1 and Annex 1 species listed above, a further five BAP/Red-listed and ten Amber-listed species were recorded, these being (from the red list): skylark *Alauda arvensis*, song thrush *Turdus philomelos*, starling *Sternus vulgaris*, tree sparrow *Passer montanus*, and yellowhammer *Emberiza citrinella*. Amber-listed species are included in Table 2 (Appendix 2).

Regular flights of individual birds and small flocks of starling were recorded throughout the survey period, associated with foraging around the Cotes-de-Val farm buildings to the south of the application site. Records of other species were restricted to small duration flights at low level between hedgerows and woodland blocks.

3.1.5 Collision Risk Analysis

Table 3 shows the turbine parameters used in the collision risk modelling analysis.

Table 3 Turbine and observation parameters.

Item	Code	Quantity	Units
Visible Area from VP	AVP	267.63	hectares
Total observation time at VP	Obs VP	518400	seconds
Hub height		Variable 80	m
Rotor radius	r	42.5	m
No. of turbines		4	
No. of rotor blades		3	
Risk Window Area	Arisk	59.5	hectares
Risk volume	Vw	55050450	cubic metres
Maximum chord width	d	3.6	m
Rotation period		5.26	seconds
Average pitch		25	degrees
Estimated maximum operation		85	%

Table 4 shows the biological parameters of peregrine, common buzzard and golden plover for use in the collision risk modeling analysis. Bird lengths and wing-spans have been taken as the mid-value of the range published in the Collins Bird Guide (1999). Flight speeds have been taken as the mean equivalent airspeeds published Bruderer and Boldt (Bruderer & Boldt, 2001).

Table 4 Biological parameters.

Species	Length of bird (l) (metres)	Wing span of bird (metres)	Typical flight speed v (m/s)
Peregrine	0.45	1.01	12.1
Common Buzzard	0.52	1.21	11.6
Golden Plover	0.265	0.56	11

Table 5 shows a summary of the observed flight activity of peregrine, common buzzard and golden plover throughout the survey period.

Table 5 Observed flight activity.

Species	Number of flights	Total time at risk height (s)
Peregrine	1	75
Common Buzzard	25	1965
Golden Plover	130	10050

Table 6 shows the calculations of the average flight activity per visible hectare for the VP for the survey period

Table 6 Average flight activity observed from VP.

Species	Proportion of observation time at risk height	Flight activity per visible hectare
	t	F (s/ha)
Peregrine	3.22×10^{-5}	5.41×10^{-7}
Common Buzzard	8.43×10^{-4}	1.42×10^{-5}
Golden Plover	4.31×10^{-3}	7.25×10^{-5}

Tables 7 shows the calculations of the bird occupancy of the rotor risk volume.

Table 7 Calculation of bird occupancy of the risk volume during the breeding season.

Species	Flight activity per visible hectare	Proportion of time in risk area at risk height	Hours per year in risk area	Combined volume swept by rotors (m3)	Bird occupancy of rotor volume (s)
	F	trisk	n	o	b
Peregrine	5.41×10^{-7}	3.22×10^{-5}	0.145	48394.73	0.457
Common Buzzard	1.42×10^{-5}	8.43×10^{-4}	2.48	51989.04	8.42
Golden Plover	7.25×10^{-5}	4.31×10^{-3}	5.99	38895.50	15.23

Table 8 Percentage chance of being struck by a rotor when passing through the rotor volume (assuming no avoidance).

Species	% collision risk
Peregrine	6.9
Common Buzzard	8.6
Golden Plover	7.0

Table 9 shows the calculations of collision risk (as described above) for peregrine, common buzzard and golden plover during one year, under the assumption that birds take no action to avoid the moving rotors.

Table 9 Calculation of collision risk assuming no avoidance.

Species	Bird occupancy of rotor volume (s)	Time to pass through rotors (s)	No. of transits through rotors per year	No. of bird collisions per year (no avoidance)
	b	N		C
Peregrine	0.457	0.156	2.94	0.172
Common Buzzard	8.42	0.175	48.2	3.52
Golden Plover	15.23	0.134	111	6.58

Table 10 shows the collision risk calculated to include an avoidance rate of 98% for common buzzard and 99% for peregrine and golden plover.

Table 10 Estimated annual mortality of peregrine, common buzzard and golden plover from the proposed developments.

Species	Number of bird collisions per year	Number of years per collision
Peregrine	0.00172	580
Common Buzzard	0.0705	14.2
Golden Plover	0.0658	15.2

4 RELEVANT LEGISLATION & POLICY²

4.1 Legislation

The European Community Council Directive 79/409/EEC on the Conservation of Wild Birds (commonly known as the 'Birds Directive') provides a framework for the conservation and management of wild birds. Species listed in Annex 1 of the directive are subject to special conservation measures within their area of distribution.

The Birds Directive is implemented in England by the Wildlife & Countryside Act (WCA) 1981, as amended by the Countryside Rights of Way (CRoW) Act 2000. This legislation offers legal protection to all wild birds and it is an offence, with certain exceptions, to intentionally kill or injure any wild bird. Species listed in Schedule 1 (Part 1) of the WCA, as amended, are protected by special penalties at all times from reckless acts such as killing, injuring or disturbance near a nest containing eggs or dependent young.

4.2 Policy

Government Planning Policy Statement 9 (PPS9) and its accompanying document ODPM 06/2005 sets out Government Policy on Biodiversity and Nature Conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species, such as birds, when considering planning applications.

The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

A number of protected species were recorded on site, such as peregrine, and redwing, fieldfare, skylark, song thrush, linnets and bullfinch which are listed as Priority Species for conservation in the Leicestershire Biodiversity Action Plan (LBAP) (Anon 2004) or the UK BAP, as amended (Anon, 1995).

² Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

5 DISCUSSION & RECOMMENDATIONS

5.1 Summer Bird Assemblage

The survey results indicate that the site provides suitable breeding habitat for a range of birds of high conservation concern. These include skylark, yellowhammer, song thrush, tree sparrow and starling. A diverse range of raptors have also been recorded on site, albeit in low numbers for many species.

Males were observed in territorial song flight across a wide part of the survey area from the northwest to the south. There were an estimated 3-4 established territories in the site boundary and several more in the wider area. The density of territories is not considered high but the site may support larger numbers during winter when birds are known to congregate in flocks and to continue their song flight behaviour.

The main concern relating to the effects of wind turbines on this species is through displacement of breeding territories/sites where birds are restricted or unable to carry out song flights. However, breeding territories are likely to shift around according to habitat related factors such as crop rotation (the turbines are all currently proposed for locating within fields presently used for intensive arable cultivation). Survey data gathered during CBC and Vantage Point surveys suggests that the skylark activity recorded appears to be low within the vicinity of the proposed turbine locations. The site comprises typical farmland habitats found in rural Leicestershire and supports a suite of typical wintering species for the county.

Although there were a high number of raptor species recorded for this site, four species were recorded on only one occasion. However, all these were Schedule 1 species, as protected by the Wildlife and Countryside Act 1981 (as amended), which receive the highest level of protection under domestic conservation law. The single hobby was recorded in late April, at a time of year when birds typically are on passage to their breeding sites. Peregrine, a scarce bird within Leicestershire and usually a winter visitor in the county (Lott, 1997), was also recorded on a single occasion. But, like the Buzzard, this species has experienced a general increase in breeding population and numbers in the last decade (although threats still remain to its presence in many areas through direct persecution). Red kite, also recorded once, is a species that has been the subject of a widespread release programme across the country; many of these releases have been successful, and the British population is now expanding. It is possible that the Low Spinney Farm area could support a small breeding population of kites, but at the current time, this species is considered to be

infrequent in the area. Osprey is a summer breeding migrant in the UK, overwintering in Africa, and is considered to be no more than an occasional visitor to the site. The bird recorded during the vantage point surveys may have been a bird from Rutland Water, the closest known breeding site.

Survey showed the site and the wider area to provide suitable habitat in the form of extensive hedgerows and mature trees for breeding or potential breeding of a range of smaller farmland birds of conservation concern such as grey partridge, reed bunting, and linnet.

5.2 Winter Bird Assemblage

The site comprises typical farmland habitats found in rural Leicestershire and supports a suite of typical wintering species for the county.

Three specially protected species were recorded, these being peregrine, fieldfare, and redwing. Peregrine is considered likely to visit the site and its environs on occasions during hunting flights, especially during winter when adult and juvenile birds become more widely dispersed away from their more summer breeding grounds. The site is considered to support a range of prey species for peregrine although it is not of particular note in this regard, and more productive foraging areas would almost certainly be available elsewhere. The corridor of the M1 to the west of the site boundary is possibly used by a range of species as a navigation aid and the flight-lines for peregrine appear to demonstrate this.

Redwing and fieldfare flocks were regularly noted during the survey period, occurring throughout the application site. Records typically referred to relatively small flocks and individual birds, often accompanied by starling, making short duration flights between grassland foraging areas and hedgerows. Longer duration flights were also recorded at a range of altitudes and often within close proximity to the proposed turbine locations. These flights are attributed to migrating birds moving in a broad front through the county rather than the site being located within a restricted migration route *per se*.

Golden plover, a species potentially sensitive to wind turbines (Pederson & Poulsen, 1991), was recorded roosting/foraging on adjacent land and within an arable field in the east of the application site.

Common buzzard was recorded throughout the survey period at various locations within and adjacent to the application site.

Most other birds recorded in the survey area were of common and widespread wintering species in the region whose populations are not known, or considered, to be at significant risk from wind turbines.

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Web addresses for access to full UK legislation and policy text:

Conservation (Natural Habitats &c.) (Amendment) Regulations 2007:
http://www.opsi.gov.uk/si/si2007/uksi_20071843_en_1

Habitats Directive:
www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043.html

Wildlife and Countryside Act 1981:
www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

Countryside and Rights of Way Act 2000:
www.legislation.hmsso.gov.uk/acts/acts2000/20000037.htm

Birds Directive:
eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en.pdf

Planning Policy Statement 9:
www.communities.gov.uk/documents/planningandbuilding/pdf/147408

APPENDIX 1 - FIGURES

APPENDIX 2 –BIRD SPECIES RECORDED

Table 11: Status of bird species recorded during summer bird surveys

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
Cormorant <i>Phalacrocorax carbo</i>												Non-breeding visitor single bird fly-over 33 Known sites in county including stronghold breeding population at Rutland water	Amber list, LK/BAP species*
Grey heron <i>Ardea cinerea</i>												Non-breeding visitor only single birds recorded	
Mallard <i>Anas platyrhynchos</i>												Non-breeding visitor low numbers occasionally recorded (<10)	
Sparrowhawk <i>Accipiter nisus</i>												Non-breeding visitor Single bird recorded	

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
Buzzard <i>Buteo buteo</i>												Breeding one pair nesting within site boundary.	LK/BAP species
Red Kite <i>Milvus milvus</i>												Non-breeding visitor single bird recorded. Uncommon visitor and very rare breeder in county	Schedule 1 WCA, Amber list
Osprey <i>Pandion haliaetus</i>												Non-breeding visitor single bird recorded. Scarce passage migrant and scarce breeder in county.	Schedule 1 WCA, Amber list
Hobby <i>Falco subbuteo</i>												Non-breeding visitor single bird recorded	Schedule 1 WCA, LK/BAP species
Peregrine <i>Falco peregrinus</i>												Non-breeding visitor single bird recorded. Scarce resident	Schedule 1 WCA Amber list, LK/BAP species

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												breeder, uncommon winter and passage visitor in county.	
Kestrel <i>Falco tinnunculus</i>												Single breeding pair. Fairly common resident breeder in county	Amber list, LK/BAP species
Red-legged partridge <i>Alectoris rufa</i>												Probable breeding Less than 10 birds recorded	
Grey partridge <i>Perdix perdix</i>												Possible breeding less than 5 birds recorded.	Red list, UK BAP, LK/BAP species
Pheasant <i>Phasianus colchicus</i>												Probable breeding low numbers of individual birds (<20)	
Black-headed gull <i>Larus ridibundus</i>												Non-breeding visitor variable numbers of	Amber list, LK/BAP species

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												birds flying over Present all year uncommon breeder in county.	
Lesser black-backed gull <i>Larus fuscus</i>												Non-breeding visitor variable numbers of birds flying over Common passage and fairly common winter visitor.	Amber list
Moorhen <i>Gallinula chloropus</i>												Probable breeding less than 5 pairs	
Lapwing <i>Vanellus vanellus</i>												Non-breeding visitor small flocks and individual birds recorded. One breeding territory just beyond site	Amber list, LK/BAP species

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												boundary. Abundant winter visitor, fairly common migrant breeder in county	
Feral pigeon <i>Columba livia</i>												Possible breeding generally low numbers recorded (<20)	
Stock dove <i>Columba oenas</i>												Breeding generally low numbers recorded (<15)	Amber list, LK/BAP species
Wood pigeon <i>Columba palumbus</i>												Probable breeding Occasionally medium sized flocks of up to 150 birds	
Collared dove <i>Streptopelia decaocto</i>												Non-breeding visitor	

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												low numbers (<5)	
Cuckoo <i>Cuculus canorus</i>												Non-breeding visitor individual birds recorded	Amber list
Little owl <i>Athene noctua</i>												Possible breeding single pair	
Swift <i>Apus apus</i>												Non-breeding visitor up to 50 birds in foraging flocks over site and adjacent land	
Great spotted woodpecker <i>Dendrocopos major</i>												Possible breeding low numbers/individual birds recorded	
Skylark <i>Alauda arvensis</i>												Probable breeding low numbers recorded regularly up	Red list, UKBAP, LK/BAP species

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												to 20 birds and 2 breeding territories. Common resident breeder, autumn migrant and winter	
Sand martin <i>Riparia riparia</i>												Non-breeding visitor foraging flocks of up to 30 birds. Fairly common migrant breeder in county.	Amber list, LK/BAP species
House martin <i>Delchon urbica</i>												Non-breeding visitor foraging flocks of up to 30 birds. Common migrant breeder, declining in county	Amber list
Barn swallow <i>Hirundo rustica</i>												Probable breeding	Amber list, LK/BAP

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												up to 20 birds at peak – regularly recorded. Common migrant breeder in county.	species
Yellow wagtail <i>Motacilla flava</i>												Spring migration visitor up to 15 birds recorded occasionally. Uncommon migrant breeder declining in county.	Amber list
Pied wagtail <i>Motacilla alba</i>												Possible breeding low numbers <5 birds	
Wren <i>Troglodytes troglodytes</i>												Probable breeding up to 5 pairs on site	
Dunnock <i>Prunella modularis</i>												Probable breeding	Amber list, LK/BAP

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												up to 8 pairs on site.	species
Robin <i>Erithacus rubecula</i>												Probable breeding up to 10 pairs on site	
Wheatear <i>Oenanthe oenanthe</i>												Non-breeding visitor single bird recorded	LK/BAP species
Blackbird <i>Turdus merula</i>												Breeding up to 6 pairs on site	LK/BAP species
Song thrush <i>Turdus philomelos</i>												Breeding 4 territories on site. Common resident breeder, recent decline in county.	Red list, UKBAP, LK/BAP species
Mistle thrush <i>Turdus viscivorus</i>												Non-breeding visitor individual birds recorded. Common resident breeder in county	Amber list
Whitethroat <i>Sylvia communis</i>												Probable breeding up to 5 pairs on site	

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
Lesser whitethroat <i>Sylvia curruca</i>												Probable breeding one or two pairs	
Blackcap <i>Sylvia atricapilla</i>												Non-breeding visitor less than 5 birds	LK/BAP species
Blue tit <i>Parus caeruleus</i>												Breeding less than 10 pairs	
Great tit <i>Parus major</i>												Probable breeding less than 10 pairs	
Magpie <i>Pica pica</i>												Possible breeding less than 5 birds	
Jackdaw <i>Corvus monedula</i>												Probable breeding less than 5 birds	
Rook <i>Corvus frugilegus</i>												Non breeding visitor medium sized flocks occasionally recorded – up to 100 birds	
Carrion crow <i>Corvus corone</i>												Possible breeding less than 3 pairs	

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
Starling <i>Sturnus vulgaris</i>												Probable breeding large flocks feeding on site regularly of up to 200 birds. Common resident breeder, recent decline in county.	Red list, LK/BAP species
Tree sparrow <i>Passer montanus</i>												Breeding 4 territories on site. Fairly common resident breeder, recent decline in county.	Red list, UKBAP, LK/BAP species
Chaffinch <i>Fringilla coelebs</i>												Probable breeding up to 15 pairs	
Greenfinch <i>Carduelis chloris</i>												Probable breeding generally small flocks or individual birds <	

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												15	
Goldfinch <i>Carduelis carduelis</i>												Probable breeding generally small flocks or individual birds < 20	LK/BAP species
Linnet <i>Carduelis cannabina</i>												Possible breeding generally small flocks or individual birds < 15. Common resident breeder and passage migrant in county.	Red list, UKBAP, LK/BAP species
Yellowhammer <i>Emberiza citronella</i>												Probable breeding 3 territories on site. Common resident breeder, recent	Red list

Species	CBC SURVEY	25-04-07	24-05-07	13-06-07	VANTAGE POINT	26-04-07	24-05-07	12-06-07	21-06-07	04-07-07	18-07-07	Breeding status on site and population status on site	Conservation status
												decline in county.	
Reed bunting <i>Emberiza schoeniclus</i>												Possible breeding less than 5 pairs. Common resident breeder, recent decline in county.	Red list, UKBAP, LK/BAP species

* LK/BAP = Leicestershire Key/BAP species as listed in 'An Inventory of Key Species in Leicestershire and Rutland' compiled by Derek Lott and published in 1997 for the Leicestershire Biodiversity Action Plan. This has not been updated to show changes in status of birds in the county since that time.

Red data listed species are indicated in red with amber data listed species in pale orange

HMSO, 1981. The Wildlife and Countryside Act 1981. Chapter 69. HMSO, London.

County bird status derived from The Leicestershire and Rutland Annual Bird Report, 2006. The Leicestershire and Rutland Ornithological Society.

Table 12: Status of bird species recorded during the winter bird surveys

<i>Scientific name</i>	Common name	BTO Two-letter Code⁺	Sch. 1 (i)	BAP	BoCC	Leicestershire status	Site winter status and preferred habitats
<i>Branta Canadensis</i>	Canada goose	CG				Introduced. Common resident, fairly common breeder.	infrequently recorded fly-over
<i>Anas platyrhynchos</i>	mallard	MA				Common autumn and winter visitor, fairly common breeder.	small resident population
<i>Alectoris rufa</i>	red-legged partridge	RL				Introduced. Fairly common resident breeder supplemented by frequent releases.	small resident population
<i>Phasianus colchicus</i>	common pheasant	PH				Introduced common resident breeder supplemented by frequent releases.	small resident population
<i>Phalacrocorax carbo</i>	cormorant	CA				Fairly common localised resident breeder, passage migrant. Amber listed. GB230	infrequently recorded fly-over
<i>Ardea cinerea</i>	grey heron	H.				Fairly common resident breeder.	infrequently recorded fly-over
<i>Accipiter nisus</i>	sparrowhawk	SH				Fairly common resident breeder.	single bird recorded hunting over the site on three occasions
<i>Buteo buteo</i>	common buzzard	BZ				Abundant resident breeder and passage migrant.	Resident; one pair in survey area
<i>Falco tinnunculus</i>	kestrel	K.				Fairly common resident breeder. Amber listed	Resident; one pair close to survey area
<i>Falco peregrinus</i>	peregrine	PE	✓		A	Resident breeder and uncommon winter and passage visitor. Amber listed	Resident; one pair in survey area
<i>Gallinula chloropus</i>	moorhen	MH				Common resident breeder.	Resident
<i>Pluvialis apricaria</i>	golden plover	GP				No evidence of breeding. Fairly numerous winter visitor (Oct-Mar); scarce to very scarce Apr-Aug, including some passage. GB2500	Maximum, approx 200 some 800m from the application site otherwise only present occasionally in small numbers
<i>Vanellus vanellus</i>	lapwing	L.				Abundant winter visitor, fairly common migrant breeder. Amber listed	Usually present in small numbers in the northern half of the survey area
<i>Gallinago gallinago</i>	common snipe	SN			A	Fairly common passage and winter visitor; scarce breeder. Amber listed	A single bird flushed from VP 1 on Dec 13.
<i>Larus ridibundus</i>	black-headed gull	BH				Present all year, abundant in winter, uncommon breeder. Amber listed	Usually present in small numbers but occasionally in flocks numbering up to 30 individuals
<i>Larus canus</i>	common gull	CM				Abundant in winter visitor, scarce to uncommon in summer. Amber listed.	regularly passing over the site in mixed gull flocks in late afternoon
<i>Larus fuscus</i>	lesser black-backed gull	LB			A	Common passage and fairly common winter visitor, uncommon in summer. Amber listed. GB500	Individual birds occasionally seen flying over the site
<i>Columba livia var.</i>	feral pigeon	FP				Feral. Fairly common resident breeder.	resident on adjacent land
<i>Columba oenas</i>	stock dove	SD				Fairly common to common resident breeder. Amber listed	resident
<i>Columba palumbus</i>	woodpigeon	WP				Abundant resident breeder, passage and winter visitor	resident – generally in low numbers
<i>Athene noctua</i>	little owl	LO				Introduced. Fairly common resident breeder.	resident – one pair within survey area
<i>Alauda arvensis</i>	skylark	S.		UK & C	R	Common resident breeder; fairly numerous passage migrant and winter visitor. Red listed	Regularly recorded on site but only in small numbers (<10).
<i>Anthus pratensis</i>	meadow pipit	MP			A	Common passage migrant and fairly common winter visitor uncommon breeder. Amber listed.	Individuals regularly recorded

Scientific name	Common name	BTO Two-letter Code⁺	Sch. 1 (i)	BAP	BoCC	Leicestershire status	Site winter status and preferred habitats
<i>Motacilla cinerea</i>	grey wagtail	GL				Uncommon resident breeder and winter visitor. Amber listed.	single record flying over site
<i>Motacilla alba</i>	pieb wagtail	PW				Common resident breeder and passage/winter visitor	Individuals occasionally recorded
<i>Troglodytes troglodytes</i>	wren	WR				Abundant resident breeder	Common in hedges, woodland and scrub
<i>Prunella vulgaris</i>	dunnock	D.		UK	A	Abundant resident breeder, passage migrant. Amber listed.	Uncommon and localised in some hedges and scrub
<i>Erithacus rubecula</i>	robin	R.				Abundant resident breeder; winter visitor	Common in hedges, woodland and scrub
<i>Turdus merula</i>	blackbird	B.				Abundant resident breeder; winter visitor	Ubiquitous in small numbers in hedge banks through out the site.
<i>Turdus pilaris</i>	fieldfare	FF	✓		A	Common winter visitor, rare in summer. Amber listed	small to medium sized flocks of mixed thrushes throughout survey period, highly nomadic in area
<i>Turdus philomelos</i>	Song thrush	ST		UK & C	R	Common resident breeder, recent decline; passage and winter visitor. Red listed	resident – low numbers recorded regularly
<i>Turdus iliacus</i>	redwing	RE	✓		A	Common/abundant winter and passage visitor. Amber listed	as FF
<i>Aegithalos caudatus</i>	long-tailed tit	LT				Common resident breeder	Small flocks (<5) occasionally recorded in hedges and woodland
<i>Cyanistes caeruleus</i>	blue tit	BT				Abundant resident breeder	common in perimeter hedges and woodland
<i>Parus major</i>	great tit	GT				Abundant resident breeder	Uncommon in perimeter hedges and woodland
<i>Garrulus glandarius</i>	jay	J.				Fairly common resident breeder	resident – at least one pair
<i>Pica pica</i>	magpie	MG				Common and widespread resident breeder.	Individuals occasionally recorded flying across site or foraging with other corvids
<i>Corvus monedula</i>	jackdaw	JD				Common and widespread resident breeder, winter visitor	Individuals regularly recorded seen flying across site and foraging in small flocks (<15) with other corvids
<i>Corvus corone</i>	carrion crow	C.				Common and widespread resident breeder	Ubiquitous throughout the site with flocks numbering up to 40
<i>Sturnus vulgaris</i>	starling	SG		UK	R	Abundant resident breeder, passage migrant and winter visitor. Red listed (significant decline in Cornwall as nationally)	Flocks regularly recorded foraging on grassland across site, and flying across site at dusk heading south ubiquitous around Cotes-de-val and Low Spinney farm buildings/yards
<i>Passer montanus</i>	tree sparrow	TS		UK	R	Fairly common resident breeder, recent decline. Red listed (significant decline nationally)	Scarce, recorded in hedgerows and mature standard trees in central part of survey area
<i>Fringilla coelebs</i>	chaffinch	CH				Abundant resident breeder and passage and winter visitor	Commonly recorded as individuals and pairs flying over the site and in hedges and woodland
<i>Carduelis carduelis</i>	goldfinch	GO				Fairly numerous migrant and resident breeder, passage migrant.	small flocks (<10) occasionally recorded flying over the site an in hedges and trees
<i>Emberiza citrinella</i>	yellowhammer	Y.		UK & C	R	Common resident breeder, recent decline. Red listed.	individuals and pairs occasionally recorded flying over the site and within hedges and woodland edges.

Species are listed in scientific order after Dudley *et al.* (2006). See www.bou.org.uk (accessed February 2007).

⁺BTO two-letter species codes follow those given at www.bto.org (accessed February 2007) and are used on Figure 1.

BoCC Birds of Conservation Concern, Red (R) or Amber (A) Listed species (Gregory *et al.* 2002).

BAP Priority Species in the UK (Anon, 1995 as amended) or Leicestershire (C) (Anon, 2004, as amended) Biodiversity Action Plans. Leicestershire status follows Wilson & Wilson (2005). *Birds in Cornwall 2004*.

APPENDIX 3 – DESK STUDY DATA

Birds of Conservation Significance within 5Km of the Application Site

Common Name	Scientific Name	Conservation Status
Barn owl	<i>Tyto alba</i>	LBAP, Birds Directive, Schedule 1, amber list
Bullfinch	<i>Pyrrhula pyrrhula</i>	UKBAP, red list
Common gull	<i>Larus canus</i>	Amber list
Curlew	<i>Numenius arquata</i>	UKBAP, amber list
Fieldfare	<i>Turdus pilaris</i>	Schedule 1, amber list
Green woodpecker	<i>Picus viridis</i>	Amber list
Grey partridge	<i>Perdix perdix</i>	UKBAP, red list
Hedge accentor	<i>Prunella modularis</i>	UKBAP, amber list
Herring gull	<i>Larus argentatus</i>	UKBAP, amber list
Hobby	<i>Falco subbuteo</i>	Birds Directive, schedule 1
Kestrel	<i>Falco tinnunculus</i>	Amber list
Lesser black-backed gull	<i>Larus fuscus</i>	Amber list
Linnet	<i>Carduelis cannabina</i>	UKBAP, red list
Northern lapwing	<i>Vanellus vanellus</i>	UKBAP, amber list
Red kite	<i>Milvus milvus</i>	Birds Directive, schedule 1, amber list
Reed bunting	<i>Emberiza schoeniclus</i>	UKBAP, red list
Redwing	<i>Turdus iliacus</i>	Schedule 1, amber list
Sand martin	<i>Riparia riparia</i>	LBAP, amber list
Skylark	<i>Alauda arvensis</i>	UKBAP, red list
Snipe	<i>Gallinago gallinago</i>	Amber list
Song thrush	<i>Turdus philomelos</i>	UKBAP, red list
Spotted flycatcher	<i>Muscicapa striata</i>	UKBAP, red list
Starling	<i>Sturnus vulgaris</i>	UKBAP, red list
Stock dove	<i>Columba oenas</i>	Amber list
Swallow	<i>Hirundo rustica</i>	Amber list
Tree sparrow	<i>Passer montanus</i>	UKBAP, red list
Willow tit	<i>Parus montanus</i>	UKBAP, red list
Whimbrel	<i>Numenius phaeopus</i>	Schedule 1, amber list