

Knepp Castle Estate

Breeding Bird Survey

2015



By

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1.0 INTRODUCTION

Repeat surveys of the breeding bird communities present within two areas of the Knepp Castle Estate were carried out in spring/summer 2015 following similar surveys in 2005 and 2007 – 14. The aims of the surveys were to:

- Identify the bird species breeding on site and to estimate the number of territories.
- Highlight the conservation status of the bird species utilising the site.

2.0 METHODOLOGY

2.1 Surveyor

The surveys were carried out by Paul James who also carried out the previous surveys detailed above.

2.2 Field methods

The same two transects were surveyed as in previous years: the first north of the A272 and east of Shipley Road (transect A) and the second south of Countryman Lane and west of New Barn Farm (transect B). Once again, ten visits were made to each transect between March and July. The dates on which visits were made were as follows: 18th March, 5th April, 14th April, 19th April, 27th April, 1st May, 9th May, 23rd May, 5th June and 20th June. Each visit was made in good weather, details of which were recorded on the field maps. The surveys were conducted by following the pre-established transects and recording the species encountered (by sight or sound) on large scale maps using the standard Common Birds Census species and activity codes (Marchant 1983). On completion of the surveys, the registrations were copied across onto species maps which are then used to estimate the number of territories for each species (Bibby *et al* 2000, Marchant 1983), a technique known as territory analysis. For the purpose of this survey, a territory was defined by the presence of a singing male on two or more dates, a bird (or pair) behaving territorially on two or more dates, alarm calls from adults or food/nesting material being carried by adults.

The species order used in this report follows the 8th edition of the British List <http://www.bou.org.uk/british-list/> while the species names are the vernacular names in common use.

3.0 SURVEY RESULTS

3.1 Weather summary

Spring 2015 was fairly unexceptional overall. March brought a mixture of typical early spring weather. High pressure in April brought some notably dry, sunny and warm days whereas during May an unsettled north-westerly weather type led to cool conditions with well above average rainfall.

The UK mean temperature for this spring was close to average. A near-average March (anomaly +0.1 °C) was followed by a rather warm April (+0.5 °C) and a cooler than average May (-0.8 °C). Maximum temperatures were well above normal in April but rather suppressed during May.

The rainfall patterns for each of the three months saw more rainfall in the north-west than the south-east relative to average, with spring totals of more than 130% across western Scotland compared to less than 70% across southern England. The UK received exactly 100% of average rainfall in March, 64% in April and 157% in May.

Sunshine amounts were rather above average in March (121%), well above average in April (143%) and slightly below in May (95%). April 2015 was the sunniest April for the UK in a series from 1929. In general central and eastern areas fared best.

<http://www.metoffice.gov.uk/climate/uk/summaries/2015/spring>

3.2 Species recorded

A total of 61 species was recorded in 2015 (see Appendices 1 – 4). One ‘new’ species was noted (grey wagtail) bringing the total for the two transects since 2005 to 88 (see Appendix 5). Included in this overall total are 21 Red List Species of High Conservation Concern and 17 Amber List Species of Medium Conservation Concern as identified by the latest assessment of the conservation status of all of the UK’s 247 regularly occurring birds (Eaton *et al* 2015). Starling bred for the first time since the surveys commenced and goldcrest for the first time along transect B.

The locations of the territories identified for each species are shown in fig. 5 – 8. Territories for some species such as green woodpecker and mistle thrush may cover a large area so the registrations on the maps may only indicate the approximate location of a territory.

4.0 CONCLUSIONS

A comparison of the results for transect A in 2015 with those for previous years shows little change in most species though for the first year since the surveys began no skylark territories were identified. The results for transect B show a continuation in the upward trend for the red listed song thrush and that the decline in whitethroat numbers from 19 territories in 2009 to just four in 2014 has been halted.

Twenty-three species of conservation concern and three additional Schedule 1 species were recorded in 2015, some of which are dealt with below:

Red kite (BoCC green list, Schedule 1)

The number of red kite sightings continues to increase. Along transect B, one was perched in a tree near Hampshires Farm on 27th April and it or another was circling over Wild Flower Meadow on 23rd May. Confirmation of nesting in the southern block is still awaited.

Peregrine (BoCC green list, Schedule 1)

A pair of adult Peregrines was observed on the electricity pylon south of Keeper's Cottage (grid ref TQ 15722 23426) on 23rd May while on 5th June the male was observed perched on the first pylon to the west. Despite a careful search of the pylon with binoculars, neither a nest nor young were observed though the territorial behaviour of the pair was strongly suggestive of nesting.

Lapwing (BoCC red list)

The only record this year was of a single bird that flew from Wild Flower Meadow to Brookhouse 8 on 23rd May. Sallow scrub has colonised much of Brookhouse 8 (where a pair was present in 2014) so it may be that there are no longer sufficient bare areas for nesting.

Barn owl (BoCC green list, Schedule 1)

The only records this year were of a single bird (presumed the same) roosting in the shed east of Brookhouse Farm (grid ref TQ 13488 19888) on 5th & 19th April and 5th June. The owl box in Lower Barn (transect B) appeared to be occupied by jackdaws.

Turtle dove (BoCC red list)

2015 was another excellent year for turtle dove on the Estate as confirmed by a coordinated survey carried out in the southern block in June – July 2015. The first record for transect B was of a 'purring' male to the west of Brookhouse 7 (a traditional site) on 23rd May. Probably the same bird was seen and heard there on 20th June while on 5th June there were 'purring' males along the tree lines between Brookhouse 8 & 9 and Brookhouse 9 & 10.

Cuckoo (BoCC red list)

This is always a difficult bird to survey as singing birds are very mobile and may be encountered almost anywhere in the southern block. The first record for transect B was of a single bird seen in flight near Brookhouse Farm on 14th April, an early date. On 19th April, one (probably the same) flew over Brookhouse 6 while on 27th April there was a pair at the northern end of Penbridge Lane. The only May record was of a single in flight over Brookhouse 7 on the 1st. In June there was one singing to the west of Lower Barn and a fledged juvenile in Brookhouse 10 on the 5th, and one in Brookhouse 4 and singing birds along the treeline between Brookhouse 6 & 7 and in the northeast corner of Brookhouse 10 on 20th June. These records indicate the presence of at least two territories along transect B. None was recorded along transect A.

Nightingale (BoCC red list)

There were two territories along transect B in 2015, one to the west of Brookhouse 7 (a traditional site) and the other in Brookhouse 4. Numbers have fallen from a high of five territories along transect B in 2007 and 2009 though the reasons for this decline are unclear.

Starling (BoCC red list)

Foraging groups of starlings have been recorded most years, especially in June. This year a pair that nested in a hole in an oak tree east of Old Keepers Cottage (transect A) was the first instance of breeding along either transect since the surveys began.

5.0 DISCUSSION

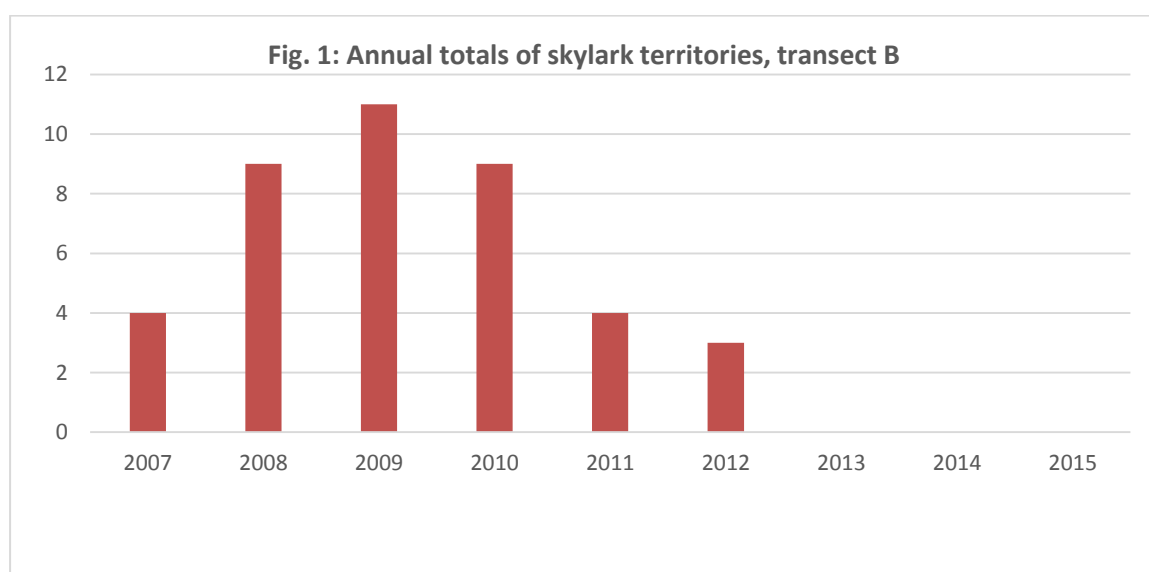
Until comparatively recently, most of the land on the Knepp Estate was devoted to traditional arable and dairy farming but in 2001 the focus shifted entirely and a series of regeneration and restoration projects were embarked upon aimed primarily at nature conservation and a less intensive way of meat production. The ongoing re-wilding project uses large herbivores (cows, deer, horses and pigs) to drive habitat changes across the Estate. Over the past ten years, ecological surveys have been carried out on the Estate to assess the impacts of the re-wilding project using methodologies that were first initiated in 2005. These have included breeding bird surveys in 2005 and annually from 2007.

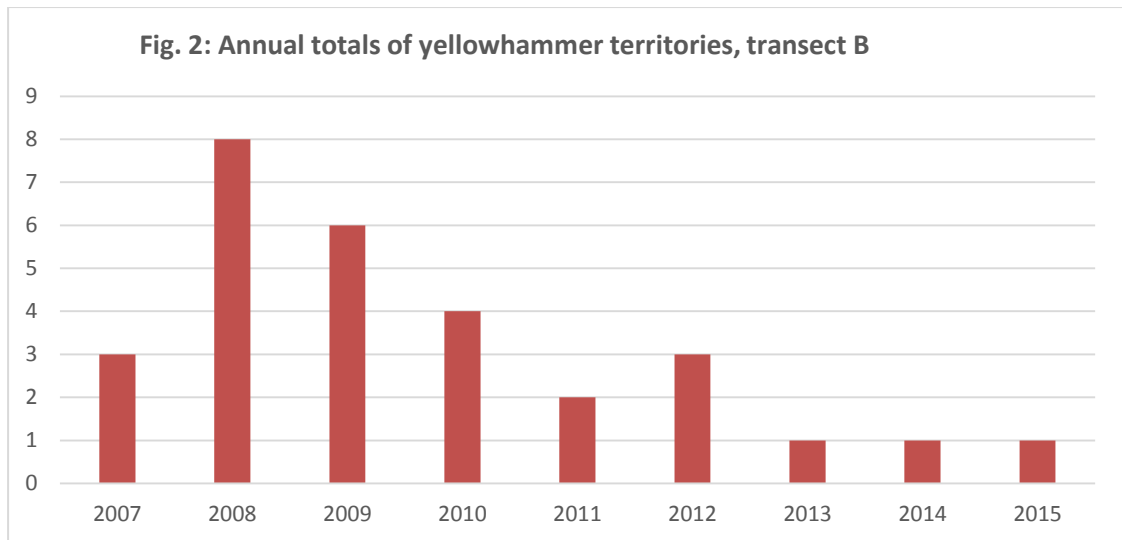
Fuller (1980) provided a framework for evaluating the conservation importance of sites in the UK based on their breeding bird assemblage using the following diversity criteria:

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

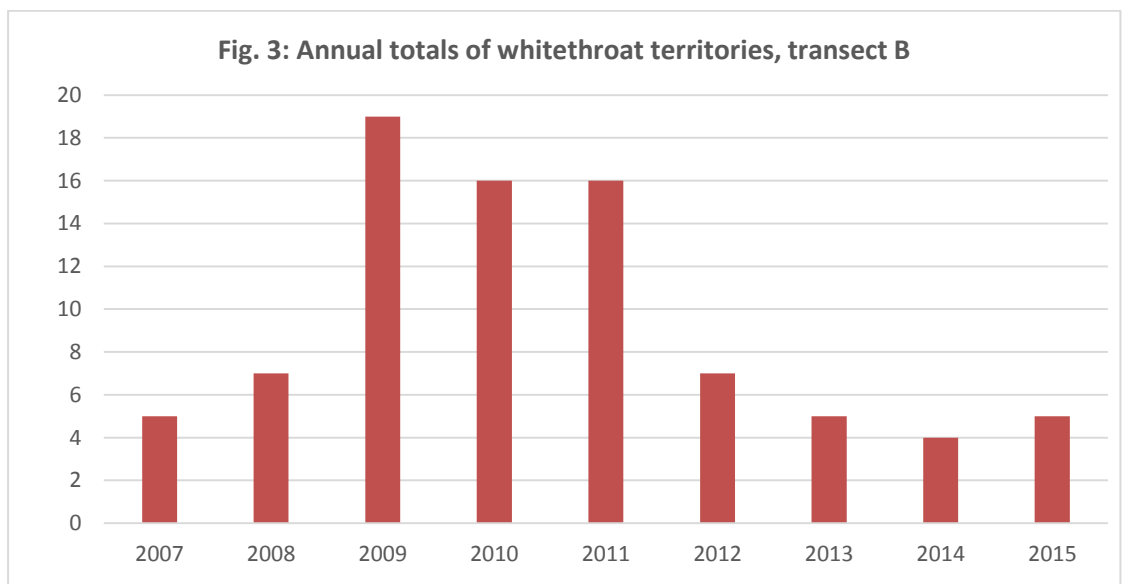
Since 2005 the transect surveys have recorded a total of 88 species, of which at least 75 are likely to breed on the Estate though, if the Estate is considered in its entirety, the total is likely to be closer to 80 with the addition of species such as mute swan and great crested grebe. Given that the Estate has no coastal habitats, this is an exceptional total which, when combined the presence of significant numbers of some species of conservation concern (e.g. barn owl, turtle dove, cuckoo and nightingale) confirms it to be of **Regional** importance for its breeding bird assemblage.

The results of the surveys reveal some interesting trends in bird populations, especially for transect B which runs through the southern block where most of the re-wilding has taken place. In the early years of the surveys, farmland birds such as skylark (fig. 1) and yellowhammer (fig. 2) were well represented but numbers have since declined probably due to increasing sward height and the development of sallow scrub over large areas of the southern block.

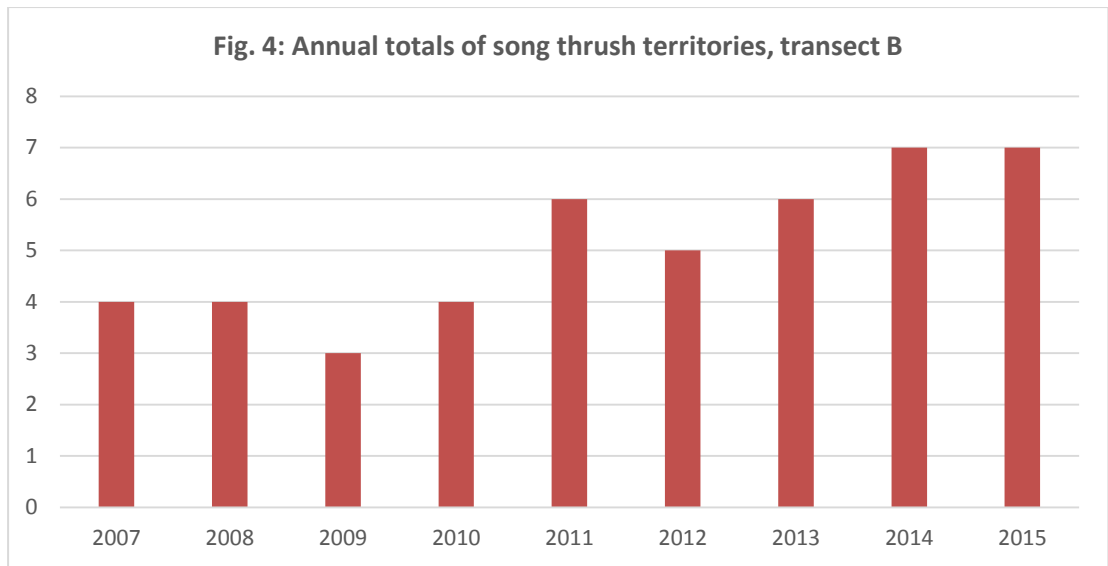




Whitethroat (fig. 3) has shown a similar trend to skylark and yellowhammer though its decline may be due to the loss of low, thorny scrub, as the taller sallow scrub invades. In 2015, all five whitethroat territories were found in areas where areas of bramble persist.



Despite the downward trend in the three species discussed above, it is clear is that the re-wilding project has maintained bird diversity on the Estate over the survey period with the number of species recorded annually varying little from year to year and some, such as the red listed song thrush (fig. 4), showing an upward trend.



Where the re-wilding project has been especially successfully has been in maintaining or increasing numbers of some species such as turtle dove, cuckoo and nightingale which have shown steep declines elsewhere, both in Sussex and nationally. Indeed Knepp is now likely to be the main stronghold for both turtle dove and nightingale in Sussex.

5.0 REFERENCES

Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S. H. (2000). *Bird Census Techniques* (2nd. ed.). Academic Press, London.

Eaton MA *et al* (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708–746. Available online at britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf

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Appendix 1 – List of species recorded, spring 2015

Species	BTO species code	Bird of Conservation Concern (BoCC status)
Canada goose	CG	Not assessed
Greylag goose	GJ	Not assessed
Teal	T.	Amber
Mallard	MA	Amber
Pheasant	PH	Not assessed
Grey heron	H.	Green
Little grebe	LG	Green
Red kite	KT	Green
Sparrowhawk	SH	Green
Buzzard	BZ	Green
Kestrel	K.	Amber
Peregrine	PE	Green
Moorhen	MH	Green
Coot	CO	Green
Lapwing	L.	Red
Herring gull	HG	Red
Stock dove	SD	Amber
Woodpigeon	WP	Green
Collared dove	CD	Green
Turtle dove	TD	Red
Cuckoo	CU	Red
Barn owl	BO	Green
Swift	SI	Amber
Green woodpecker	G.	Green
Great spotted woodpecker	GS	Green
Jay	J.	Green
Jackdaw	JD	Green
Rook	RO	Green
Carrion crow	C.	Green
Raven	RN	Green
Goldcrest	GC	Green
Great tit	GT	Green
Blue tit	BT	Green
Coal tit	CT	Green
Skylark	S.	Red
Swallow	SL	Green
Long-tailed tit	LT	Green
Chiffchaff	CC	Green
Willow warbler	WW	Amber
Blackcap	BC	Green
Garden warbler	GW	Green
Lesser whitethroat	LW	Green
Whitethroat	WH	Green
Nuthatch	NH	Green
Treecreeper	TC	Green
Wren	WR	Green

Starling	SG	Red
Blackbird	B.	Green
Fieldfare	FF	Red
Song thrush	ST	Red
Redwing	RE	Red
Mistle thrush	M.	Red
Robin	R.	Green
Nightingale	N.	Red
Dunnock	D.	Amber
Grey wagtail	GL	Red
Chaffinch	CH	Green
Linnet	LI	Red
Bullfinch	BF	Amber
Yellowhammer	Y.	Red
Reed bunting	RB	Amber

Birds of Conservation Concern (BoCC)

- Red list species are those that are globally threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; or those that have declined historically and not shown a substantial recent recovery.
- Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a significant recent recovery; rare breeders; or those with internationally important or localised populations.
- Species that fulfil none of the criteria are green listed while non-native species are not assessed (Eaton *et al* 2015).

Appendix 2: Number of territories - Transect A

Species	Species code	2007	2008	2009	2010	2011	2012	2013	2014	2015
Canada goose	CG	-	-	-	1	1	-	-	-	-
Mandarin	MN	-	-	1	-	1	-	-	-	-
Mallard	MA	-	-	1	1	-	-	1	-	2
Pheasant	PH	-	-	-	1	-	1	-	-	-
Buzzard	BZ	1	-	1	1	1	-	-	-	-
Kestrel	K.	1	-	-	-	-	-	-	-	-
Hobby	HY	-	-	1	-	1	-	1	1	-
Peregrine	PE	-	-	-	-	-	-	-	-	1
Stock dove	SD	1	2	1	1	-	-	1	-	-
Woodpigeon	WP	3	-	2	2	-	1	-	-	2
Cuckoo	CU	1	-	-	-	-	-	-	-	-
Little owl	LO	2	2	-	-	-	-	-	-	-
Green woodpecker	G.	1	1	1 - 2	2	-	-	-	-	1
Great spotted woodpecker	GS	3	3	4	1	1	1	2	1	2
Magpie	MG	2	-	-	-	-	-	-	-	-
Jay	J.	2	-	-	-	-	-	-	-	-
Jackdaw	JD	-	-	1	2	-	4	2	2	-
Carrion crow	C.	-	1	-	-	-	-	1	1	-
Goldcrest	GC	1	4	4	1	3	2	2	3	3
Blue tit	BT	2	8	7	7	4	5	4	3	6
Great tit	GT	3	8	10	4	5	6	6	5	6
Coal tit	CT	1	3	1	2	1	3	1	2	1
Marsh tit	MT	1	2	-	2	-	-	-	-	-
Skylark	S.	1	2	1	1	1	1	1	1	-
Long-tailed tit	LT	2	2	4	1	2	-	-	1	1
Chiffchaff	CC	4	7	8	7	7	6	4	5	6
Willow warbler	WW	1	1	2	1	-	-	-	-	-
Blackcap	BC	5	3	5	6	6	6	5	5	4
Garden warbler	GW	1	1	1	-	-	1	1	1	-
Whitethroat	WH	-	1	1	-	-	-	1	-	-
Nuthatch	NH	1	3	3	3	2	1	2	3	2
Treecreeper	TC	1	2	3	1	3	1	2	3	1
Wren	WR	12	21	17	10	11	10	7	8	11
Starling	SG	-	-	-	-	-	-	-	-	1
Blackbird	B.	5	2	4	1	-	2	1	3	2
Song thrush	ST	3	2	3	1	-	3	1	1	2
Mistle thrush	M.	-	1	1	-	-	-	-	-	-
Robin	R.	8	23	20	15	13	10	16	11	14
Dunnock	D.	3	2	4	4	1	2	2	1	2
Chaffinch	CH	9	13	15	9	9	10	7	1	3
Goldfinch	GO	1	1		2	1	1	1	-	-
Bullfinch	BF	-	-	1	-	-	-	-	1	1
Yellowhammer	Y.	-	1	1	-	-	1	-	-	-

Appendix 3: Number of territories - Transect B

Species	Species code	2007	2008	2009	2010	2011	2012	2013	2014	2015
Canada goose	CG	1	-	-	-	-	-	-	-	-
Mandarin	MN	-	-	-	-	-	-	-	1	-
Mallard	MA	2	1	-	-	2	1	1	5	3
Grey partridge	P.	-	-	1	-	-	-	-	-	-
Little grebe	LG	-	-	-	-	-	-	-	1	1
Common buzzard	BZ	1	1	-	1	-	-	-	-	-
Moorhen	MH	2	2	4	3	2	2	1	3	4
Coot	CO	-	-	-	-	-	-	-	1	1
Stock dove	SD	1	3	-	2	2	3	1	2	2
Woodpigeon	WP	2	4	-	1	3	2	1	1	1
Collared dove	CD	-	-	1	-	-	-	-	-	-
Turtle dove	TD	2	2	2	2	2	1	-	4	2
Cuckoo	CU	2	2	3	1	1	2	1	3	2
Barn owl	BO	-	-	1	-	-	-	1	-	-
Tawny owl	TO	-	-	-	-	-	1	-	-	-
Green woodpecker	G.	4	2	1	1	-	1	-	1	-
Great Spotted Woodpecker	GS	2	1	1	1	1	1	1	2	1
Jay	J.	-	2	1	-	-	1	-	-	-
Magpie	MG	1	2	1	1	1	-	-	-	-
Jackdaw	JD	1	1	1	1	2	3	7	4	3
Rook	RO	-	-	8	10	12	9	4	6	8
Carrion crow	C.	-	2	-	-	1	1	1	-	1
Goldcrest	GC	-	-	-	-	-	-	-	-	2
Great tit	GT	3	10	8	7	9	6	6	2	4
Blue tit	BT	5	9	8	6	7	5	5	7	8
Woodlark	WL	-	2	-	-	-	1	-	-	-
Skylark	S.	4	9	11	9	4	3	-	-	-
Swallow	SL	1	-	-	-	-	-	-	-	-
Pied wagtail	PW	-	1	-	-	-	-	-	-	-
Long-tailed tit	LT	1	3	1	1	3	1	1	-	2
Chiffchaff	CC	8	14	13	13	12	10	6	16	13
Willow warbler	WW	-	-	-	-	-	-	1	-	-
Blackcap	BC	7	9	8	9	11	7	7	8	8
Garden warbler	GW	5	6	6	3	7	4	4	3	4
Lesser whitethroat	LW	-	4	3	2	1	1	1	1	2
Whitethroat	WH	5	7	19	16	16	7	5	4	5
Reed warbler	RW	-	1	-	-	-	-	-	1	-
Nuthatch	NH	2	1	2	1	2	3	1	1	1
Treecreeper	TC	-	1	2	-	-	1	1	2	1
Wren	WR	13	16	16	12	14	11	12	20	16
Blackbird	B.	4	6	7	7	2	5	6	6	8
Song thrush	ST	4	4	3	4	6	5	6	7	7
Mistle thrush	MT	-	1	-	1	1	-	-	1	2
Robin	R.	5	21	16	14	18	19	17	20	17
Nightingale	N.	5	4	5	4	4	4	3	1	2
Dunnock	D.	6	12	13	5	7	7	9	6	7

House sparrow	HS	1	1	1	-	-	1	1	-	-
Chaffinch	CH	12	18	14	21	13	9	8	6	5
Goldfinch	GO	-	1	1	1	1	-	1	-	1
Linnet	LI	-	1	2	1	-	-	-	-	-
Bullfinch	BF	1	5	3	2	1	-	-	2	-
Yellowhammer	Y.	3	8	6	4	2	3	1	1	1
Reed bunting	RB	-	2	1	1	-	-	-	-	-

Appendix 4: Additional species recorded

Species	Observations
Greylag goose	Transect B: Five in flight over Wagstaffs Wood and a pair over Wild Flower Meadow on 5 th April.
Canada goose	Transect B: Eight in flight over Blonks on 14 th April, pairs at Brookhouse 8 pond and in Brookhouse 6 on 1 st May, three in flight over Wild Flower Meadow on 5 th June.
Teal	Transect A: A pair in Alder Copse on 18 th March.
Pheasant	Transect A: Three males on 14 th & 19 th April, male on 27 th April, two males on 23 rd May. Transect B: Males on 14 th & 19 th April and 1 st May.
Grey heron	Transect B: One flew from Brookhouse 8 on 19 th April, three in flight over Brookhouse 6 and 7 on 5 th June.
Red kite	Transect B: One perched in a tree near Hampshires Farm on 27 th April, one circling over Wild Flower Meadow on 23 rd May.
Sparrowhawk	Transect B: One circling over Bull Field on 18 th March.
Buzzard	Transect A: Eight (including 7 circling together) on 18 th March, singles on 19 th April and 20 th June. Transect B: Singles on 18 th March, 5 th & 27 th April, 23 rd May & 5 th June, pair circling over Wagstaffs Wood on 1 st May.
Kestrel	Transect B: One over Bull Field on 27 th April.
Lapwing	Transect B: One flew from Wild Flower Meadow to Brookhouse 8 on 23 rd May.
Herring gull	Transect B: One flew N on 5 th April, seven flew N on 19 th April, three flew N on 1 st May, seven flew N on 23 rd May.
Collared dove	Transect B: One at Blonks on 20 th June.
Barn owl	Transect B: One roosting near Brookhouse Farm on 5 th & 19 th April and 5 th June.
Green woodpecker	Transect A: Singles on 18 th March, 19 th & 27 th April, and 1 st May. Transect B: Singles on 14 th & 27 th April, and 20 th June.
Swift	Transect B: One in flight on 20 th June.
Magpie	Transect A: A pair on 19 th April.
Jay	Transect A: Singles on 5 th April & 1 st May. Transect B: Two singles on 18 th March, six (including five together) on 5 th April, five on 19 th April, two on 1 st May, one on 9 th May, two on 20 th June.
Raven	Transect B: Singles in flight on 18 th March, 5 th & 27 th April, pair near Brookhouse Farm on 23 rd May and four there on 5 th June.
Skylark	Transect A: A pair on 14 th April but not subsequently.
Swallow	Transect A: Two flew N on 19 th April. Three flew N on 9 th May. Transect B: Two over Brookhouse 8 on 5 th April.
Grey wagtail	Transect B: One in flight over Brookhouse 8 on 5 th June.
Willow warbler	Transect B: Singing male in Brookhouse 9 on 19 th April but not subsequently.
Starling	Transect B: Eight in flight over Brookhouse 4 on 18 th March and four there on 20 th June.

Fieldfare	Transect B: Flock of 40 in Bull Field on 5th April.
Redwing	Transect B: Ten in Brookhouse 6 and 20 in Bull Field on 18 th March, two in Bull Field on 5 th April.
Linnet	Transect B: Pair in Bulls Field on 1 st May, pair in Brookhouse 6 on 5 th June.
Reed bunting	Transect B: Single males in Brookhouse 8 and at Lower Barn pond on 14 th April but not subsequently.

Appendix 5: List of species recorded, 2005 - 15

Species	BoCC status	Species	BoCC status
Greylag goose	No status	Raven	Green
Canada goose	No status	Goldcrest	Green
Mandarin duck	No status	Firecrest	Green
Teal	Amber	Great tit	Green
Mallard	Amber	Blue tit	Green
Tufted duck	Green	Coal tit	Green
Pheasant	No status	Marsh tit	Red
Red-legged partridge	No status	Woodlark	Red
Grey partridge	Red	Skylark	Red
Grey heron	Green	Swallow	Green
Little grebe	Green	House martin	Amber
Red kite	Green	Meadow pipit	Amber
Sparrowhawk	Green	Grey wagtail	Red
Buzzard	Green	Pied wagtail	Green
Kestrel	Amber	Long-tailed tit	Green
Hobby	Green	Chiffchaff	Green
Peregrine	Green	Willow warbler	Amber
Moorhen	Green	Blackcap	Green
Coot	Green	Garden warbler	Green
Lapwing	Red	Lesser whitethroat	Green
Green sandpiper	Amber	Whitethroat	Green
Woodcock	Red	Reed warbler	Green
Snipe	Amber	Nuthatch	Green
Lesser black-backed gull	Amber	Treecreeper	Green
Herring gull	Red	Wren	Green
Great black-backed gull	Amber	Starling	Red
Stock dove	Amber	Blackbird	Green
Woodpigeon	Green	Fieldfare	Red
Collared dove	Green	Song thrush	Red
Turtle dove	Red	Redwing	Red
Cuckoo	Red	Mistle thrush	Red
Barn owl	Green	Robin	Green
Little owl	No status	Nightingale	Red
Tawny owl	Amber	Dunnock	Amber
Swift	Amber	House sparrow	Red
Kingfisher	Amber	Chaffinch	Green
Green woodpecker	Green	Brambling	Green
Great spotted woodpecker	Green	Greenfinch	Green
Lesser spotted woodpecker	Red	Goldfinch	Green
Magpie	Green	Linnet	Red
Jay	Green	Lesser redpoll	Red
Jackdaw	Green	Bullfinch	Amber
Rook	Green	Yellowhammer	Red
Carrion crow	Green	Reed bunting	Amber