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A 10-year evaluation of the status of the breeding birds of a north Norfolk lowland, organic, mixed farm, with particular reference to red-listed and amber-listed species as defined in *Birds of Conservation Concern 3*

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Introduction

This paper is intended to be used in conjunction with the previously published 5-year evaluation of the status of the breeding birds of Courtyard Farm, Ringstead, Norfolk (*Norfolk Bird and Mammal Report,* Volume 44 pp. 14-30). Readers are recommended to refer to the previous publication as it fully documents the field survey methodology used to collect data, and the geology, geography, habitat diversity and agricultural practices, of Courtyard Farm. Whilst it is not the intention to repeat previously published information here, it will be referred to when comparing data.

Ten years of Breeding Brid Survey (BBS) work has now been completed at Courtyard Farm and this paper thus represents an evaluation of the changing fortunes of its breeding birds in that 10-year period (2006-15).

All species of breeding birds are monitored during field survey work at Courtyard Farm and the current trends of all of these are documented in the text that follows. However, in view of the well documented collapses in populations of farmland birds in the United Kingdom (UK) in recent decades special attention is given to 14 species of farmland bird breeding on the farm that are highlighted in Birds of Conservation Concern 3 (BOCC 3), eight of which are red-listed and six of which are amber-listed species.

Breeding population sizes and trends will be discussed in the results section that follows, particularly in relation to agricultural practices at Courtyard Farm. In some instances it is difficult to make meaningful comment on trends as breeding populations of some species at Courtyard Farm are relatively small.

Agricultural changes since 5-year evaluation

There have been a small number of important changes in agricultural practice at Courtyard Farm from those documented in the previous paper (p.000), most notably changes in livestock practices, and a number of impending changes to the Department for the Environment, Food and Rural Affairs (Defra) controlled Higher Level Stewardship Scheme (HLS) operated on the farm, which is currently in the process of being replaced by the new Countryside Stewardship Scheme (CS). These changes in agricultural practices on the farm are discussed below:

Changes to livestock husbandry and grazing regime practices

Since the commencement of bird survey work at Courtyard Farm in 2006 there has been a number of changes relating to livestock. The majority of these changes are likely to have had a greater effect on wintering birds rather than breeding birds but all are noted here.

Firstly, since the 5-year evaluation the practice of maintaining a resident herd of Redpoll cattle on the farm has ceased completely. This clearly has implications on both the grazing regime on the HLS grassland on the farm during the summer months, and also the availability and distribution of animal waste within the organic farming plan.

Secondly, to compensate for the loss of grazing practice by the Redpoll herd, and to ensure the continued input of animal waste into the organic regime, Longhorn cattle from the organic Houghton Hall herd were grazed and other cattle over-wintered in the main cattle shed on the farm. Grazing practice has also ceased and grazing on the HLS grassland varies from year-to-year, from all fields extensively grazed, some grazed and some mown after mid-July to produce haylage, and none grazed and most left uncut during the winter.

Finally, the occasional practice of intermittent autumn finishing of organic sheep has also ceased and there are currently no longer any livestock on the farm other than those belonging to a rent-paying tenant that are over-wintered in the cattle shed on the northern section of the farm.

Impending changes from HLS to CS schemes

General organic farming practices remain unchanged on the farm throughout the survey period. However, the 10-year HLS agreement on the farm was due to end in September 2015. Discussions are ongoing to implement the changeover from the old Defra HLS scheme on the farm to the new CS scheme. The complications of the changeover have led to a one year extension of the HLS scheme with the CS scheme now due to commence the following year.

There has been considerable change both in the features and associated allowances within the new CS scheme, a number of which there are plans to adopt at Courtyard Farm. The changes are likely to influence both wintering bird populations (provision of scattered winter feed and new standing wild bird seed crops on areas of current HLS grassland) and breeding bird populations (provision of plots within crops for ground-nesting waders).

The result of these changes, some of which will be trialled during the last year of the current HLS scheme, will be monitored with interest.

BBS results

The classified list of species that follows comprises all those species that have either been proven breeders, or where singing or displaying males have been recorded as holding territory during the breeding season (without actual proof of breeding having occurred).

Each species in the classified list is referred to first by its common English name, followed by its full English name in parenthesis (where this differs from the common English name), followed again by its Latin name. There then follows a brief statement on breeding status of the species in the county, and its breeding current status on the farm. Finally the following text gives a fuller explanation of breeding numbers, trends and affecting factors.

To assist in the comparison with the 5-year breeding evaluation the species below are treated in the same classified order as in that paper. The 14 species appearing on the BOCC 3 red- and amber-lists are referred to briefly in the classified list below, but are treated more thoroughly in the section that follows.

Classified List

MALLARD *Anas platyrhynchos*
Resident breeder, 1-3 pairs breed most years; annual since 2011

Following renovation of all of the farm ponds a small breeding population of Mallard has become established. Nests can be located almost anywhere but are often in scrub or under a hedgerow in the vicinity of the main paddock pond.

A small semi-feral population from Ringstead village is believed to be the source of the population at Courtyard Farm.

RED-LEGGED PARTRIDGE *Alectoris rufa*
Resident breeder, 20-33 pairs annually; steadily increasing to peak in 2015

This is an increasingly common breeding species with a steady increase during the survey period. Much of this increase is attributed to shooting stock being released on land to the immediate east and west of the farm. Scrub on Stewardship headlands beneath hedgerows and woodland edges are the favoured nesting locations.

Winter survival is a known factor in breeding densities of partridges and this species is doubtless also benefiting from the provision of drum feeders on Courtyard Farm that are intended mainly for grey partridge.

GREY PARTRIDGE *Perdix perdix*
See BOCC 3 species below

QUAIL (Common Quail) *Coturnix coturnix*
Migrant breeder, 1-3 males calling most years; annual since 2011

Territorial males vary annually in number, often with more present in what are called ‘Quail years’, when the UK receives larger numbers of migrants from African wintering quarters.

Courtyard Farm is situated within the north Norfolk chalk belt that, combined with the local climate, provides the perfect growing conditions for barley destined for the brewing and baking industries. These same geological conditions and climate are favoured by breeding Quail. At Courtyard Farm the wildflower-rich Stewardship grassland is also a favoured option.

PHEASANT (Common Pheasant) *Phasianus colchicus*
Resident breeder, 9-32 pairs annually; steadily increasing to peak in 2015
An increasingly common breeder with numbers swelled by released shooting stock from adjacent farmland. Shooting on adjacent estates depletes numbers during the late-autumn and early-winter but surviving breeding stock shows a steady increase and peaked at 32 pairs in 2015.

Woodland edges and dense headland scrub beneath hedgerows remain the favoured nest sites of this species, another which doubtless benefits from the provision of winter drum feeders.

SPARROWHAWK (Eurasian Sparrowhawk) *Accipiter nisus*
Resident breeder; pair bred in 2014
Recorded annually during the survey period, a pair of sparrowhawks was noted displaying over the southern limits of the farm during most springs. The occasional occurrence of juvenile Sparrowhawk during autumn suggested successful breeding locally. In 2014 a pair of sparrowhawks, presumed to be that from conifer woodland just south of the farm, successfully fledged at least one young from a nest in a tall conifer in a mixed woodland belt on the southern section of the farm.

This species almost certainly benefits from the provision of suspended seed feeders at Courtyard Farm, primarily provided as a source of winter feed for the tree sparrow population. A male Sparrowhawk has been trapped, and controlled, in the vicinity of suspended feeders on the farm.

BUZZARD (Common Buzzard) *Buteo buteo*
Resident breeder; pair bred in 2014 and 2015
The spread of the common buzzard into lowland areas in the UK in recent decades has been nothing short of remarkable and has been attributed mainly to a reduction in persecution. Breeding birds reached Norfolk in 1992 and the population quickly burgeoned with that in north-west Norfolk apparently one of the most densely populated.

Following a number of years of anticipation, when common buzzards bred on adjacent land, it was initially concluded that there was not an area of woodland on the farm that was free enough from disturbance for common buzzards to breed. However, a pair finally took up residence in a wood on the southern section of the farm, in 2014. This pair successfully fledged two young from a nest in an undisturbed area of deciduous woodland.

In 2015 the same pair again fledged two young from the same area of woodland.

KESTREL (Common Kestrel) *Falco tinnunculus*
Resident breeder; pair bred in 2012
This species remains one of the most frustrating of all to survey. In each year of the survey period a pair of kestrels has been present on the farm, regularly seen in and apparently defending various nestboxes in oak trees in hedgerows, usually against the presence of jackdaws. However, only once in the survey period has this led to successful breeding when a pair fledged three young in 2012.

MOORHEN (Common Moorhen) *Galinula chloropus*
Irregular breeder, 1-2 pairs holding territory in most years; annual since 2012
Successful breeding occurred in at least two of the years 2006-8 but drying out of the favoured pond led to just one adult being present during 2009, when the pond was completely dry for a period during the summer. Renovation work on all of the farm ponds saw an immediate return to form with both a pair and a third adult present during April 2010 and the re-growth of emergent, surrounding and over-hanging vegetation has provided suitable breeding habitat on at least two of the newly restored ponds.

At least one territory (Paddock pond) has been occupied in the last four years with successful breeding noted on at least one occasion.

OYSTERCATCHER (Eurasian Oystercatcher) *Haematopus ostralegus*
Resident breeder; pair in territorial display noted in 2007-10
The bare earth habitats preferred by several ground-nesting wading birds is a rare commodity on an organic farm, most usually only being available for a short period in spring. Thus, displaying oystercatchers are occasionally recorded at this season, in noisy, synchronised territorial courtship

flight, often alighting and feeding within the boundaries of Courtyard Farm. However, sightings almost always cease once nest-scraping has ceased and the first egg is laid.

In each of the four years 2007-10 breeding occurred on a stony field just to the north of the Courtyard Farm boundary.

AVOCET (Pied Avocet) *Recuvirostra avosetta*
Migrant breeder; pair held territory in 2009, breeding just over the farm boundary
Avocets actually bred just to the east of Courtyard Farm in 2005 in a potato field that had developed a slack water pool at it lowest point. These birds were thought to possibly be failed breeders from the local breeding populations at either Holme Norfolk Wildlife Trust (NWT) or the Royal Society for the Protection of Birds (RSPB) reserve at Titchwell Marsh.

An unexpected reminder of the above event came when a pair of avocets was regularly recorded in very noisy display flight over the northern section of the farm during May 2009, before finally settling to breed and successfully raise young in a stony sugar beet field just to the north of the farm.

RINGED PLOVER (Common Ringed Plover) *Charadrius hiaticula*
Resident breeder; pair in display in 2007, another pair bred just over the farm boundary in 2009
A pair of ringed plovers was noted in display over a recently sown pea field on 6th April 2007. Unfortunately they were not seen on subsequent visits. However, there were several sightings over the northern end of the farm in 2009 of presumably the male of a pair that nested successfully on the same stony field, just north of the northern boundary of the farm that hosted breeding oystercatcher, avocet and lapwing.

LAPWING (Northern Lapwing) *Vanellus vanellus*
Resident breeder; pair in territorial display flight in each year 2007-10
Despite having been recorded in display flight over Courtyard Farm in each of the years 2007-10, in all but the last year of that period the displaying male failed to attract a mate. However, finally, in 2010 the male did manage to attract a female and they were regularly seen together, and even noted nest-scraping, before disappointingly deciding to nest outside the northern boundary of the farm.

CURLEW (Eurasian Curlew) *Numenius arquata*
Resident breeder; pair in display flight in 2009
Curlew is included in this list on the strength of a displaying pair on both 25th and 26th April 2009, with presumably the same pair remaining in the rough unimproved grassland meadows 2nd to 10th May. The characteristic bubbling call was heard on more than one occasion but the birds failed to remain to breed.

STOCK DOVE *Columba oenus*
Resident breeder, 15-42 pairs bred annually; currently in steep decline from peak numbers in 2011
This species was noted as being in apparent decline at Courtyard Farm in the 5-year evaluation. There was a c.40% drop in numbers during the previous survey period, 31.6% of which has occurred in the period 2008-10. Despite an unexplained leap to 42 breeding pairs in 2011 (a record number for the site) the trend of decline has since continued with a record low being reached in 2015 of just 15 breeding pairs, representing a decline of c.64% over just five years.

Despite the provision of some new nestboxes for both owls and jackdaws there is still some serious competition for any suitable nest boxes on the farm. Stock doves are the more passive species and thus are regularly usurped by jackdaws and both tawny and barn owls. This has doubtless played a part in the current decline. Woodland management may be another factor affecting nest site availability for stock doves as some suitable tree holes may be removed during felling of old and diseased trees.

WOODPIGEON (Common Wood Pigeon) *Columba palumbus*
Resident breeder, 35-72 pairs bred annually; numbers currently stable following an increase
Woodpigeons are renowned singers when loafing in trees adjacent to feeding areas and this can lead to recording of a false representation of breeding territories by the unwary. An increase of 105% was recorded up to the peak years of 72 breeding pairs in 2013, but there has been a levelling out with currently numbers c.10% below the 2013 peak at 65 pairs.

Woodpigeon is one of only two species that are controlled at Courtyard Farm, the other being rabbit, both of which are shot in small numbers to reduce the impact on young crops.

Distribution of woodpigeon territories remains almost entirely centred around the areas of woodland in both the north and south sections of the farm, with a small number of pairs nesting in the top of black thorn scrub on Ringstead Common.

COLLARED DOVE (Eurasian Collared Dove) *Streptopelia decaocto*
Resident breeder, 4-10 pairs bred annually; current slight decline
This species remains a regular breeder on the farm in small but fluctuating numbers. Currently the breeding numbers are at 50% of the peak years in 2007-8 when 10 territorial pairs were present.

All breeding records are concentrated in the immediate vicinity of the farm building complex in the southern section of the farm, where fallen seed from hanging feeders provides much of the species food requirements.

TURTLE DOVE (European Turtle Dove) *Streptopelia turtur*
See BOCC 3 species below

CUCKOO (Common Cuckoo) *Cuculus canorus*
Migrant breeder; male in song on 30th April 2006
The evocative call of the cuckoo has been recorded just once during the entire survey period when a male was in song on the western boundary of the farm, early on the morning of 30th April 2006.

BARN OWL *Tyto alba*
Resident breeder, 1-2 pairs bred intermittently; currently stable following decline
Although recorded annually during the survey period, and regularly roosting and holding territory, actual breeding at Courtyard Farm is intermittent. In good barn owl years the farm can form part of up to three (occasionally four) barn owl territories. Breeding numbers have been more consistent of late, perhaps as a result of the provision of new or refurbished nest boxes and sites, with up to two territorial or breeding pairs recorded in four of the last five years.

Interestingly, for at least the latter period of the survey period it has generally been regarded as a difficult time for barn owls with severe winter weather, poor summer weather and resultant food shortages all causing high levels of mortality in both young and adults alike. During this same period barn owls at Courtyard Farm have perhaps been at their most productive.

LITTLE OWL *Athene noctua*
Resident breeder, 2-4 pairs bred annually; currently stable
Numbers have remained stable throughout the entire survey period with year-on-year fluctuations being explained by one or more pairs moving across the boundaries of Courtyard Farm into adjacent estates. A minimum of two pairs have attempted breeding in each of the years 2006-15 with a peak of four territories recorded in both 2008-9 and 2012.

Successful breeding was proven, with fledged young being seen, in 2006, 2008, 2009 and 2012. All confirmed successful breeding has occurred in natural tree holes in oak trees within mature hedgerows, but a pair has frequented the vicinity of the farm buildings in recent years and may well have bred within this territory.

TAWNY OWL *Strix aluco*
Resident breeder, 2-7 pairs bred annually; overall decline
The more mature areas of woodland on the farm are favoured by Tawny Owls. A decline of 57% has been recorded during the entire survey period at Courtyard Farm and the dilapidated condition of some nestboxes was believed to be at least partly responsible for this decline. Replacement of a number of 'tube' nestboxes in recent years has helped to stem the decline noted since peak numbers occurred in 2008. Numbers currently remain stable at 2-3 pairs breeding annually (since 2010).

Calling birds can be located in both autumn and spring and successful breeding has been proven on a number of occasions when 'branching' young have been seen in the immediate vicinity of where adults were heard calling previously.

GREEN WOODPECKER (European Green Woodpecker) *Picus viridus*
Resident breeder, 1-4 pairs territories occupied annually; population stable
Implementation of organic farming practice led to this species returning to breed at Courtyard Farm. Whilst Stewardship grassland, particularly when close-grazed, is a favourite habitat for this ground-feeding woodpecker, the light, well-aerated soils of north-west Norfolk hold good feeding opportunities and it may be encountered almost anywhere.

Despite an apparently large fluctuation in breeding pairs numbers have remained relatively stable at Courtyard Farm during the survey period. The discrepancy is a result of the difficulty of locating nest holes in woodland leading to occupied territories being the means of monitoring for this species. Whilst the more sheltered area of the farm south of the Burnham Road may host up to four territories annually, successful breeding has never been proven within the farm boundary, though this has been thought possible more than on more than one occasion, though it is possible that the majority of nesting green woodpeckers nest in the adjacent woodland belts of neighbouring estates.

The small sample of green woodpeckers has remained stable during the full survey period 2006-10 and there has been some annual fluctuation in numbers. However, there has been no evidence of the large increases recorded in other areas of the UK, particularly in the East of England.

GREAT SPOTTED WOODPECKER *Denrocopus major*
Resident breeder, 2-7 pairs bred annually; currently stable following steep decline
This species represents something of an enigma. The breeding population on the farm appears to have stabilised at two pairs annually, following a steep and rapid decline from a peak of seven pairs in both 2006-7. Over the survey period this represents a c.72% decrease in occupied territories at Courtyard Farm, perhaps surprising when this species is considered to be generally increasing in the UK during the same period.

The more southerly (more wooded) section of the farm is favoured by this species and the woodland management programme at Courtyard Farm may have contributed somewhat to this decline in numbers. The health and safety aspect involved in having standing dead wood in areas with permissive public access has inevitably led to the removal of a small number of dead or dying mature trees that may have offered potential nest sites and feeding opportunities for this species.

JAY (Eurasian Jay) *Garrulus glandarius*
Resident breeder, 2-3 pairs bred annually; population stable
Numbers have remained stable throughout the survey period. Territorial distribution of breeding pairs of this species is also a reflection of the distribution of mature woodland at Courtyard Farm, with one or two territories annually in the southern section (Wharton's Belt and Dark Wood) and the occasional territory in the northern section (North Wood).

MAGPIE (Eurasian Magpie) *Pica pica*
Resident breeder, 7-13 pairs bred annually; apparently in slow decline
Ringstead Common, in the centre of Courtyard Farm, has for many years hosted one of the largest communal winter magpie roosts in Norfolk. This fact, combined with the lack of any game-keeper activity, has doubtless resulted in a good breeding population on the farm.

Distribution of breeding territories is biased heavily toward the southern section of the farm with usually around half situated on Ringstead Common, on the south of the Burnham Road. Occasionally odd pairs breed in the top of the tallest hedgerows or in tall trees in woodland belts.

An initial increase was noted in the number of breeding territories in the early years of the survey. However, it is possible that territories were undercounted initially as access into Ringstead Common was hampered by dense undergrowth that was later cleared by foraging cattle. Thus the initial increase may be somewhat less than recorded. Subsequently, breeding numbers peaked at 13 pairs in both 2008 and 2010, but this has been followed by a slow but steady decline with the current population numbering eight pairs. The reasons for this currently remain unclear.

JACKDAW (Western Jackdaw) *Corvus monedula*
Resident breeder, 9-14 pairs bred annually; recent small increase
Territorial distribution of this species is almost entirely in the southern section of the farm where a number of artificial holes are provided in a wooden dovecote and in the gable end wall of a large flint barn. More recently a number of wooden nestboxes have also been provided in woodland to compensate for the dilapidated condition of the above mentioned dovecote. Occasionally other sites are used, such as natural tree holes, stock dove and owl boxes.

Nest site provision clearly has an impact on breeding numbers as a decline in breeding numbers was noted from 2008-12 as some of the old nest sites became unsuitable through deterioration of condition, or more recently occupied by either barn owls or tawny owls. This decline subsequently reversed as more nest sites were provided and the current breeding population has peaked at 14 pairs.

Insect-rich Stewardship grassland and undersown organic stubbles are clearly favoured habitats for foraging jackdaws in both spring and summer.

CARRION CROW *Corvus corone*

Resident breeder, 1-2 pairs bred annually except for 2007; population stable

Carrion crows have nested almost annually during the survey period, the only blank year being 2007, when the resident pair nested just over the farm boundary to the south. Formerly two pairs bred, with traditional nest sites in both North Wood and Dark Wood. More recently, in 2014-15 a single pair has bred, the North Wood nest site having been abandoned.

As a species that is regularly found foraging around livestock, it is possible that the disappearance of grazing livestock may have contributed to the reduction in breeding pairs on the farm.

GOLDCREST *Regulus regulus*

Resident breeder, 2-13 pairs bred annually; currently stabilising following a steep decline

During the survey period this species has seen dramatic changes in the breeding population at Courtyard Farm, Initially numbers rose sharply increasing from five pairs in 2006 to 13 in 2009, a remarkable increase of 260%... The increase is believed to be as a result of mild winters and good numbers of autumn migrants occurring on the north Norfolk coast. However, this situation was completely reversed in 2010 when following a combination of a poor autumn arrival in 2009 and the relatively hard winter of 2009-10 the breeding population was apparently decimated with a return to just t five territories in 2010 .

Subsequently breeding numbers have fluctuated between two and five pairs annually with no immediate suggestion that a return to 2010 levels was likely. Territorial distribution remains strongly in favour of the sheltered southern section of the farm, where the more mature areas of woodland (and particularly the few conifers present on the farm) are found.

The relatively small breeding population at Courtyard Farm and such dramatic changes over a relatively short period of time make it difficult to relate the data against that recorded elsewhere in the UK during the survey period, though it is well known that this insectivorous species is highly susceptible to sever weather. It will probably need to be followed by a mild winter but it will be interesting to see if an impressive autumn coastal immigration into Norfolk in October 2015 has an impact on breeding numbers in 2016.

FIRECREST *Regulus ignicapilla*

Resident breeder; male in song in suitable habitat in 2006

A male was in song in suitable breeding habitat on 6th March 2006. There were no further sightings and it is thought that this bird was a passage migrant and did not breed locally.

BLUE TIT *Cyanistes caeruleus*

Resident breeder, 26-42 pairs bred annually; overall decline

A common and regular breeding species on the farm, blue tit breeding distribution and numbers are assisted by the provision of a total of 40 Woodcrete nestboxes, distributed throughout the wooded areas of the farm. There is thus a heavy breeding distribution bias towards the southern section of the farm where most nestboxes are situated. In addition a number of natural nest sites are available in woodland, buildings and mature hedgerows. The provision of seed in the six suspended feeders situated on the farm clearly assists this species in winter survival, but may also be of assistance at other seasons.

Peak blue tit numbers at Courtyard occurred at the start on the survey period, in 2006. Subsequently the population has fluctuated regularly but currently stands at 33 breeding pairs, representing a decline of c.38%. The fluctuations in breeding numbers are apparently weather-related with poor weather in spring meaning birds are unable to reach breeding condition so easily. Continued adverse weather into early-summer also has a detrimental effect on the emergence of oak eggar moth caterpillars, a prey species long associated with foraging blue tits. Prolonged periods of adverse winter weather can also have a detrimental effect on local breeding populations.

Whilst there is obviously seasonal variation in breeding numbers (a fact confirmed by results from nestbox surveys) none of this can mask the genuine decline recorded over the full survey period.

GREAT TIT *Parus major*

Resident breeder, 25-46 pairs bred annually; overall decline

Great tit is another common and regular breeding species on the farm. As with blue tit breeding distribution and numbers are assisted by the provision of a total of 40 Woodcrete nestboxes resulting in the same distribution bias towards the southern section of the farm. Again, in addition natural nest sites are available in woodland, buildings and mature hedgerows.

Whilst initial impressions are that the fortunes of this species mirror those of blue tit, there has in fact been a more pronounced decline of c.45% in this species during the survey period. Breeding

numbers of great tits peaked in 2007 at 46 pairs. However, this season was apparently exceptional for great tits with 34 breeding pairs recorded in the preceding year, and the following season producing a similar 32 breeding pairs. Removing the peak year in 2007 from the calculations the decline over the survey period has been a more modest c.24%, much more in-line with that recorded for blue tit.

With slightly different breeding times the association between great tits and oak eggar moth caterpillars is not as strong as that of blue tit it is clear that adverse spring and early-summer weather does have the same effect on both breeding numbers and success. As with blue tit, prolonged periods of adverse winter weather can also have a detrimental effect on local breeding populations.

COAL TIT *Periparus ater*
Resident breeder, 6-12 pairs bred annually; recovering from recent decline
Another annual breeding species at Courtyard Farm, the coal tit initially showed a remarkably stable set of data with the nine or ten breeding territories recorded annually during 2006-11. Following a small increase to 12 breeding pairs in 2012, the severe winter weather recorded in the winter of 2012-13 had a major effect on the breeding population on the farm, halving the numbers to just six pairs. Subsequently numbers have remained stable at between six and seven pairs during 2013-15. This dramatic decline is not unusual in a species so susceptible to hard weather but is perhaps a little surprising as it was apparently unaffected by the hard winter of 2009-10, when its food caching habits may have assisted survival rates.

Coal tits do not take to provided nestboxes, preferring to build a small, neat nest high in trees, almost exclusively in conifers. Its distribution is therefore governed by the availability of natural nest sites. It is however, a regular visitor to the suspended seed feeders on the farm, habitually caching seed to assist winter survival.

Distribution of territories at Courtyard Farm strongly mirrors the distribution of suitable habitat in the conifers in the available woodland, with a heavy bias in favour of the southern section. This restriction in distribution suggests that the peak of 12 pairs in 2012 may well have been at or near the maximum expectations for the farm.

MARSH TIT *Poecile palustris*
Resident breeder, formerly up to 3 pairs bred annually; last bred 2012
This species bred annually at Courtyard Farm during 2006-12 with a maximum of three territories recorded in 2006 and 2008-9. Subsequently a steady decline occurred with the last breeding pair recorded in 2012. This trend of rapid decline is unfortunately mirrored across much of the UK both prior to, and during the survey period.

All breeding territories at Courtyard Farm were in dense thorn scrub, most usually associated with Ringstead Common and occasionally in the ancient hedgerows. Even outside the breeding season, marsh tit is now a rare bird at Courtyard Farm.

SKYLARK (Sky Lark) *Alauda arvensis*
See BOCC 3 species below

SWALLOW (Barn Swallow) *Hirundo rustica*
See BOCC 3 species below

LONG-TAILED TIT (Long-tailed Bushtit) *Aegithalos caudatus*
Resident breeder, 18-33 pairs bred annually; overall decline
Breeding numbers of long-tailed tits on the farm have fluctuated considerably over the survey period with numbers increasing from an initial level of 17 pairs in 2006, rising to a peak of 33 pairs in 2009, representing an increase of c.94% at that time. However, this is another mainly insectivorous species that can be affected badly by severe winter weather and the hard winter of 2009-10 took its toll, reducing breeding numbers in 2010 to 25 pairs. Numbers then rose slowly again to 29 breeding pairs before the severe weather experienced in the winter of 2012-13 once again depleted breeding numbers with just 18 pairs located returning the population to almost exactly that at the start of the survey period. Currently numbers stand at 21 pairs in both 2014 and 2015, presumably representing the start of another recovery period before the next harsh winter.

Despite the appearance given by results for this species in the 5-year evaluation it appears that ‘boom and bust’ may well be a breeding strategy familiar to this species and breeding numbers are clearly governed by winter survival rates. Hopefully the core population will be able to recover from these setbacks and continue with the increases in numbers recorded between spells of harsh weather.

Territorial distribution of this species on the farm is not dissimilar across both the northern and southern sections of the farm. The habit of building nests of lichen, feathers and cobwebs low-down and deep into sheltered cover means that the shelter offered by the lower-lying southern section of the farm is less critical to this species.

CHIFFCHAFF *Phylloscopus collybita*
Migrant breeder, 16-22 pairs bred annually; stable population
Chiffchaff is a migrant species with a fairly consistent set of data over the survey period. Peak numbers of 22 pairs occurred in both 2011 and 2012 but a very late, cold spring in 2013 resulted in the lowest level of breeding birds when just 16 pairs were recorded. Currently the indications are that numbers are climbing back towards average levels with 18 pairs recorded in both 2014 and 2015.

Despite annual fluctuations at Courtyard Farm over the 10-year period there has been a slight decline of c.10% across the survey period, a result that does not equate with the general upward trend for this species in the UK. Woodland management at Courtyard Farm, particularly the removal of understorey and scrub, may temporarily be one of the influencing factors affecting both numbers and the distribution of chiffchaff territories on the farm until re-growth occurs.

Unsurprisingly for an insectivorous migrant, territorial distribution shows a bias towards the more sheltered southern section of the farm where there is more mature woodland and new plantation. The blackthorn scrub that covers much of Ringstead Common remains a favoured breeding habitat.

WILLOW WARBLER *Phylloscopus trochilus*
See BOCC 3 species below

BLACKCAP (Eurasian Blackcap) *Sylvia atricapilla*
Migrant breeder, 31-49 pairs bred annually; stable population
The results for this migrant species remain one of the most satisfying sets of data collected on the farm. There has been an increase of c.12% over the entire survey period with breeding numbers currently standing at 36 pairs. Intriguingly, 2011 proved to be a spectacular year for this species when 49 breeding territories were identified. This peak represented an increase of c.32% on the previous year, which itself was the culmination of a year-on-year increase in numbers since 2006. However, the following year saw a return to more expected levels when 36 pairs were recorded, numbers having since stabilised at this level.

Blackcap is another species whose territorial distribution and numbers appear to be affected, at least temporarily, by woodland management that removes understorey. Removal of understorey during felling of some larger trees has led to this species being absent from certain favoured areas of woodland, at least until scrub and understorey re-growth occurs. Territorial distribution clearly favours the more sheltered and more densely wooded southern section of the farm.

GARDEN WARBLER *Sylvia borin*
Migrant breeder; territorial males recorded in five out of ten years, 2006-8 and 2014-15
This is perhaps one of the less likely species to be encountered in farmland, generally preferring sallow and alder scrub in wetter areas than dry woodland. However, a singing male held territory in scrub adjacent to one of the farm ponds in the years 2006-8, and again on the edge of a dry deciduous woodland shelter belt in 2014-15.

LESSER WHITETHROAT *Sylvia curruca*
Migrant breeder, 12-19 pairs bred annually; recovering following slight decline
This migrant annual breeder has shown a decline of c.12% during the full survey period but this figure does not reveal the full picture. Initially breeding numbers were at 19 pairs in 2006 but a slow decline followed which was accelerated by the cold, late springs of 2011 and 2012 when numbers dropped to just 12 and 13 breeding pairs respectively. Subsequently the indication is that numbers have recovered annually, almost to the same level as recorded in 2006.

Interestingly there has also been a change in the overall distribution pattern of lesser whitethroat territories at Courtyard Farm during the survey period with the distribution initially favouring the more sheltered southern section of the farm, but recent years have seen an adjustment in this balance as increasing numbers have occupied new territories in the more exposed hedgerows of the northern half of the farm. Predominantly a hedgerow nester on the farm, this distribution will to some extent have been dictated by annual hedge-cutting and maintenance practices.

WHITETHROAT (Common Whitethroat) *Sylvia communis*
See BOCC 3 species below

GRASSHOPPER WARBLER *Locustella naevia*
Migrant breeder; male singing on one occasion in 2008
This secretive migrant species appears here on the strength of a single male that was 'reeling' from bramble scrub on Ringstead Common, south of the Burnham Road, on 26th April 2008. This represents the only recent record of this species at Courtyard Farm and was not seen or heard subsequently.

SEDGE WARBLER *Acrocephalus schoenobaenus*
Migrant breeder; first bred in 2015
A migrant breeding species that was first recorded breeding in 2015 in a scrubby hedgerow at the northern end of the green lane that forms the eastern border to Bell's Charity.

TREECREEPER (Eurasian Treecreeper) *Certhia familiaris*
Resident breeder; pair bred in 2006
Treecreeper is generally a scarce bird at Courtyard Farm, therefore is it unsurprising that only one territory was recorded, that being in 2006, in the most mature area of mixed woodland in the survey area, North Wood.

Despite the provision of two woodcrete treecreeper-type nestboxes in the vicinity of the breeding record there have been no subsequent records that suggest breeding activity.

WREN (Winter Wren) *Troglodytes troglodytes*
Resident breeder, 41-58 pairs bred annually; overall decline
This species is a common annual breeder at Courtyard Farm that is in decline. The number recorded in the first three survey years was between 57-58 pairs annually, since then a steady fall in numbers has occurred culminating in a c.30 overall decline across the full survey period. Woodland management may have a temporary impact on both the breeding numbers and distribution of this species as clearance and destruction of low cover and scrub during management work removes suitable breeding habitat until re-growth occurs. However, one of the main controlling factors for this resident insectivorous species is its ability to survive spells of hard weather.

It is believed that the decline recorded in 2010 is a direct result of hard winter weather in 2009-10 when snow-cover and prolonged periods of low temperatures is likely to have caused both fatalities and the surviving wrens to be in poor condition. This is perhaps endorsed by the fact that surveys conducted early in 2010 found very few singing wrens, but as spring progressed, and birds presumably recovered their condition, many more songsters were located.

Territorial distribution favours the more sheltered and wooded southern section of the farm where hedgerows not only tend to be more substantial but also come into leaf earlier in the spring.

STARLING (Common Starling) *Sturnus vulgaris*
Resident breeder, up to 2 pairs bred intermittently; absent as a breeder since 2010
Two starling territories were recorded annually during survey work at Courtyard Farm during 2007-10, but none have been recorded subsequently. The reason for such a poor set of data for this species is unclear but it may possibly be linked to the presence or absence of livestock on the farm. It is well known that wintering starlings are attracted to all kinds of livestock as both spilt foodstuffs and insects attracted to organic animal droppings are useful food sources. It is unclear how this related to starlings in the breeding season but the data collected suggests that cessation of breeding may be linked to removal of outdoor pigs from the farm.

In each year that this species was recorded in the survey period, both territories have always been in the farm building complex in the southern section of the farm.

BLACKBIRD (Common Blackbird) *Turdus merula*
Resident breeder, 39-58 pairs bred annually; increasing population
Blackbird is a common resident and annual breeding species showing one of the most impressive increases in numbers. Blackbirds have increased c.18% during the full survey period, but with some annual fluctuations. A total of 39 breeding pairs were recorded in 2006 and this increased quite impressively to peak at 58 pairs in 2010. However, a subsequent gentle decline has reduced the population to 47 pairs in 2015. It is unclear why such fluctuation in numbers occurs in this species but the number of over-wintering birds may influence this in some way. As well as incoming Continental autumn migrants it is possible that there are also some more local blackbird movements into the area with some perhaps remain to breed the following spring.

The distribution of blackbird territories located at Courtyard Farm for this species show a very strong bias towards the southern section and virtually all blackbirds breeding in the northern section of the farm are located in North Wood.

SONG THRUSH *Turdus philomelos*
See BOCC 3 species below

REDWING *Turdus iliacus*
Winter visitor; male in song in 2008
This species is included here on the basis of a single singing male, one of a group of at least 5 redwings that was in full song in North Wood on the morning on 29th March 2008.

MISTLE THRUSH *Turdus viscivorus*
See BOCC 3 species below

ROBIN (European Robin) *Erithacus rubecula*
Resident breeder, 44-66 pairs bred annually; overall decline
Another common breeding species at Courtyard Farm, robin numbers remained very stable during the period 2006-9, with between 60 and 66 territories recorded annually. This however has been followed by an apparently steady decline that amounts to c.30% over the full survey period. It is thought that breeding numbers can be affected by harsh winter weather when some local movements may occur to avoid the harshest of weather.

The distribution of robin territories at Courtyard Farm once again clearly illustrates the north/south divide either side of the Burnham Road with the more sheltered and wooded southern section of the farm strongly favoured. Woodland management practices are likely to have a temporary effect both the number of territories and their distribution, at least until scrub and understorey re-growth occurs.

DUNNOCK *Prunella modularis*
See BOCC 3 species below

HOUSE SPARROW *Passer domesticus*
Resident breeder, up to 2-15 pairs bred 2006-2010; absent as a breeder since 2010
House sparrow numbers at Courtyard Farm fluctuated dramatically during the first half of the survey period. Initially 10 territories were recorded in 2006 with numbers reaching a peak of 15 in 2007, then falling quite dramatically to nine territories in 2008 and then just two territories in 2010. In the 5-year evaluation local extinction was predicted imminently and in fact followed immediately. This data is much in line with that recorded in both rural and urban areas in the UK in recent years.

Nesting house sparrows were always associated with the gardens of the farm cottages and stables in the farm building complex in the southern section of the farm, and this is where the vast majority of territories would be found. Only on two occasions were house sparrow territories located in the northern section of the farm, both in the hedgerow opposite Field Barn, an adjacent private dwelling on the north-western boundary of the farm.

TREE SPARROW (Eurasian Tree Sparrow) *Passer montanus*
See BOCC 3 species below

PIED WAGTAIL (White wagtail) *Motacilla alba*
Resident breeder, 2-6 pairs bred annually; overall decline
Pied wagtail has been an annual breeder at Courtyard Farm throughout the survey period, albeit in relatively small numbers. Breeding peaked at six territories in 2006 but subsequently between two and four territories have been located. This data effectively represents a decline of 50% in the full survey period but more realistically, following a sharp decline, numbers have remained relatively stable during the period 2007-15.

The vicinity of the farm building complex in the southern section of the farm has been the location of the vast majority of located territories. This species regularly nests inside outbuildings, barns and stables, gaining access through open windows and doors, but has also been located nesting on banks beneath hedgerows.

It is tempting to try associate the decline of this wholly insectivorous species over the full survey period with the cessation of livestock husbandry on the farm, but the annual data collected simply does not indicate this is so.

MEADOW PIPIT *Anthus pratensis*
Resident breeder; first bred in 2015
Breeding meadow pipits in coastal Norfolk are usually found in *marrams* in a sand-dune habitat. Inland breeding birds however are more associated with rank grassland but it was still something of a surprise to find a pair breeding in the rank grass of a 10 metre field headland on the southern section of the farm in 2015.

The partial change at Courtyard Farm from *phacelia* to vetch and mustard as organic crops has led to an increase in over-wintering meadow pipits; it is possible that this pair remained from the wintering population that were frequenting the same area in late winter.

CHAFFINCH *Fringilla coelebs*
Resident breeder, 77-91 pairs bred annually; stable population
The most numerous of Courtyard Farm's annual breeding birds, chaffinch numbers have remained relatively stable throughout the full survey period. Peak numbers occurred in both 2007 and 2008 when 91 pairs were located. There then followed a slight decline to the current level of 86 pairs in 2015, representing overall stability.

Chaffinch territories show a distribution bias favouring the more wooded southern section of the farm. However, the shelter offered by the more low-lying southern section of the farm appears to have less importance to this species as a considerable number of territories on the farm are located in standard trees in the hedgerows across both the northern and southern sections of the farm.

Both the suspended and drum feeders on the farm are frequented by chaffinches at all seasons, a fact that may have some impact on winter survival and the subsequent number and condition of the potential breeding population in spring.

To date there has been no obvious sign of the parasite *trichomonosis* in the Courtyard Farm chaffinch population but the gentle decline in numbers of territories needs monitoring as there may be a link to the disease that is believed to be contacted through local movements between feeding stations carrying traces of the disease.

BRAMBLING *Fringilla montifringilla*
Winter visitor; singing males in spring on three occasions
Single male bramblings have been recorded in song on 12th-26th April 2008 and 11th March 2009, and two different males were singing at separate locations on 1st April 2009.

The male present for a fortnight in April 2008 was singing from, and apparently defending a territory, but was unfortunately not seen after the latter date above. All of the males in 2009 were in the vicinity of suspended feeders and although singing were apparently not defending territory as such, and were all heard on just the single occasion.

GREENFINCH (European Greenfinch) *Carduelis chloris*
Resident breeder, 2-18 pairs bred annually; catastrophic overall decline
In the 5-year evaluation it was noted that greenfinch was 'another annual breeding species with a relatively stable set of data'. Against all expectations, this statement could not be further from the truth over the following five years. Numbers of territories identified annually ranged from 16 to 18 with a c.12% increase noted during the period 2006-10. This was followed by a decline to 13 breeding pairs in both 2011 and 2012, before a catastrophic collapse to the current level of just two breeding pairs by 2015.

The data from Courtyard Farm suggests that the initial decline was likely caused by *trichomonosis* a disease that is known to flare up in specific areas as a direct result of movement from one feeding station to another but had previously been unknown on the farm. The collapse that followed may also have been attributable to the same disease and further monitoring is required in relation to this. However, another major factor in the decline was the harsh winter weather of 2012-13 when despite regular supply of food available at the suspended feeders the local population of greenfinches completely evacuated the area, presumably in favour of less harsh conditions. This evacuation was perhaps in itself not so surprising, but the following spring revealed that the birds had failed to return.

Greenfinch territories were mainly distributed along green lanes and in gardens and paddocks around the farm building complex where the mature trees are used as song-posts by the singing males. Consequently the distribution of breeding territories was almost entirely concentrated in the southern section of the farm and this remains the case with the remnant breeding population. Interestingly, as this species has declined by c.89% over the survey period, it has been replaced in numbers and to a large degree in distribution, by the following species.

GOLDFINCH (European Goldfinch) *Carduelis carduelis*
Resident breeder, 8-21 pairs bred annually; steady overall increase
This species remains one of the success stories amongst the breeding birds of Courtyard Farm. Goldfinches have increased by an impressive c.137% over the full survey period. Just eight territories located in 2006, increasing steadily throughout the survey period to a peak of 21 territories in 2014. The current total stands at 19 breeding pairs in 2015.

The UK increase in goldfinches is often linked to the provision of nyjer seed, a small back seed that is now being provided for birds in gardens throughout the UK where its attractiveness to the delicate seed-eating finches, such as siskin and goldfinch, make it one of the most popular seeds provided. Nyjer seed is not provided in the Courtyard Farm feeders but the local goldfinch population continues to grow, perhaps being linked to improved winter survival as the birds often wander locally during the winter months, presumably taking advantage of nyjer seed provided at other locations as well as feeding on saltings and weedy fields.

Goldfinch territories are distributed along the green lanes and in the more mature trees of the older hedgerows an alongside adjacent roads. The distribution of goldfinch territories marginally favours the southern section of the farm where, as stated in the text for greenfinch (above), it has occupied a number of territories vacated by that species as it went into major decline.

SISKIN (Eurasian Siskin) *Carduelis spinus*
Resident breeder; 1-2 singing males or pairs in both 2008 and 2009
A single singing male was recorded on 29th March 2008, with another, or possibly the same, in song (at a different location) on 12th April 2008. In addition a pair was present on 1st April 2009 only, when the male was noted song-flighting and displaying to the female. It is unlikely that any of these birds bred.

LINNET (Common Linnet) *Carduelis cannabina*
See BOCC 3 species below

LESSER REDPOLL *Carduelis cabaret*
Resident breeder; male in song in on one date only in 2007
A male was in song in suitable habitat on 7th April 2007. Unfortunately it was not seen or heard again after this date.

MEALY REDPOLL (Common Redpoll) *Carduelis flammea*
Autumn and winter visitor; 2 males in song on one date only in 2009
In what must rate as one of the most surprising events of the whole survey period a party of six mealy redpolls alighted in a dense hedgerow on 12th April 2009. The four females immediately began to feed on old teasel heads at the base of the hedgerow, whilst the two adult males, splendidly adorned in pink and red, sang and courted the females whilst they fed. Both males sang within two metres of each other without ever becoming involved in dispute and one male was seen to indulge in frenzied wing- and tail-quivering display on several occasions. Suddenly, without warning, the entire flock took off and departed east with at least one male still singing as they departed.

BULLFINCH (Eurasian Bullfinch) *Pyrrhula pyrrhula*
See BOCC 3 species below

YELLOWHAMMER *Emberiza citronella*
See BOCC 3 species below

CORN BUNTING *Emberiza calandra*
See BOCC 3 species below

BBS results for BOCC 3 species

Published in 2009, BOCC 3 is the most up-to-date review of information on the status of birds in the UK and elsewhere within their ranges.

The global and European conservation status assessments are derived from BirdLife International's *Threatened Birds of the World 2004* and subsequent updates, and *Birds in Europe: population estimates, trends and conservation statu*s, the latter also providing European the population estimates.

The UK population estimates come from the Avian Population Estimates Panel, or recent targeted surveys. Thus, Information on population trends and ranges is sourced from a wide range of authorities including the Wildfowl and Wetlands Trust (WWT), the British Trust for Ornithology (BTO), the Joint Nature Conservancy Council (JNCC), the Shetland Oil Terminal Environmental Advisory Group (SOTEAG) and the Royal Society for the Protection of Birds (RSPB). Most notably in relation to UK farmland breeding birds:

- The BTO2/JNCC3 *Common Birds Census* and the BTO/JNCC/RSPB4 *Breeding Bird Survey* (which provide trends in common breeding birds)
- The Rare Breeding Birds Panel (RBBP) and single-species surveys, mostly as part of the Statutory Conservation Agencies and the RSPB *Annual Breeding Bird Scheme* (trends and population estimates for scarce and rare breeding birds)
- Trends in range come from single-species surveys, Seabird 2000, and the BTO/IWC7 1968–72 and BTO/SOC8/IWC 1988–91 breeding bird atlases. Due to the lack of recent range data, relatively few species have been assessed against the range change criteria

Information on species distribution within BOCC3 comes from the JNCC's *The UK SPA Network*, and BirdLife International's *Important Bird Areas Database*.

Definition of qualification criteria for BOCC 3

The BOCC 3 qualification criteria relating to the 14 red- and amber-listed species discussed in depth later are as follows:

- **BDMP[1]**: Breeding population decline - moderate decline > 25% but < 50% over the last 25 years
- **BDMP[2]**: Breeding population decline - moderate decline > 25% but < 50% since 1969 (entire period of BOCC)
- **BDP[1]**: Breeding population decline - severe decline > 50% over the last 25 years
- **BDP[2]**: Breeding population decline - severe decline > 50% since 1969 (entire period of BOCC)
- **HD**: Historical decline – severe decline between 1800-1995 without sign of substantial recent recovery
- **SPEC**: European Conservation Status – categorised as a species of European Conservation Concern

Classified list of BOCC 3 species

GREY PARTRIDGE *Perdix perdix*

Resident breeder, 15-20 pairs bred annually; current slow decline

BOCC 3 Red-listed. *Qualification criteria:* BDP[1]; BDP[2]; SPEC

Courtyard Farm holds a large amount of historical data on grey partridges, in the form of spring counts, breeding graphs and more recently Breeding and Winter Bird Surveys, much of which was documented in the 5-year evaluation. The historical plight of this species at Courtyard Farm was the main reason for the farm adopting organic farming. Additionally, farming practices associated with initially the original Countryside Stewardship Scheme, and later the Environmental Higher Level Stewardship Scheme, were undertaken in the hope of turning the fortunes of grey partridges.

It soon became apparent that non-spraying of field margins and headlands alone was not enough to stem the decline of grey partridges and further changes involving utilising extensive permanent field margins and headlands, stewardship grassland, wild bird seed strips and the practice of continual grain feeding from drum feeders were necessary to provide breeding habitat, increased levels of insect prey and winter feed grain.

Whilst it is clear that the over-winter, undersown stubbles associated with organic farming practices are vital to winter survival for this species it is also highly likely that the provision of wild bird seed strips and drum grain feeders around the farm was in part responsible for the increase in grey partridge numbers immediately after their provision, and continues to aid winter survival. Food availability during the 'hungry gap' in late-winter and early-spring is long known to have a major effect on the numbers of grey partridges successfully over-wintering, and thus the numbers of birds in breeding condition the subsequent season. This was the reason for the implementation of the Courtyard Farm Winter Bird Survey, conducted annually since the winter of 2007-8.

There has, as a matter of policy, long been no predator control at Courtyard Farm, save for occasional shooting of woodpigeon and rabbits to protect vulnerable crops. As a result there are a number of predators present that could take advantage of the nest or young of a ground-nesting species. Foxes, stoats, weasels, carrion crows, jackdaws and magpies are all present on the farm and control of these species would theoretically double the numbers of grey partridges present.

When breeding bird survey work commenced at Courtyard Farm in 2006 a total of 17 territorial pairs of grey partridges were located. This increased to a peak of 20 pairs in both 2007 and 2008, but has since been followed by a gentle, but discernible, decline to the current total of 15 pairs in 2015, representing a decline of c.12% and a low point in the survey period. Spring grey partridge surveys indicate that winter feeding and habitat changes at Courtyard Farm alone are failing to offset winter losses, possibly the result of shooting pressure and cropping changes on neighbouring farms. Whilst parts of north and north-west Norfolk constitute the primary grey partridge stronghold in the UK, the pattern of slow decline in these areas goes somewhat against the UK trend where grey partridges have completely disappeared from vast areas of agricultural land, particularly since the end of the Second World War.

Distribution of grey partridge territories at Courtyard Farm is evenly split between both the northern and southern sections of the farm, clearly representing the distribution of suitable breeding cover at the base of hedgerows and in weedy headlands.

Figure 1: Breeding Bird Survey data from Courtyard Farm, Ringstead, Norfolk, for the period 2006-15: Grey partridge, *Perdix perdix* (BOCC3 Red listed)

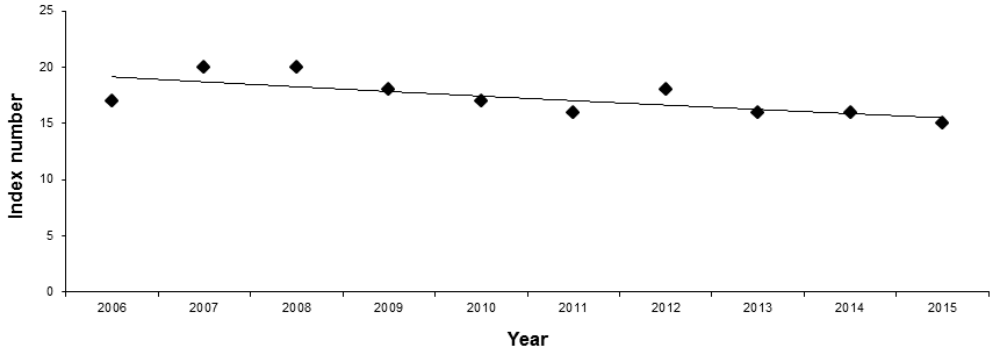


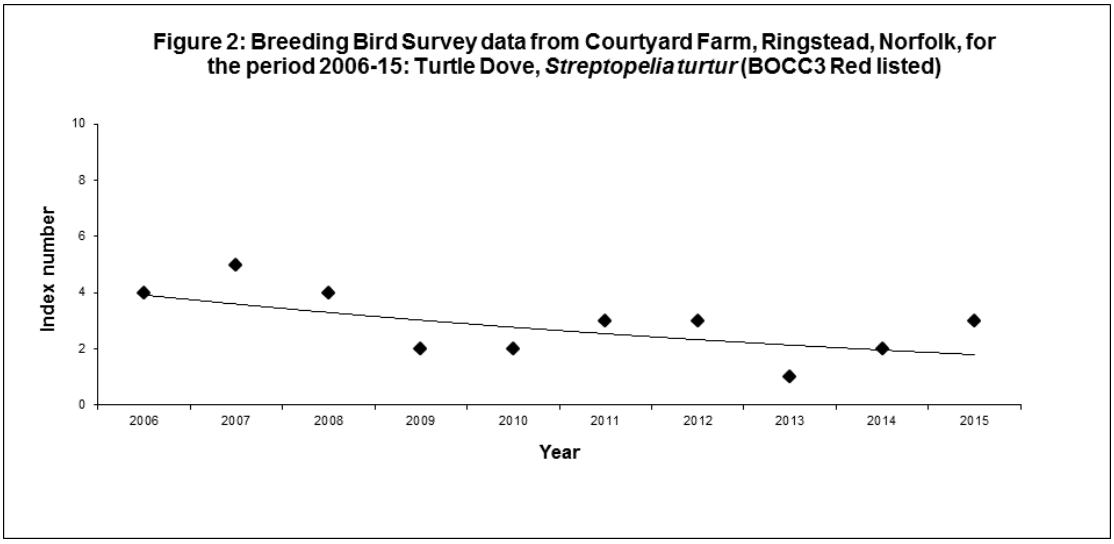
Figure 1 above clearly shows the general trend of gentle decline at Courtyard Farm and the next few years may prove to be critical to this species future as a breeding bird on the farm. The *Game and Wildlife Conservancy Trust* suggests that research shows that release of red-legged partridges has no effect on the numbers of grey partridges but it is becoming apparent that the ever-increasing population of red-legged partridges released from adjacent game-shooting estates leads to both increased food competition and increased nest-site competition. Whilst it is true that red-legged partridges will happily nest in habitat suitable for grey partridges, the reverse is not always true.

TURTLE DOVE (European Turtle Dove) *Streptopelia turtur*
Migrant breeder, 1-5 pairs bred annually; currently stable following decline
BOCC 3 Red-listed. *Qualification criteria:* BDP[1]; BDP[2]; SPEC
The decline of this species in the UK is both well documented and much lamented. Turtle dove was noted in the 5-year evaluation as 'present as a breeding species throughout the survey period but in steadily decreasing numbers'. Initially between four and five singing males were recorded in the period 2006-08, all of which were located in the blackthorn scrub of Ringstead Common, lying at the very heart of the farm. This dropped to just two singing males in both 2009 and 2010 initiating the comment above. Since then numbers have fluctuated somewhat at between one and three singing males annually. A total of three singing males were located in 2015 representing an overall 40% decline in the full survey period, but numbers appear to have stabilised somewhat, at least temporarily.

The trend-line in Figure 2 opposite clearly shows a downward trend at Courtyard Farm but to some extent masks the more recent apparent stabilisation of numbers of singing males.

Turtle doves are late arrivals on the farm, often not being noted until very late-May, or even early-June. They are generally elusive on the farm, most often seen when singing from telegraph wires

or tall trees, but also occasionally when feeding on short vegetation and field margins. There is no evidence to suggest any pair has made more than one breeding attempt in any given year, and usually very little evidence to suggest successful breeding occurred. The modern-day lack of second and even third broods by the UK turtle dove population is often cited as one of the major reasons for its decline. This, combined with illegal hunting pressure on migration, habitat destruction, changing climate and changes in conventional farming practices would produce a lethal cocktail of circumstances for any species.



Interestingly, since the 5-year evaluation there has been a shift in distribution of turtle dove territories away from the confines of Ringstead Common towards areas of new plantation on the farm, where scrub and thicket are associated with trees that are generally not fully mature. The reasons for this shift are not certain but it may well be associated with the presence of a small number of pairs of magpies that shared the blackthorn thicket of Ringstead Common with the turtle doves during the breeding season. Predation of the Ringstead Common nests by magpies may have been the reason for little evidence of successful breeding and ultimately may have led to an evacuation of this area in favour of 'safer' habitat.

Turtle doves are in dramatic decline across much of UK and despite extensive study there currently appears to be little sign of a sustainable long-term recovery, despite small enclaves of resistance such as north-west Norfolk, where the decline appears to be at a slower rate.

SKYLARK (Sky Lark) *Alauda arvensis*
Resident breeder, 67-81 pairs bred annually; currently stable
BOCC 3 red-listed. *Qualification criteria:* BDP[2]
During survey work this species is not counted after mid-May when disturbance from everyday farming activities inevitably causes the destruction or desertion of a few nests. It appears to be quite normal for adults from these disturbed territories to relay, often quite close by, thus clouding the true numbers of pairs present if counting continues beyond mid-May.

Long used as a key indicator of the welfare of farmland birds in the UK, the Skylark has been in decline for many years and is now red-listed by BOCC 3. The fortunes of this species at Courtyard Farm have fluctuated somewhat during the full survey period. Initially a population that peaked at 81 territories in both 2006 and 2007 began to decline, as noted in the 5-year evaluation for the period 2006-10, representing a c.10% decline over this period. This decline was apparently occurring at slower rate than the recorded trend throughout the UK, but nonetheless still represented a decline. This pattern continued to 2013 when a survey low of 67 territories was recorded. This low point followed a winter when skylark numbers were reduced by hard weather.

Fortunately, since the low point in territories recorded in 2013 there has been a change in fortunes for the skylark with 72 territories recorded in 2014 and 76 in 2015. This current trend reversal has seen the overall rate of decline across the full survey period reduced to just c.6%; a very satisfactory result when compared with continued declining numbers across the UK in much of the conventional farmland. The UK Farmland Bird Indicator shows a decline in England of 51% for the period 1970-2007, and a decline of 27% in East of England during the period 1995-2008. Clearly the results from Courtyard Farm are far superior to these figures.

A number of factors can affect the distribution and density of skylark territories on farmland, not least the level of available insect prey. The organic farming methods undertaken at Courtyard Farm, particularly the absence of routine spraying of insecticides and herbicides and the utilisation of spring-sown cereals, both of which appear to benefit skylarks. Additionally, the standing stubbles associated with organic farming that are present annually over the winter period, and the considerable amount of Stewardship grassland on the farm, both clearly assist in skylark winter survival rates.

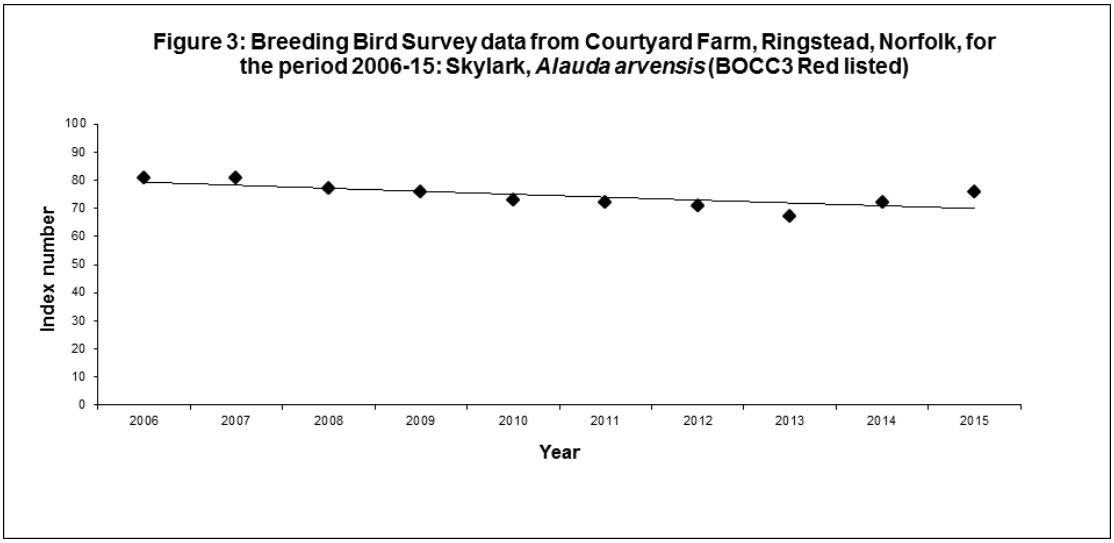


Figure 3 above clearly shows the trend of slight decline in territories recorded for this species whilst also showing the recent turn in fortunes.

Distribution of skylark territories on the farm over the full survey period does favour the more sheltered southern section, however, the distribution of the favoured crops and unimproved grasslands are more likely to be the governing factor deciding the breeding distribution for this ground-nesting species.

Future plans under the new Countryside Stewardship scheme hopefully include, to initially trial, and eventually utilise, undisturbed plots in arable crops for ground-nesting waders which may also have benefits for skylarks.

SWALLOW (Barn Swallow) *Hirundo rustica*

Migrant breeder, 2-10 pairs bred annually; currently stable following steep decline

BOCC 3 amber-listed: *Qualification criteria:* SPEC

In the 5-year evaluation this species was described as having 'one of the more disappointing sets of results', swallows having declined steeply by a total of 70% during the period 2006-10 from 10 territories in 2006 to a low of just three in both 2009 and 2010.

Sadly, there have been no indications of an immediate reversal in fortunes in the intervening period and despite a brief return to four territories in 2013, numbers have now dropped to just two in both 2014 and 2015. This set of data now represents an overall decline of 80% over the full survey period.

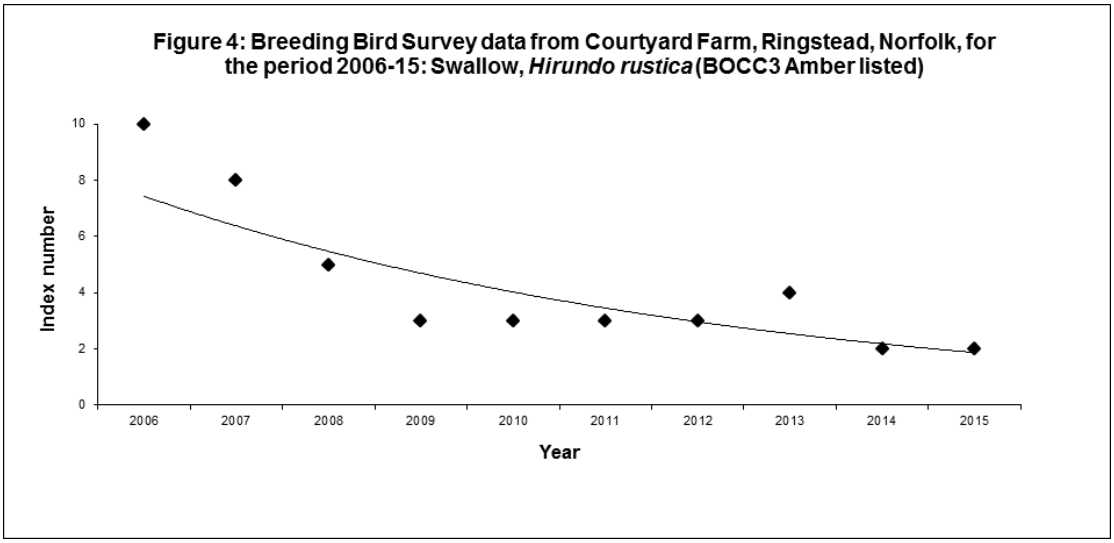
Figure 4 overleaf clearly shows the extent of the decline at Courtyard Farm over a short period of time, and also shows the apparent stabilising of numbers in more recent years, albeit at a critically low level.

Despite being amber-listed in BOCC 3 as a species of European Conservation Concern, much of the UK has shown a trend of slight increase in the number of breeding swallows in recent years, but unfortunately this is yet to be noted at Courtyard Farm. The reasons for this overall decline remain unclear, but as a long-distance migrant swallows are vulnerable to a number of factors both on passage and in their winter quarters in Southern Africa, not least crossing the Sahara Desert.

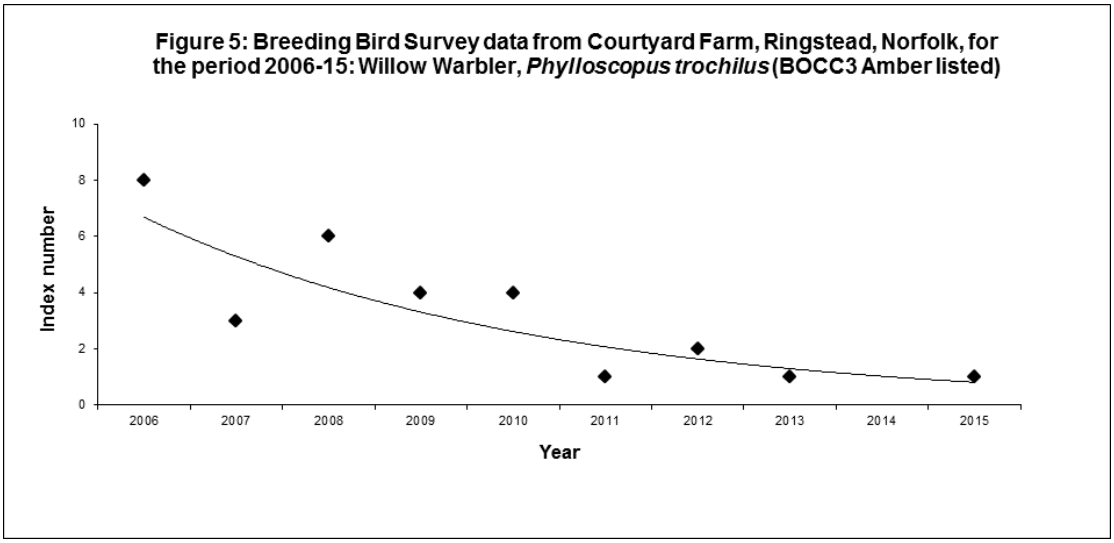
More locally, conventional UK agricultural practices, including routine blanket spraying of insecticides, will surely have had a massive impact on the numbers of insect prey available to this wholly insectivorous species. Climate change and the tendency toward more erratic and extreme weather systems will also have an effect on feeding opportunities and severe drought can even lead to the inability to find local water sources to construct the suspended cup-shaped mud nests.

All of the territories on the farm were located within the farm building complex in the southern section of the farm where the familiar selection of outhouses, barns and stables provide plenty

of suitable nesting opportunities and the relatively recently renovated farm ponds provide a constant water supply. This in mind, the reasons for the continued decline are not immediately obvious, particularly given the relatively high insect populations present on the farm.



WILLOW WARBLER *Phylloscopus trochilus*
Migrant breeder, 0-8 pairs bred annually; ongoing major decline
BOCC 3 amber-listed: *Qualification criteria:* BDMP[1]; BDMP[2]
This long-distance migrant breeder has suffered a major decline in the UK recent years and this is reflected in the data recorded at Courtyard Farm. In the 5-year evaluation it was noted that numbers had decreased from eight territories in 2006 to just four in 2010, having dipped to a low of just three territories in 2007. This data represented a decline of 50% during the period. In the subsequent period any optimism that the decline had bottomed was soon dashed as numbers continued to fall with just one or two singing males recorded in four of the five years and none at all recorded in 2014. Despite a singing male being recorded again in 2015 it appears unlikely that breeding occurred and the decline is probably best now considered as complete. Figure 5 below shows the decline in full.



Data from much of the UK suggests that the decline at Courtyard Farm is in line with that recorded elsewhere, particularly that recorded in East of England during the period 1995-2008.

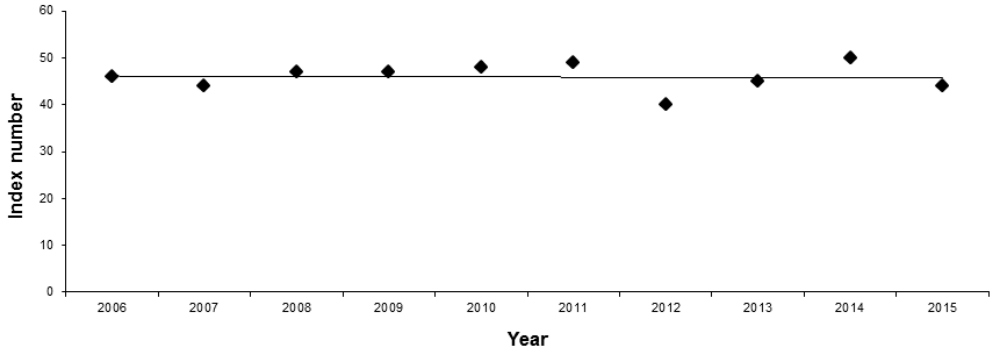
Comparison of the fortunes of two very closely related, small, insectivorous species namely the willow warbler, a long-distance migrant, and its cousin the chiffchaff, a relatively short-distance migrant that now occasionally over-winters in the UK, gives a clear indication of the perils that face long-distance migrants on their journeys south for the winter. Whilst chiffchaff numbers have remained relatively stable, if fluctuating somewhat in accordance with the lateness and ambient temperatures

each spring (and are in fact increasing throughout much of the UK), willow warblers have plummeted in a similar time-span

Blackthorn was the most favoured type of habitat for this species although it was occasionally recorded singing its melancholy cadence from top of the densest of established traditional hedgerows and very occasionally on the edges of the younger woodland plantations. Thus, its distribution was always centred on Ringstead Common, straddling the Burnham Road in the centre of the farm, and the green lanes south of the Burnham Road. Territorial distribution was always in favour of the more sheltered and more wooded southern section of the farm, but with such a small remnant population breeding on the farm the loss of just one territory can have a large effect on such statements.

WHITETHROAT (Common Whitethroat) *Sylvia communis*
Migrant breeder, 40-50 pairs bred annually; currently stable
BOCC 3 amber-listed; *Qualification criteria:* BDMP[2]
This migrant breeding species was noted in the 5-year evaluation as showing a remarkably consistent set of data with the annual number of territories varying between 44 and 48 with a c.4% increase in territories during the full survey period. Little has changed in subsequent years. Over the full survey period numbers of territories varied between 40 and 50 annually and the population is considered to be at worst stable. Numbers peaked at 50 territories in 2014 but this was followed by a decline to just 44 territories in 2015. The reason for this decline is believed to be almost certainly a result of increased hedgerow maintenance the previous autumn and winter (following a spell of very little hedgerow maintenance as a result of broken machinery). It is clear from annual distribution maps on the farm that whitethroats are considerably less likely to nest in any stretch of hedgerow that has been flailed the previous year and is therefore bereft of the natural level of covering foliage, but with the subsequent increased growth in the second year breeding numbers will return to c.75-80% of the season prior to flailing, and by the third year the recovery is complete. The data for 2015 is therefore likely to be masking a trend of slight increase.

Figure 6: Breeding Bird Survey data from Courtyard Farm, Ringstead, Norfolk, for the period 2006-15: Whitethroat, *Sylvia communis* (BOCC3 Amber listed)



Data recorded across much of the UK suggests that the number of breeding territories noted at Courtyard Farm has increased at a similar or slightly slower rate than that of some other UK areas during the period 1995-2008, but comparison with BTO data from other organic lowland farms in Lincolnshire, Cambridgeshire and Norfolk is similar to that recorded at Courtyard Farm, with perhaps just a hint at the slightly higher rate of increase in breeding numbers recorded across much of the UK. As most migrant breeders in the UK are currently in decline, the Courtyard Farm dataset for whitethroat represents an encouraging return.

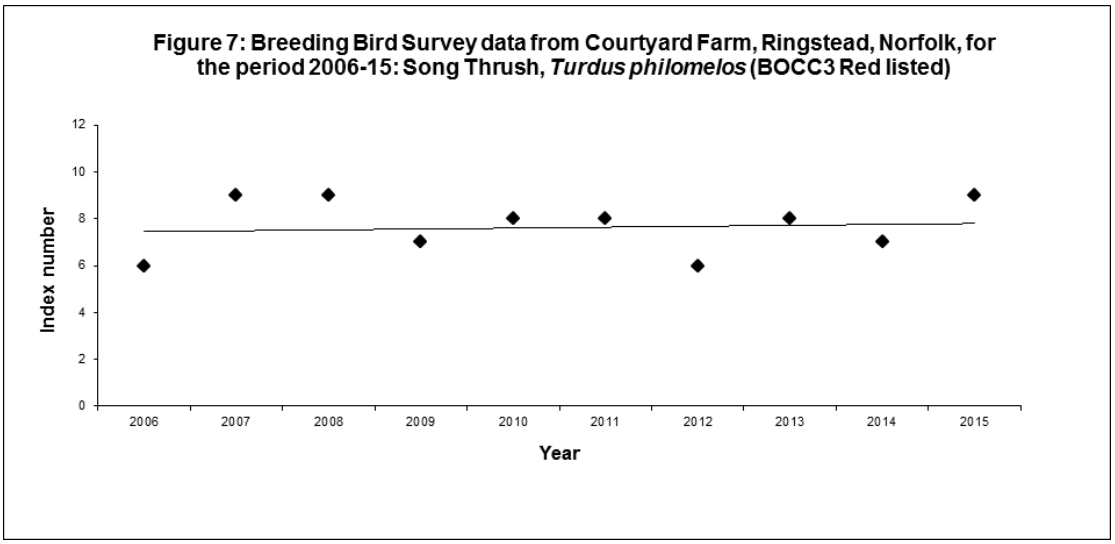
Distribution of whitethroat territories on the farm favours the southern section where hedgerows are more sheltered and consequently come into leaf earlier than those in the northern section. Whilst hedgerow maintenance clearly affects annual distribution of territories some stretches of hedgerow definitely appear more attractive to whitethroats than others. Ancient boundary hedgerows can be traced back through maps over hundreds of years, particularly those associated with green lanes. They are often rich in traditional tree and shrub species diversity and are apparently particularly attractive to whitethroats.

SONG THRUSH *Turdus philomelos*

Resident breeder, 6-9 pairs bred annually; slight increase

BOCC 3 red-listed; *Qualification criteria:* BDP²

Another annual resident breeder, song thrush numbers were noted in the 5-year evaluation as showing an increase of 33% over the period 2006-10. Early in the survey period there was a sharp increase in numbers from six territories in 2006, to nine territories in 2007, and numbers have fluctuated annually between these high and low points. Whilst this fluctuation may appear quite extreme, in a relatively small core population it needs little more than one or two pairs of song thrushes to move a very short distance into woodland on the eastern and southern boundaries of the survey area to have a dramatic influence on annual figures in any given year.



Whilst data recorded indicates there has in fact been an increase of 50%over the full survey period, the trend line in Figure 7 above shows a stable breeding population at Courtyard Farm with perhaps just a hint of a long-term increase. This represents a good set of results for a BOCC 3 red-listed species which qualified for BOCC 3 classification on the strength of a severe UK decline of less than 50% over the BOCC 3 qualification period since monitoring began in 1969.

Territorial distribution on the farm unsurprisingly shows an extremely strong bias towards the southern section of the farm, where the majority of the mature woodland and the more substantial hedgerows and adjoining scrub are to be found.

MISTLE THRUSH *Turdus viscivorus*

Resident breeder, 4-8 pairs bred annually; overall decline

BOCC 3 amber-listed; *Qualification criteria:* BDMP¹; BDMP²

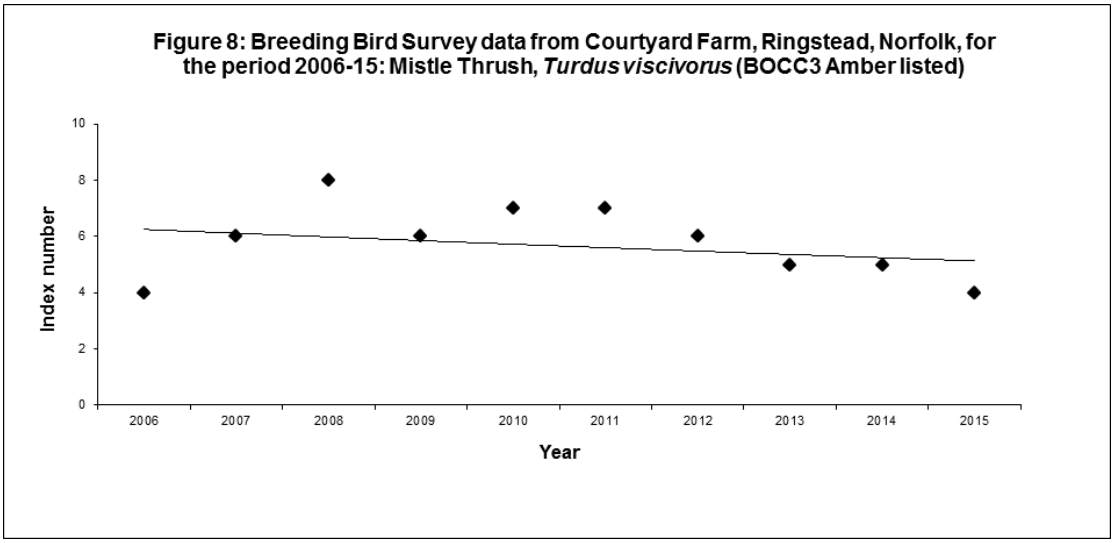
Fluctuating numbers were noted in the 5-year evaluation as seeming to be the norm for this annual resident breeder at Courtyard Farm. In the subsequent years there has been nothing to suggest that this pattern may change.

During the full survey period numbers were initially low at just four territories in 2006 but then climbed steeply to a peak of eight territories just two years later in 2008. Subsequently there has been a trend of decline with numbers in 2015 having returned to just four territories.

Figure 8 opposite clearly shows both the initial sharp increase in breeding territories early in the survey period, and the subsequent steady decline, with a definite long-term downward trend. Unfortunately, the steady decline in mistle thrush territories at Courtyard Farm in recent years conflicts with the optimism shown in the 5-year evaluation by the healthy increase in numbers in the period 2006-8. Data recorded across the UK suggests a species in moderate decline, at various rates in certain areas, during the qualification period for BOCC 3 classification

Mistle thrushes almost always nest in the mature isolated oaks in field margin hedgerows and as a relatively hardy, early breeding species appear to be unconcerned by the shelter offered by the southern section of the farm and distribution of territories shows an almost even split between the northern and southern sections of the farm.

Unfortunately the reduction in the number of breeding pairs of mistle thrushes at Courtyard Farm also means that the spectacle of loose, wandering, late-summer post-breeding flocks is becoming less common.



DUNNOCK *Prunella modularis*
Resident breeder, 23-45 pairs bred annually; overall decline
BOCC 3 amber-listed; *Qualification criteria:* BDMP[2]
An annual resident breeder at Courtyard Farm, dunnock numbers were recorded in the 5-year evaluation as having fluctuated over the survey period from 33 territories in 2006, rising to a high of 45 territories in 2007, then declining to just 30 territories in 2010. This dataset of apparently fluctuating figures was in fact masking a long-term decline that has become more apparent over the full survey period.

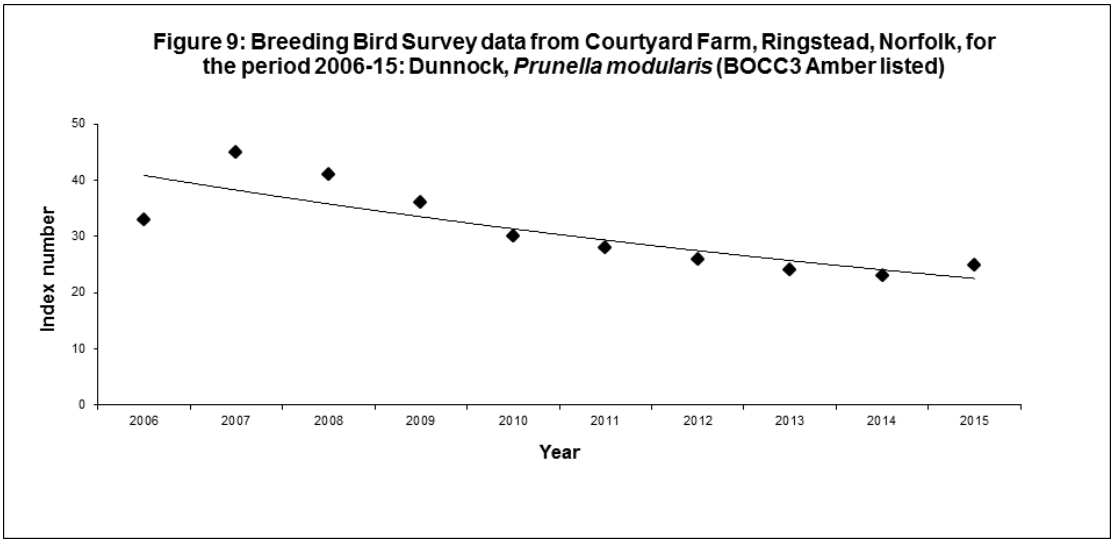


Figure 9 above reveals the trend of long term decline with the number of territories recorded in 2012-15 perhaps representing a bottoming-out of the decline. The discrepancy in the low number of territories recorded in 2006 may be artificially low and can possibly be explained by the early-season survey work. Following what was considered to be a relatively low count of territories in the first year of survey work, in 2006, it was decided to commence survey work at the very end of February, rather than in mid-March, specifically to detect early singing birds.

Dunnock is amber-listed on BOCC 3 on the strength of a severe decline of less than 50% in the breeding population since 1969, the full qualification period. This trend appears to be mirrored in the dataset from Courtyard Farm where the decline is at a similar level.

Woodland management and hedgerow maintenance may have some influence on both the number of dunnock territories and their distribution on the farm but this cannot be responsible for the long-term trend of decline recorded. The distribution of breeding dunnocks over Courtyard Farm is similar to that of many other small resident passerines, clearly favouring the more sheltered and wooded southern section.

TREE SPARROW (Eurasian Tree Sparrow) *Passer montanus*
Resident breeder, 2-17 pairs bred annually; current slow decline following major decline
BOCC 3 red-listed; *Qualification criteria:* BDP[1]; BDP[2]; SPEC
This resident species has been recorded breeding annually during the full survey period, initially bucking the trend across the UK by maintaining a relatively stable population, then undertaking a dramatically steep decline that left the local population at a critical level. This level has since been maintained without showing any signs of recovery.

The initial years of the survey saw a breeding population of between 15 and 17 pairs, colonially centred on a number of wooden nestboxes hidden deep in cover in a patch of scrub on the southern perimeter of the farm building complex, very close to the main horse paddock pond. Occasionally the odd pair would also utilise holes in the flint walls of adjacent barns and occasionally be found in nestboxes elsewhere on the farm. Initially another small population of birds bred on the north-west perimeter of the farm in scrub and hedgerows close to an adjoining property, this colony however soon disappeared but without any major fluctuation in breeding numbers suggesting they had moved into the main colony.

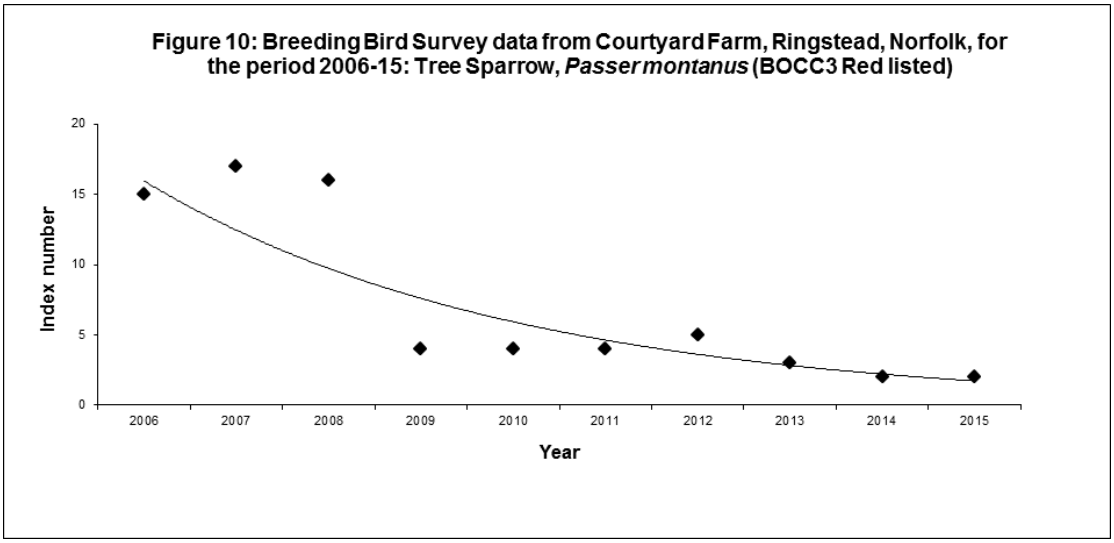


Figure 10 above illustrates the initially stable population, followed by a dramatic decline and the subsequent slow decline. The decline in the population was fully documented in the 5-year evaluation but is worth repeating here as it is a sobering example of how vulnerable a single colony of any species can be. The numbers of tree sparrows recorded at feeders during the winter 2008-9 appeared both normal and stable, but it became apparent very quickly that tree sparrows had virtually deserted the usual breeding territories on the farm in the following spring. The spring of 2009 was particularly dry with virtually no rain falling at Courtyard Farm for six weeks. It was decided to investigate the most favoured nestboxes to try to ascertain whether any nest building or egg-laying had taken place. On opening the first box it was found to be full to the brim with garden snails, *Helix aspersa,* packed tightly against each other so closely that it was impossible for another snail to get enter the box, let alone a tree sparrow. Inspection of each of the cluster of five boxes revealed the same situation in each box. Subsequently the four tree sparrows that nested in 2009 all built nests in cavities in walls in the farm building complex and none used wooden nestboxes.

Consequently, in an attempt to reverse the fortunes of this species at Courtyard Farm it was decided to replace the decaying and damp, wooden nestboxes that were in the worst condition with 20 new *woodcrete* boxes that were placed on the gable ends of the farm buildings, close to where the remaining tree sparrows had moved to. None of the woodcrete nestboxes were used in 2010 when once again just four territories were located and only rarely does the remnant population use these boxes, despite many of them being placed in identical positions to the old wooden boxes. Therefore, whilst recent recoveries have been recorded in certain areas of the UK, the Courtyard Farm tree sparrow population remains perilously close to local extinction.

On a wider local scale it has become apparent through ringing recoveries and observations that the core tree sparrow population in the area of north-west Norfolk around Courtyard Farm does periodically move to other traditional territories, and indeed, winter feeding areas, all but a few miles

distant. The trend for this population is certainly one of decline, much the same as recorded across much of the UK.

As stated previously, the territorial distribution of tree sparrows has always been centred on the farm building complex in the southern section of the farm. By 2008 all of the small satellite breeding populations had been lost and the whole tree sparrow population was in the farm building complex area, the remnants of which remain to date.

LINNET (Common Linnet) *Carduelis cannabina*
Resident breeder, 2-7 pairs bred annually; current recovery following slow decline
BOCC 3 red-listed; *Qualification criteria:* BDP[2]; BDMP[2]; SPEC
This attractive little finch has bred annually throughout the full survey period, albeit in small numbers. In the 5-year evaluation it was noted as being in slow but steady decline. Numbers peaked in 2006 and 2007 when seven territories were identified, with a decline to just three territories by 2010. This set of data represented a c.57% decrease during the period 2006-10.

At that time comparison of the Courtyard Farm data against that for other UK regions during the period 1995-2008 shows a similar, unabated decline in numbers of territories. The qualification criteria for this species to be red-listed in BOCC 3 also suggests a long-term moderate decline in breeding numbers, with an acceleration to a steeper rate of decline in more recent times.

Subsequent to the 5-year evaluation there has been a reversal of fortunes for this species at Courtyard Farm with breeding territories back up to six in 2015. It is difficult to determine exact trends with such a small core population of breeding linnets, but whilst the overall decline of c.14% recorded over the full survey period, the most recent data suggests that there appears to be some cause for optimism.

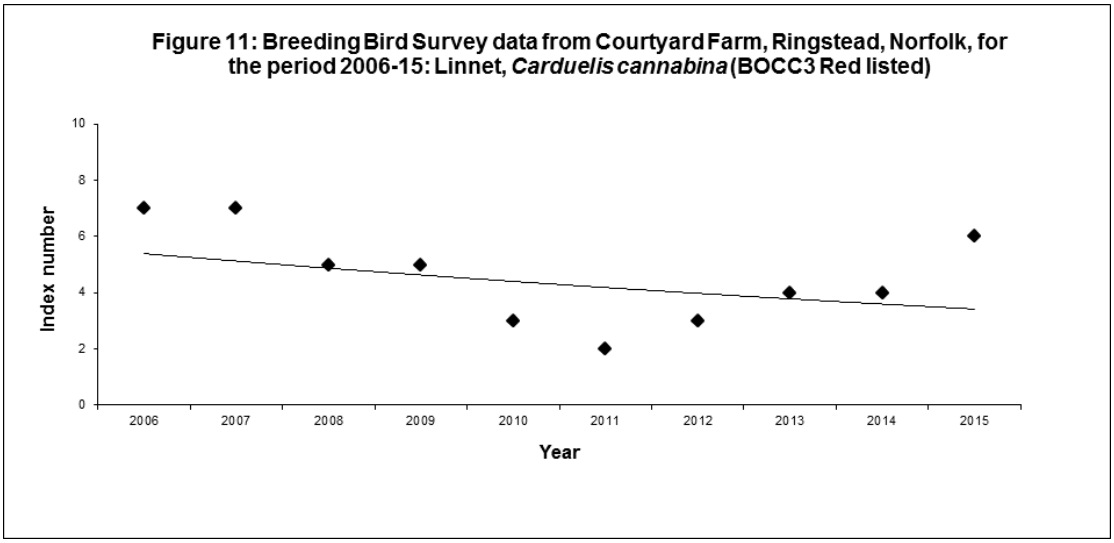


Figure 11 above clearly reflects the changing fortunes of the linnet population over the full survey period depicting the initial decline, subsequent recovery and overall slightly downward trend.

Whilst in winter linnets do not attend either the suspended feeders or drum feeders at Courtyard Farm, they are often found foraging for weed seeds in the depths of the wild bird seed strips and have benefitted from the recent practice of spreading of fat hen seed in these areas. Provision of extra feed may assist winter survival promoting a healthier and more numerous local population at the commencement of breeding activity the following spring.

The distribution of linnet territories at Courtyard Farm is rather strange. The majority of territories are located in the more exposed hedgerows in the northern section of the farm. There is also a small patch of sparse gorse scrub on the edge of Ringstead Common that occasionally holds one or two territories. It is interesting that this patch of seemingly suitable gorse scrub is not occupied in each year, and also that the generally larger and more densely-vegetated hedgerows in the sheltered southern section are not utilised more often.

BULLFINCH (Eurasian Bullfinch) *Pyrrhula pyrrhula*
Resident breeder, 5-8 pairs bred annually; slow decline
BOCC 3 amber-listed; *Qualification criteria:* BDMP[1]; BDMP[2]

This is another annual resident breeding species which has a relatively small core population at Courtyard Farm. Numbers of bullfinch territories were noted in the 5-year evaluation as having remained remarkably stable throughout the full survey period, where despite annual fluctuations there was no change in numbers in the first and last years of the period 2006-10. However, the data collected subsequently suggests that a decline may now be in progress. With a small core population evaluation is difficult but breeding numbers fell to just five pairs in 2013 and have remained static at that level since.

Whilst initial analysis of data from Courtyard Farm during the period 2006-10 suggested a relatively stable population, this was somewhat against the trend for much of the UK during the period 1995-2008. Data for the period 2011-15 suggests that the small recoveries that have been noted in some bullfinch populations in the UK in recent years are not reflected at Courtyard Farm. Qualification criteria for bullfinch to be amber-listed in BOCC 3 indicate a moderate decline since monitoring began in 1969 and a continued moderate in the last 25 years. A similar picture to that recorded at Courtyard Farm.

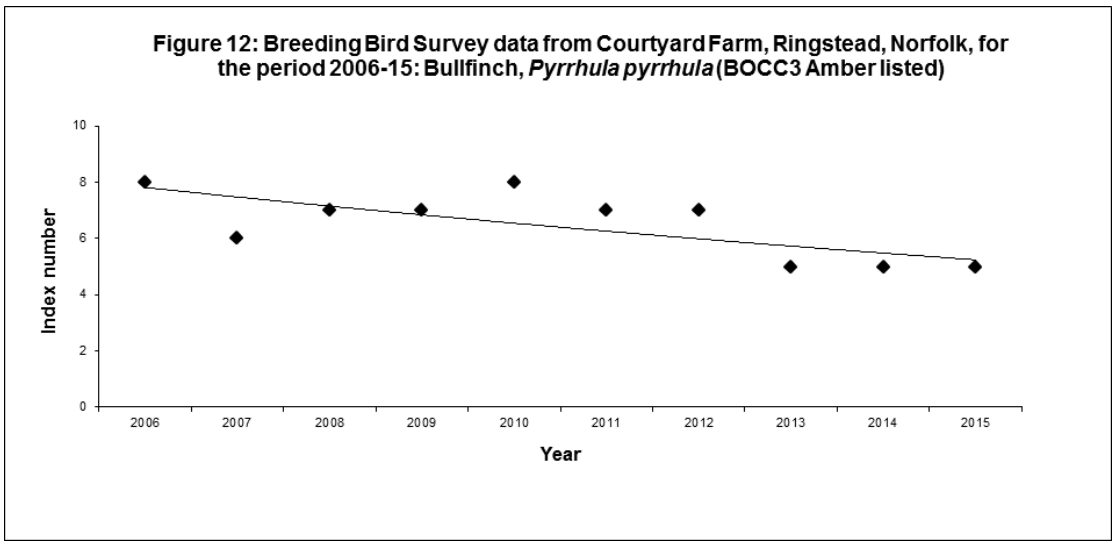


Figure 12 above shows not only the annual fluctuation in numbers in a small core population but also the general downward trend recorded over the full survey period.

Distribution of bullfinch territories has proved to be one of the more predictable facts uncovered by the sur vey work. The tangled thorn and bramble scrub in field corners and on woodland edges hold the vast majority of the territories. In most years since 2008 a single territory has been in use in the more exposed northern section of the farm, albeit on a gentle south-facing slope, whilst all other territories are usually to be found in the more sheltered southern section.

YELLOWHAMMER *Emberiza citronella*

Resident breeder, 31-42 pairs bred annually; currently stable

BOCC 3 red-listed; *Qualification criteria:* BDP[1]; BDP[2]

It was noted in the 5-year evaluation that the dataset for yellowhammer, a resident and annual breeding species, represents one of the most pleasing sets of results from the Courtyard Farm Breeding Bird Surveys.

Numbers of territories recorded during the period 2006-10 were at low of 31 in the first year of survey work, climbing to a peak of 42 before falling again to show an increase of c.18% across the survey period. Subsequently, these annual fluctuations have evened out with between 33 and 38 pairs recorded annually in the second 5-year period. Numbers of territories recorded in both 2014 and 2015 was 36, representing a c.12% increase over the full survey period. For a species red-listed in BOCC 3 as a result of a severe decline of over 50% in numbers since 1969, and a continued sever decline of over 50% in the last 25 years, these results represent an encouraging dataset even when the annual fluctuations are taken in to consideration.

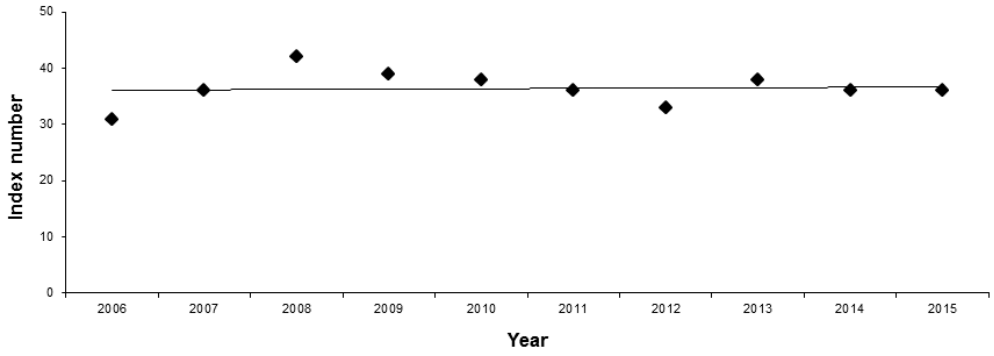
In direct comparison against data from the BTO relating to other organic lowland farmland the species graph shows a trend of a very slight increase at Courtyard Farm, contrasting with the decline recorded in Lincolnshire, Cambridgeshire and other areas of Norfolk.

Over-winter and undersown stubbles are a feature of organic farming methods and these combined with the provision of a winter food source in the form of seed drum feeders (primarily for

grey partridges and tree sparrows), has doubtless assisted winter survival rates for this species on the farm. Yellowhammers are regularly flushed from the depths of the weedy wild bird seed strips at Courtyard Farm where they forage for weed and cereal seeds alike. This additional food provision almost certainly has a direct effect on both the number of over-wintering yellowhammers and consequently in the number of breeding territories recorded.

Figure 13 below depicts the fluctuations in breeding yellowhammer numbers in the early survey years and also shows the general stability of recent years and the overall trend of slight increase.

Figure 13: Breeding Bird Survey data from Courtyard Farm, Ringstead, Norfolk, for the period 2006-15: Yellowhammer, *Emberiza citrinella* (BOCC3 Red listed)



Yellowhammer is one of the few breeding species present at Courtyard Farm with a territorial distribution that favours the northern section of the farm, albeit marginally. This is possibly directly linked to the fact that this species tends to sing a little later in the spring and early summer at Courtyard Farm, when the hedgerows of the northern section of the farm are in full leaf and offer more cover and shelter than in early spring.

Hedgerow maintenance on the farm appears to have less of an effect on the annual territorial distribution of yellowhammers than it does whitethroats, a species that habitually shares its favoured hedgerow habitat. Despite whitethroat being a migrant breeder and yellowhammer being a resident, this may also be a result of the tendency to later breeding by the latter species. Additionally, it has been noted there is a tendency for territories to be located in the vicinity of the drum feeders that are permanently filled with grain throughout the year.

CORN BUNTING *Emberiza calandra*

Resident breeder, 0-6 pairs bred annually; current slight increase

BOCC 3 red-listed; *Qualification criteria:* BDP[1]; BDP[2]; HD; SPEC

Corn bunting is red-listed in BOCC 3 on the strength of an historical decline; severe declines in numbers over both the last 25 years and since monitoring began in 1969, and as a species of European conservation concern.

Despite now being absent from most of the county corn buntings still have a tenuous hold as a breeding species in extreme north-west Norfolk and this species was recorded holding territory at Courtyard Farm in all but one of the years of the full survey period. The number of occupied territories on the farm appears to be regulated by the number of over-wintering birds that remain to breed the following spring. The blank year in 2011 was almost certainly as a result of a total evacuation of the farm (and indeed the whole of north-west Norfolk) during severe weather in the county during the winter of 2010-11.

Assessing breeding numbers of this species is complicated as singing males are known to sometimes be associating with two or three loosely colonial females, or possibly more, all of which may be breeding. Care must therefore be taken during survey work to eliminate the possibility that a single male may have more than one regularly used song-post, not always an easy thing to achieve unless males are clearly heard singing simultaneously.

With a small core population extracting meaningful comments is particularly difficult but temporarily ignoring the blank year, the number of territories recorded has varied between three and six annually during the years 2006-15, and thus remains relatively stable. However, it should be noted here that this is a species that nests late in spring and early summer and can have flightless young in the nest

in August. Consequently the annual number of breeding pairs can be lower than the actual number of territories recorded as it is known that corn buntings can sing repeatedly from the hedgerows (or other song-posts) adjacent to the stubble fields in which they have been feeding during spring and then depart the area completely (see below). Additionally, corn buntings are ground-nesters, nesting in cereal crops and grassy field headlands and are thus susceptible to nest-destruction during agricultural procedures.

Direct comparison against BTO Breeding Bird Survey data from organic lowland farmland in Lincolnshire, Cambridgeshire and Norfolk suggests a similar trend to that at Courtyard Farm, one of small fluctuations in a relatively small core sample with an overall tendency towards slight decline. Therefore the dataset from Courtyard Farm represents a good set of results. With such a small core population comparison must however be made with caution, particularly as signs do still indicate a slight overall decline in the surrounding general area. This of course is much against the trend for the majority of the UK where corn bunting has now either completely disappeared, or is becoming extremely scarce at a worryingly fast pace.

Figure 14: Breeding Bird Survey data from Courtyard Farm, Ringstead, Norfolk, for the period 2006-15: Corn Bunting, *Miliaria calandra* (BOCC3 Red listed)

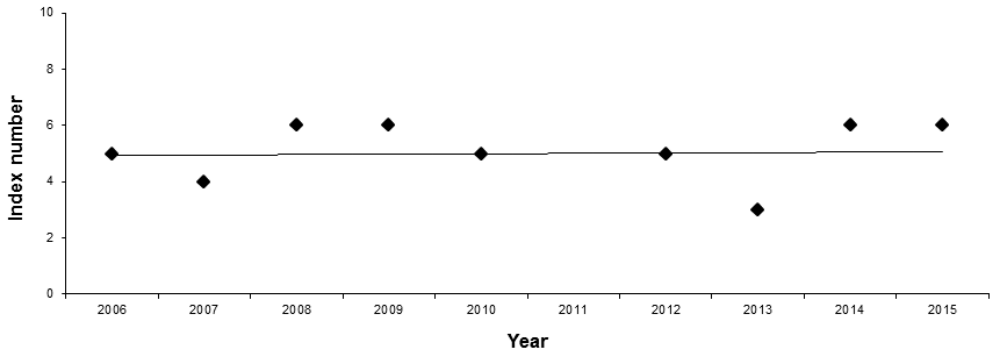


Figure 14 above shows annual fluctuations in numbers of territories during the survey, period, the blank year recorded in 2011 and the general trend for overall stability during the period 2006-15.

Distribution of corn bunting territories at Courtyard Farm in any given year tends to be both loosely colonial, and to either follow the distribution of standing stubble fields in spring, or be in the vicinity of the location of the wild bird seed strips on the farm. As corn buntings need insectivorous food for their young during the breeding season, this perhaps reinforces the theory that not all singing males in spring result in a breeding territories as songsters can disappear from their favoured area once second-year stubble is ploughed-in during spring.

Summary

Of all the species that breed annually at Courtyard Farm in any numbers there is without doubt a general overall pattern of decline. There are signs in the datasets of some species that provide encouragement, but equally there are others that are becoming at least a cause for concern locally. As those species either red- or amber-listed in BOCC3 have been discussed in more depth in the results above, that differentiation will continue here.

Non-BOCC3 red- and amber listed species

Familiar woodland birds such as great and blue tit, wren and robin all declined in numbers over the full survey period. Against some quoted trends, so perhaps a little surprisingly, one or two other woodland species appeared to have fared badly, particularly great spotted woodpecker and tawny owl. Both coal tit and goldcrest numbers have also declined, predominantly as the result of harsh weather conditions taking their toll on the local populations which obviously take time to recover. The woodland edge and green lanes on the farm have also seen a dramatic decline in numbers of greenfinches, albeit as a result of *trichomonosis*. Additionally the scrub and common land has seen the total demise of marsh tits and regular fluctuations in numbers of long-tailed tits.

Some of the birds more associated with the open farmland have also decreased in numbers, most noticeably stock dove which is apparently in a quite sharp decline, though this is not mirrored over all of the UK. Following the overall UK trend house sparrows disappeared as a breeding bird five years hence.

Other breeding species with smaller core populations and thus more difficult to evaluate that also appear to be in a slow but overall decline include collared dove, pied wagtail, Treecreeper (not known to have bred since 2006) and magpie.

A number of other species appear to be holding relatively stable populations, albeit with some annual fluctuation. Those with larger core populations include chiffchaff, lesser whitethroat and chaffinch; those with much smaller populations include barn owl, little owl, green woodpecker, jay and carrion crow.

Whilst the general trend at Courtyard Farm has to be noted as one of decline there are a small number of species that have increased over the full survey period, specifically woodpigeon, goldfinch, blackbird, blackcap, and jackdaw. Woodpigeon numbers have virtually doubled in the period 2006-15; though without any real explanation for this other than perhaps they have not been shot so heavily in recent years allowing the local population to slowly grow. Goldfinches seem to be readily filling the niche left by a rapidly declining local greenfinch population. Blackbird, despite some almost annual fluctuations in the population has definitely increased over the full survey period. Blackcap, a short-distance migrant that has moved its wintering area northwards in recent years, is also showing a trend of increase, albeit with some fluctuations caused by cold and late springs, and jackdaw has benefitted from provision of new nestboxes, and the acquisition of some older ones from the declining stock dove population.

Some of the major increases in breeding numbers on the farm have been recorded in two game birds, namely red-legged partridge and pheasant. There is little doubt that lack of shooting and the relatively undisturbed woodland at Courtyard Farm, allied to the year-round practice of providing additional seed in drum feeders, offers a favourable home to these species, it is also clear that their numbers are supplemented annually by large releases of birds for the shoots on neighbouring land. It is not uncommon to see over 50 pheasant poults wandering around on the roads that head either west from the western perimeter of the farm towards Thornham Lings, or north towards Thornham village. Also flights of up to 20 red-legged partridges have been observed flying onto Courtyard Farm when shooting is in progress nearby. One can only speculate at the number of birds that are released annually but it clearly has a major effect on populations of these two species on the farm.

In addition, there are also a number of occasional or first-time breeding species that cannot be evaluated, namely mallard (up to three pairs bred in seven of ten years), moorhen (up to two pairs bred in seven out of ten years), sparrowhawk (bred once), common buzzard (bred in the last two years), kestrel (bred once), meadow pipit (bred in 2015) garden warbler (single pair bred in five out of ten survey years), sedge warbler (bred in 2015) and starling (bred 2007-10 only, two pairs annually).

The majority of the species mentioned in the summary above are resident breeding species with just three being migrant breeders. Of these, both chiffchaff and blackcap are relatively short-distance migrants that winter in southern Europe and extreme North Africa and both have an increasing tendency to over-wintering in the southern UK. The third migrant breeder is lesser whitethroat, again a relatively short-distance migrant that winters predominantly in the arid zones of north-west Africa.

BOCC 3 red- and amber-listed species

Perhaps unsurprisingly, of the 14 red- and amber-listed BOCC 3 species monitored not one single species has shown significant signs of a long-term improvement in its status as a breeding bird at Courtyard Farm. There is some cause for optimism in a few species, but generally the outlook appears gloomy.

Of the red-listed species breeding in woodland and scrub tree sparrow showed a catastrophic decline in the survey period and is grimly hanging on as a breeding bird on the farm. Turtle dove showed an overall general trend of decline, albeit a slow one, though there are possibly some signs of a reversal in fortunes in recent years. The species in this habitat that gives most cause for optimism is song thrush, which despite regular annual fluctuations is showing a stable or slightly increasing trend.

Birds more associated with open farmland showed varying results. Grey partridge, skylark and linnet continue to show a general trend of slow decline despite an apparent recent upturn in fortunes for the latter species, but both yellowhammer and corn bunting are showing a trend of stability with perhaps the glimmer of an upward trend in a relatively small core population of the latter.

Of the eight red-listed species seven are resident breeding birds at Courtyard Farm and only one is a migrant breeder, namely turtle dove, which is a long-distance migrant that winters in the humid zone south of the Sahara in Africa.

Of the six amber-listed species on the farm those breeding in woodland and scrub all showed declines of varying extent. Bullfinch showed a trend of slow decline whilst dunnock has shown some fluctuation in numbers but is clearly showing a slightly steeper rate of decline than the previous species. Most critically, following an almost annual decrease in numbers, willow warbler failed to breed in 2014 and is in such steep decline that its local extinction must currently be considered imminent.

Birds of more open farmland habitat also showed variable results with whitethroat the most successful with a stable population. Mistle thrush has shown a steeper rate of decline than some of the previously mentioned species but there is much annual fluctuation in a relatively small core population and following an increase numbers have currently returned to the same level as when survey work commenced. Swallow has shown the most dramatic decline, most of which occurred in the early years of the survey leaving a small and vulnerable core population.

Of the six amber listed species three are resident breeders, namely dunnock, mistle thrush and bullfinch. The remaining three all are long-distance sub-Saharan migrant breeders. Swallow winters over a large range that covers humid, tropical and southern African areas south of the Sahara, whitethroat winters in the arid zone, and willow warbler winters in the humid zone

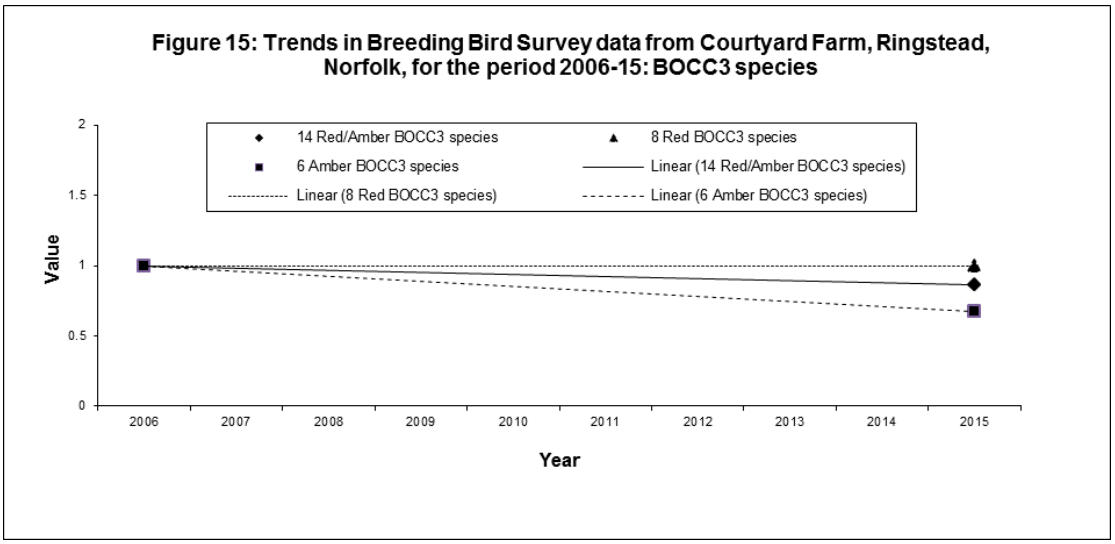


Figure 15 above depicts the combined status of the 14 red- and amber-listed BOCC 3 species that breed on Courtyard Farm, and also shows the contrast between the plights of both the resident and migrant species.

Conclusions

There have been major changes in the abundance of many species at Courtyard Farm since before general records were kept. The grey partridge has long been monitored on the farm and the dataset and historical references are discussed in depth in the 5-year evaluation previously referred to; it is frankly quite staggering to compare the game bags of yesteryear against the current breeding population. In fact it is difficult even to imagine how the farm and surrounding land could possibly have held the numbers of breeding grey partridges that would be necessary to provide bags of such magnitude. Also included in these records is data regarding numbers of brown hares on the farm, another species that remains in its county stronghold but is much depleted.

Further examples of abundance are numerous; turtle doves were commonplace with birds raising two, three and even four broods annually when conditions allowed; hirundines were commonplace with tens of pairs of swallows nesting and c.30-50 pairs of house martins on the farm buildings, skylarks uttered their up-lifting song as they fluttered in large numbers over arable land and pasture alike. The fate of the rural house sparrow is also well documented; the effects of insecticides, more efficient harvesting methods, the removal of thousands of miles of hedgerow and development of dilapidated farm buildings have all contributed to the decline of this once abundant species. Unfortunately there are many similar stories to be told.

In the quest for ever-increasing crop yields to feed a burgeoning post-World War II UK population the development and widespread use of indiscriminate agricultural insecticides led to collapses in insect populations and subsequently in numbers of farmland birds.

As interests in bird-watching and conservation have grown in recent years the declining numbers have led to much interest in several farmland birds; grey partridge, skylark and yellowhammer are often quoted as Farmland Bird Indicators, whilst tree sparrow and corn bunting have become very scarce and even locally rare. Species that breed in scrub and thickets such as turtle dove and bullfinch have also had their share of attention in recent years. The upside of this new interest is that farmland birds are now monitored much more intensively than ever before. Unfortunately the data collected makes grim reading.

At Courtyard Farm there has clearly been an increase in records of a number of high-profile raptor species such as common buzzard, red kite and marsh harrier, all of which have re-established populations that had disappeared from the county, either with or without the assistance of reintroduction programmes. Jackdaw also continues to increase locally, partly as a result of nestbox provision, as do the two released game birds, red-legged partridge and pheasant. Occasional sightings of scarcer species such as Montagu's harrier, hobby, peregrine and little egret also hint at changing populations within the county in recent years. Mediterranean gull is also occasionally noted over the farm on its way to and from the pig fields in north-west Norfolk.

At the same time, virtually all the commoner birds of grassland, farmland, woodland, commons and scrub have all fallen in number in the county. Some, such as willow warbler and turtle dove have suffered devastating declines that have been well documented elsewhere, but many have slipped away almost undetected. It appears that migrant species have suffered most, particularly those long-distance migrants that cross the Sahara twice each year on journeys to and from wintering grounds. Turtle doves and quail, and indeed other birds that do not breed at Courtyard Farm, also have to negotiate a barrage of illegal hunting guns as they cross the Mediterranean each year.

There is evidence in the dataset collected at Courtyard Farm that organic farming may well have a beneficial effect on at least some farmland breeding species. Song thrush appears to be at least holding its own, and is perhaps increasing. Whitethroat, yellowhammer and corn bunting are all showing good results in relation to those from conventional farmland in the UK, whilst the decline in a number of other species such as grey partridge, turtle dove, and linnet has been at a less severe rate than on conventional farmland. One or two other species such as bullfinch and mistle thrush are showing patterns similar to those recorded elsewhere in the UK.

The major declines in breeding species at Courtyard Farm appear to be in migrants species where the results for long-distance migrants, such as swallow and willow warbler in particular, are generally at odds with those recorded for short-distance migrants such as chiffchaff and blackcap. Other than to provide suitable breeding conditions and food supply, there is of course nothing that can be done at Courtyard Farm to aid migrant species once they leave the shores of the UK.

There are two additional woodland species on the farm that produced a poor set of results; namely tawny owl and great spotted woodpecker. Both species have declined quite steeply over the full survey period. Although the tawny decline may have in part been fuelled by a number of dilapidated wooden nestboxes, since replaced, there is no apparent reason for the decline of the great spotted woodpecker, a species that is generally considered to be increasing in the UK. Is it perhaps possible that this increase is an illusion created by the regularity with which this attractive woodpecker appears at feeders in urban gardens and is in fact hiding its farmland decline?

Clearly, even with its many benefits to human health and wildlife, organic farming is not enough on its own. Successive periods operating under the CS and subsequent HLS schemes at Courtyard Farm has seen the implementation of a great many practices that were designed to aid wildlife. Not all were wholly successful but it is clear that many things were, not least the use of drum feeders and wild bird seed strips which have gone some way towards bridging 'the hungry gap' encountered by farmland birds at the end of winter and in early spring.

In addition to the small orchard at the rear of the farmhouse having been restored to broaden the range of fruit available for harvest, a programme of woodland management has been implemented to provide both a safe environment for visitors adjacent to the permissive paths on the farm and to provide varied and structured woodland that benefits all wildlife. All removed dead wood is stacked inside the woodland areas to provide habitat for invertebrates.

Hedgerow management is another factor that has an effect on annual breeding numbers as it is clear that sections of hedgerow flailed in autumn and winter are less attractive to some species the following spring, though most have recovered by the second year after flailing. Apart from those next to tracks and roads, all hedgerows at Courtyard Farm are only cut every five years, and often less frequently.

Cessation of resident outdoor pigs and a decrease in beef cattle on the farm may also have had a detrimental effect on breeding birds as the insects disturbed by foraging livestock and those attracted

to the associated animal dung are less readily available, particularly to species such as swallows and pied wagtails.

It is also apparent that scrub and rough common-land has been an undervalued habitat for many years. Tidying up of conventional farmland has led to removal of many a scrub patch and has doubtless contributed to the decline of such species as turtle dove, willow warbler, linnet and bullfinch.

On a more positive note, the program of provision of both wooden and pre-formed *woodcrete* nestboxes will have benefitted barn and tawny owls, great and blue tits and jackdaws. Unfortunately the provision of 20 *woodcrete* nestboxes aimed specifically at tree sparrows has failed to halt the decline of that species.

The future

There is little to suggest, in either research results or conventional agricultural practices, that the farmland bird decline in the UK is about to end. Courtyard Farm expects to see a continued decline in many species associated with both open farmland and associated woodland. The obvious exceptions to this pattern are expected to be those few species that have learned quickly to benefit from, rather than suffer from, our everyday human activities. Woodpigeons and great spotted woodpeckers will likely continue to grow fat on our bird tables, the carnage on our roads will presumably continue to provide carrion for scavengers such as gulls, corvids and red kites, whilst continued game bird releases will support seemingly ever-increasing populations of birds that were not naturally found within the UK at the expense of its natural avifauna. Amongst all this the conservation bodies will doubtless continue to attempt to re-dress the balance of nature in protected sanctuaries that represent an ever-decreasing percentage of viable wildlife habitats within our islands.

Courtyard Farm remains committed to protecting, encouraging and monitoring wildlife of all forms and ongoing organic farming practices and selected options under the new Countryside Stewardship Scheme will be employed to make it as diverse and wild a place as it can possibly be within the constraints of being a farming business.

Reference has already been made to the intention to increase winter feeding by expanding the area under the wild bird food options and by spreading waste and weed seeds on these areas. Also, the implementation of bare plots in crops will be trialled in the hope of attracting ground-nesting wading birds, or perhaps some more skylarks.

Both breeding and wintering bird surveys will continue annually, as will grey partridge counts, brown hare counts and the nestbox provision and monitoring scheme that currently studies 60 *woodcrete* nestboxes (39 tit boxes, one specialist treecreeper box and 20 dedicated tree sparrow boxes). It is also hoped that with the assistance of the North Norfolk Farmland Bird Ringing Group a number of wooden owl boxes will also continue to be monitored.

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Both Ashley Murray and James McCallum contributed to the initial development of the survey work at Courtyard Farm. Dr. Gavin Siriwardena, Head of Land-use Research at the BTO, kindly supplied comparison data from Breeding Bird Surveys on organic lowland farms in Lincolnshire, Cambridgeshire and Norfolk. Doubtless many un-named individuals contributed to both the provision and presentation of data relating to UK population trends available on the BTO and RSPB websites. My thanks are due to all of the aforementioned.

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Postscript

Since this review was written Birds of Conservation Concern 4 has been published revealing a small number of changes to the species reviewed above. For completeness these changes are detailed below. The classification of all other regular breeding species reviewed at Courtyard Farm remains unchanged:

- Stock Dove has been added to the amber list on the strength of the UK breeding population being of international importance
- As a result of a more favourable recent set of results swallow has been reclassified from the amber list to the green list
- Mistle thrush has been elevated from the amber to the red list on the strength of a 62% long-term decline in the breeding population qualifying this species for the red list under the BDP2 and BDMP2 criteria as previously defined in the review
- As a result of a more favourable recent set of results whitethroat has been reclassified from the amber list to the green list