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BIRDS EYE WALL'S: Partnership for Sustainability

Progress Report on the Use of Pea Fields by Birds

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1. EXECUTIVE SUMMARY

1. As part of BirdsEye Wall's Partnership for Sustainability programme, the BTO launched a breeding season survey of birds on 21 farm sites in the east of England, and an intensive study of Skylarks on five East Anglian farms. The purpose was to investigate the potential of pea crops to be managed productively and in a manner that may prove beneficial to wildlife (here birds).

2. For the extensive survey, volunteer ornithologists surveyed pairs of fields (one pea field and one cereal field per pair), with each field-pair located on a different farm. Observers made up to six visits to their farm plot between March and August, and on each visit they walked around the perimeter of each field recording all birds seen or heard on both the field and boundary. On fields they recorded birds within distance band categories of 0-5, 5-10, 10-20 and over 20 m from the field boundary.

3. During the intensive studies, two observers made records of Skylark activities to ascertain whether this species was using pea fields to nest in or to forage in, and understand how these activities might corresponded to the seasonal shift in crop growth from March to August.

4. The extensive survey revealed that a greater number of species and a greater abundance of most types of species were recorded on pea fields compared to cereal fields. In March however, bare soil was avoided by most species, but much greater use was made of the sparse or developing pea crops from April to June (the key phase). As a consequence, farming activities before April were unlikely to have much affected the birds using the pea fields. However, crops rolled several weeks after drilling would clearly pose some threat to ground nesting clutches of Skylarks and possibly Lapwings.

5. Thrushes, finches and buntings occurred at higher densities nearer field boundaries, and would probably benefit from field margin conservation strips. From intensive studies, Skylarks would only use marginal strips where these occurred on open boundaries between two fields (e.g. beetle banks).

6. Skylarks breeding on peas appeared to continue into June and possibly July, thereby potentially raising more offspring than on cereals. However, when not tied to a breeding site, birds used pea fields much less frequently and often foraged beyond the pea-field boundary. Overall, the mosaic created by pea crops, cereals and other crop types on rotational farms may help to maintain both foraging and breeding habitat for longer over the summer season.

2. INTRODUCTION

In recent years there has been growing concern about widespread loss of biodiversity in arable landscapes, in particular in the UK, mainland Western Europe and the USA (Flade & Steiof 1990; Barr *et al.* 1993; Saris *et al*. 1994; Millenbah *et al.* 1996). In the UK a number of long-term monitoring programmes have shown substantial declines in the status of many groups of plants and animals (Firbank *et al*. 1991). For example, the results of Countryside Survey 1990 (Barr *et al.* 1993) showed a marked reduction in hedgerow length and plant biodiversity in arable landscapes since 1978. Analysis of the British Trust for Ornithology's Common Birds Census, supported by two periodic atlas studies of bird distribution, also revealed that many of Britain's farmland bird populations have suffered serious long-term declines (Gibbons *et al*. 1993; Marchant & Gregory 1994; Fuller *et al*. 1995; Siriwardena *et al.* 1998), with declines less evident in other habitats such as woodland (Fuller *et al*. 1995). The species in decline represent a broad range of ecological needs and include birds like Grey Partridge *Perdix perdix* and Song Thrush *Turdus philomelos*, and seed-eating passerines such as Skylark *Alauda arvensis*, Tree Sparrow *Passer montanus*, Linnet *Carduelis cannabina* and Yellowhammer *Emberiza citrinella*. Similar declines in farmland birds are reported from elsewhere in Europe, for example, in Germany (Flade & Steiof 1990) and The Netherlands (Saris *et al*. 1994).

There is now growing evidence linking these bird declines with major changes in agriculture since the 1970s (e.g. Fuller *et al.* 1995; Siriwardena *et al*. 1998). These changes include increased use of pesticides, with possible indirect effects on the food resources of birds (Rands 1985, 1986; Potts 1986, 1991; Campbell *et al*. 1997), and a switch from spring to autumn sown cereals. The latter has resulted in a loss of winter stubble fields that provide important foraging habitats (Evans & Smith 1994; Aebischer 1997; Evans 1997a; Buckingham *et al*. 1999.

One of the problems facing attempts to reverse declines in bird population trends on farmland has been the difficulty of integrating intensive agricultural regimes with conservation measures. Field margins (marginal strips, beetle banks and conservation strips) may go some way to achieving this but occupy a relatively small proportion of the landscape. Meanwhile, initiatives which search for ways to integrate whole-field agriculture with conservation requirements are rare and currently dependent on the uptake of relatively expensive agri-environment schemes such as the Arable Stewardship Scheme, or the manipulation of set-aside.

A programme, by Birds Eye Wall's (the Partnership for Sustainability), to investigate the potential of pea crops to be managed in a manner that can also provide benefits to wildlife is a welcome approach. As part of this programme, the following report assesses the relative abundance and species richness of birds on pea fields compared to winter cereals, and in relation to the timing of crop management activities and crop development. As part of this protocol, the BTO has instigated: 1) a breeding season survey of birds on 21 farm sites, 2) an intensive study of Skylarks on five East Anglian sites, and 3) has conducted a review of the use of arable fields as key winter habitats by birds (Henderson 1999). Below we report on points 1 and 2.

3. METHODS

3.1 Study Sites and Field Methods for the Extensive Survey

For the Pea Field Survey, the BTO found volunteer ornithologists to survey 21 pairs of fields (one pea field and one cereal field per pair) with each pair of fields located on a different farm. The farms were located in East Yorkshire and Lincolnshire (12) and East Anglia (9) with field sizes averaging for pea and cereals, 15.8 ha and 17.4 ha respectively.

Observers made up to six visits to their farm plot between March and August. On each visit, they walked around the perimeter of each field recording all birds seen or heard on both the field and the field boundary. On fields, they recorded birds within distance bands, estimated by eye, in categories of 0-5, 5-10, 10-20 and over 20 m from the hedge or field boundary. Birds were recorded as either singing (i.e. indicative of a breeding territorial) or in some other activity (e.g. foraging, flying, preening etc.). Birds were recorded as using the first field or boundary in which they were seen to occur, with subsequent movements between fields ignored. Observers where asked to take care in distinguishing between independent records and probable duplicates caused by the movements of individual birds. No visits were made in heavy rain or in wind greater than force four. The timing of farm visits was intended to coincide with significant phases of pea-crop development or farm activities. Thus bird usage of peas and cereals targeted the following "growth" periods:

1. Bare earth soon after drilling (March/April (May)).
2. Soon after the crop was rolled - if it was not rolled immediately after drilling - and with the pea crop approximately 5-10 cm tall (April/May).
3. Pea flowering period (June/July).
4. Pre-harvest usage (July).
5. Post-harvest usage (July/August).

Several studies have emphasised the importance of the physical characteristics of hedgerows in determining bird abundance, in particular hedge height and tree frequency (Green *et al*. 1994; Parish *et al*. 1994, 1995). Field boundary variables (hedge height, tree frequency, boundary strip width (the strip of grassy vegetation between the crop and the hedge)) and the presence of a wood nearby were recorded by botanical surveyors during their fieldwork, with the intention that they become incorporated into the analysis at a later stage.

3.2 Extensive Survey: Analysis

Relative bird densities were compared between the pea and cereal crops and across months of the survey in order to assess bird usage relative to different pea-growth phases (using a Genmod procedure: standard General Linear Modelling with Poisson error). Below a combined analysis of all sites draws together the main findings of the fieldwork. This is followed by a summary of the number of species and their abundance on both the pea field and cereal field for each farm.

4. RESULTS

4.1 Species Richness and Abundance

The total number of species recorded on both fields and boundaries for the survey as a whole was similar between pea and cereal fields (48 species and 44 species respectively). However, the average number of species per field was 10.2 species for peas/beans but only 4.2 species for cereals. The densities of all bird species combined, in both East Yorkshire/Lincolnshire and East Anglia were higher on pea fields than on cereal fields (Figure 1). Furthermore, the proportion of birds recorded on fields rather than boundaries was also higher on pea fields than cereal fields (Figure 2). Clearly then, on average, both species richness and bird abundance was higher on pea fields than cereal fields.

4.2 Spatial Use of Fields and Field Margins

Within pea fields, highest densities of birds were recorded within 5 m of the boundary with densities becoming increasingly lower with greater distance into the field (Figure 3). Partly this reflects detectability which is likely to have been higher nearer the field boundary. The inner field sections, because of their area of cover, nevertheless supported a far greater abundance of certain species, particularly breeding and foraging Skylarks (March to August; 50% of all 236 records on peas), and foraging Lapwing (92% of 60 records) in the early months, March to May while the crop was still short.

4.3 Overview by Species Group

Below we provide a brief overview of the use of pea and cereal crops by several birds, combined for convenience, into species groups (i.e. groups of related species with similar requirements). In general, bare soil in March was avoided, but much greater use was made of the sparse or developing pea crops from April to July. Farming activities before April are unlikely to have affected birds using the pea fields. However, if rolling was delayed for some period after drilling, and after the establishment of Skylark territories, then clearly some threat would be posed to the nests and clutches of this species. The same may be true of Lapwings, although they were very rarely recorded as a breeding species during the present survey and no assessment of their seasonal requirements can be made here.

(a) Gamebirds (Pheasant, Red-legged Partridge with a few Grey Partridge): Preferred pea fields to cereal fields, in April and May before flowering when the ground is relatively accessible.

(b) Skylark: In general, higher densities were recorded on pea fields than on cereals but mainly in April after drilling and again late in the season in July before harvest. Dense cereal crops from May onwards are known to discourage Skylarks from nesting except near gaps or by tractor tyre tracks. The provision of relatively late-drilled pea crops nearby will almost certainly have provided Skylarks with alternative areas for raising later second broods, although the species appears to forage regularly outwith the pea field boundary on adjacent land. Turnips were especially utilised in this way, but cereals were not.

(c) Insectivores (including Dunnock, Pied and Yellow Wagtails, Robin and Starlings): These species preferred pea fields to cereal fields particularly in June and July before harvest. Possibly

the pea crops support more insects at this time of year compared to cereal crops. Alternatively, the relatively tangled canopy cover provided by the pea crop might have encouraged birds to feed further away from boundaries than they might normally do.

(d) Song Thrush and Blackbird: These species are also insectivorous and were also recorded at higher density in pea crops than in cereal crops. Some use of pea fields was made in April and May when the crop was short. However, pea-fields were mainly utilised in June, July and August before and after harvest (mainly before) when young fledglings and their parents would have been searching for insects, slugs and spiders within the crop or, more likely, on the ground below. Superior access to the ground may have been an important factor in attracting these species to peas rather than cereals (with relatively dense growth within cereal rows).

(e) Buntings (Yellowhammer and Reed Bunting plus a few Corn Buntings): These species were recorded on peas at higher density than on cereals throughout the summer but particularly during July during the pre-harvest phase. Buntings are relatively late breeding species and although they are seed-eaters, they seek insects to feed to their offspring. Buntings were therefore most likely to be using the pea crop as a source of insect food rather than as nesting cover.

(f) Linnets, Goldfinches and Greenfinches (known as Cardueline finches): These species were most prominent on the pea crops (at higher density than on cereal crops) in April and May when the crop was fairly short, and partly again in July before harvest but after flowering. These species will feed on the ground on tiny weed seeds such as those provided by groundsel or chickweed, or they may feed on the weed plants themselves. Access to the ground or low growing weeds is usually required, so dense crops tend to be avoided unless weedy margins are provided.

5. INTENSIVE FIELDWORK

5.1 Time Budgets and Field Usage by Skylarks

In addition to the extensive fieldwork, an intensive study of the use of pea and cereal fields by Skylarks was conducted on five farms in East Anglia. Skylarks are of particular interest on farmland because of their close association with fields, rather than boundaries, as places in which to nest and forage. Thus, their numbers are more likely to reflect changes in field quality which alter a field's suitability to birds (Wilson *et al*. 1997). Skylarks have declined by more than 50%, as a breeding bird, on farmland since the mid 1970s. The process of arable intensification is implicated in this decline such that the losses are linked to the increased use of pesticides and fertilisers (Potts 1991), the loss of winter stubbles (Donald & Evans 1994; Evans 1997a) and the loss of late developing spring crops and crop diversity (O'Conner & Shrubb 1986; Chaney *et al*. 1997; Evans 1997b; Wilson *et al*. 1997; Chamberlain *et al*. 1999).

The purpose of the intensive work was therefore to identify the reasons why Skylarks were using pea fields, whether for breeding purposes or as a foraging resource, and how their activity might be affected by management regimes (rolling or spraying) or crop growth. These studies may also witness abandonment of breeding territories on cereals in association with dense cereal crop growth, or in relation to aspects of field management, such as spraying. The spatial use of fields (that is, finding out which parts of fields birds will use) was also of interest in helping to identify ways of integrating crop management with conservation initiatives.

5.2 Field Methods

Observations of Skylarks were made by recording activities over periods of between one and three hours per day, on at least five occasions between April and late July inclusive. The purpose of these observations was to quantify the level of movement by Skylarks within and between the survey fields and nearby fields. Birds were thus recorded as being: (a) on the ground (usually out of site), (b) singing or (c) travelling either within or between fields. The hourly frequency of these activities provided an assessment of why pea fields were being utilised by Skylarks, when they were being utilised and which parts of the field were being utilised.

5.3 Intensive Studies: Results

At only one of the five study sites was an actual Skylark nest found (fledglings being fed in late April and early May) since nests of this species are hidden and difficult to locate. Nevertheless, from behavioural activities there was evidence that Skylarks were breeding beyond April and May, and into June on pea fields. Activity budgets revealed peak singing periods during early June (see Figure 4). Singing tends to indicate the presence of a breeding territory, and typically precludes egg-laying. From a national perspective, early May is the peak time for breeding Skylarks and in fact most of the maximum counts of Skylarks on cereals in this study occurred in late April and May (at a time when the cereal crop was only 30 cm high). On peas, however, a dramatic drop in singing activity in mid to late June indicated that females were incubating eggs or broods, while a simultaneous increase in flight frequency (other than that used for singing; Figure 4) signified that parents were provisioning broods and that fledged juveniles were at large. Either way, breeding in this species appeared to continue into June and possibly July, such that the season was extended beyond that reached in tall, dense cereal crops (Figure 5). The loss of opportunity for completing second broods is widely suspected as being a major contributing

factor to declining Skylark populations on arable farmland in the last 25 years. The mosaic created by pea crops, cereals and other crop types on rotational farms may help to maintain both foraging and breeding habitats throughout the summer season.

Interestingly, the use of pea fields by Skylarks appears to be mainly related to the provision of breeding habitat but possibly not foraging habitats. From April to early June birds tended to remain within the pea field (and the cereal field for territories established there), due to pre-occupations with breeding activities (Figure 6). From mid June onwards, when the crop was well developed, most flights took birds beyond the pea field boundary onto neighbouring fields and margins (Figure 6). So when not protecting a breeding site or a breeding female, birds used pea fields much less frequently. The key phase for this species is therefore that period which leads up to the establishment of breeding territories in April, May and June.

Foraging birds frequently entered neighbouring turnip or set-aside fields and were also recorded using marginal strips between two adjacent fields. While most other species on farmland tend to have a strong marginal bias to their foraging around fields, Skylarks actively avoid structured boundaries such as hedgerows or woodlands. As a consequence they do not benefit from marginal strips provided by farmers in the way that other bird species may do. However, on open boundaries, where no hedge is present between two fields, a grassy marginal strip would serve as both a potential nesting and foraging habitat for Skylarks, away from the threat of farm management activities on fields.

6. GENERAL OVERVIEW

The extensive survey revealed that a greater number of species and a greater abundance of most types of species were recorded on pea fields compared to cereal fields, including insectivores and seed-eating species. However, these densities (particularly of Skylarks) are less than one third lower than those recorded in previous studies for habitats such as rotational set-aside (Henderson *et al*. in press).

Across the season, bare soil (in March) was avoided by most species, but greater use was made of the sparse or developing pea crops from April to June (the key phase) and to a lesser extent July (after the harvest, in July and August densities of Skylarks dropped off considerably). As a consequence, farming activities before April were unlikely to have much affected the birds using the pea fields. However, crops rolled several weeks after drilling, would clearly pose some threat to ground nesting clutches of Skylarks and possibly Lapwings during late April and May.

Thrushes, finches and buntings occurred at higher densities nearer field boundaries, and would probably benefit from field margin conservation strips. This is a fairly well established feature for boundary-based birds on farmland, and one that is also recognised in other studies of farmland birds (Henderson *et al*. in press). From intensive studies of Skylarks, this species would only use marginal strips where these occurred on open boundaries between two fields. Skylarks breeding on peas appeared to continue into June and possibly July, thereby potentially raising more offspring than on cereals. However, when not tied to a breeding site, Skylarks used pea fields much less frequently and often foraged beyond the pea-field boundary in neighbouring fields of oilseed rape, set-aside, or turnips. Overall, the mosaic or heterogeneity created by pea crops, cereals and other crop types on rotational farms may help to maintain both foraging and breeding habitats for a longer period over the summer than would be available from winter–sown cereals alone.

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APPENDIX 1

A.1 Summary of Contribution of Pea Fields to Farmland Biodiversity

The species which can contribute to farmland biodiversity include non-passerines and passerines. Non-passerines include gamebirds, birds of prey, waders or pigeons. Passerines include insectivorous (e.g. Thrushes) and seed-eating (finches and buntings) species. Of these groups, representative species are compared between pea and cereal crops as well as with densities which have been observed on farmland in previous studies (see Table A1).

Table A1 A comparison of mean densities of a representative selection of species recorded on peas and winter cereals during the 1999 survey with densities recorded in other studies (for example on spring tillage) and/or habitats (examples of maximum densities from the literature). In the final column, the "pea score" is a crude indication of the current success of pea fields to support breeding densities of each selected species (based on the first year's results). In most cases densities on or around pea fields were less than half of those that have been observed (and are therefore theoretically achievable) in other farmland crops or habitats (column 4). Pea fields therefore tend to score less than 5, whilst the index ranges from 0 (poor) to 10 (excellent).

	Total densities (per hectare) of birds recorded on and around both pea and winter cereal fields				
Species	**Winter cereals**	**Peas**	**Potential densities that may be achievable on farmland**	**UK: maxima for territory densities in ideal habitats**	**Pea score**
Lapwing	0.00	0.01	0.13 (e.g. spring tillage$^{\perp}$)	0.27 (stubble$^{\perp}$)	2
Grey Partridge	0.01	0.08	0.20 (e.g. set-aside/spring tillage)	0.60 (Norfolk mixed farmland and traditional leys$^{\blacktriangledown}$)	2/3
Skylark	0.16	0.28	0.5-1.0 (e.g. spring tillage)	1.50 (traditional leys, set-aside$^{\blacklozenge}$)	4
Blackbird	0.11	0.21	0.48 (e.g. farm woodland fringe$^{\clubsuit}$)	7.00 (suburbia$^{\clubsuit}$)	5
Whitethroat	0.12	0.12	1.0 (e.g. scrub$^{\spadesuit}$)	1.60 (scrub$^{\spadesuit}$)	4
Linnet$^{\spadesuit}$	0.12	0.25	0.27(e.g. arable/grassland)*		4
Yellowhammer	0.09	0.19	0.23 (e.g. farmland CBC 1980$^{\spadesuit}$)	0.47 (scrub$^{\spadesuit}$)	6

Sources, see references: $^{\clubsuit}$BWP, $^{\blacktriangledown}$Gibbons *et al.* 1993, *Gregory & Baillie 1998, $^{\spadesuit}$Hickling 1983, $^{\blacklozenge}$Wilson *et al.* 1997, $^{\perp}$Wilson *et al.* 1999. $^{\blacklozenge}$Pers obs.

Among non-passerines, Lapwings were not recorded at all as a breeding species on peas, even though spring crops are considered valuable in providing Lapwing with suitable breeding habitat (Table A1). The Grey Partridge is a species of national conservation concern, now generally scarce in the countryside where once it was very common. It too was recorded on peas a few times more often than in cereals, but much higher densities have been recorded on suitable farmland comprising set-aside, spring crops or traditional grass leys. Among passerines, the pea field vegetation probably helped access within the crop and onto the ground, attracting higher numbers of Blackbirds and Song Thrushes than winter cereals. Again, however, Blackbirds were recorded in relatively low densities compared to densities recorded on farmland close to a woodland fringe. Farmland scrub or sympathetic hedgerow management could increase the density of Whitethroats, Linnets and Yellowhammers around crops, but only the latter two

species would respond to increased invertebrate or weed seed densities on the pea crop *per se*. Unsprayed crops, grass margins, headlands and beetle banks would increase the food resource of all three species.

Although most species were found to occur on peas in greater numbers than on cereals, in fact the densities of these species were not high. Whether or not the higher densities of species recorded elsewhere are achievable on peas is a matter for debate (refer to Table A1). This would depend on the flexibility of the management regime to be able to incorporated sympathetic agronomy and extensive habitat changes into the arable landscape. However, possibly at a more practical level, but on a larger-scale than the pea crop itself, an increase in biodiversity could be achieved through manipulation of field boundary profiles, including the progression from hedgerow to headland to field-marginal strips, without herbicide or pesticide inputs.

As a spring crop, peas may offer immediate benefits to birds by providing sparse, low growing vegetation throughout spring and early summer. Here ground-nesting birds can both nest and forage with easy access to the soil surface. Increased invertebrate densities would encourage more birds to utilise pea fields, throughout the summer as a food source, and even for a rotational crop, temporary boundary strips or beetle banks, coupled with reduced pesticide and herbicide inputs might contribute to this scenario. Low rates of mechanical interference would encourage the use of pea fields by nesting species, such as Skylark and Lapwing both of which might be encouraged to utilise pea fields in greater numbers than were observed during 1999.

A.2 Studies for 2000

A.2.1 Extensive survey

It is expected that for 2000, a repeat bird survey will take place on the basis of the 1999 fieldwork in order to generate a larger overall data set and therefore increase the power of any analysis to be able to detect important influences on bird activities. A second breeding season will also allow comparison between two consecutive years to look for areas of consistency in the relationships between bird numbers and pea-crop variables. Twenty farm plots, each comprising a paired pea and cereal field, are expected to contribute to the 2000 dataset.

Volunteer fieldworkers will receive field instructions in early March or prior to drilling. Data will provide information on bird abundance and species richness on both the pea and control crops, throughout the growing season. Some emphasis within the instructions will be placed on gathering data on the use of pea fields immediately before and after harvest, to improve on information gathered in 1999. This is an area that will benefit from a more detailed analysis than has currently taken place.

A.2.2 Intensive work

Intensive fieldwork provides greater detail (on fewer sites) than the extensive survey, on the daily usage of a crop by a particular species, that is, the proportion of time spent exploiting the crop in preference to neighbouring fields. It provides more detail on the relationship between a species and a crop compared to the presence/absence monitoring provided by the extensive survey. The extensive survey covers a far greater number of sites and is, ultimately, more representative of the variation in field type, geographical location, field management and bird species communities; the extensive survey is a more reliable monitoring tool.

In 2000, further intensive work is required on the activity budgets of Skylarks, to identify why Skylarks utilise pea crops in preference to cereals (if they do) by attempting to measure peak periods of nesting and foraging activity. Data from 1999 indicate that Skylarks in pea fields may nest slightly later than on cereal, probably in relation to the height or density of the respective crops. The significance of this is that peas may contribute to a mosaic of winter and spring crops that allow Skylarks to extend their breeding season beyond that possible in winter cereals alone. Activity budgets of Skylarks incorporate peak periods of singing (i.e. territorial behaviour). Therefore, professional fieldworkers will monitor Skylarks time budgets on both the pea crop and the cereal crop in each month from April to August inclusive (possible March to July for early crops). Movement between crops will also be monitored so that one can better understand value of peas to Skylarks, not only as a breeding habitat but as a foraging habitat.

While monitoring the activities of Skylarks, observers will also note the movements of other species utilising peas and cereals. They will collect the frequency of use, the distance birds travel into the crop as well as the numbers and variety of species utilising each crop during the summer. All of this information can be related to the phase of crop development.

APPENDIX 2

Field counts and an overview of the contribution of individual farms

L1: **Mr John Mitchell**

County: **Norfolk**

Crops surveyed: **Vining peas and winter wheat**

Unfortunately no bird data are available for this site.

Bird Survey Results: summer 1999

L2: **Mr S Marsh**
County: **Norfolk**
Crops surveyed: **Vining peas and winter wheat**

Twenty-five species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Great Spotted Woodpecker, Warblers, plus a rich variety of common species utilising the field boundaries only. On the fields, other than Pheasants and Red-legged Partridge, 17 species were recorded using the pea field, compared to just five recorded on the cereal field. On the peas, species included Turtle Dove, Golden Plover, Yellow Wagtail and Skylark, all of which are declining on farmland nationally and therefore are of national conservation concern. Skylarks were more abundant on the pea field than on the cereal field in line with the general survey picture. Here Skylarks have been recorded at higher density on pea rather than cereal fields, particularly towards June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Golden Plover	12 (0.89)	
Pheasant	1 (0.07)	1 (0.05)
Red-legged Partridge	5 (0.19)	
Woodpigeon	14 (0.28)	11 (0.05)
Stock Dove	2 (0.15)	
Turtle Dove		1 (0.11)
Skylark	31 (0.75)	8 (0.05)
Pied Wagtail	11 (0.44)	
Yellow Wagtail	1 (0.07)	
Mistle Thrush	3 (0.11)	
Blackbird	2 (0.19)	6 (0.07)
Starling	4 (0.01)	
C. Crow	4 (0.29)	
H. Sparrow	24 (0.44)	
Goldfinch	6 (0.04)	
Linnet	2 (0.07)	
Greenfinch	2 (0.04)	
Chaffinch	2 (0.03)	

Bird Survey Results: summer 1999

L3: **Mr Robert Middleditch**
County: **Suffolk**
Crops surveyed: **Vining peas and winter wheat**

Eighteen species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Sparrowhawk, Whitethroats, Jay, finches plus a variety of common species utilising the field boundaries only. On the fields, 12 species were recorded using the pea field, compared to just three recorded on the cereal field. On the peas, species included Yellowhammer, Linnet, both of which are declining on farmland nationally and therefore are of national conservation concern. Skylarks, however, were scarce on both the pea field and the cereal field. In the survey, as a whole, Skylarks have been recorded at higher density on pea rather than cereal fields, particularly towards June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Sparrowhawk		1 (0.09)
Red-legged Partridge	6 (0.23)	2 (0.18)
Pheasant	2 (0.14)	
Moorhen	2 (0.20)	
Woodpigeon	6 (0.22)	
Skylark	1 (0.01)	
Pied Wagtail	2 (0.10)	
Magpie	1 (0.10)	
H. Sparrow		1 (0.05)
Linnet	3 (0.02)	
Chaffinch	1 (0.01)	1 (0.02)
Yellowhammer	1 (0.01)	

Bird Survey Results: summer 1999

L4: **Mr David Rush**
County: **Suffolk**
Crops surveyed: **Vining peas and winter wheat**

Fifteen species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Linnets, Whitethroats, Song Thrush, Willow Warbler plus a variety of common species utilising the field boundaries only. On the fields, eight species were recorded using the pea field, compared to just two recorded on the cereal field. On the peas, species included Yellowhammer, Linnet and Skylark, all of which are declining on farmland nationally and therefore are of national conservation concern. Skylarks were more abundant on the pea field than on the cereal field in line with the general survey picture. Here Skylarks have been recorded at higher density on pea rather than cereal fields, particularly towards June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Woodpigeon	6 (0.17)	
Skylark	13 (0.35)	8 (0.17)
Meadow Pipit	2 (0.05)	
Rook	4 (0.25)	
Jackdaw	1 (0.06)	
Starling	15 (0.93)	
Linnet	5 (0.01)	
Yellowhammer	1 (0.01)	1 (0.06)

Bird Survey Results: summer 1999

L5: **Mr Michael Porter**
County: **Suffolk**
Crops surveyed: **Vining peas and winter wheat**

Sixteen species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Sparrowhawk, Turtle Dove, Whitethroat, Lesser Whitethroat, Goldinches and Greenfinches plus a healthy variety of common species (e.g. Tits, Chiffchaff, House Sparrow and Bullfinch) utilising the field boundaries only. On the fields, 10 species were recorded using the pea field, compared to just five recorded on the cereal field. On the peas, species included Yellowhammer and Skylark, both of which are declining on farmland nationally and therefore are of national conservation concern. Up to three pairs of Skylarks were present on the pea field compared to none seen on the cereal field, in line with the survey as a whole. Here Skylarks have been recorded at higher density on pea rather than cereal fields, particularly towards June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Kestrel	1 (0.08)	
Red-legged Partridge	2 (0.15)	2 (0.09)
Pheasant	3 (0.17)	2 (0.04)
Woodpigeon	1 (0.01)	
Skylark	4 (0.06)	
Dunnock	1 (0.04)	4 (0.11)
Blackbird	1 (0.05)	1 (0.03)
Jackdaw	3 (0.19)	
Yellowhammer	1 (0.02)	1 (0.14)

Bird Survey Results: summer 1999

L6: **Mr R & B Allen**
County: **Norfolk**
Crops surveyed: **Vining peas and winter wheat**

Although over 20 species were recorded on the boundaries of the pea and cereal fields, including Moorhen, Great Spotted Woodpecker, Cuckoo, Whitethroat, Lesser Whitethroat, Blackcap, Linnet, Goldfinches, plus a healthy variety of common species, only six species were recorded on the fields themselves. These six species were recorded using the pea field, compared to three recorded on the cereal field. On the peas, species included Yellowhammer and Skylark, both of which are declining on farmland nationally and therefore are of national conservation concern. However, Skylarks were also present on the cereal field in equivalent numbers. In the survey, as a whole, Skylarks have been recorded at higher density on pea rather than cereal fields, particularly towards June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Red-legged Partridge	1 (0.08)	2 (0.14)
Woodpigeon	74 (1.42)	
Skylark	3 (0.20)	4 (0.11)
Pied Wagtail	3 (0.01)	
Chaffinch	2 (0.01)	
Yellowhammer	1 (0.01)	1 (0.01)

Bird Survey Results: summer 1999

L7: **Mr M Cook**
County: **Suffolk**
Crops surveyed: **Vining peas and winter wheat**

Eighteen species were recorded in total on both the boundaries and ground of the pea and cereal fields, including Meadow Pipits, Whitethroat, Blackcap, Linnet and Yellowhammers, plus a healthy variety of common hedgerow/boundary species. Of these, only seven species were recorded on the fields themselves but all seven were recorded using the pea field, compared to just two on the cereal field. On the peas, species included Yellowhammer and Skylark, both of which are declining on farmland nationally and are therefore of national conservation concern. Skylarks were more abundant on the pea field than the cereal field in line with the survey as a whole. Here Skylarks were also recorded at higher density on peas rather than on cereal fields, particularly towards June and July when the cereal crop becomes too tall and dense. This process of shifting from the cereal field to the pea field may extend the breeding season of Skylarks, enabling a greater number of broods to be raised overall.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Red-legged Partridge	1 (0.39)	
Pheasant	4 (0.20)	2 (0.14)
Woodpigeon	4 (0.40)	
Skylark	3 (0.25)	1 (0.17)
Pied Wagtail	3 (0.29)	
Chaffinch	2 (0.09)	
Yellowhammer	2 (0.09)	

Bird Survey Results: summer 1999

L8: **Mr James Leggat**
County: **Suffolk**
Crops surveyed: **Vining peas and winter barley**

Although over 20 species were recorded on the boundaries of the pea and cereal fields, including Sparrowhawk, seven Whitethroats and Blackcap, plus a healthy variety of common species, only nine species were recorded on the fields themselves (apart from "roosting" gulls). Of these, eight species were recorded using the pea field, compared to six recorded on the cereal field. On the peas, species included Yellowhammer and Skylark (also on the cereals in May, but fewer in July), both of which are declining on farmland nationally and therefore are of national conservation concern. In the survey as a whole, Skylarks were recorded at higher density on pea rather than cereal fields, but this difference was most striking towards June and July when the cereal crop becomes too tall and dense for Skylarks except where gaps occur in the crop. Peas potentially offer a lower growing, sparser crop for Skylarks to move into which extends their breeding season and enables a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Red-legged Partridge	2 (0.06)	
Pheasant	2 (0.03)	
Woodpigeon	1 (0.04)	1 (0.01)
Stock Dove	2 (0.09)	1 (0.08)
Skylark	4 (0.05)	5 (0.12)
Blackbird		1 (0.02)
Jackdaw		5 (0.12)
C. Crow	2 (0.06)	
Chaffinch	2 (0.08)	1 (0.08)
Yellowhammer	1 (0.01)	

Bird Survey Results: summer 1999

L9: **Mr Richard Styles**
County: **Suffolk**
Crops surveyed: **Vining peas and winter wheat**

Twenty-four species were recorded on the fields and boundaries of the pea and cereal fields (mainly on the boundaries), including Whitethroats, Linnets, Jays, Mistle Thrush, Tits, Goldfinches and Greenfinches, plus a healthy variety of other common hedgerow species. Ten species were recorded on the pea field compared to six recorded on the cereal field. On the peas, species included potential pests including Rooks and Woodpigeons but also a flock of Lapwing, a Yellowhammer and Skylarks, all three of which are currently declining on farmland nationally and therefore are of national conservation concern. Skylarks and Yellowhammer were also found using the cereal field. Skylarks were marginally more abundant on the pea field than cereal, particularly later in the breeding season during June and July. This difference between field types reflected the findings of the survey as a whole, in which Skylarks were recorded at higher density on pea rather than cereal fields towards June and July. In June and July, the cereal crop becomes too tall and dense for this species except where gaps occur in the crop. Peas potentially offer a lower growing, sparser crop for Skylarks to move into which extends their breeding season and enables a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Red-legged Partridge	9 (0.20)	2 (0.01)
Pheasant	3 (0.05)	4 (0.07)
Moorhen	1 (0.05)	2 (0.02)
Lapwing	60 (2.70)	
Woodpigeon	26 (0.49)	
Skylark	5 (0.09)	4 (0.07)
Pied Wagtail	10 (0.45)	
Dunnock		1 (0.01)
Rook	37 (0.56)	
Starling	5 (0.20)	
Yellowhammer	1 (0.02)	1 (0.01)

Bird Survey Results: summer 1999

H1: **Mr G Pickering**
County: **North Lincolnshire**
Crops surveyed: **Vining peas and winter wheat**

Fourteen species of bird were recorded on both the fields and boundaries of the pea and cereal fields, including Whitethroats and Linnets both vulnerable on farmland and of conservation interest on farmland. Five species were recorded using the pea field compared to just one (Skylark) recorded in the cereal field over the summer period as a whole. These species included Yellow Wagtail, Yellowhammer and Skylark each declining on farmland nationally and therefore of conservation concern. Only two pairs of Skylarks were recorded on the cereal field compared to four or five pairs on the pea field, in line with the full survey across East Yorkshire, North Lincolnshire and East Anglia. Initial indications are that pea fields offer a more suitable breeding habitat for Skylarks particularly towards June and July when the cereal crop becomes too tall and dense. Thus the breeding season is extended and a greater number of broods raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Pheasant	2 (0.16)	
Woodpigeon	2 (0.15)	
Skylark	5 (0.34)	3 (0.18)
Yellow Wagtail	1 (0.08)	
Yellowhammer	2 (0.15)	

Bird Survey Results: summer 1999

H2: **Mr Robert Borrill**
County: **North Lincolnshire**
Crops surveyed: **Vining peas and winter wheat**

Sixteen species of bird were recorded on both the fields and boundaries of the pea and cereal fields, and 11 on the fields proper, including Grey Partridge and Lapwings both vulnerable on farmland and of high conservation interest on farmland. Eleven species were recorded using the pea field compared to just two recorded on the cereal field over the summer period as a whole. The species on peas included the two species above plus Yellowhammer and Skylark, each declining on farmland nationally and therefore of national conservation concern. Three pairs of Skylarks were recorded on the cereal field in April but only one pair in July compared to four pairs on the pea field in July, in line with the full survey across East Yorkshire, North Lincolnshire and East Anglia. Initial indications are, therefore, that pea fields offer a more suitable breeding habitat for Skylarks particularly towards June and July when the cereal crop becomes too tall and dense. Thus the breeding season is extended and a greater number of broods raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Pheasant	1 (0.01)	
Grey Partridge	2 (0.15)	1 (0.11)
Lapwing	4 (0.45)	
Woodpigeon	20 (2.25)	
Skylark	8 (0.44)	6 (0.24)
Pied Wagtail	4 (0.45)	
Dunnock	3 (0.11)	
Blackbird	1 (0.04)	
Rook	40 (4.49)	
Starling	100 (11.12)	
Yellowhammer	2 (0.11)	

Bird Survey Results: summer 1999

H3: **Mr Bill Davey**
County: **North Lincolnshire**
Crops surveyed: **Vining peas and winter wheat**

Sixteen species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Chiffchaffs and Whitethroats, and 11 on the fields proper, including Tree Sparrows and Lapwings both vulnerable on farmland and of high conservation interest on farmland. Ten species were recorded using the pea field compared to just five recorded on the cereal field over the summer period as a whole. These species included the species above plus three additional species of high conservation concern, Corn Bunting, Yellowhammer and Skylark, each declining on farmland nationally and therefore of national conservation concern. Two pairs of Skylarks were recorded on the cereal field in April but none in July, compared to up to three pairs on the pea field in July, in line with the full survey across East Yorkshire, North Lincolnshire and East Anglia. Initial indications are therefore that pea fields offer a more suitable breeding habitat for Skylarks particularly towards June and July when the cereal crop becomes too tall and dense. Thus the breeding season is extended and a greater number of broods raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Pheasant	1 (0.04)	
Red-legged Partridge	3 (0.08)	1 (0.01)
Lapwing	3 (0.24)	
Woodpigeon	59 (1.65)	2 (0.01)
Skylark	4 (0.21)	2 (0.12)
Blackbird	2 (0.16)	
Starling	6 (0.48)	
Tree Sparrow		2 (0.09)
Linnet	4 (0.11)	5 (0.06)
Corn Bunting	2 (0.09)	1 (0.01)
Yellowhammer	2 (0.02)	

Bird Survey Results: summer 1999

H4: **Mr Richard Byass**
County: **East Yorkshire**
Crops surveyed: **Vining peas and spring barley**

Ten species of bird were recorded on both the fields and boundaries of the pea and cereal fields, and 10 in total on the fields proper, including Lapwing and Yellow Wagtail, both vulnerable on farmland and of high conservation interest. Ten species were recorded using the pea field compared to just three recorded on the cereal field over the summer period as a whole. The species on peas included the two species above plus Skylark, each declining on farmland nationally and therefore of national conservation concern. Possibly two pairs of Skylarks were recorded on the cereal field in April and May but only one pair in July, compared to up to four pairs on the pea field in July, in line with the full survey across East Yorkshire, North Lincolnshire and East Anglia. Initial indications are therefore that pea fields offer a more suitable breeding habitat for Skylarks particularly towards June and July when the cereal crop becomes too tall and dense. Thus the breeding season is extended and a greater number of broods raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Pheasant	1 (0.01)	1 (0.01)
Red-legged Partridge	1 (0.01)	1 (0.01)
Lapwing	25 (0.49)	
Woodpigeon	18 (0.24)	
Skylark	8 (0.15)	3 (0.11)
Pied Wagtail	4 (0.07)	
Yellow Wagtail	1 (0.01)	
Dunnock	1 (0.03)	
C. Crow	1 (0.05)	
Rook	59 (0.99)	

Bird Survey Results: summer 1999

H5: **Mrs Emma Mountifield**
County: **East Yorkshire**
Crops surveyed: **Vining peas and winter wheat**

Ten species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Linnets, Whitethroats (boundary) and Lapwings, each vulnerable on farmland and of high conservation interest on farmland. Nine species were recorded using the pea field compared to just four recorded on the cereal field over the summer period as a whole. These species included those above plus two additional species of high conservation concern, Yellowhammer and Skylark, each declining on farmland nationally and therefore of national conservation concern. One to two pairs of Skylarks were recorded on the cereal field in April but none in July, compared to two pairs on the pea field in July, in line with the full survey across East Yorkshire, North Lincolnshire and East Anglia. Thus initial indications suggest that pea fields offer a more suitable breeding habitat for Skylarks particularly towards June and July when the cereal crop becomes too tall and dense. The breeding season is therefore extended and a greater number of broods raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Pheasant		3 (0.07)
Red-legged Partridge	1 (0.07)	2 (0.10)
Lapwing	2 (0.11)	
Woodpigeon	2 (0.15)	
Skylark	4 (0.10)	3 (0.10)
Dunnock	2 (0.05)	2 (0.03)
Pied Wagtail	1 (0.07)	
Rook	25 (1.81)	
Linnet	2 (0.01)	
Yellowhammer	2 (0.01)	

Bird Survey Results: summer 1999

H6: **Mr William Osgerby**
County: **East Yorkshire**
Crops surveyed: **Broad beans and winter wheat**

Nine species of bird were recorded on both the fields and boundaries of the bean and cereal fields including Grey Partridge and Yellow Wagtails each vulnerable on farmland and of high conservation interest. Seven species were recorded using the bean field compared to just five recorded on the cereal field over the summer period as a whole. These species included those above plus two additional species of high conservation concern, Corn Bunting and Skylark, each declining on farmland nationally and therefore of national conservation concern. One to two pairs of Skylarks were recorded on the cereal field in April and May but none were recorded in June or July, compared to nine individuals and up to four pairs on the bean field from May to July. This result was in line with the full survey across East Yorkshire, North Lincolnshire and East Anglia; that is that initial indications suggest that beans/peas offer a more suitable breeding habitat for Skylarks particularly towards June and July when the cereal crop becomes too tall and dense. The breeding season is therefore extended and a greater number of broods raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Pheasant		1 (0.01)
Grey Partridge	2 (0.01)	
Skylark	9 (0.15)	2 (0.03)
Meadow Pipit	4 (0.06)	2 (0.04)
Yellow Wagtail	7 (0.12)	1 (0.02)
C. Crow	2 (0.07)	
Rook	12 (0.27)	
Starling		1 (0.01)
Corn Bunting	2 (0.02)	

Bird Survey Results: summer 1999

H7: **Mr Caley Sackur**
County: **East Yorkshire**
Crops surveyed: **Vining peas and winter wheat**

Twenty-one species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Sparrowhawk, Great Spotted Woodpecker, Blackcaps, Goldcrests, and a rich variety of common species utilising the field boundaries only. On the fields, 12 species were recorded using the pea field, compared to just four recorded on the cereal field over the summer period as a whole. On the peas, these species included Corn Bunting, Yellowhammer and Skylark, each species declining on farmland nationally and therefore of national conservation concern. A record of Quail calling from the pea field added extra interest to this area, this species being extremely elusive in Britain. Skylarks were also abundant on the cereal field as well as the pea field, in contrast to the general survey where pea fields offered, on average, a more suitable breeding habitat for Skylarks than cereals. This was particularly true towards June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Red-legged Partridge	2 (0.10)	2 (0.06)
Quail	1 (0.06)	
Lapwing	2 (0.06)	
Woodpigeon	3 (0.16)	
Stock Dove	2 (0.10)	
Skylark	9 (0.31)	10 (0.17)
Pied Wagtail	2 (0.02)	2 (0.08)
Starling	6 (0.20)	
C. Crow	1 (0.13)	2 (0.02)
Rook	10 (0.42)	
Corn Bunting	1 (0.01)	
Yellowhammer	1 (0.01)	

Bird Survey Results: summer 1999

H8: **Mr Nick Baker**
County: **East Yorkshire**
Crops surveyed: **Vining peas and winter wheat**

Twenty species of bird were recorded on both the fields and boundaries of the pea and cereal fields including Sparrowhawk, Whitethroat, Spotted Flycatcher and Tree Sparrow (as species of national conservation interest) plus a rich variety of common species utilising the field boundaries only. On the fields, 13 species were recorded using the pea field, compared to just seven recorded on the cereal field over the summer period as a whole. On the peas, species included several, such as Corn Bunting, Yellow Wagtail and Skylark, which are declining on farmland nationally and therefore of national conservation concern. A record of Quail calling from the pea field added extra interest to this area, this species being extremely elusive in Britain. Skylarks were more abundant on the pea field than the cereal, particularly towards June and July when the cereal crop becomes too tall and dense. This is in line with the general survey picture and extends the breeding season of Skylarks, enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Red-legged Partridge	6 (0.38)	4 (0.21)
Pheasant	1 (0.01)	
Quail	1 (0.09)	
Woodpigeon	3 (0.30)	
Skylark	9 (0.38)	5 (0.28)
Meadow Pipit	3 (0.14)	2 (0.19)
Pied Wagtail	2 (0.10)	5 (0.02)
Yellow Wagtail	1 (0.09)	
Starling	6 (0.11)	7 (0.57)
C. Crow	4 (0.38)	3 (0.25)
Rook	2 (0.19)	2 (0.01)
Chaffinch	4 (0.22)	
Corn Bunting	2 (0.01)	

Bird Survey Results: summer 1999

H9: **Mr Paul Hayward**
County: **East Yorkshire**
Crops surveyed: **Vining peas and winter wheat**

Eighteen species of bird were recorded on both the fields and boundaries of the pea and cereal fields, including Sparrowhawk, Whitethroat, Blackcap, Swallows and Martins plus a rich variety of common hedgerow species utilising the field boundaries only. Twelve species were recorded using the pea field, compared to seven recorded on the cereal field over the summer period as a whole. Records included several species, such as Lapwing, Grey Partridge, Yellowhammer and Skylark, which are declining on farmland nationally and therefore of national conservation concern. Unlike the general picture for the survey, which demonstrates a preference for pea fields over cereals by Skylarks in June and July in particular, only one or two Skylarks were recorded on both the pea and cereal field on this farm. The general trend for the survey as a whole indicates that pea fields provided breeding and foraging habitat for Skylarks late in the breeding season (June and July) when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks, enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Pheasant	2 (0.10)	1 (0.08)
Red-legged Partridge	6 (0.20)	4 (0.09)
Grey Partridge	2 (0.20)	2 (0.17)
Lapwing	1 (0.10)	
Woodpigeon	4 (0.29)	
Skylark	1 (0.10)	2 (0.17)
Dunnock	2 (0.01)	1 (0.04)
Blackbird	2 (0.07)	1 (0.09)
Rook	1 (0.01)	
Linnet	2 (0.01)	2 (0.09)
Chaffinch	4 (0.03)	
Yellowhammer	1 (0.04)	

Bird Survey Results: summer 1999

H10: **Mr Mark Flint**
County: **East Yorkshire.**
Crops surveyed: **Vining peas and winter wheat**

Twenty-four species of bird were recorded on both the fields and boundaries of the pea and cereal fields including a variety of common species utilising the field boundaries only. On the fields, 14 species were recorded using the pea field, compared to just six recorded on the cereal field. On the peas, species included Lapwing, Grey Partridge, Yellow Wagtail, and Skylark, which are declining on farmland nationally and therefore of national conservation concern. Skylarks were equally abundant on the pea field and cereal field, unlike the general survey picture, in which Skylarks are more prevalent on peas, particularly towards June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks and enables a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Lapwing	13 (0.19)	
Red-legged Partridge	1 (0.07)	1 (0.03)
Grey Partridge	3 (0.07)	3 (0.49)
Pheasant	1 (0.01)	
Woodpigeon	4 (0.16)	
Skylark	11 (0.13)	9 (0.15)
Meadow Pipit	3 (0.19)	
Pied Wagtail	1 (0.07)	
Yellow Wagtail	3 (0.02)	1 (0.04)
Dunnock	1 (0.02)	
Blackbird	1 (0.01)	1 (0.01)
C. Crow	7 (0.16)	
Rook	1 (0.02)	
Linnet	13 (0.01)	1 (0.21)

Bird Survey Results: summer 1999

H11: **Mr David Martinson**
County: **East Yorkshire**
Crops surveyed: **Vining peas and winter wheat**

Seventeen species of bird were recorded on both the fields and boundaries of the pea and cereal fields including a healthy variety of common species utilising the field boundaries only and a Marsh Harrier hunting over the area. On the fields, 14 species were recorded using the pea field, compared to just three recorded on the cereal field. On the peas, species included Turtle Dove, Yellow Wagtail, Linnet and Skylark, which are declining on farmland nationally and therefore of national conservation concern. Skylarks were marginally more abundant on the pea field than the cereal field in line with the general findings of the survey this year. This was so, especially during June and July when the cereal crop became too tall and dense. This process extends the breeding season of Skylarks that can move into the pea crop, enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Red-legged Partridge	1 (0.14)	1 (0.12)
Pheasant	1 (0.14)	
Woodpigeon	5 (0.36)	
Turtle Dove	1 (0.21)	
Stock Dove	2 (0.29)	
Skylark	3 (0.19)	2 (0.12)
Pied Wagtail	1 (0.01)	
Robin	1 (0.01)	
Goldfinch	1 (0.14)	
Starling	13 (0.21)	
C. Crow	1 (0.01)	
Rook	1 (0.14)	
Linnet	7 (0.07)	
Chaffinch	2 (0.01)	3 (0.09)

Bird Survey Results: summer 1999

H12: **Mr Peter Martinson**
County: **East Yorkshire**
Crops surveyed: **Vining peas and winter wheat**

Twenty species of bird were recorded on both the fields and boundaries of the pea and cereal fields including a variety of common species utilising the field boundaries only. On the fields, nine species were recorded using the pea field, compared to just four recorded on the cereal field. On the peas, species included Grey Partridge and Skylark, both of which are declining on farmland nationally and therefore of national conservation concern. Skylarks were relatively scarce on both the pea field and the cereal field. The general findings of the survey indicate that pea fields support high densities of Skylarks, especially during June and July when the cereal crop becomes too tall and dense. This process extends the breeding season of Skylarks, enabling a greater number of broods to be raised.

Maximum numbers of each species recorded on fields rather than boundaries, during a single 1-hour visit (with densities in parenthesis, averaged across all visits to each field).

	Field type	
Species	**Pea/beans**	**Cereal**
Shelduck	5 (0.38)	1 (0.01)
Red-legged Partridge	1 (0.15)	
Grey Partridge	3 (0.23)	
Woodpigeon	1 (0.04)	
Skylark	1 (0.08)	1 (0.08)
Sedge Warbler		2 (0.17)
C Crow	1 (0.06)	
Starling	100 (7.56)	
Pied Wagtail	1 (0.01)	
Tree Sparrow	2 (0.01)	
Greenfinch		1 (0.04)