# Grey partridge News

Issue 13: Summer 2010

## Introduction

As I sit writing this introduction to the *Grey Partridge News*, the combines have all ground to a halt owing to a couple of dull, drizzly days, so we have only been able to assess a relatively small acreage of stubbles to see how partridges and other wild game have fared. However, following last year's generally good breeding season and where some excellent pair counts were returned to us this spring, I hope that we once again see some large coveys this autumn.

The partridge counts we receive this year may well be the most important ever, as figures from the British Trust for Ornithology (BTO) indicate that grey partridge numbers declined by a massive 20% between 2008 and 2009, resulting in a reduction in their estimate of grey partridge pairs from 65,000 to 50,000. This poses serious concerns for the 2010 reporting which will inform future policy towards grey partridge conservation, shooting, and whether ongoing conservation is likely to be called into question. From 2008 to 2009 PCS members also recorded a decline in grey partridge density, but only by 4% instead of the 20% reported by the BTO. This emphasises that good partridge management can significantly reduce the effects of bad years.

For many of you, the next 12 months will see the renewal of your five year Entry Level Stewardship scheme. Take the opportunity to include plenty of 'in-field' options such as wild bird seed mixes and un-harvested cereal headlands, all of which are ideal options for greys. In-field options such as these will help to put a big tick in the Campaign for the Farmed Environment (CFE) box to stop the compulsory return of set-aside.

I hope that you are pleasantly surprised by good numbers of grey partridges across your farm. Don't forget to do your counts and send them in to us, so that we can assess how well grey partridges are doing across the country and back it all up with your statistics. Thank you all in advance for doing this as it is a vital part of the recovery programme and we cannot do it without your efforts. Please help us expand the scheme by getting friends and neighbours involved. Here's to a bountiful harvest of crops and game!

Peter Thompson
Biodiversity Advisor

## Inside this issue:



## News in brief

**East Anglian meeting**

The East Anglian Grey Partridge group is meeting on Wednesday 8 September at 5pm, at Wyken Estate, Stanton, Suffolk, by kind permission of Sir Kenneth Carlisle.

By providing year-round habitat including refuge, nesting cover, insects for chicks and winter seed, grey partridges can make a comeback. This is certainly the case on the 1,100 acre Wyken Estate, which has provided all these essential partridge requirements within a very successful stewardship agreement.

Drinks (including Wyken vineyard wines) and a light buffet will be kindly provided by Sir Kenneth Carlisle and the sponsors, CastleAcre and Carter Jonas. The event costs £12 per person. See box to book.

**September group meetings/courses**

22 Sept Hereford – Grey partridge and other farmland birds
22 Sept Cumbria – Grey partridge meeting
23 Sept – Northumberland grey partridge talk, Alnwick
30 Sept Cotswold – Grey partridge meeting
**To book please contact Lynda Ferguson on 01425 651013 or visit www.gwct.org.uk/courses**

Special thanks to all those individuals, gamekeepers, landowners and estates, who have contributed to the Partridge Count Scheme.



Game & Wildlife CONSERVATION TRUST
*Partridge Count Scheme*

# Spreading cover out across the farm

From previous research on the breeding success of birds at the Allerton Project, Loddington, we know how far some songbirds species will travel from the nest to gather food for their young. For yellowhammer, the maximum distance is 300 metres, for tree sparrow it is 220 metres and for skylark it is 200 metres. These are maximum distances. If birds are able to gather insect food considerably closer to the nest than this, they will reduce the risk of nestlings being predated or chilling during cold weather, and the stress on the adults themselves will also be reduced. In winter, birds are much more mobile. Research by the British Trust for Ornithology suggests that distances of 500-1,000 metres are typical foraging ranges for farmland birds in winter.

MSc student, Frances Davis, used these figures to estimate the potential benefits of actual wild bird seed mixtures in the upper Eye Brook catchment around Loddington. She used a Geographical Information System to distribute 'nest sites' randomly across the landscape and then investigated how many of them fell within 200 metres or 300 metres of wild bird seed crops. Eight percent of nests were within 200 metres, and 19% were within 300 metres of these crops. As the ranges used were based on maximum distances travelled by nesting birds, the effective proportion of nests benefiting from wild bird seed crops during the breeding season is probably lower than these figures suggest. This indicates that managers need to spread brood-rearing cover crops more evenly throughout their areas to account for the smaller foraging distance of songbirds during nesting.

In winter the story is different. Despite the fact that the crops were clumped on the three farms, buffering them by 500 and 1,000 metres revealed that a good three quarters of the area of cover crops was within range of birds that were foraging in winter. In practice, birds would have access to several crops. This might be useful to avoid the attention of sparrowhawks and other predators, and to enable birds to respond to seasonal seed availability. Using known foraging ranges could be a useful tool for planning the distribution of wild bird seed crops across a farm, or the wider landscape.

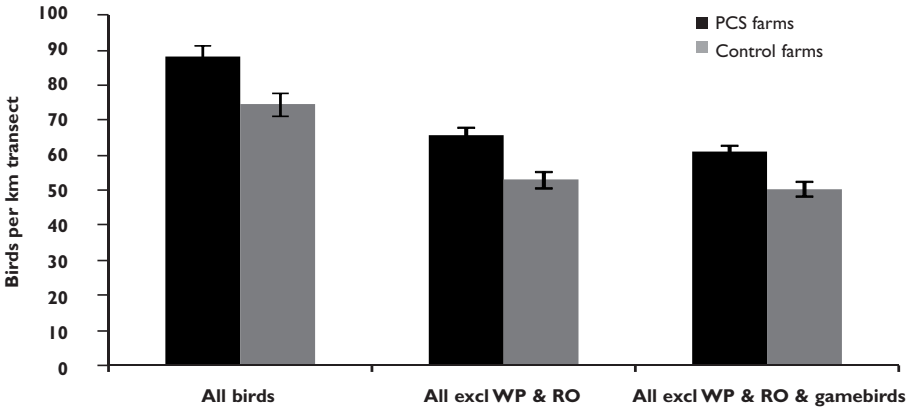
*Brood-rearing cover crops need to be spread evenly across the farm.*

# Boost for songbird numbers

Latest data from the British Trust for Ornithology (BTO) indicate that although 69% of farmland is now covered by environmental stewardship agreements, numbers of many farmland songbirds continue to decline. However, recent research by the GWCT and University of Birmingham shows that declining farmland birds benefit from management targeted at grey partridges. The research, undertaken on 48 farms in eastern England between 2007 and 2009, collected information on habitat and game management. A range of conservation measures designed to boost farmland bird numbers are available to all farmers under environmental stewardship agreements, including wild bird cover, nesting cover and beetle banks. The surveys showed that all three were more common on farms in the Partridge Count Scheme (PCS) than neighbouring farms. Farmland bird surveys, using the Breeding Bird Survey methodology, were also undertaken on farms that participate in the PCS and compared with identical surveys on neighbouring farms. The results showed that 24% more birds were counted on farms participating in the PCS and on average five more species were counted on the PCS farms (see Figure 1). Farms participating in the PCS are encouraged to adopt a range of measures to increase numbers of grey partridges. These include the provision of suitable habitat in winter, spring and summer, but also supplementary feeding and predation control in spring to reduce nest predation. Feeding and predation control were also more common on PCS farms. It is likely that the combination of habitat management, supplementary feeding and predation control, undertaken by farmers to conserve grey partridges, benefits a wide range of declining farmland birds.

**Figure 1**

**Bird abundance for all birds, excluding wood pigeon (WP) and rook (RO), and also excluding pheasant, red-legged partridge and grey partridge. For each group, more birds were found on farms in the PCS than on neighbouring farms. All three results were statistically significant.**



*Upland grey partridges are often found on rush-infested pastures and the fringes of heather moorland managed for grouse shooting.*

# Upland Grey Partridge Recovery Project

Grey partridges are primarily recognised as a bird of lowland arable farming landscapes, but important populations persist in upland fringe areas such as the Yorkshire Dales and North Pennines. Here arable land is almost entirely absent and they frequent enclosed hay meadows, rush-infested pastures and the fringes of heather moorland managed for red grouse shooting. Pilot surveys in 2007 found locally high densities of partridges. However, numbers have crashed following two poor breeding seasons and the severe winter in 2009/10. This spring we launched a three year research project, funded by the SITA Trust and the County Durham Environmental Trust, that aims to quantify numbers, establish local conservation targets and promote management practices conducive to increasing grey partridge abundance in the uplands.

### Spring surveys

This spring we initiated a survey to establish the distribution and numbers of grey partridges in the Durham and Yorkshire Dales. Surveying here presents a problem in that rushes and rank grass, poor access and undulating terrain makes partridges difficult to see and the traditional surveying methods of the Partridge Count Scheme, used to such good effect on lowland farms and arable landscapes, are not effective here. Therefore a tape call-back method was used, whereby a recording of a calling male was played to elicit responses from males. This allowed partridges to be recorded that would otherwise have not been detected via direct observation. Partridges were surveyed along 61 four kilometre routes along tracks distributed throughout suitable moorland fringe habitats in the study area. Surveys were undertaken at dawn and dusk with the tape played for 15 seconds on and off for a period of two minutes at 10 stop points, positioned at 400 metre intervals along each route.

In total, we encountered 51 sightings of partridges, equating to a density of 0.7 pairs per 100 hectares. Repeat surveys on routes surveyed annually since 2007 recorded a 90% decline in numbers, with partridges at higher altitude above 400 metres suffering high over-winter mortality owing to the severe winter weather in 2009/10, where prolonged snow covered food resources for three months. Given that numbers are currently so low we obviously urge that until a recovery is achieved, shooters should refrain from harvesting them.

### Radio-telemetry study

To find out more about the population dynamics of grey partridges and their habitat use in this terrain, we commenced a radio-telemetry study in spring 2010. Ten partridges, equipped with radio transmitters, have been followed weekly to assess movements, causes of mortality and survival rates. To investigate chick diet and brood range use, we have located broods at their roost sites twice weekly. Habitat conditions have been assessed and droppings counted and collected. Analysis of chick droppings this autumn will provide an insight in to the specific food and habitat requirements of partridge chicks in these environments.

*This winter was the coldest since 1978/79.*

# Partridge Count Scheme

Thank you to everyone who gave up their time to count their land and submit their findings to the Partridge Count Scheme (PCS) this spring. The results of the counts are summarised below in Table 1.

Some might view it as ironic that last autumn, the most productive for many years, was followed by the coldest winter since 1978/79. According to the Met Office, the mean temperatures for January for the UK were 2.5°C below the 1971-2000 average. As a result of the cold temperatures and snowfall it was a short and difficult spring count for many, with birds remaining tight in cover because of the delay in emergence of spring crops. Some PCS members in Scotland reported very late pairing, with snow still on the ground in May.

After such a good result last autumn, we only received 732 spring counts, down from 825 received in spring 2009 (-11%), and 816 received last autumn (-10%). However, there is some very encouraging news to report. Having had high productivity last year and despite the winter, nearly 8,400 grey partridge pairs were counted over an area of 205,000 hectares (506,000 acres). Although 30,000 fewer hectares were counted compared with spring 2009, the average area counted remains stable and indicates that we did not see a fall in counts from any particular size of farm. Also encouraging is that the average pair density nationally, as reported in Table 1, has increased thanks to good chick production last year, although this showed some variation around the country.

Any effect of the severe winter can be measured by comparing the Over-Winter Survival (OWS) to that from previous winters (see Table 2). As all parts of the UK were affected, it is interesting to see that 2009/10 OWS was similar to that from the previous three years. This would seem to reflect the ability of grey partridges to tolerate cold winters and snow (see page 5 *How do grey partridges cope with snow?*). However, there are individual PCS members who have recorded the loss of their partridges. Whether this is due to emigration to find food and shelter, or actual mortality, it is difficult to tell. We hope that these members will return their counts this autumn to see if their grey partridge numbers manage to recover.

We still don't know whether hibernating chick food has been affected by weeks of frozen ground, especially as the unusually dry periods during spring over Wales and a broad swathe from Cumbria to East Anglia, may have also limited chick food in these regions.

**Table 1**

Regional spring pair densities of grey partridges in Great Britain for 2009 and 2010

| | Number of sites | | Spring pair density per 100ha | | Comparison |
|---|---|---|---|---|---|
| **Region** | **2009** | **2010** | **2009** | **2010** | |
| Southern | 137 | 111 | 1.5 | 2.1 | (40%) ↑ |
| Eastern | 205 | 203 | 5.6 | 5.4 | (-4%) ↓ |
| Midlands | 158 | 142 | 3.1 | 3.6 | (16%) ↑ |
| Wales | 3 | 2 | 0.9 | 0 | (-100%) ↓ |
| Northern | 191 | 193 | 4.9 | 4.4 | (-10%) ↓ |
| Scotland | 131 | 122 | 2.7 | 3.3 | (22%) ↑ |
| **Overall** | **825** | **773** | **3.8** | **4.0** | **(5%)** ↑ |

**Table 2**

Grey partridge over-winter survival

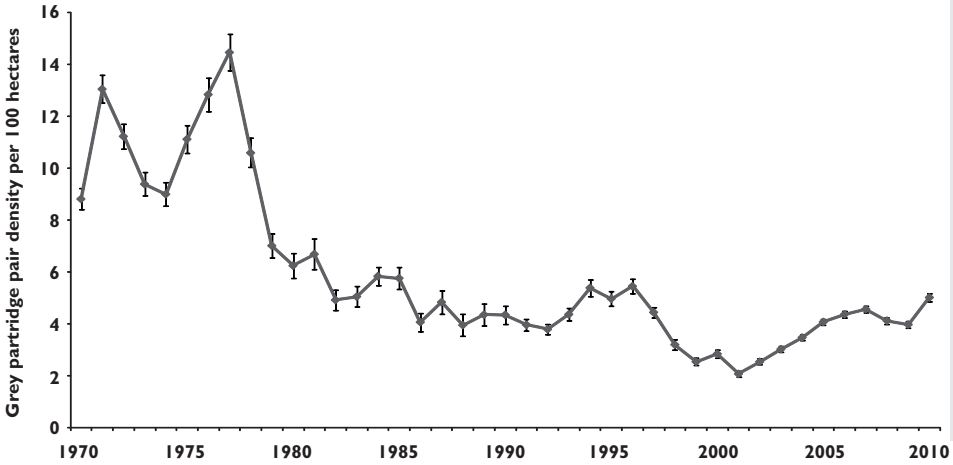
| Winter | Mean over-winter survival (%) |
|---|---|
| 2004/05 | 68 |
| 2005/06 | 41 |
| 2006/07 | 45 |
| 2007/08 | 56 |
| 2008/09 | 54 |
| 2009/10 | 54 |

PCS participation is particularly needed given the news that the BTO has recorded a further fall in its UK grey partridge population estimate. Following a huge 26% decline recorded between 2008-2009, it has revised its 2009 figure down to just 50,000 spring pairs. It certainly wasn't a good year, but the PCS recorded only a 4% decline, which clearly illustrates the necessity of effective habitat and management in limiting the consequences of poor years. The PCS long-term index (see Figure 2) shows the 2010 average spring pair density surged by 26% to five pairs/100ha, bolstered by limited over-winter loss. It is hoped that next year's BTO figures show some silver-lining, but at present PCS members are recording 17% of the entire UK population, but from approximately 5% of the land suitable for grey partridges.

This coming year the PCS would be particularly interested in hearing from new farms, shoots etc from the following counties: Cornwall, Oxfordshire, Essex, Suffolk, Warwickshire, Fife and Aberdeenshire, plus anywhere in both southern and northern Wales who have grey partridges. If you know of friends or have family in these areas please encourage them to get involved and contact Neville Kingdon, PCS co-ordinator at nkingdon@gwct.org.uk or call 01425 651066. Outside these areas the PCS would still like all readers to pass on details of the PCS to their neighbours, friends and family and sign them up – Every one counts!

**Figure 2**

Trends in the indices of grey partridge density, controlling for variation in the different count areas.




**Comparing Table 1 and Figure 2**

Readers will note the disparity between the results of Table 1 and Figure 2. More complex analysis is used to produce Figure 2 which, unlike Table 1, looks at the between-year changes within each site, then averages those changes across sites. This adjusts for the fact that counts are not available for all sites every year and includes only sites with more than one spring count. This gives a more accurate long-term overview than is provided from Table 1.

# How do grey partridges cope with snow?

*Grey partridges taking refuge at a chicken feeder in the middle of winter.*

It may be surprising, but partridges can cope with quite extreme winter conditions. Neither cold or snow is a particular problem and partridges will scratch through snow up to 35cm (10 inches) deep in search of food. However, high mortality does occur once an ice crust forms. Studies in Bulgaria have shown that partridges can maintain a body temperature for at least three days at -30°C, and will even roost in burrows in the snow which provide a local ambient temperature above freezing. Nevertheless, if entirely deprived of food, death will occur in as little as five days at -18°C, or seven days at -10°C. Beyond some severe overnight falls in temperature, or more extended extreme cold events in higher and remote areas where grey partridges are less common, neither of these potential high mortality situations occurred this winter in the UK.

However, although such hard winters are not the norm in the UK, many of the field observations reported above occurred in continental Europe in the 1950s and 1960s, a time when 'naturally' occurring winter food availability was greater than the increasingly sterile post-harvest fields of recent decades. It therefore emphasises the need to provide planted seed crops and hopper feeding to compensate for the loss of more extensive natural food sources. The object of all feeding, especially with hoppers, is to supplement, not to replace, wild foods and crop residues. No one food type, even wheat, provides a complete ration for partridges. So in addition to feeding via hoppers in winter, try to ensure that your winter cover mixes contain crops that produce rich and long-lasting seeds.

*The head keeper sweep netting on the Duke of Norfolk's estate, where grey partridges have staged a remarkable comeback.*

# Success in Sussex

How things have changed on the Norfolk Estate! The estate is part of the Sussex Study, where we have monitored grey partridges and the cereal ecosystem since 1968.

In the early 1960s it was a thriving wild grey partridge shoot. On 3 October 1961, 273 wild grey partridges were shot in one day without any discernable effect on numbers present. Turn the clock forward 40 years and the story was very different at the beginning of this century. In February 2004 calculations indicated that the species would become completely extinct on the estate, either that year or the following one. Instead of accepting this as inevitable, the landowner and his management team decided to reverse this decline with the recovery in grey partridge density shown in Figure 3. This year in late July, with wheat still uncut and the final numbers uncertain, the brood sizes seen so far suggest that there has been an amazing turnaround, with about two grey partridges per hectare.

This has been the result of a heady mixture of sympathetic Higher Level Scheme payments and a lot of hard work by the Duke of Norfolk and his dedicated team. It is not possible to tell the full story here; things have moved on a great deal since the days when grey partridge management could be referenced simply to a three-legged stool. However, the large covey size (an average of young-to-old ratio of 3.2 over the years of management) and high chick survival (an average of 52% from 2004 to 2009) has been the most surprising thing to many people. This is mainly due to the way in which the insect food supply for the chicks has been managed through the use of conservation headlands. Dick Potts, the founder of the Sussex Study and still involved in this work today, does not think the improved chick survival could have been achieved by any other method.

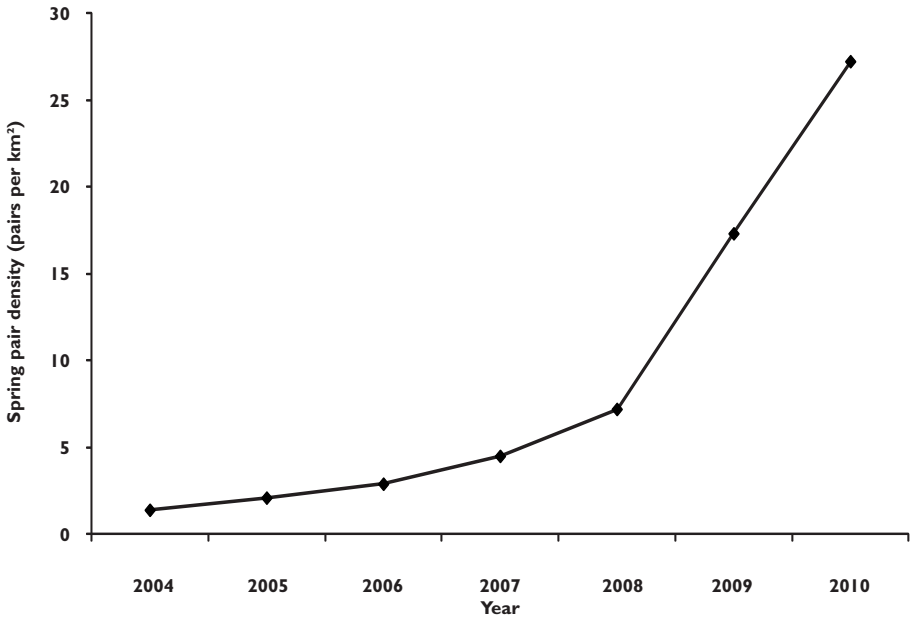
About half the insects in conservation headlands feature in grey partridge chick diet and most depend on broad-leaved weeds. On the Norfolk Estate, as part of the Sussex Study, these are measured in the cereal headlands using a five-point scale. Chick-food abundance had increased by 30 to 70 individuals per sweep sample with each point on this five-point vegetation scale. Grey partridge chick survival then increases in line with chick-food insects.

The management practised on the estate has seemed to provide a buffer in the face of inclement weather conditions, with no adverse effect of weather on chicks detected over the past seven years.

Both Entry Level and Higher Level Stewardship provide funds to incorporate conservation headlands into any farm's conservation programme. Please seize the opportunity that they provide to give grey partridges a fighting chance on your ground. See page 7 to find out how you can benefit by incorporating conservation headlands or other similar in-field options on your land.

**Figure 3**

Spring density of grey partridges in the Sussex Study.



# Nourishing school dinners are vital for youngsters

It is not only Jamie Oliver who has been beavering away to improve the diet of youngsters, we have also been hard at work to advance the quantity (and quality) of food available in the countryside for our farmland bird chicks. Conservation headlands, invented by us in the 1980s, have evolved and changed over the years, so here is a brief look at the options that are now available under both the Stewardship schemes and the Campaign for the Farmed Environment, to deliver the vital insect-rich habitats that birds need if they are to successfully fledge their young.

Conservation headlands (now called unfertilised cereal headlands), the selective spraying of a cereal crop edge (from six to 24 metres wide) to allow weeds and therefore insects to flourish within the crop, still exist but they are now unfertilised as well. This is because the modern, fertilised, cereal crop is so thick that it is virtually impenetrable for adult partridges, let alone the newly hatched chicks. In the Higher Level Stewardship scheme, you can also gain a larger payment for not harvesting this cereal edge, thereby providing an excellent weed seed and grain source for birds over winter as well.

There is also a new option which a number of farmers are trying and many report back that they find it easier to deliver on the ground. This option is called the 'un-harvested cereal headland' and the big difference here is that it is totally de-coupled from the main crop, which could be oilseed rape or field beans for instance. It is very simply a three to six metre cereal strip (so it should fit in with whatever drill width you use) drilled alongside the field boundary or alongside a feature such as a beetle bank. It is not fertilised or harvested, but is fully rotational. The beauty of this option is that it does not interfere with the management of the main crop, unlike the 'old' conservation headland technique.

Although designed for encouraging rare arable flowers, another possible option is the 'un-cropped cultivated margin', a cultivated area of between three to six metres around a field, without the addition of cereals. From a grey partridge point of view, cereals provide an element of over-head cover from predators, so they prefer margins with cereal cover. However, any weedy strip alongside the main crop will offer an abundance of insects.

Finally, the addition of a few wildflowers when sowing a permanent grass margin will improve the numbers of insects using the area. These 'floristically enhanced' buffer strips can become very good brood-rearing areas, especially on the more nutrient-free soils that produce only sparse vegetation.

These are just some of the ways to produce, and get paid for, insect-rich habitats across the farm. Our research has shown that these are absolutely vital for good gamebird chick survival, and we have also demonstrated that it is crucial to many other farmland birds too.

*Many farmers are finding un-harvested cereal headlands easier to deliver on the ground and they provide vital insects for farmland bird chicks.*

*PCS members attending the Lincolnshire group meeting earlier this year.*

# Winning ways for greys

Here are some of the well deserved winners of the 2010 grey partridge trophies. Standards have been high across the country and the winners were chosen for their outstanding commitment towards grey partridge conservation. We are very grateful to everyone for submitting their counts and supporting the grey partridge groups, and to the individual trophy and group sponsors.

This year's winner of the Jas. Martin & Co. Lincolnshire Grey Partridge Trophy was Coates Hall Farm near Lincoln, represented by Mr Graham Rowles Nicholson and his keeper, Mr Paul Wykes.

The Durham and Northern Dales grey partridge group winner was John Boon, a farmer from near Beamish in County Durham, who was presented the trophy by Phil Scott-Priestley of Gray's Chartered Surveyors, who kindly sponsor the Durham group.

*George Farr, Chairman of the Northumberland Partridge Group (left), presenting the Glenlivet Grey Partridge Trophy to Ian Tulip of Bilton Farm near Alnwick (right).*

*George Winn-Darley (left) receiving the Yorkshire Grey Partridge Group Trophy, sponsored by Savills, from Simon Britton of Savills (right).*

*Fiona Paterson receiving her grey partridge trophy (sponsored by CLM) from The Duke of Norfolk (right) with Peter Setterfield, Chairman of the South-East Grey Partridge Group (left).*

*James Carr was the winner of the Cumbria and North Lancashire Grey Partridge Group Trophy. James is boosting numbers of grey partridges at Moorhouse, Warwick-on-Eden.*

*The Wessex grey partridge trophy, kindly sponsored by Savills this year, was awarded to James Whittle (left) by Sir James Scott (right), chairman of the Wessex group.*

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For more information on our grey partridge research and further copies of this newsletter, please contact:

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