

Grey partridge

NEWS

A report to all those interested in grey partridge conservation

Issue 3: Summer 2005

Introduction

Now that Defra has announced the details of the new Entry Level and Higher Level Stewardship (ELS/HLS) schemes for England and Wales, and the Scottish Executive has given details of the Land Management Contracts in Scotland, land owners and managers across the UK are able to help grey partridges and receive financial reward on a scale that has never been available before. The Government consulted widely with conservation organisations, including The Game Conservancy Trust, when drawing up the list of options and the majority have been specifically designed to help a range of wildlife present on farmland, including the grey partridge. Unlike in the past, when the majority of agri-environment scheme uptake was on estates managed for shooting, the restructuring of financial payments means that under the new schemes, uptake will be much more widespread, and the benefits to wildlife considerably greater. Many of the options available under the new schemes have been successfully tested at our research farm at Loddington and now at the Royston study area, and offer a real opportunity to improve the conservation status of the grey partridge. This newsletter includes information from an assessment of how much habitat is required to help grey partridges and sets out how it can be provided by the new schemes. Additionally, we provide an update on a number of on-going projects, the recovery project at Royston and the Partridge Count Scheme. We report on the establishment of three new regional partridge groups, an exciting development that shows our commitment to furthering the conservation of this important species.

Stephen Browne
Grey Partridge Ecologist

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News in brief

Agricultural trust awards grant for partridge research

The Chadacre Agricultural Trust has awarded The Game Conservancy Trust a grant to study how cropping patterns and habitat features influence partridge and wild pheasant distribution and breeding success. The grant will enable us to computerise game count and land use data collected on several farms in East Anglia over the last decade. We hope that the project will provide information on

how crops and conservation features, such as game cover plots, beetle banks and set-aside, can be efficiently located and managed to benefit wild game.

Cotswold grey partridge award

Ruffer, the investment house, is sponsoring a Cotswold grey partridge award, as part of the formation of the new regional group (see regional round-up). The silver partridge trophy, which will be known as 'The Ruffer Cotswold Grey Partridge Trophy' will be given to the estate or farm that has done the most to help grey partridges within the region. Further

details will be given when the group is launched in June.

New study into partridge management

A new joint project between ourselves and the Wildlife Conservation Research Unit (WildCRU) at Oxford University will start later this year. The three-year DPhil project will build upon the experimental work on releasing on which we are currently working, and integrate it with grey partridge management at a large scale within farmland on the Upper Thames tributaries in Oxfordshire.

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



Quantifying habitat requirements for grey partridge recovery

Recommendations for managing grey partridges always emphasise the need for habitat provision, in particular nesting and brood-rearing cover. We are frequently asked how much habitat is required, but there have been no definite guidelines. Recently, Defra has asked the question in relation to declining farmland birds, and commissioned us to provide an answer for grey partridges.

By drawing together Dick Potts' partridge research from Sussex, which gave rise to his population simulation model, and our other partridge studies in East Anglia and Hampshire in the 1980s, we showed that the attractiveness of different areas to grey partridges is determined by the availability of nesting habitat. This consists primarily of non-cropped linear landscape features such as hedgerows and grass banks. Dick's model already incorporated the amount of nesting cover as a factor influencing female losses over winter and during nesting. It also used the annual chick survival rates observed in Sussex. Chick

survival rates vary according to the abundance of chick-food insects in cereals, which is determined by the pesticide regime. Using chick survival rates measured during our research on conservation headlands, and during a period of intensive broad-spectrum pesticide use in parts of Sussex, we estimated that a 1% increase in the amount of insect-rich brood-rearing habitat on the arable area of a farm, increased chick survival rate by 4%. By taking this into account, we were able to predict the relative changes in long-term grey partridge breeding density in terms of the amounts of nesting cover and brood-rearing habitat (see Figure 1).

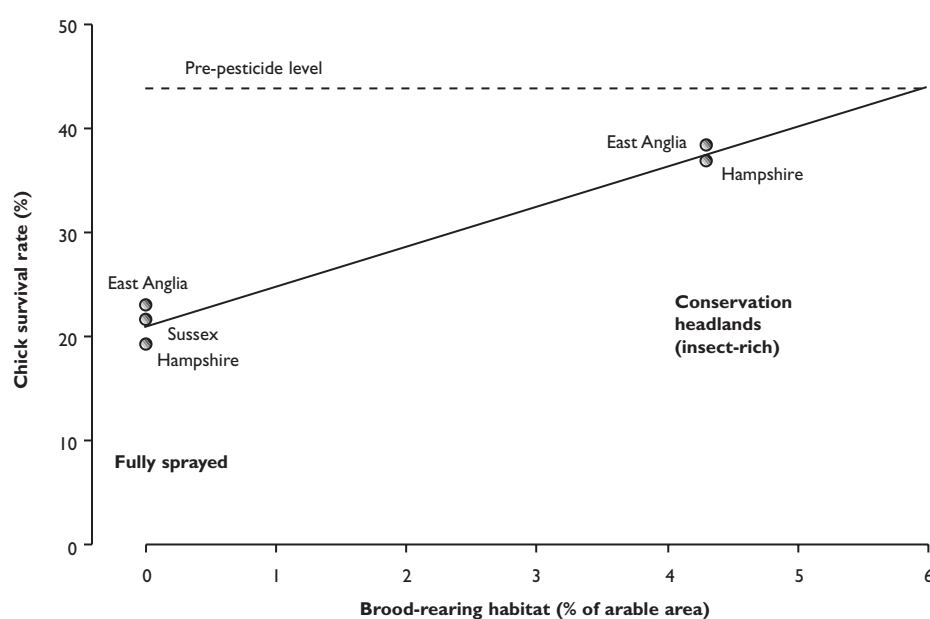
When brood-rearing habitat was under 1% of arable area, increasing its proportional coverage had a similar positive effect on density as increasing the amount of nesting cover. When brood-rearing habitat reached around 3% of arable area, the positive response in density was strongest in relation to increasing nesting cover. Also, densities always increased much faster in the

presence of predation control.

Considering that the UK grey partridge population has been declining at an average annual rate of 7% over the last decade, stabilising the population requires having 3% of arable area as insect-rich brood-rearing habitat. Restoring grey partridge abundance to the situation in 1990 (the target for the UK grey partridge Biodiversity Action Plan) requires a combination of increased brood-rearing habitat and increased nesting habitat, for instance 5% of arable land being insect-rich together with 6.9 km² of nesting cover. Because of the latest CAP reforms, achieving this does not necessarily require major investment, as Peter Thompson explains in the next article.

For more information please contact Dr Nicholas Aebischer on 01425 652381 or email: naebischer@gct.org.uk. Funding for this assessment was provided by Defra under project BDI618.

Figure 1
Relationship showing how grey partridge chick survival rates increase with the amount of arable area managed as insect-rich brood-rearing habitat.



How to provide these requirements for partridges by using the Entry Level Scheme and set-aside?

Many of you will be looking to join the Entry Level Stewardship (ELS) scheme this year and this will be an ideal way of providing grey partridges with everything they need. However, you will also have 8% set-aside and this large area of land can be put to good use as well - especially if you are prepared to split it up, and position it around the farm in small areas.

Starting at the beginning of the year, partridges need good nesting areas. The main way of achieving the required area of nesting habitat is to use the grass buffer strip options (EE1-EE6). These are best placed in the more open parts of the farm, not only next to hedges, but also along ditches and fence-lines. Set-aside grass margins can be reduced down to six metres in width when placed next to a watercourse or a hedge and therefore this offers another option.

Add an element of tussocky grass in these margins (ie. cock's-foot or timothy) because grey partridges show a distinct preference for nesting in tussocky grasses. A possibility is to drill the 'inside' three metres of the margin with this tussocky mix and the three metres next to the crop with a finer grass mix, consisting of fescues, bents and crested dog's-tail. These finer grasses will be the area cut each year, allowing other species to establish, whereas the inside three metres could remain uncut and allowed to form tussocks. These tussocky areas also provide ideal over-wintering areas for many of the insects that the chicks eat during the summer months.

On a similar vein, beetle banks (EF7) should be considered across fields of 16 hectares (40 acres) and above. Grey partridges prefer to nest in beetle banks than any other habitat.

Once the chicks hatch in June they need to have a plentiful supply of insects adjacent to where the nest was. Not only have these tiny newly-hatched chicks got to walk to these insect-rich areas, but they also need to be able to move about within this area, ideally under a protective overhead canopy. Conservation headlands (EF9), particularly conservation headlands

with no fertilisers (EF10), offer exactly this habitat ie. good accessibility, overhead canopy and lots of insects. The EF10 option at six metres wide around the edge of a field, where yields are between 18% and 20% less than the rest of the field, offers particularly good value.

Conservation headlands are allowed only in cereals and if most of your crops are in blocks, this will inevitably mean that in some years there will be no good brood-rearing cover in the main grey partridge area. This can be overcome by having some wild bird seed mix (EF2) in six metre wide strips alongside prime nesting sites. The mix of three seed types should be based on cereals (mimicking a conservation headland) with the addition of linseed, quinoa or a little mustard. This option can also be counted as set-aside (EF3), albeit at a substantially lower payment rate.

The wild bird seed mix option can also be used to provide grey partridges with cover and food over the winter months. These areas may be blocks or strips and include some other crop types such as kale (which could last for two years), millet and triticale. The particular benefit of having kale is that not every area needs to be replaced in the spring each year. This saves money and provides grey partridges with perfect cover during the early spring when they have paired up and are vulnerable to predation.

Another option to be considered is the stubble option (EF6). Grey partridges

spend a great deal of the winter using stubbles, especially if the stubble is a weedy one. To ensure a green stubble, glyphosate is not allowed before entering this option.

Where applicable, some other options under the ELS scheme may also be useful, such as ditch management (EB6-EB10), field corner management (EF1), six metre uncropped, cultivated margins (EF11), under-sown spring cereals (EG1) and brassica fodder crops (EGS). All of these have benefits for grey partridges, so the choice is extensive.

Finally, having got into the ELS scheme, you may be considering the Higher Level Stewardship (HLS) scheme. This scheme would enable you to enhance an area further, using the above mentioned options and a number of others specific to the HLS. For example, grey partridges would love unharvested, fertiliser-free conservation headlands (HF14), reduced herbicide in cereal crops prior to over-wintered stubble (HF15), and the enhanced wild bird mix (HF12), to mention a few.

These are important times for grey partridges - choose the correct options and the grey partridge will surely respond, but choose the 'wrong' options and we will have missed a fantastic opportunity.

For more information please contact Peter Thompson on 01425 652381 or email: pthompson@gct.org.uk



The Partridge Count Scheme

In January, we took over the day-to-day running of the Partridge Count Scheme (PCS) from Edward Darling of Green Globe Consultancy. Edward (with the help of his wife Annie) have run the scheme since 1999 and have increased its coverage and success. Edward was involved with the re-launch of the PCS under the banner 'Every one counts', which sought to fulfil our obligations as lead partner of the grey partridge Biodiversity Action Plan. We thank Edward and Annie most warmly for their hard work and hope that the supplies of midnight oil are soon replenished!

Neville Kingdon is now responsible for co-ordinating the PCS with participation from our Geographical Information Systems (GIS) office (Julie Ewald, Nina Graham, James Daplyn and Courtney Kennedy). We have taken this opportunity to upgrade the database, so it can be more easily analysed. We are also streamlining the paperwork sent to participants to keep the costs of this free scheme as low as possible, but still provide information that is of value to its participants. This has led to a few teething problems and, although we cannot say for certain that these are entirely sorted, we hope that through the year you will begin to see some changes, both in our contact with you and with the information we are able to pull out for analysis.

It is worthwhile to take a moment to outline the schedule for 2005 and in future years. We plan that the first mailing of the year in February, will contain the spring count form (March this year due to timing) followed by a series of reminders via post, fax and email. With the spring newsletter in May, we will return the summary sheet for each participant to check to ensure that our database is up-to-date. The autumn count forms will be sent in August, followed by reminders for their return as appropriate. The final mailing will take place in November, providing the autumn count summary with the autumn newsletter.

The really BIG push for this year is to ensure everyone who can count does. Currently, year-on-year returns are lower than we would like. Since joining some have undertaken only the odd count, although we do recognise that a count may not be possible every year. We will try to contact individuals who have registered, but who haven't returned anything in response to any of our mailings and reminders, to determine how we can assist them in undertaking a count and returning the information to us.

Other house-keeping issues will be dealt with over the following months and we hope you will assist us with as many of these as possible for the efficient running of the scheme. We want to standardise

our addresses to those used by and registered with the Royal Mail. A number of participants are using addresses (particularly house names) that do not appear to have been registered. To check whether your address is registered, visit the Royal Mail's online address finder (www.royalmail.com).

Other changes would allow us to make sure that the money we spend on mailings results in the greatest educational benefit. It would be ideal if, for each count area, one person was sent the count forms for the first mailings in a season (February and August). This would allow us to cut down our paper usage and mailing obligations, reduce duplication and possible loss of forms when passed to others. On the other hand, we would like to encourage anyone involved in farming or shooting on a count area to be included in the mailings that contain the newsletter (May and November). For those who have email addresses and faxes, we would like to extend our use of digital media to help us lower costs, so if you can provide us with these, please do. Please remember that the scheme is free to participants, with little outside sponsorship at present. The more money we can save on mailing costs, the more we will have to spend on both science and education.

On the subject of the digital information age, the Trust's website has dedicated a page for the PCS (www.gct.org.uk/partridge). This is slowly being expanded, providing information about the PCS and an online form to fill in for those wishing to join. In the near future, this will include basic information on habitat improvements that will benefit grey partridges and any of our recent position statements concerning grey partridge issues, such as release of reared grey partridges. Please pass this information to anyone you think might be interested in joining the PCS or just learning about partridge conservation.

We look forward to hearing more from you. We hope to match the efforts of Edward and Annie Darling and offer the highest level of service to the volunteer members of the PCS, as well as furthering the conservation of the grey partridge.



Spring report

As we go to press, we currently have returned to us details from 825 count areas (properties, farms, beats, etc) who have counted 8,767 grey partridge pairs and 825 singles. We have been able to calculate spring pair densities from the 789 count areas that returned information on the area they counted, resulting in a density of 4.3 pairs per 100 hectares. Of the 488 areas that returned a spring count in both 2004 and 2005, 60 maintained and 243 increased their partridge density.

In general, pair densities are just slightly up on last year, and encouragingly this looks to be the picture across most of the country, although Wales suffers from both low densities and only two counted areas (see Table 1). The geographical spread of the density of grey partridges is illustrated in Figure 1.

| Region | Number of sites | | Spring pair density per 100ha | | Change |
|----------|-----------------|------|-------------------------------|------|--------|
| | 2004 | 2005 | 2004 | 2005 | |
| South | 120 | 135 | 1.6 | 2.1 | ▲ |
| Eastern | 220 | 227 | 4.5 | 5.8 | ▲ |
| Midlands | 143 | 141 | 2.5 | 3.2 | ▲ |
| Wales | 2 | 2 | 0 | 0.7 | ▲ |
| Northern | 135 | 158 | 4.4 | 4.5 | ▲ |
| Scotland | 140 | 162 | 3.6 | 4.1 | ▲ |
| Overall | 760 | 825 | 3.5 | 4.1 | ▲ |

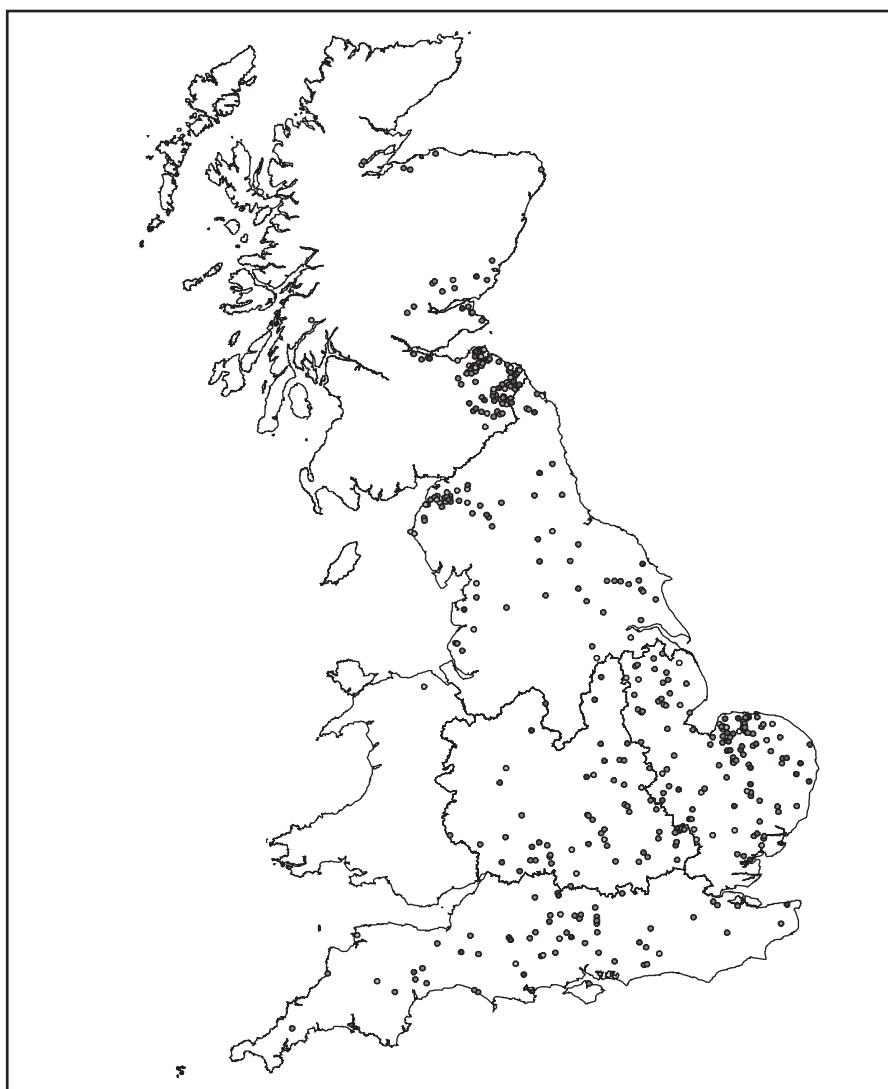
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Figure 1

Spring pair densities where properties are mapped and where there has been a returned count this spring that allowed the calculation of spring pair densities.

2005 spring pair density per 100 hectares

- 10+ (26)
- 5 to 10 (37)
- 0 to 5 (172)
- 0 (59)



The Grey Partridge Recovery Project update (Royston)

After a mixed breeding season and a very wet August, the post-harvest counts produced a total of 533 grey partridges (142 old and 391 young) plus 438 redlegs and 537 pheasants. It was decided that two shoots could take place to thin down the increasing number of pheasants and redlegs, which we hope will allow the greys to increase towards their target density. At the end of October, we held a partridge day and the shooting team, made up of farmers from the project area plus Game Conservancy Trust guests, achieved a bag of 164 redlegs, 24 pheasants and two grey partridges. Only two grey partridges in the bag was a credit to all the shooting team as a lot of greys came through the line and shows how a little care can almost eliminate the accidental shooting of grey partridges. A further day was held at the end of November; this time the aim was to get to grips with the surplus pheasants. The team of guns were the 12 farmers from the

project area, who produced a bag of 151 pheasants and 21 redlegs.

Over-winter habitat has been a lot better this year. Fields of winter rape, some good stubble, set-aside, wild bird mix and countryside stewardship WMI wild bird areas are all playing their part in providing good holding cover. This year's spring pair count recorded 112 pairs of grey partridges on the demonstration area, an annual increase of 51% (see Table 1). This spring we also counted 182 pairs of redlegs and 195 female pheasants. During the winter of 2004, we counted 179 hares on the demonstration area. Over the next few months, on-going keeping work will concentrate on intensive predator control, with over 200 tunnel traps, 20+ larsen traps, many fox snares, and lamping being used continuously until the middle of July.

Table 1

Number of grey partridges counted on the demonstration area of the Grey Partridge Recovery Project in Hertfordshire

| Spring (area counted) | Grey partridges (pairs/pairs per 100ha) |
|------------------------------|---|
| 2002 (6.96 km ²) | 20/2.9 |
| 2003 (9.98 km ²) | 51/5.1 |
| 2004 (9.98 km ²) | 80/8.0 |
| 2005 (9.98 km ²) | 112/11.2 |
| Target | 185/18.6 |

Scotland's Land Management Contracts

At the end of March, the basic framework, menu options and payment rates for Scotland's new Tier II Agri-Environment Scheme, the Land Management Contracts (LMCs) were announced by Environment and Rural Development Minister, Ross Finnie.

LMCs fit between Tier I, the new Single Farm Payment and its associated cross-compliance requirements, and Tier III, which is currently being developed, but at present is Scotland's Rural Stewardship Scheme.

LMCs are available to all farmers, crofters and other land managers registered on SEERAD's integrated administration and control system. However, the maximum payment per holding is limited and governed by area.

2005 maximum allowances

- first 10 hectares at £75 per hectare
- next 90 at £30 per hectare
- next 900 at £1 per hectare
- any hectares over 1,000 at £0.10 per hectare

Only some of the menu options have conservation potential, others being focused on issues such as education, training and access.

Measures that could have potential for grey partridge habitat enhancement include:

- Management of linear features:
 - Hedgerows £0.10 per metre
 - Ditches £1.00 per metre
 - Dykes £0.10 per metre
- Management of rush pasture: £125 per hectare
- Biodiversity cropping on in-bye:

£40 per hectare (£150 per hectare if stooking!)

- Retention of winter stubbles: £40 per hectare
- Wild bird seed mixtures: £329 per hectare

Applications had to be submitted by Monday 6 June 2005, but if you have missed this deadline you can resubmit in 2006. For those seeking further help, contact your local Game Conservancy Limited Regional Advisor.

For more information please contact Ian McCall on 01828 650543 or email: imccall@gct.org.uk

Released grey partridges in Scotland

The grey partridge has declined in number and range to such an extent that it is now absent from large areas where it was formerly common. Part of the UK Biodiversity Action Plan for this species is to enhance, where possible, the current range. This might be achievable by improving the management of land at the edge of the partridge's current range to encourage expansion because, as we know, this species responds well to sympathetic management where it is present. However, this strategy is not possible where unsuitable habitats separate suitable areas and will take some time where the birds have disappeared from large tracts of ground. A complementary option would be to reintroduce them.

Our Scottish Lowland Research Project has been studying released, commercially-reared grey partridges for seven years now, initially near Arbroath and latterly close to Kirriemuir, both in Angus. Although the release of greys was not uncommon at the start of the study, no one really knew what happened to the birds once released and it was suggested that such practices could be used to reintroduce the birds to areas from where they have disappeared. To investigate this, we radio-tagged a sample of released birds in most years and compared them with tagged wild birds wherever possible. Since the study began we have tagged over 200 birds and amassed thousands of hours of observation in the field.

Firstly - and importantly - we established that birds fitted with radio-tags were not disadvantaged compared with released birds without tags: their survival rates from release in autumn to the following spring were the same, as was their body condition. This means that our findings from radio-tagged individuals should apply equally to the untagged portion of the population.

Winter survival rates (from release in autumn until the end of March the following year) were variable, but averaged just 10% (the range was 3% to 35%). During the summer (April to September), the survival rate of hens (only hens were targeted at this time to monitor breeding attempts) was 30%

(20% to 40%) which compared favourably to that of wild hens (44%). However, this was still too low to permit the accurate monitoring of breeding attempts - quite simply too few birds survived long enough to allow us to follow them. However, our data suggest that most reared hens do not attempt to breed in their first spring after release (19% of reared hens attempted breeding compared with 60% of wild hens - these estimates are conservative).

The most significant cause of mortality for reared birds was predation (82% of losses at Arbroath and 55% at Kirriemuir), with foxes and raptors responsible for the majority of kills. People often criticise such studies by suggesting that it is impossible to be certain that birds found eaten were killed by the predator rather than scavenged after they had died of another cause. This is often true, but here we think we can be confident that these were actual kills. Firstly the study sites were visited several times a week, leaving little time for scavengers to find and eat carcasses in between. Also, although no kills were witnessed directly, buzzards were seen perched on or near release pens, buzzards and sparrowhawks were seen attacking live partridges, and buzzards were twice flushed from freshly-

killed partridges (the carcasses were still warm). No mammalian predators were seen attacking or eating partridges, presumably because they were less conspicuous and most active at night, but stoats occasionally raided, or were caught at release pens. Furthermore, as a final check we laid out carcasses of woodpeckers or red-legged partridges twice during the winter of 2002/3, in conspicuous locations in open fields and monitored them to see how long it took for scavengers to find them. Even under these conditions, scavengers took 8.3 and 5.4 days on average to find these obvious carcasses.

Interestingly, the major cause of mortality for wild hens at Kirriemuir was raptor predation, so it is not just naïve reared birds that are susceptible to these predators.

This study has highlighted the problems faced by commercially-reared released partridges put out under standard conditions and we are now investigating ways of improving the success rate of such releases.

For more information please contact Dave Parish on 01307 850247 or email: dparish@gct.org.uk



Regional round-up



Game Conservancy Trust membership recruiters on a visit to The Grey Partridge Recovery Project, © Alan Pickering

We believe that getting people together who are interested in grey partridges to discuss latest research, management ideas and to allow people to see environmentally sensitive farming in action at a regional level, is a great way to help improve the conservation status of the species. It is therefore very exciting that we are able to announce the formation of three new groups, in the Cotswolds, Northumberland and Wessex, who will be holding their first meetings shortly. We encourage you to attend the meetings in your local area and if you would like to form your own regional group area, please contact Lynn Field on 01425 652381, who will put you in touch with your local organiser.

Cotswolds

This new grey partridge group, under the chairmanship of Mark Tuffnel, will hold its first meeting on Wednesday 29 June at Calmsden Manor. The evening meeting will include a farm walk which will be followed by a barbecue. If you would like to attend please contact Lynn Field on 01425 652381. The event is being sponsored by David Bright, specialist suppliers of seeds for game cover crops. For more details ring 0870 777 3208 or email: sales@davidbright.co.uk

Lincolnshire

The South Lincolnshire Grey Partridge Group, which currently has around 40 members, meets in the spring and autumn each year at Leadenham and plans to hold a farm walk this autumn. For further information please contact David Bird on 01354 740760.

Norfolk

The Norfolk Grey Partridge Group meets bi-annually, usually in May and October at the Visitor's Centre at Sandringham. Those interested in joining the group should contact the Chairman, the Earl of Romney (01533 636292) or Stephen Browne (01760 756417 / 07788 628173).

Northumberland

The Northumberland Grey Partridge Group will be launched on Wednesday 5 October at Alnwick, and will be chaired by the Duke of Northumberland. If you would like to attend or require further information please contact Mike McKendry on 01830 520835 or email: mmckendry@gct.org.uk

Wessex

The new Wessex Grey Partridge Group, chaired by Sir James Scott, will hold its first meeting on Wednesday 22 June at Wilton

House. David Bright has also agreed to sponsor this event which starts at 5pm and will provide a barbecue. If you would like to attend please contact Lynn Field on 01425 652381.



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

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