

Grey partridge

NEWS

A report to all those interested in grey partridge conservation

Issue 2: Autumn/winter 2004

Introduction

The first deadline of the grey partridge BAP will soon be upon us, when in 2005 we will need to have shown that the decline of the grey partridge over the last 30 years has stopped. All the indications from the Partridge Count Scheme suggest that this target will be met, at least on areas that undertake active management to help the species. However, we must not be complacent because meeting the next BAP target in 2010, which requires us to show that the abundance and range of the species has been restored to 1990 levels, will be much more challenging. The grey partridge still faces a number of problems, from unsuitable habitat management, increasing levels of predation and, in some cases, over-shooting. We hope that a new research project and several grey partridge management demonstration farms in a number of contrasting areas of the UK will help us to achieve the 2010 target. Research into the difficult subject of raptor predation is always going to produce results that will not satisfy those entrenched on either side of the argument, but by looking into the issue The Game Conservancy Trust is able to present information based on scientific fact. This newsletter provides information on research projects and initiatives that address these issues, and demonstrates our commitment to achieving the BAP targets.

Stephen Browne
Grey Partridge Ecologist

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News in brief

Diet and disease

A study by the Trust into the effects of disease on wild grey partridges during 2000-2003 in Norfolk has recently been accepted for publication in the scientific journal *Wildlife Biology*. The study found that although grey partridges consume insects that are hosts to parasites, and that levels of infection might be high enough to result in death, parasitic infection only affected about 7% of the wild population. The study concluded that management should be targeted at improving feeding habitats, rather than at reducing the small-scale effects of disease.

Lincolnshire grey partridge trophy

The newly instigated award, sponsored by Jas Martin & Co, has been given to Sir Richard Sutton's Settled Estate at Stainton-le-Vale for their efforts in



improving grey partridge numbers. The estate also won the Silver Lapwing Award in 2004. The estate's gamekeeper, Tim Moss (pictured left receiving his prize from Baroness Byford), was also crowned Gamekeeper of the Year 2004 at the CLA Game Fair. Many congratulations to all those involved in this success.

Grey partridge research funding appeal

A research funding appeal organised by the Trust's Norfolk Committee and hosted by Mr and Mrs van Cutsem at Hilborough Estate in Norfolk, raised nearly £130,000 for grey partridge research over the next five years. Our grateful thanks to all those who made the event such a success.

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



The effects of raptor predation on grey partridges



Mark Watson radio-tracking grey partridges during his raptor predation study

Mark Watson finished his study into the effects of raptor predation on grey partridges in April 2004. The study took place during the winter and spring from 2000 to 2004, when Mark recorded, in detail, the behaviour of grey partridges, including 150 birds which he fitted with radio-transmitters. The work was funded by The Game Conservancy Trust and Game Conservancy USA.

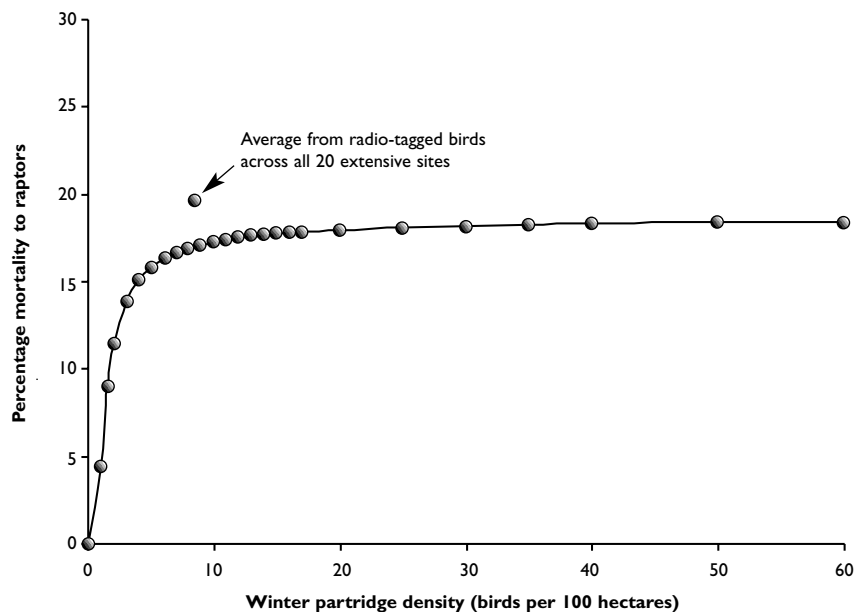
Initially, Mark's study area was in Sussex, where losses to raptors were low and accounted for 12% of the autumn stock. This was re-calculated as 17% of the autumn stock in the hypothetical absence of shooting. However, an analysis of shoot bag data and actual counts, showed that, in the areas where partridges had declined most, shooting pressure was high, in some cases far higher than partridge

numbers could support. Also, when shooting pressure was reduced or completely eliminated, grey partridge decline was arrested, even in the presence of raptors. Had raptors been responsible for the decline, it would have continued when shooting was stopped. This showed that raptors were likely to have contributed to the decline of grey partridges only after the effects of modern farming and over-shooting had reduced their densities.

This raised the question "how relevant were these findings to areas that had higher densities of partridges and different shoot management strategies?" To answer this, the study was extended to cover 20 sites across England from Dorset to Lincolnshire that held a range of partridge densities. Relating the number of kills found to the number of raptors present suggested that sparrowhawks were the principal raptor predator of adult grey partridges in winter. Buzzard numbers were not related to the number of kills, suggesting that they were not an important predator of partridges on these study areas. This may not be the case everywhere. Although peregrines and hen harriers attacked and killed some grey partridges during the study, they were too rare to have an effect. Using simulation

Figure 1

The percentage mortality of partridges to raptors over winter increased very little as partridge density increased above five birds per 100 hectares (prediction from a simulation model based on Sussex fieldwork)



modelling, an important finding was that the percentage mortality of partridges to raptors over winter increased very little when partridge density was greater than five birds per 100 hectares (see Figure 1). There was close agreement between calculations of this figure from counts in Sussex (17%) and from the fate of radio-tagged birds across all sites (18%). Overall this means that partridge populations are very sensitive to any predation once their densities drop to low levels as they did in Sussex, but that as densities increase to moderate levels (above five birds per 100 hectares), the proportion taken by hawks is not high and increases very little.

By observing partridge behaviour and how they used farmland habitats, and relating this to raptor numbers, Mark assessed how partridges coped with different levels of risk in different situations. Unsurprisingly, being in a larger covey allowed more time for feeding and reduced the time needed for vigilance by any one of its members. After pairs were formed and they moved towards field edges they were not able to be as vigilant because edges (usually hedgerows) were high-risk places where partridges were vulnerable to being surprised by attacking sparrowhawks. Partridge survival was higher at sites that had larger group sizes and higher for pairs at sites where they could remain further from the field edge. However, because pairs' use of edge cover (for nesting) was twice that of coveys and they were in smaller groups (pairs not coveys), predation risk was higher and it was unlikely that they could increase their levels of vigilance beyond a certain limit to compensate. This may help explain why most raptor losses occurred during late winter after pairs had formed. The availability of suitable cover was crucial: partridges used tall cover (above 30cm) more often at sites that had a higher

predation risk. Overall partridges used game cover crops seven times more than their availability on the ground would suggest. Partridges also used shorter vegetation more at sites where survival was higher, because by implication the risk of predation was lower.

The main conclusion from the study is that when partridge numbers are above the very lowest levels, the impact of raptor predation is minimal. Raising partridge numbers above the levels where raptors are likely to have an impact is the aim for the BAP and fundamental to most wild bird shoots. This study shows that there are a number of management strategies that will directly help reduce raptor predation of grey partridges. Providing tall cover above 30cm is important, especially in spring. By reducing the time needed to look for food, supplementary feeding may also help reduce

losses. More generally, it is important to create and improve habitats to provide suitable nesting and feeding habitats and to ensure that shooting is controlled so that grey partridges are not shot inadvertently or at unsustainably high levels.

Hear more about Mark's work

Mark will be giving a presentation of his research at the spring meeting of the Norfolk Partridge Group. You are welcome to attend.

For more information please contact Stephen Browne (see page 8 for contact details).



Game Conservancy Trust Credit Card

An excellent way to support the Trust is to apply for and use our MBNA Affinity Credit Card. For every card issued and used, the Trust receives £25 and further donations every year. For an application form, please call the Trust's membership department on 01425 652381.

The Grey Partridge Recovery Project

Around the country a number of estates have instigated grey partridge recovery measures, where all the techniques that research by The Game Conservancy Trust has shown to benefit grey partridges are being used. One of these is the Trust's Grey Partridge Recovery Project on 2,000 hectares of farmland near Royston, Hertfordshire. On this site the Trust's lowland gamekeeper, Malcolm Brockless, has been undertaking keeping activities on a demonstration area of about 1,000 hectares, with the remaining area being left to represent a reference area. Two other projects, one in the Scottish Borders and one in Wiltshire (see page 5), have the involvement of Game Conservancy Limited's regional advisors. An update on these

three projects sets out what has been achieved so far.

The Royston area, like many parts of Britain, suffered the consequences of the 2003 autumn drought, which meant poor crop establishment. Winter rape, which in this area is good for holding coveys in winter, and winter wheat, which is good for holding pairs during late winter and early spring, were either very backward or failed completely. This in turn affected the number of pairs that could be held on the demonstration site. Despite more than 200 feeders continually providing grain throughout the winter and spring, the site could hold only 40% of the greys counted in autumn 2003. During the 2004 spring, we counted 80 pairs of grey partridges and 132 pairs of redlegs on the demon-

stration area. The number of partridges counted throughout the project so far is given in Table 1.

The weather during the nesting and hatching time was very mixed in 2004, compared with the same period during 2003. Overall, 221mm (approximately 8½ inches) of rain fell during May to July in 2004 compared with 166.5mm (approximately 6½ inches) during the same period in 2003. Unlike 2003 when drought conditions prevailed during August, 2004 was the wettest for nearly 100 years. This resulted in a very late start and finish to the harvest. In 2003 the harvest started on 13 July and finished on 23 August, whereas in 2004 the dates were 27 July and 10 September. This late harvest delayed counting, but it became clear that, despite the weather, grey partridges had done well, as had the wild pheasants. For redlegs, however, production was lower than in 2003. The numbers of gamebirds counted in autumn are given in Table 2.

This has given the project enough wild pheasants and redlegs to have at least two good shoot days. Heavy fines will be imposed for any greys in the bag!

The 220 feeders across the site were filled with new wheat straight after harvest and, along with improved habitat, we hope that these will reduce winter losses. We look forward to the project's third successive increase in grey partridges pairs next spring.

*For more information please contact:
Nicholas Aebischer on 01425 652381
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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 (9.69 km ²)	51/5.1
2004 (9.69 km ²)	80/8.1
Target	185/18.6

Table 2

Number of gamebirds counted on the demonstration area of the Grey Partridge Recovery Project in autumn

Autumn	Grey partridge		Red-legged partridge		Pheasant
	Y:O	Density	Y:O	Density	Number
2001	0.6	7.6	0.3	15.7	66
2002	3.0	28.8	1.1	18.5	353
2003	2.9	29.0	2.2	42.0	432
2004	2.7	53.4	1.2	43.9	537

Tartan partridges - the Scottish Borders recovery project

Wild grey partridges in the arable and hill fringe sectors of south-eastern Scotland are clearly of a robust gene pool.

Following a grim 48-hour period during the peak partridge hatch at the end of the third week in June when cold winds delivered over 100mm (4 inches) of rain, a forecast of doom and gloom could have been justified. However, the late harvest has revealed quite the opposite with coveys of 16, 17 and 18 not an unfamiliar sight on stubbles where farmers are conducting a focused approach to grey partridge management.

Much of this positive news is the result of two exciting and innovative farmland projects, which Game Conservancy Limited's Advisory Services have been pivotal in forming and steering. In East Lothian and the Scottish Borders, we have been working in close partnership with East Lothian Biodiversity and the Scottish Borders Council, along with other major environmental organisations

including Scottish Natural Heritage, Scottish Agricultural Colleges, FWAG, the RSPB and the Scottish Wildlife Trust. The two projects focus on set-aside land to create key habitats for grey partridges and tree sparrows and have, to date, enrolled the assistance of around 130 farmers.

Project partners have provided a free supply of seed to farmers to grow wild bird cover, and expert advice on the strategic siting of the crops. Being either brassica- or cereal-based, the crop mixes aim to provide a rich supply of seed and grain over winter; an abundant supply of essential protein-rich insects to help feed chicks in the breeding season and a degree of protection from avian predators.

The results of the 2003 autumn counts revealed an encouraging 3.5:1 young-to-old ratio in the Borders and 3.1:1 in East Lothian compared with a UK average of 2.8:1. The average brood size in the Borders was 10.8 young, with 6.5 in East Lothian, compared with the UK

average of 6.8. We will report on the 2004 results in the next newsletter.

Four demonstration farms in the region allow us to demonstrate the important stewardship role that farmers and gamekeepers play in the conservation of farmland game and wildlife, even in years of declining farm incomes. Target audiences are schools, local communities, decision makers from SEERAD and members of the Scottish Parliament.

Our next objective is to encourage active participation from low-count farms so that we create larger contiguous blocks of land with appropriate habitat and, where possible, a co-ordinated control of predation and implementation of proven winter/spring feeding techniques.

For more information please contact:
Hugo Straker - Regional Advisor for Game Conservancy Limited on 01620 830230 or email: hstraker@gct.org.uk

Grey partridge recovery at Wilton

The Northhills beat at Wilton near Salisbury was once famous for its wild grey partridges. Until a few years ago, the shoot had been maintained by a grey partridge release programme, but late in 2001 the estate decided to give up releasing, and try to rebuild a wild stock. At the same time there were high hopes of showing that good keeping for greys would help some of the other farmland birds. With Wilton so close to the Trust's HQ, we were delighted at the prospect of a demonstration site on our doorstep.

In spring 2002 Northhills had an apparently healthy spring stock of 20 pairs; just about what we would expect with no keeping. However, we know only too well that left-over reared birds are much less productive than wild ones. Even so, the fact that no young were found, despite active predation control, and that the autumn stock had fallen to just 13 old birds, was worrying to say the least. Would we be able to rescue something from so little?

The following spring, we counted just four pairs, although whether these were old reared birds or wild immigrants from nearby we will never be sure. At this stage, however, the project was fully under way, with Nick Stiff working full time on predation control, and a spring feeding programme in place. The estate had also established wild bird cover brood-rearing strips of spring wheat and linseed, and various other habitat improvements. By autumn, our four pairs had all survived, and produced two coveys totalling 24 young between them. Needless to say, both pheasants and redlegs had found conditions to their liking too, and a couple of walked up pheasant days were possible.

This year six grey partridge pairs established, but their production was not so good, with three broods totalling 14 young. However, add to this a brood of six just over the boundary, and there are high hopes that we are on the road to recovery. Alongside the game, we have

been monitoring both breeding and wintering songbirds. It is too early to say if there are any trends, but we are grateful to British Seedhouses and David Bright Ltd of Salisbury for their sponsorship of these counts, and for the seed for the wild bird cover.

For more information please contact:
Mike Swan - Regional Advisor for Game Conservancy Limited on 01425 651020 or email: mswan@gct.org.uk

New research into releasing



A new project started this summer, which aims to identify an optimal release method and then to produce recommendations that will enable people to re-establish grey partridges in areas from which they are currently missing.

The project began with a review of existing and historical rearing and releasing techniques by searching through old gamekeeping and game management books and magazines and by speaking to a wide range of gamekeepers and other interested parties. The review identified that the ideal system for producing birds for reintroduction would be to obtain eggs laid in the wild, hatch them under captive grey partridges, allow the captive pair to rear the chicks to eight weeks, then either release the chicks with the adults or foster the young to a barren pair of wild grey partridges. However, the review also established that it was most unlikely that wild eggs would be widely available for this purpose. There was also conflicting evidence about the suitability of

captive grey partridges as parents, and about their ability to hatch and raise sufficient numbers of chicks for a releasing programme. Clearly, we needed a compromise that would result in an easy, practical and cost-effective system that would produce young grey partridges of sufficient quality for reintroduction.

The most suitable compromise, already used successfully by several keepers, is to obtain eggs from a reliable source (eg. a reputable game farm), hatch the eggs under bantams and allow them to rear the chicks to eight weeks. The young are then fostered to wild barren pairs of grey partridges. An alternative is to hatch and raise chicks under artificial heat sources and foster these to barren pairs. Obviously these two systems are dependent on the presence of barren pairs in the wild. If no grey partridges are present in an area suitable for a reintroduction attempt, it is necessary to establish a nucleus of free-living adults first. The review identified two possible

methods for doing this: releasing a captive-reared family covey in late autumn, and releasing captive-reared pairs in spring.

We will field-test these chick and adult releasing techniques over the next two years, in East Anglia and in Wiltshire/Hampshire/Dorset. In each of the two study regions, we have chosen one site for an intensive study involving all four release methods. We shall follow the fate of the released birds using radio-telemetry. In each region, we have chosen a further 12 extensive sites where only one release method will be used per site. At each extensive site, we shall mark all released young with coloured leg-rings and monitor the outcome through standardised spring and autumn counts.

The rearing field at Fordingbridge has adopted the techniques needed to rear partridges under bantams and has successfully reared more than 4,000 grey partridges. The birds produced on the rearing field include about 40 broods of bantam-reared partridges and 40 broods of partridges reared in a standard game-farm fashion. We have also produced 40 family coveys of grey partridges, by fostering 15 four-week-old chicks to pairs of ex-laying game-farm birds, for release in late autumn.

The first broods were released this autumn and despite the lateness of the harvest the project is progressing well. The released broods appear to be behaving much the same as wild broods. They have not moved very far, have not packed together and survival appears to be high. The next stage of the project is to establish free-living adult grey partridges at sites where partridge numbers are very low or where the species is absent. We did this by releasing some family coveys in October 2004, and will release some more in early spring 2005. We will assess the survival of these birds by counting pairs in March/April 2005.

For more information please contact:
Stephen Browne on 01760 756417 or
email: sbrowne@gct.org.uk about East
Anglia or Francis Buner on 01425 652381
or email fbuner@gct.org.uk about the
southern sites.

The Partridge Count Scheme

Pair counts, spring 2004

The timing of the last newsletter meant that we were unable to present the results from our spring counts, but all participants in the Partridge Count Scheme (PCS) have since received a detailed report, so only a brief report is included here. However, we have changed the timing of our newsletters to enable us to provide a seasonal report within each one.

In spring 2004, 719 properties representing 270,590 hectares of land counted 7,106 pairs of grey partridges at a density of 2.63 pairs per 100 hectares. In total, 283 properties either maintained or increased the number of pairs counted in 2004 compared with 2003 and 203 properties had higher levels of grey partridges needed to meet the BAP targets.

Brood counts, autumn 2004

The autumn 2004 grey partridge results from the PCS are summarised in Table 1. This year has seen some very poor summer weather resulting in one of the latest harvests for many years. This has led to count details being sent in much later than usual and we are still awaiting some. Despite this, however, the number of sites registered in our PCS has increased from 1,341 in 2003 to 1,690 in 2004. The number of registered properties actually submitting their returns still remains at the 40% level, with 520 returns in 2003 and currently 467 for 2004. The actual area of land being counted and mapped onto our computer-based Geographical Information System at Fordingbridge has increased from 274,000 hectares in 2003 to 347,000 hectares in 2004.

In many areas, the weather during the 2004 breeding season was in complete contrast to 2003, with June being cooler and wetter, and some areas experiencing extremely heavy rain. It is therefore surprising that the grey partridge breeding success, measured by the young-to-old ratio and the autumn density, are not much lower than in 2003. Despite the unfavourable weather, it seems that the presence of suitable habitat may have prevented disaster.

The total number of birds counted so far in 2004 is 24,452 compared with 28,181 in 2003. In 2004 overall densities

Region	Number of sites		Young-to-old ratio		Autumn density (birds per 100 hectares)	
	2004	2003	2004	2003	2004	2003
South	75	81	2.7	2.4	5.1	7.0
Eastern	136	155	2.3	2.6	21.8	22.4
Midlands	85	90	2.8	2.9	7.7	10.3
Wales	1	-	-	-	-	-
Northern	89	91	2.7	3.4	12.9	17.0
Scotland	81	103	2.5	3.0	6.3	6.2
Overall	467	520	2.5	2.8	12.3	13.2

are slightly lower owing to more properties with lower densities joining the scheme. The highest number of partridges recorded so far in 2004 on one site is 1,181, at a density of 129 birds per 100 hectares. An increasing number of properties are now recording densities over 100 birds per 100 hectares with the highest reaching 213 birds per 100 hectares.

With regard to the Biodiversity Action Plan, the first target is to halt the

decline of the species by 2005. The data collected by the PCS continues to indicate that this will be achieved, at least on the properties undertaking active management for grey partridges.

For more information or to join the PCS please contact: Lynn Field in Fordingbridge on 01425 652381.



Regional round-up



Members of the Norfolk Partridge Group on a visit to Sandringham.

One of the Trust's commitments to the grey partridge BAP is to help with the establishment and running of regional partridge groups. The aim of these groups is to bring together all of those interested in conserving the grey partridge so that the latest results of the Partridge Count Scheme for the region, the results of the Trust's latest research and information from invited speakers can be presented and group members can share experiences about their success or otherwise. The groups are very informal and relaxed and usually involve an annual farm visit to see in practice management that benefits partridges. If you would like more information about the group in your area, please see below for details, or if you are interested in forming a group, please contact Stephen Browne on 01760 756417 or 07788 628173, who will put you in contact with your local Game Conservancy Trust organiser.

Norfolk

The Norfolk Partridge Group is the longest running group and has been in existence for over 10 years. The group meets twice a year, usually in May and October, and has recently been meeting at

the Visitors' Centre at Sandringham. The spring 2005 meeting will be held at Sandringham Visitors' Centre at 6.00pm on Thursday 12 May. Those interested in attending, or joining the group should contact the Chairman, the Earl of Romney on 01533 636292, or Stephen Browne on 01760 756417 or 07788 628173.

Lincolnshire

The South Lincolnshire Partridge Group was launched at Leadenham on 28 October when 35 farmers attended to hear presentations by Game Conservancy Trust staff on the grey partridge recovery project, the new reintroduction project and Entry Level Stewardship. The group was conceived by David Theaker and David Bird and its chairman is Stewart Thorpe. It aims to hold two update meetings a year and a farm visit. Anybody who is interested in joining should contact Martin Tickler on 01379 586551 or 07730 065935 or David Bird on 01354 740760 for more details.

Cotswolds

Mark Tufnel has established an informal Partridge group in the Cotswolds, which has so far held a couple of meetings. If

you would like to become involved and would like to attend the meetings, please contact Mark Tufnel on 01285 831606.



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

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