



Grey partridge News

Issue 14: Autumn 2010/spring 2011

Introduction

A lot has happened since I last wrote the introduction to the *Grey Partridge News*. Wheat prices have soared, partridge counts have been completed and returned (see below), Higher Level Stewardship (HLS) has had its budget reduced for next year and the Campaign for the Farmed Environment (CFE) has completed its first year.

There are two ways of looking at the increase in wheat prices. One is that farmers can now afford to spend more on conservation in general terms – especially where funding does not properly cover the costs incurred. However, with prices so high, some farmers are tempted to put every inch of the farm into production. I have sympathy with both of these opinions, but do urge that people take the long-term view. Otherwise the grey partridge, along with other farmland wildlife, may struggle further and the chances of the return of compulsory set-aside becomes much more likely.

People are optimistic that with the change of Government and potential world food shortages, set-aside won't return. However, France has just brought back set-aside – 3% this year and 5% in 2012. This is compulsory, has management prescriptions attached, lots more paperwork involved and no payment! The CFE allows us the chance to stop set-aside returning here, while being able to pick options that integrate well into your farming business, and benefit grey partridges, while you receive a payment to implement them. So please take a look at the website www.cfeonline.org.uk to find out more about the initiative and also to register what you are doing on your own farm.

The news about Stewardship funding is not all bad. Entry Level Stewardship (ELS) funding is unchanged and remains open to all, whereas the increase in this year's budget for HLS has been set at an 80% increase, instead of the original 100% that had been planned. However, there is a large backlog of prospective HLS agreements waiting to be processed, which in some areas very nearly swallows up the 2011 budget. If you are coming up to renew your HLS agreement, or are considering entering one for the first time, remember good, well constructed schemes should still get through in time.

Our Partridge Count Scheme (the biggest single-species survey in Europe) has caught the Government's eye too, as it is a classic example of the 'big society' – David Cameron's catch-phrase to describe individuals doing their bit to add to the greater picture – in this case to bring the grey partridge back to our British farmland. As we showed in the last newsletter, those of you who return your counts to us in the spring and autumn not only have grey partridge numbers that on average are increasing, but also your general farmland bird numbers are increasing too. This is contrary to what the British Trust for Ornithology's survey statistics show across the country as a whole, where farmland bird numbers still show declines. It demonstrates that if you carefully design your habitats across the farm for grey partridges using the Stewardship schemes to fund them, you can reverse the declines of grey partridges and other farmland birds, and you can stop compulsory set-aside returning as well. Now that really does make an awful lot of sense.

Peter Thompson
Biodiversity Advisor

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The grey partridge is one of many birds that have been lost from large parts of the English countryside.

Declining farmland wildlife

by James Phillips, Natural England

The decline in farmland wildlife over the last 40 years has been well documented and the disappearance of many once familiar farmland bird species from the farmed landscape is indicative of this decline. Birds like the lapwing and the grey partridge have been lost from large parts of the English countryside.

A range of studies has shown that these declines have been caused by the loss of the following habitats:

- In-field nesting habitat.
- Seed food during winter and early spring.
- Insect-rich foraging habitats.

Often referred to as the 'big three' for farmland birds, this loss has resulted from: increased specialisation in either arable crops or livestock, loss of spring-sown crops and weedy stubbles, increase in the use of pesticides and fertilizers, intensification of grassland management, loss of hedges, margins and other non-farmed habitats.

For these reasons farmland birds have fewer places to nest, produce fewer offspring and survive the winter less well. Those species of farmland bird associated with arable farmland have been particularly affected by the loss of these habitats. Reversing the decline in farmland birds and other wildlife is now one of the great nature conservation challenges we face.

The South West Farmland Bird Initiative

The South West Farmland Bird Initiative (SWFBI) is an exciting three year partnership project that has been set up to specifically help reverse the decline of farmland birds across Wessex. The initiative is targeting nationally important farmland bird hotspots across Gloucestershire,

Wiltshire and Dorset as defined by the distribution of the six rarer, most declining farmland birds, often called the 'Arable Six': grey partridge, lapwing, turtle dove, yellow wagtail, tree sparrow and corn bunting.

By targeting these six species, we are targeting our best arable habitats in Wessex, and the measures that we put in place for these species will also benefit other wildlife associated with arable farmland - in particular rare arable plants like shepherd's needle, brown hare and the more widespread farmland birds like skylark, linnets, reed bunting and yellowhammer.

Partnership approach

Across these three counties, four sister projects are working together under the umbrella of the initiative. Each is led by a different partner organisation, with a dedicated project officer to provide practical advice to farmers on how they can best use the Environmental Stewardship (ES) scheme to help farmland birds and the plants and animals associated with the arable landscape in their region. The project officers work together with the farming community to deliver measures that specifically provide the key in-field habitats that farmland birds and other arable wildlife need to thrive – insect rich foraging habitats, in-field nesting habitats and over-wintering food – the 'big three'.

The four projects are:

1. Cotswolds Farmland Bird project – Natural England.
2. North Wessex Farmland Bird Project – RSPB.
3. South Wiltshire Farmland Bird project –

Cranborne Chase & West Wilts Downs.

4. Dorset Arable Project – Farming and Wildlife Advisory Group (FWAG).

Partnership working is the key to the project's success and the initiative has funding from and works closely with regional and national teams in Natural England, GWCT, RSPB, FWAG, NFU, CLA, Cotswolds Conservation Board, North Wessex Downs, Cranborne Chase and West Wiltshire Downs and Dorset AONBs, Defra, Wessex Water, agents, agronomists and most importantly the farming community. The initiative has also developed strong working links with the Campaign for the Farmed Environment (CFE).

The Farmland Bird Package

When the project was set up farmers and landowners were very enthused by the initiative but came back to us with one very important question – what did we actually want them to do for farmland birds? In response to this request from the farming community we have developed a specific ES package of options that delivers the 'big three' habitats for farmland birds.

The package is based on the best research, evidence and experience to date from the GWCT, RSPB, BTO and Natural England, which suggests that 4-7% (4-7ha) of a one hundred hectare arable area (250 acres) in suitable management, will deliver enough key habitat to help reverse the decline of farmland birds.

Those options included in the Farmland Bird Package are the ones that deliver the biggest benefit for farmland birds, focusing down to those that deliver the 'big three'

habitats that farmland birds need. See Table 1.

This package is central to the initiative's activity and the four projects are asking farmers to deliver this, ensuring that the options are sited correctly for the needs of the farmland bird species we are targeting.

Having an evidence-based approach has added credibility to and weight behind the package we have asked farmers to deliver. Having a specific figure to work to, a specific area to deliver across the farm and knowing that it makes the difference for farmland birds, has been very well received by the farming community and has made the approach easier to 'sell', with many farmers actually now delivering more than the 7% ask. The farming community has also responded very positively to partner organisations working together to deliver the same consistent message and ask for farmland bird conservation.

The hectareage of habitat delivered over the last two years speaks for itself – working with farmers and landowners, the four projects combined have delivered some 3,000 hectares of key in-field habitat across Wessex for farmland birds using the key in-field ES arable options that deliver the Farmland Bird Package.

How are the farmland birds responding?

It is early days, but initial results have been positive. For example, some five pairs of corn bunting are now breeding (in 2009 and 2010) on Whittington Lodge Farm in the Cotswolds, (one of the project's key farms) where they have not bred before. All five pairs are using the 'big three' habitat that we have provided through ES – including actually nesting in the wild bird mix we provided for them.

To quantify the success of the evidence-based ES Farmland Bird Package we are monitoring 35 farms across Gloucestershire, Wiltshire, Dorset, Warwickshire, Sussex and Kent. The 35 farms chosen are all delivering the farmland bird package through ELS/ HLS. Working with farmland bird research scientists from the GWCT, RSPB and Natural England, we have designed a methodology that monitors the fortunes of the 19 species of bird found within the wider countryside (including the key arable specialists that we are targeting) and which are likely to be present on the 35 farms. These 19 species are the same 19 that are used to measure the national trends in farmland bird populations through the national farmland bird index.

By monitoring a sample of 35 farms and this suite of 19 species, we have developed our own specific farmland bird index by which we can track the fortunes

Resource	Environmental Stewardship options	ELS (min per 100ha)	HLS (min per 100ha)
Winter seed food	Wild bird seed mixture	2ha	2ha
	or Weed-rich stubble (or a combination)	or 5-10ha	or 5-10ha
Spring-summer invertebrate food	Conservation headlands, low-input spring cereals, field corners, beetle banks, blocks/strips of nectar mix/flower rich margins	1ha	2-3ha
Places to nest in-field	Skylark plots	20	20
	Fallow plots	or 1ha	plus 2ha (if appropriate)

of farmland birds on these farms against that of the national farmland bird index, and assess whether the measures that have been put in place through ES are making the difference for farmland birds. This began in November 2010.

Wider influence

The SWFBI targeting and delivery approach has been adopted as a way to deliver for farmland birds, using ES as the key delivery tool. The Farmland Bird Package has now been rolled out across England and all regions now have specific local farmland bird projects or initiatives in place – with all of these delivering the same message and the same ask of the farming community across England. The approach has also influenced the way the CFE has been developed, with the Farmland Bird Package now central to CFE activity.

Getting involved

If you would like to learn more about the initiative and would like to get involved, please contact me or any one of the four project advisers, who will be happy to help you with your enquiry:

Project Manager:

james.phillips@naturalengland.org.uk

Cotswolds Farmland Bird project:

neil.harris@naturalengland.org.uk

North Wessex Downs Farmland Bird Project:

sarah.blyth@rspb.org.uk

South Wiltshire Farmland Bird Project:

tracyadams@cranbornechase.org.uk

Dorset Arable Project:

ruth.wilkins@fwag.org.uk



The Farmland Bird Package aims to help birds such as lapwings and has now been rolled out across England.



Good spring weather provided enough chick food insects for grey partridge chicks.

Partridge Count Scheme

The results from the 2010 autumn partridge counts from participants of the Partridge Count Scheme (PCS) are summarised in Table 2. We are continually grateful to everyone who submits their findings to the PCS. We hope you find the individual feedback we provide helpful. This in turn helps to increase our own understanding of the grey partridge's national status.

After a cold and snowy winter, when spring did get underway it was slightly warmer and dryer than average; some participants reported that they felt this may have reduced the chick-food insect availability at hatching. The summer weather

was mixed as to partridge requirements. June was drier than normal in most areas, especially in the south, although heavy downpours were noted in several eastern counties. However, during July the west and north was much wetter than the eastern half of England, and East Anglia and parts of the east Midlands received heavy rain in August.

Consequently, with the changeable weather at harvest, many reported delays in counting. With some crops still standing well into October, we continued to receive count forms into December. Partly owing to delays with harvest, 764 counts were returned (down 6% from 817 in autumn 2009).

Most encouraging was the total number of grey partridges counted, up from 41,302 birds in 2009 to 47,324 in autumn 2010. This was an increase of 14.5% despite fewer counts. A small increase in the average hectareage counted from 275ha in 2009 to 281ha in 2010 may indicate that some smaller sites, possibly those with fewer grey partridges, were less likely or able to count at this busy time. The UK average density of birds per 100ha rose to 22 up from the 19.7 birds per 100ha recorded the previous autumn (see Table 2).

Nationally autumn densities increased by 11.7%, despite a 10% decrease in northern England. However, northern England is still

Table 2

Results from the Partridge Count Scheme for autumn 2009 and 2010

Region	Number of sites*		Young-to-old ratio**		Autumn density*** (birds per 100ha)		Comparison
	2009	2010	2009	2010	2009	2010	
South	140	124	2.3	2.4	8.3	11.4	37.3%
Eastern	218	200	2.8	2.6	24.5	29.3	19.5%
Midlands	162	155	2.4	2.6	14.6	18.1	23.9%
Wales	1	1	0.7	0	6.6	0	-
Northern	194	190	2.6	2.9	28.7	25.7	-10.4%
Scotland	102	94	2.6	3.2	16.4	19.8	20.7%
Overall	817	764	2.6	2.7	19.7	22	11.7%

* The number that returned any information, even zero counts.

** Calculated from estates where at least one adult grey partridge was recorded.

*** From those estates that reported the area they had counted.

recording one of the highest densities in the country within the PCS. Southern England saw the largest average density increase from eight birds to 11 birds/100ha (37%) due partly to the rise in its spring pair density. Nevertheless, it still is a worry that this region's partridge density remains well below the others, despite this autumn's increases and its suitability for grey partridges.

The average Young-to-Old ratio (Y:O a measure of productivity) rose slightly

to 2.7 from 2.6 in 2009 and this is visible across most regions except eastern England where Y:O fell and in the south where Y:O has remained stable, reflecting a sluggish recovery. Importantly most areas remained above the lower limit of 1.6 necessary for a stable population (see Figure 1).

The overall rise in Y:O is reflected in the average brood sizes. Where counts distinguished young birds from old, national brood size rose to 6.4 young per covey

up from 6.1 in 2009. Although the fewer counts returned in autumn 2010 may affect any comparison, it is better to compare to the autumn of 2008 when the number of counts returned was also low (695). The brood size in 2008 was 5.5 young, again less than this year, indicating that 2010 was a good chick production year. Despite some participants worries, the spring weather was wet enough to produce the required chick food insects in time for hatching, and the summer rains were not so intense that chicks succumbed to post-hatching weather.

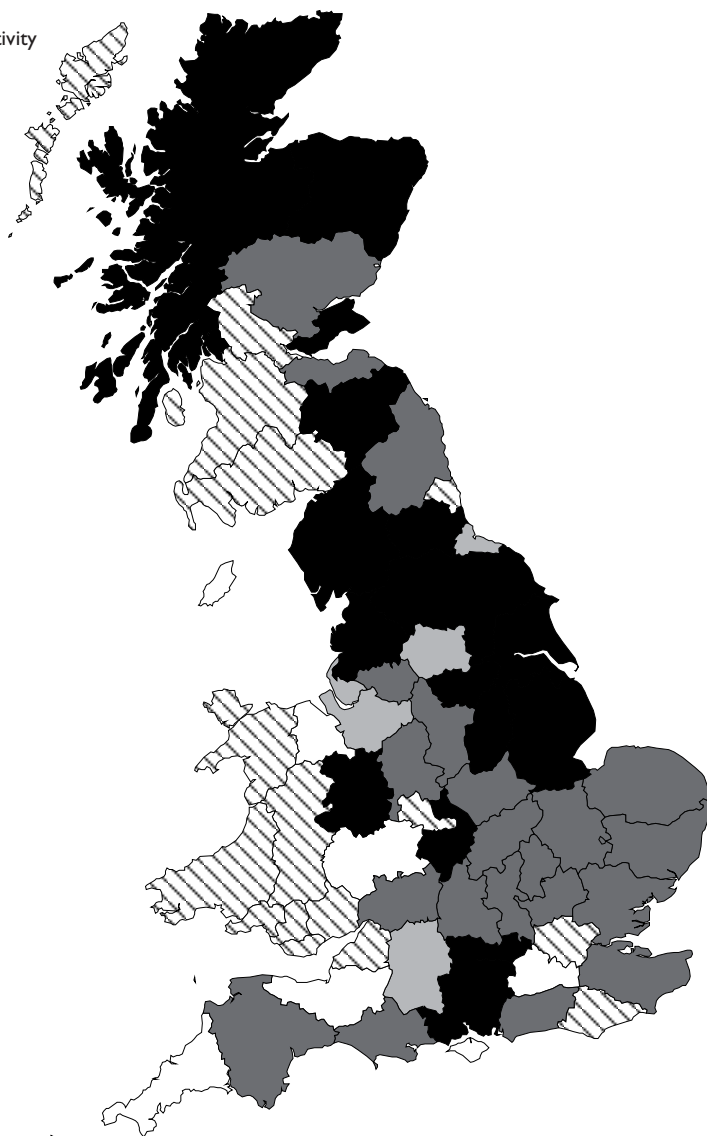
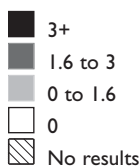
The average number of adult grey partridges counted per 100ha also rose in comparison with last year (4.8 in 2009, 5.6 in 2010) and illustrates that many areas are increasing their breeding stock. However these figures are still below those seen in 2006 and 2007 when adults per 100ha were 6.9 and 6.2 respectively. These highs were just prior to the subsequent poor summers of 2007-08 that reduced the number of young available for recruitment into the adult breeding population the following years. We are still recovering from these two bad summers.

Nevertheless the 2010 autumn count has demonstrated that many of the PCS participants are doing what is needed for grey partridges and getting the desired results, while also helping other farmland wildlife. What we need is for this to be repeated on farms across the country, using the PCS to help in these efforts. Expanding the area involved in active grey partridge conservation will help boost the national figures that the Government uses to assess the state of the UK's farmland bird populations. The PCS would like to encourage more Trust members and other readers to get involved. We would especially like to see more interest from the following areas: Cornwall, Oxfordshire, Warwickshire, Suffolk, Cheshire, Fife, lowland Perthshire, Aberdeenshire and Wales. Every one counts! Go to www.gwct.org.uk/partridge or please contact Neville Kingdon by email nkingdon@gwct.org.uk or call 01425 651066.

Figure 1

Grey partridge productivity

Average young-to-old (Y:O) ratio



Easter Ross partridges

Easter Ross Grey Partridge Group.

This is a relatively small group set up in 2006 and jointly run with the Scottish Agricultural College (SAC). Although there may be only a dozen regular members, they are possibly the keenest of any of our grey partridge groups, regularly attending

meetings and actively encouraging greys. Many of the farmers are now regularly submitting returns to the Partridge Count Scheme and this year there are several reports of sizeable coveys. This may be due, in some part, to the predator control employed across all farms after SAC

secured funding for this last year from the Landfill Communities Fund. The group held its meeting last autumn and covered topics from predator control and partridge counts, to agri-environment measures undertaken.



Sainfoin is ideal for use on farmland as it has an extended growth period and flowering time which is highly beneficial for pollinators, plant feeders and natural enemies of pests.

The value of sainfoin

Uncropped land on farmland is highly valuable for species conservation owing to a range of flowers, weeds and plants which encourage insect diversity, therefore increasing numbers of birds and small mammals. Although there have been studies assessing the impact of habitat on farmland wildlife, there have been few species-specific studies investigating the value of plant species that may be suitable for conditions in the UK and that also benefit farmland conservation. Our study carried out by Masters student, Tarryn Castle, investigated the value of sainfoin for farmland insects on the Cholderton Estate.

Historic use of sainfoin dates back to the 17th-19th centuries when it was cultivated widely as a forage crop. This forage variety originated from central and southern parts of Europe and temperate regions of Asia. Since the 19th century cultivation in the UK has declined coinciding with changes in farming practices. Current use of sainfoin is low, despite being recommended by stewardship schemes for inclusion in pollen and nectar mixtures. This may be due to the lack of knowledge regarding the biodiversity and conservation benefits that sainfoin has to offer farmland environments.

Previous studies of insects associated with sainfoin have largely focused on pests. The aim of this study was to identify the insects associated with sainfoin at Cholderton, where the Hampshire common cultivar has been grown for many years, and to evaluate its potential for increasing farmland biodiversity. For comparison, fields of sainfoin were compared with clover leys of mixed *Trifolium* species and regenerated

chalk grassland fields. Regenerated grassland is often the target for agri-environment schemes on uncropped land within farmland.

Cholderton Estate is located on the Hampshire/Wiltshire border and covers 1,000 hectares. The chalk downland was converted to farmland in the early 19th century. The soils are thin and low in natural organic matter and manure is added to most areas to boost fertility. The estate is largely managed for animal husbandry.

Invertebrates were collected from fields by both sweep net and Vortis suction sampler. Samples were collected at least 30 metres in from the edge of the field to prevent edge effects.

We found that nationally rare and scarce species were identified in sainfoin and regenerated grassland fields including plant bugs, weevils and ragwort flea beetle. A plume moth, *Merrifieldia tridactyla*, was also identified in sainfoin fields.

The insects associated with sainfoin are likely to benefit the overall biodiversity and aid healthy ecosystem functions within the farmland environment. Numerous similarities were found between regenerated grassland and sainfoin. These included a number of Hemiptera (bugs), Diptera (flies), Coleoptera (beetles) and Hymenoptera (wasps, bees and ant) families and species. The combination of invertebrates in sainfoin fields was similar to that in regenerated grassland; this demonstrates the value sainfoin has to offer in terms of associated invertebrate diversity. This study shows the potential value of adding sainfoin to farmland flower margins and uncropped land because of its ability to increase the number



Sainfoin is recommended for use in pollen and nectar mixes.

of pollinators, natural enemies of pests and also provision of food for farmland birds, including the grey partridge, many of which are in general decline.

Sainfoin has an extended growth period and flowering time making it highly beneficial for groups of invertebrates such as pollinators, plant feeders and natural enemies of pests. It also has structural diversity with numerous erect stems with leaves similar to vetch, and can reach over a metre in height. This is likely to aid the build-up of natural enemies to pest species, as they are known to increase with structural diversity.

Although this plant has suffered from a lack of recognition for a number of decades, recent renewed interest could aid the conservation of a variety of invertebrate and, consequently, bird species. Sainfoin should therefore be promoted for use in agricultural environments to increase biodiversity on farmland.

Establishing responsibility for winter losses



Working out which raptor is responsible for winter losses is not easy.

Last year we reported the preliminary findings of the grey partridge winter loss study at Royston, the site of our successful Grey Partridge Recovery Project. We found that winter dispersal was much lower than expected and raptor predation was much higher. But we did not know which raptor species was responsible, why they were so successful and what could be done to reduce these losses.

When finding a carcass, it is often impossible to tell exactly what was responsible for the kill. If you are lucky enough to find plucked feathers, it is likely to have been a raptor. But working out which raptor is not easy and even if you are almost certain, you can rarely be 100% sure. Therefore to try and establish this scientifically, we are now studying the predators and their prey at the same time at a new site in Oxfordshire.

The results from last winter when we managed to radio-tag almost 100 grey partridges, essentially confirmed our results from winter 08/09. Winter losses were close to zero from November until Christmas and into January, until the

coveys started to break up. Overall, across both years, around 75% of all tagged birds remained within 500 metres from where they were caught and only 15% of the birds dispersed beyond one kilometre. Among those almost all were single juvenile cocks in search of a mate. However, around 55% of the tagged birds were predated between early February and late April, with no detectable differences between sexes, or young and old. More than 50% of the identifiable losses were caused by raptors.

Based on our findings from winter 08/09, we suspected that most of the raptor kills were caused by sparrowhawks. To confirm this we applied for a licence to capture and radio-tag this cunning raptor species alongside the partridges. We mainly used mist nets in combination with pigeon carcasses as decoys, which proved to work quite well. What looked like two to three foraging sparrowhawk females

We caught sparrowhawks using mist nets.

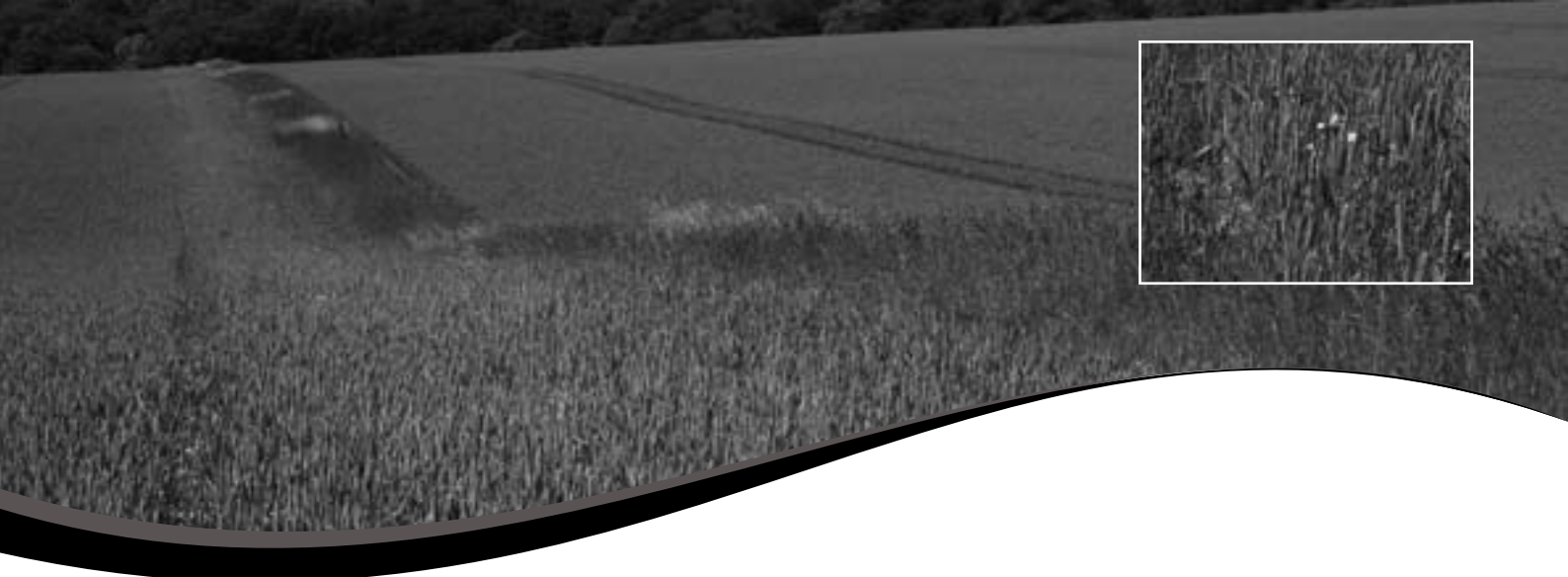


at the beginning, turned out to be five to six. We managed to catch and radio-tag four of them and followed them twice a week until the beginning of incubation, in May, when they normally become entirely dependent on their mate to feed them. Not surprisingly, no partridges were killed from May onwards. Despite good numbers of buzzards, we found no evidence for any other raptor species kills, although hen harriers were not wintering in the area. The data collected showed that all the tagged sparrowhawk females used the same area for hunting partridges, but they never did so simultaneously. They spent most of their time around their roosting, and later nesting sites, far away from each other and only foraged for partridges for a couple of hours per day.

When trying to make it harder for sparrowhawks to hunt for partridges, the following seems important: Concentrations of spring pairs around partridge-friendly fields, surrounded by badly managed hedgerows, may attract sparrowhawks from several kilometres away. It is therefore vital to spread suitable spring cover evenly around the farm to avoid the creation of a predator trap. Plant suitable wild bird seed cover strips, such as mixes that contain chicory and kale, right along hedgerows which are favoured by the resident partridges in spring, as this will help them to escape raptor attacks. Mature hedgerows with no low-growing branches and only grass margins also attract spring grey partridge pairs, but do not provide sufficient cover from sparrowhawk predation.

Grey partridges must have escape cover spread evenly around your land to help them avoid attacks from raptors.





A beetle bank with October-sown brood cover alongside, and in close-up. Just about perfect.

Practical experience with brood strips

Often the most frequent habitat shortfall from a wild lowland game point of view (pheasants and partridges) is brood-rearing cover.

Wild grey partridges need a habitat full of slow-moving creepy-crawlies that the chicks can reach. This means that we need to copy the conservation headland that we pioneered nearly 30 years ago. In its simplest version this is just a rather thin cereal crop, with a sprinkling of broadleaved weeds. This gives the ideal habitat for the insect food, and an environment where broods feel safe because of the shelter and camouflage offered by the swelling corn ears. It also offers freedom of movement for little chicks and it dries out quickly after a shower of rain.

There are many ways of providing this sort of habitat and wild bird seed mix, unfertilised cereal headlands and unharvested cereal headlands are all possible Entry Level or Higher Level Stewardship options. However, these schemes come with rules and some can be difficult to abide by. On my own shoot I have been able to experiment without being in any scheme, as the landowner has been able to obtain his entry level points in other areas.

In the early days there were conservation headlands in the classic GWCT sense, but as contract farming took over, it became clear that they were not happening properly. I apportion no blame, but offer a simple observation; if just one application of herbicide or insecticide goes onto the headland by accident, its value is undermined. When contract staff are farming many holdings, the chance of one application going wrong is high indeed.

We now have about four kilometres of mid-field beetle banks across the big fields on our shoot, and these make perfect partridge nesting cover. However, well farmed wheat,



(Left) Early February sown winter triticale. OK but a bit thin. (Right) Spring triticale – too thin, too late and too weedy.



winter rape or barley surrounds them, and this is clearly not perfect brood cover. So we put a three-metre strip for brood cover alongside these banks.

With no 'rules' to constrain me, I hoped to go for a simple system that would give both brood-rearing and winter food. Early experiments with hand broadcasting winter triticale, and harrowing it in went well. However, wanting to get the maximum amount from it, we left it into winter to provide food for both songbirds and game. Early spring sowings of winter or spring triticale followed, but results were variable. The winter crop vernalised well enough, and then shot up, but establishment was often rather thin. Even more serious was that spring crops were often just too late, coming into their own well after peak hatch time.

The winter food value of our little strips was pretty low as by late October most of the heads were gone, having been shed or eaten. So I decided that we must focus on brood habitat alone, and accept anything else as merely a bonus. Our brood strips are now either winter triticale or winter wheat, and are established in autumn or early winter. Hand broadcasting works

well provided you harrow the seed under straight away and then roll it down well. The pictures tell the story, and I think that it is no coincidence that our best brood of greys, which had 16 young when first seen back in August, came from that best beetle bank and brood strip combination (see top picture).

Mike Swan



Game & Wildlife
CONSERVATION TRUST
Partridge Count Scheme

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

Game & Wildlife Conservation Trust
Fordingbridge, Hampshire, SP6 1EF
Tel: 01425 652381
Email: info@gwct.org.uk

www.gwct.org.uk
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