

Game for Nature

Why released gamebird
management is a lifeline for
declining farmland biodiversity



Game & Wildlife
CONSERVATION TRUST

The application of the three-legged stool of game management has seen a doubling of the number of breeding songbirds on The Allerton Project's 780-acre demonstration farm. If that kind of success was repeated across the 72% of British countryside that is farmed, we'd be well on the way to restoring UK biodiversity.

– Alastair Leake
Director of The Allerton Project



CONTENTS

- 4 INTRODUCTION
- 7 KEY MESSAGES
- 11 HOW GAMEBIRD MANAGEMENT CONTRIBUTES TO NATIONAL NATURE RECOVERY
- 13 THE SCIENCE BEHIND BENEFITS TO BIODIVERSITY
- 16 PREDATION MANAGEMENT: THE THIRD LEG OF THE STOOL
- 18 LANDSCAPE-SCALE POSITIVES VERSUS LOCALISED NEGATIVES
- 21 GAMEBIRD RELEASING AS A DRIVER FOR CONSERVATION
- 22 POTENTIAL FOR A COLLABORATIVE APPROACH
- 23 REFERENCES



Game & Wildlife
CONSERVATION TRUST

Citation: Dimbleby, J., Hopgood, A. and Connelly, J. 2026. *Game for Nature: Why released gamebird management is a lifeline for declining farmland biodiversity. A report based on scientific and practitioner evidence.* Game & Wildlife Conservation Trust, Fordingbridge.



INTRODUCTION

Nick von Westenholz

GWCT CHIEF EXECUTIVE OFFICER

Conservation organisations recognise that best practice management for released game can benefit biodiversity¹. Moreover, its positive impact on farmland ecosystems, which make up 72% of the UK land mass, is widespread. However, what goes into released gamebird management and how it benefits wildlife is little understood by policymakers and the wider public. Much is made of the game shooting element without knowing about the work that goes on year-round behind the scenes.

Gamekeepers don't simply release pheasants and partridges into the countryside and walk away. To sustain their birds, they create and maintain woodlands and hedgerows, distribute food during winter and provide protection from predators and these activities have been proven to benefit wildlife. In addition, there is evidence that released gamebird management can inspire additional conservation measures.

This document refers to decades of scientific research produced by the GWCT and others, which shows that by combining measures both directly and indirectly associated with game bird releasing, it is possible to create space for nature in the farmed environment with transformational results for wildlife. Given the urgent imperative to tackle biodiversity loss combined with severe limits to public spending, if we are to meet legally binding environmental targets, we cannot afford to ignore that science.

By encouraging shoot managers to follow GWCT's Guidelines for Sustainable Gamebird Releasing to attain the high standards required to achieve biodiversity net gain, this unsung conservation success story can play an even greater role in restoring UK wildlife.

A study of hedges near game crops
on Exmoor found twice as many
breeding songbirds.



When released game management was introduced at The Allerton Project, song thrushes increased from 15 to 60 pairs in six years². © Adobe Stock

Woodlands managed for
released pheasants have
up to 32% more wild birds.



Provided best practice and high standards are followed, game management produces a significant biodiversity net gain³.
© Adobe Stock

KEY MESSAGES

1. Follow the science

Several strands of scientific and practitioner evidence show the significant benefits to farmland birds and other wildlife from released gamebird management.

2. Direct benefits for biodiversity

Released gamebird management requires the implementation of conservation measures including habitat provision, winter feeding, and predation management, which, when done in accordance with best practice, benefit a variety of biodiversity.

3. Additional benefits for wildlife

As well as directly associated benefits such as planting game cover crops, there is practitioner evidence that released gamebird management is a driver for uptake of additional agri-environment actions such as pollinator mixes and enhanced field margins. In combination, these conservation measures make space for nature recovery in an otherwise intensively farmed landscape.

4. A lifeline for declining species

Since 1970, the UK has lost 73 million wild birds, and farmland species have shown the biggest overall decline with 63% of species showing a decrease. Many species, including some red and amber-listed songbirds, benefit from practices that are directly and indirectly associated with gamebird releasing.

5. The three-legged stool

Habitat creation and food provision are not enough on their own to reverse songbird declines, the 'third leg of the conservation stool', predator control, which is often carried out as part of released gamebird management, is needed to prevent declines of red-listed species.

6. Best practice is nature positive

Many land uses can have a negative impact on biodiversity if not managed carefully. Provided best practice and high standards are followed, released game management can produce a significant biodiversity net gain.

7. Negative impacts are often localised

Many negative effects of releasing are localised around pen and feed sites, and their effect can often be minimised by releasing in accordance with best practice. At the same time, many of the positive effects are at a whole farm or landscape scale.

8. A driver for greater investment in nature

The conservation work carried out by gamekeepers has significant costs and these are mostly privately funded. Without gamebird releasing funding for these conservation measures would have to be found elsewhere.

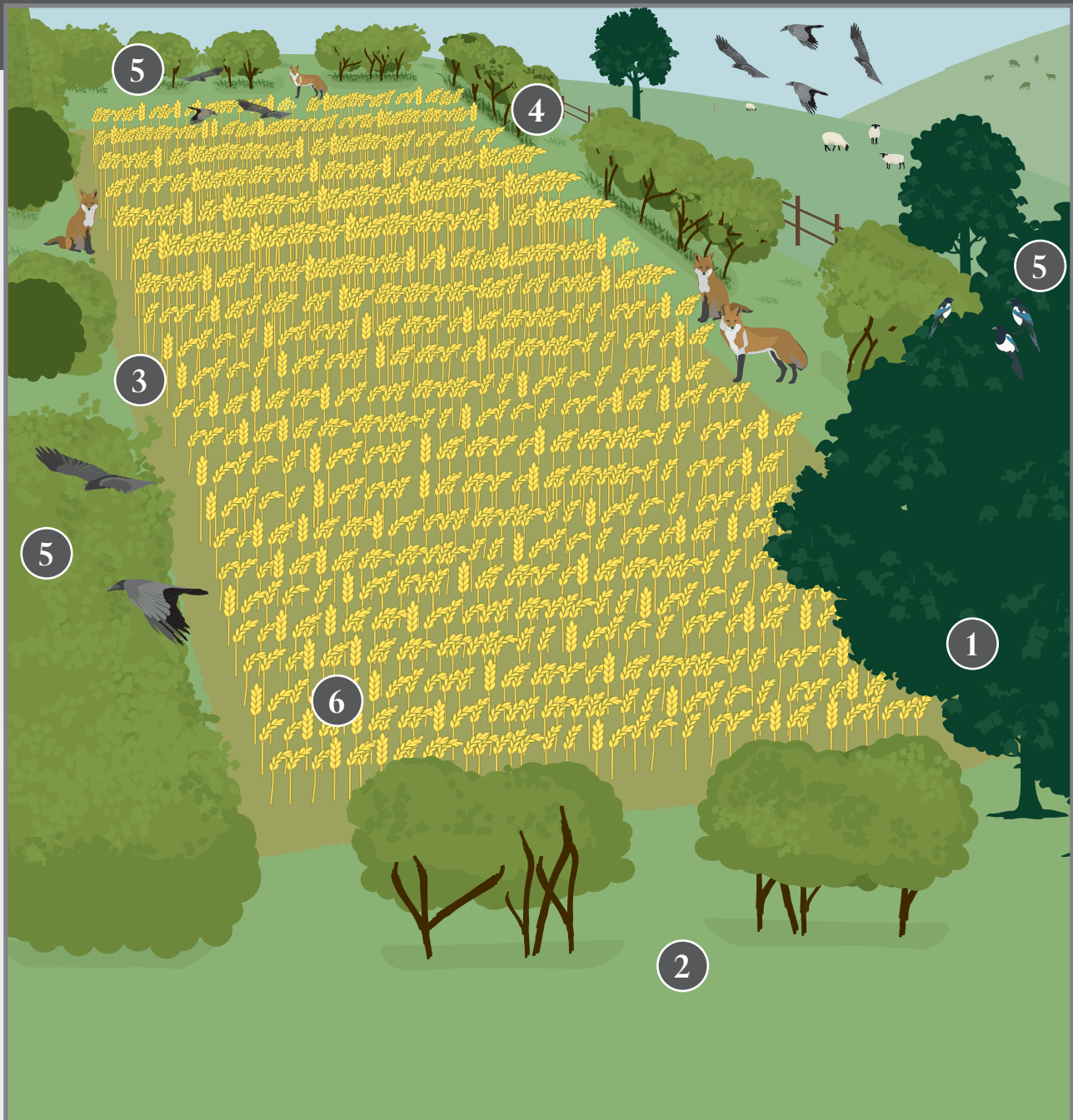
9. Delivering at scale

Nature reserves are very important, but they only comprise around 8% of the UK land mass, whereas the farmed environment covers 72%. Therefore the kind of farm-scale conservation delivered by best practice game management has a large part to play in delivering national nature recovery targets.

10. Potential for collaborative conservation

There is an opportunity for game managers to capitalise on their conservation credentials by working together with local farmers, land managers and communities to achieve UK-wide nature recovery.

Nature depleted farmland

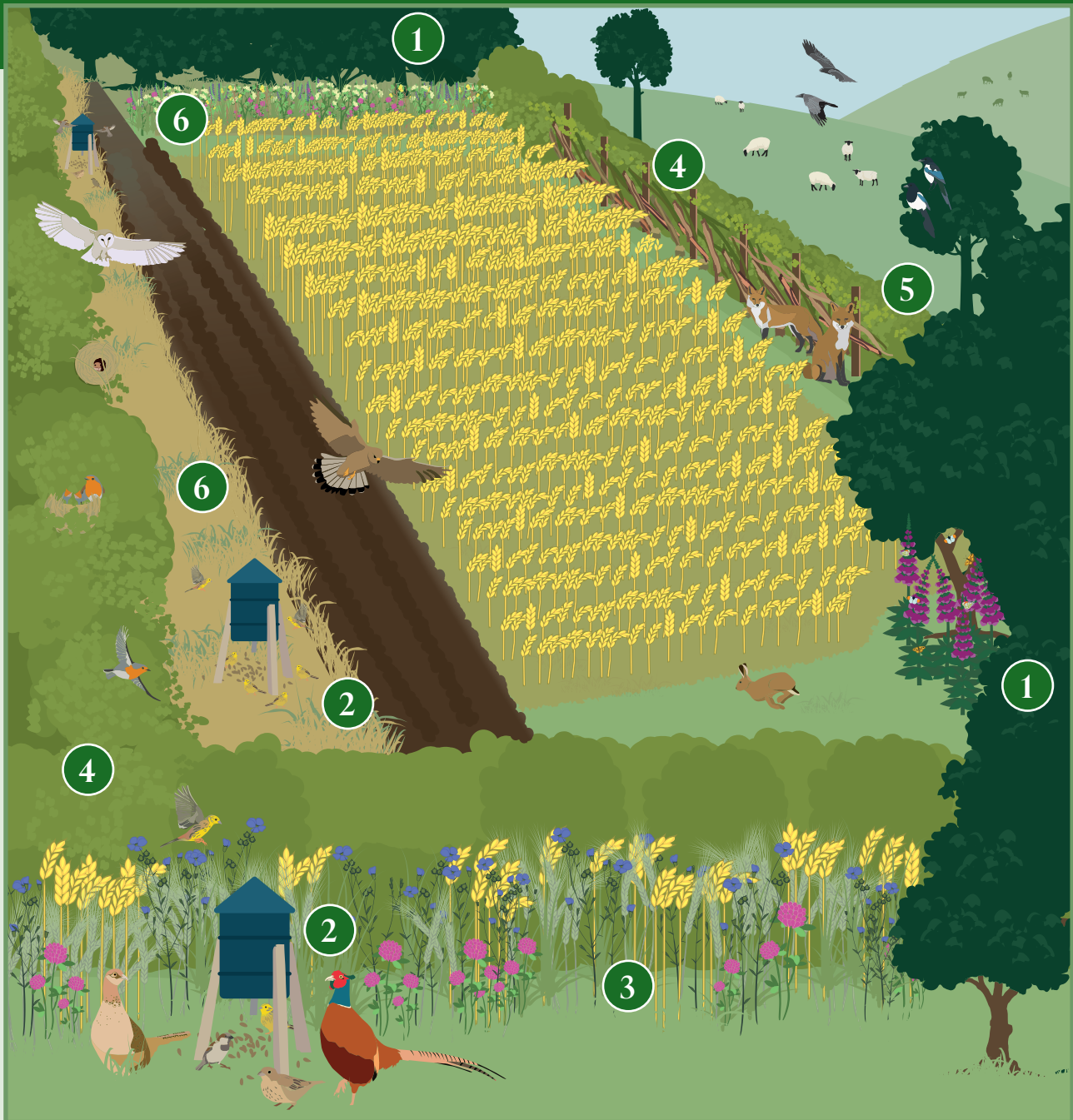


- 1. Fewer woods and no woodland management**
Little incentive to plant new woodland, and unmanaged woodland has no sunlit glades for flowers and butterflies.
- 2. Lack of insect habitats**
Loss of hedges, hay meadows, and diverse arable flora leads to a decline of beneficial invertebrates.

- 3. No field margins**
Cropping to the edge of the field leaves no space for wildlife.
- 4. Poorly managed hedgerows**
Birds often struggle to nest in gappy hedges.

- 5. Predation pressure**
Prey/predator imbalance prevents recovery of red listed birds and mammals.
- 6. Lack of food in winter**
Efficiency of modern farming leaves little grain on the ground after harvest.

Associated benefits of gamebird releasing



1. Woods and woodland management

Woods managed for released pheasants have more birds and more open spaces for flowers and butterflies.

2. Supplementary feeding

Grain put out in hoppers and game crops provide essential food for farmland birds during the winter months.

3. Game crops

Seed bearing plants provide food and shelter for birds, mammals and invertebrates.

4. Well-managed hedges

Ideal nesting sites for farmland birds, habitat for insects and mammals and hunting grounds for bats and birds of prey.

5. Balance between prey and predators

Management of predators is a key leg of the conservation stool. Reducing predation pressure in spring leads to better ground-nesting and songbird breeding success.

6. Indirect benefits

Gamebird releasing often inspires additional conservation measures such as pollinator mixes and grass margins.

Thousands of tonnes of grain put out in feeders help songbirds such as yellowhammers survive the winter.



HOW GAMEBIRD MANAGEMENT CONTRIBUTES TO NATIONAL NATURE RECOVERY

There is a misconception that gamekeepers simply release gamebirds into the countryside and stand back.

In fact, a huge amount of work goes into looking after them and keeping them within the shoot area, from feeding to providing habitat and protection from predators. This work has been shown to improve habitats and to support other wildlife.

Taking wild birds as an example, several strands of research have shown that the conservation measures associated with released game management benefit the UK's songbird population.

These include a landscape-scale study, which found that hedges near game crops in an improved grassland landscape held between 1.5 and 2 times more breeding resident songbirds⁵ (see Game crops section below).

At the GWCT demonstration farm in Loddington, Leicestershire, 30 years of annual monitoring showed that songbird numbers fell by 50% when wild gamebird management was withdrawn and then recovered when pheasant releasing was introduced alongside best practice gamebird management measures. (see **FIGURE 1**).

Another study showed that woodlands managed for released pheasants have up to 32% more birds⁶.

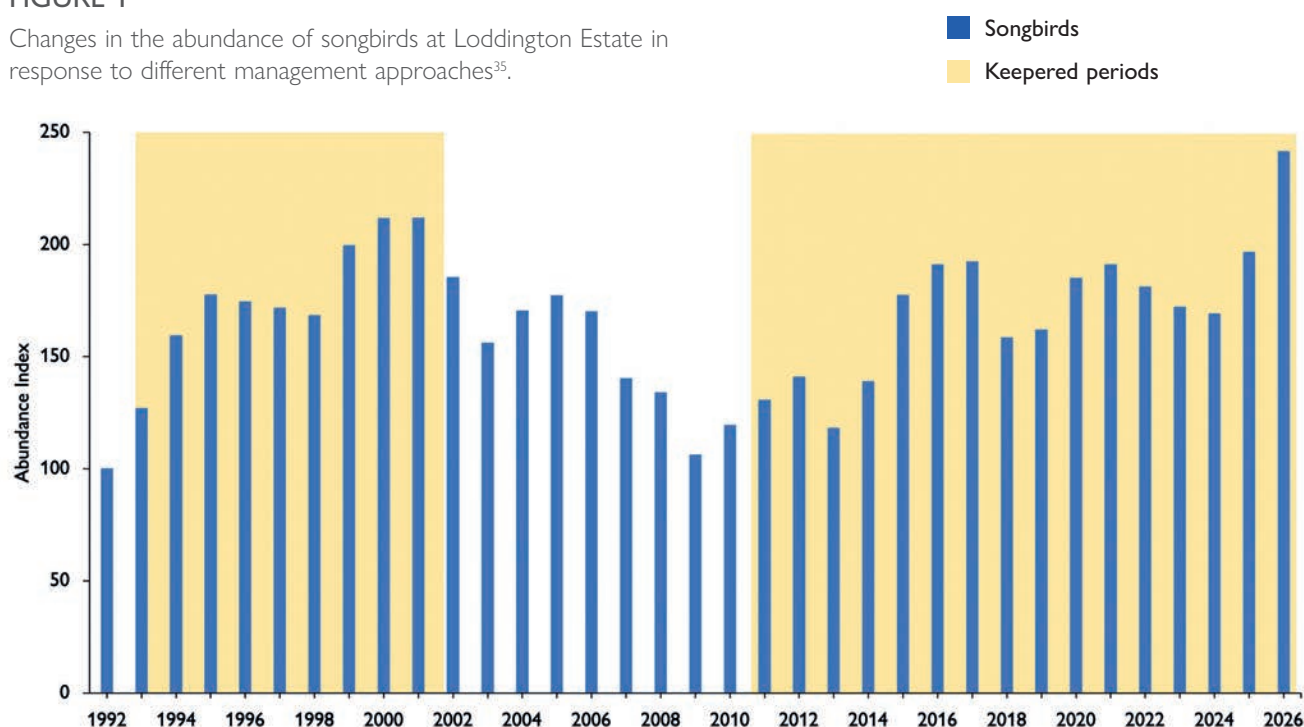
In this context, given that 28% of England's woodland is managed for pheasants⁷, many wild native birds from the two fastest declining specialist groups (woodland and farmland) benefit from gamebird management. Without it, hitting the Government's legally binding target to halt the decline of the nation's biodiversity by 2030 would be even harder.

There is a misconception that gamekeepers release pheasants into the countryside and then stand back

To reach the Government's ambitious goal, conservation will need to take place on the 72% of land, which is farmed not just the 8% managed for nature. This means integrating food production with wildlife recovery. Measures developed for released gamebird management were designed to fit around farming operations. Several of these have been made available by DEFRA as agri-environment options aimed specifically at increasing biodiversity, including wild bird seed mixes, supplementary feeding and hedgerow management.

FIGURE 1

Changes in the abundance of songbirds at Loddington Estate in response to different management approaches³⁵.



Released game management drives large amounts of private investment into conservation with gamekeepers maintaining habitats at no cost to the taxpayer.

Meeting national nature recovery commitments will require a huge increase in the uptake of agri-environment measures, which will need to be continuously funded. Released game management drives large amounts of private investment into conservation with gamekeepers creating and maintaining habitats and carrying out predation management at no cost to the taxpayer. Game crops are often funded by the shoot, providing habitat and food for farmland birds. Other significant expenditure includes tree and hedge planting and thousands of tonnes of grain put out in feeders which help songbirds such as yellowhammers survive the winter⁴.

VALUE OF GAME
MANAGEMENT
£500 MILLION

VALUE OF
CONSERVATION ACTIVITY

.....

14

MILLION DAYS OF
CONSERVATION WORK

.....

26,000

FULL TIME JOBS
IN CONSERVATION

.....

7.6

MILLION HECTARES ON WHICH
CONSERVATION TAKES PLACE

.....

(THESE FIGURES ARE TAKEN FROM THE 2024 VALUE OF SHOOTING REPORT AND INCLUDE WILD GAMEBIRD AND DEER MANAGEMENT AS WELL AS RELEASING)



72% LAND MANAGED
FOR AGRICULTURE

8% LAND MANAGED
FOR NATURE

20% LAND FOR OTHER USE
INCLUDING URBAN

Conservation will need to take place on the **72%** of land, which is farmed, not just the **8%** managed for nature. This means integrating food production with wildlife recovery.

THE SCIENCE BEHIND BENEFITS TO BIODIVERSITY

GWCT peer-reviewed scientific research carried out over decades demonstrates the success of released gamebird management in improving habitats and helping wildlife, for example, improving songbird breeding productivity, which is key to species survival. It achieves this by providing elements of the farmed environment which historically supported biodiversity, but which have been lost since the Second World War.

Game crops

Farms where pheasants are released often feature plots of plant species such as kale, triticale, quinoa, fodder radish and millet designed to provide food and shelter for gamebirds. The extent to which they benefit farmland biodiversity depends on the species that are chosen, how many are in a mix and the size of the plot. This crop diversity is often lacking in intensive farming systems. For example, maps of land holdings on Exmoor with game interests (see **FIGURE 2**) well illustrates how game crops replicate the mixed farming of the 1960s, providing accessible habitat diversity on a landscape scale in an otherwise grass dominated farmed environment.

Game crops have an even greater impact when they are located adjacent to hedgerows. A GWCT scientific study looked at the effect of the proximity of hedges to game crops on neighbouring gamebird release sites on a 5,900-hectare area on the outskirts of Exmoor National Park. In this region, these crops cover 4-5% of farmed land, with the remainder being grassland for livestock grazing. The study found that



Game crops provide a vital source of food for farmland birds in winter.

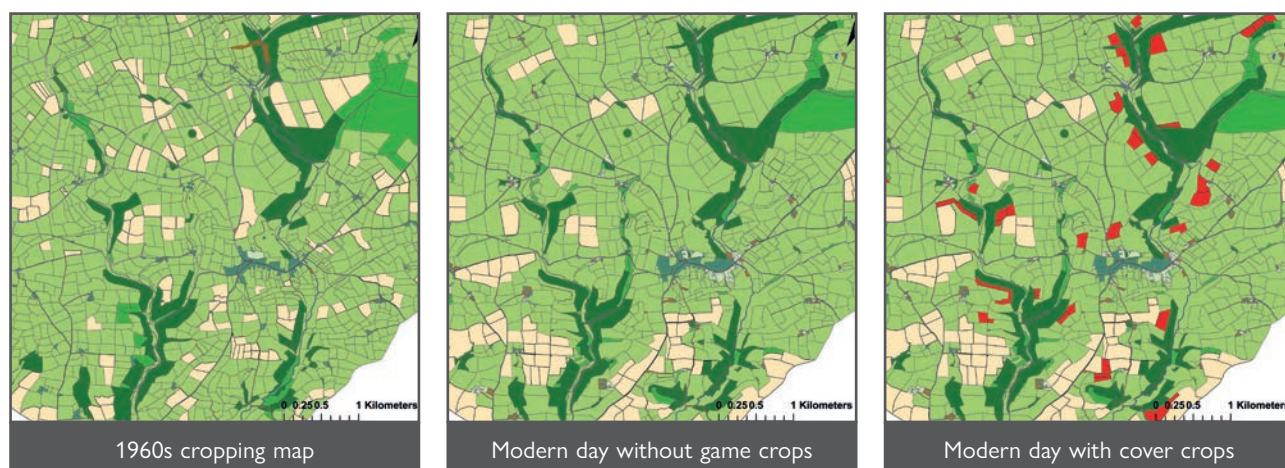
hedges near game crops held between 1.5 and 2 times more breeding resident songbirds in summer⁵.

Another research project in Scotland looking at bird use of game crops in winter recorded up to 100 times as many songbirds per hectare in game cover crops, compared to set-aside, stubble or conventional crops. It also attracted a greater variety of species (21 as opposed to 11 in conventional crops). These included more red-listed species such as linnet, bullfinch, reed bunting, house sparrow, tree sparrow, and song thrush⁸.

A study looking at game crops in Scotland recorded up to **100 times as many songbirds per hectare in game cover crops, compared to set-aside, stubble or conventional crops**

FIGURE 2

Past and present cropping in a typical area on the Exmoor fringes. The use of game crop plots today increases the spatial crop-type diversity of the otherwise grass dominated farmed landscape. The size and distribution of the game crop plots is more like a 1960s cropping pattern⁵.



Hedgerows

In the 1970s and 80s farmers were incentivised to remove hedgerows in the interests of increased production. In some areas of the country, 50% of hedges have been lost and a survey of hedgerow changes revealed that between 1984 and 1990 hedgerow length in England had declined by 20% and in Wales by 25%⁹. Since then, there have been grants to restore them and they have increased, but they are still far from pre-War levels.

During this period, it is likely that many hedgerows were planted or retained for released game interests. Hedges are a key tool in holding and moving released pheasants and partridges around a shoot. Using satellite imagery of around 150 locations, a GWCT study found that hedge banks on farms today are between 17% and 36% wider on game estates. Those estates also had between 10% and 65% more hedgerow per square kilometre than those without gamebird releasing. The same survey showed that

there were more grass margins and other uncropped strips alongside hedges on released game estates¹⁰. Hedgerows near to release pens can sometimes be damaged by gamebirds especially when they are released at high densities, but in the wider landscape there is no evidence of negative impact away from release pens and feed points.

A well-managed hedge is a wildlife haven year-round and this combination of hedgerow and grass margin or cover strip provides ideal nesting habitat for a range of birds including red-listed species such as yellowhammer. It has been estimated that a third of all Britain's plant species are found in hedgerows, and hedges and hedge bases are one of the most important habitats on farmland for invertebrates, supporting 1,500 different species from 70 families. They also provide habitat for many mammals including dormice, harvest mice and bats, which commonly hunt for insects along hedge lines¹¹.



A well-managed hedgerow next to a field margin can provide protection from predators and the weather, nesting cover and foraging habitat round the edges of a field. © Peter Thompson

HEDGEROW DECLINE

50%

LOST IN SOME AREAS OF
THE COUNTRY SINCE 1970s

• • • • •

20%

DECLINE IN HEDGE LENGTH
IN ENGLAND IN SIX YEARS

• • • • •

9,500km

LOST EVERY YEAR
BETWEEN 1984–1990

• • • • •





Farmland bird species glean from feed hoppers put out for pheasants. © Laurie Campbell

Supplementary feeding

Pre-war farming was less efficient with more grain left on the ground after harvest. This, combined with the loss of overwinter stubbles due to the switch to autumn sowing and fewer weed seeds, means there is far less food for wild birds on farmland to glean in winter¹². Supplementary feeding is a central part of the gamebird management package with grain supplied by gamekeepers in hoppers to sustain gamebirds in the winter and early spring. Gamekeepers put out more food than the gamebirds actually need and in a large study, farmland birds accounted for a quarter of all animal visits to feeders⁴. GWCT research demonstrated that when carried out according to best practice (feeding after the shooting season through the “hungry

gap” from February to May when food is scarce¹²), supplementary feeding increases breeding densities of songbirds including red-listed species such as tree sparrows and yellowhammers⁴. This led to DEFRA creating agri-environment options for farmers to be paid for feeding wild birds in late winter and through early spring.

In one study, songbirds accounted for a quarter of all animal visits to feeders



Woodland habitats

Provision and maintenance of woodland habitats is a key part of managing land for pheasant releasing, which is why it has positively influenced the nature of our woodland stock over the last 100 years¹³. Studies show that more ancient semi-natural woodland was retained post War on farms that had an interest in game management¹⁴. Over the last 100 years a large driver to plant new woodland was for pheasants, which also provide the incentive to carry out the much-needed active management of mature woodlands. Between 1905 and 1967, the area of UK woodland managed by coppicing fell by 85%¹⁵. Coppicing is where sections of woodland are cut back on a 10 or 20 year cycle and then left to regenerate. These areas are very varied in structure, making an attractive environment for many species.

Woodland areas managed for pheasants have more of this type of open canopy and importantly more ground vegetation⁶. There are more and wider

HEDGEROWS ON FARMS WITH GAMEBIRDS

150 RELEASING
LOCATIONS SURVEYED

.....

10% to 65%
MORE HEDGEROW PER SQ/KM

.....

17% to 36%
WIDER HEDGE BANKS

.....

rides, or pathways to feed gamebirds, and a study showed these rides have a greater abundance of butterflies than in standard woods¹⁶. Hedges and strips of smaller trees providing woodland with a buffer against the wind is another important habitat found more commonly on holdings managed for game¹⁷. All these measures result in an increase in wildlife. As well as 32% more songbirds referred to above, they have twice as many butterflies and more flowering shrubs compared to typical UK woods⁶.

Woods managed for pheasants have twice as many butterflies and more flowering shrubs

PREDATION MANAGEMENT: THE THIRD LEG OF THE STOOL

After decades of research into the impact of predation on a range of species, the GWCT developed the three-legged stool principle of conservation based on best practice game management: habitat provision; availability of food and predation management. Take away a leg and the stool falls, resulting in the failure of both gamekeeping and conservation efforts.

Increasing predation pressure

Long-term data sets show that the prey/predator balance has shifted in the past 50 years putting certain prey species at greater risk and making the need for predator control more urgent. Many prey populations have plummeted putting them in danger of local extinction. Since 1970, the UK has lost 73 million wild birds, and farmland species have shown the biggest overall decline with 63% of species showing a decrease^{18, 19}. At the same time, numbers of certain predators have increased^{20, 21} so the need for predation management to avoid local extinctions of red-listed species has become greater.

For example, research by the GWCT and others has demonstrated predation as a limiting factor on the productivity of many farmland bird species. There is evidence that blackbird, song thrush, chaffinch, dunnoek, yellowhammer and lapwing benefit from predator control in spring as carried out on best practice released bird shoots^{22, 23} for predation management. At the GWCT's Allerton Project demonstration farm, over the past 30 years, thousands of songbird nests

in hedgerows have been counted and the number of birds fledged recorded as part of an ongoing long-term monitoring project. When targeted legal predator control of foxes and corvids was introduced as part of the three-legged stool approach to wild gamebird management many vulnerable prey species increased significantly. These included spotted flycatchers whose breeding numbers doubled from seven to 14 pairs and song thrushes, which went from 14 breeding pairs to 64 in nine years and then collapsed to 15 pairs when gamekeeping was withdrawn. Released gamebird management was then introduced alongside best practice predator control in 2015 and by 2021 song thrushes had returned to 60 pairs along with the recovery of many other farmland birds².

Similarly, the Trust has been monitoring lapwing decline in the Hampshire Avon Valley since 1996. By 2015 there were just 61 breeding pairs left, despite the provision of habitat on local farms through agri-environment schemes. In 2015 GWCT ecologists and advisors began working with farmers and gamekeepers to further improve habitat and protect the remaining birds. A key part of the initiative was increasing lethal control of foxes and crows during the breeding season. Following this the lapwing decline was successfully reversed and by 2022 the number of pairs in the study area had doubled from 61 to 122²⁴. The role of local gamekeepers was crucial and suggests that similar benefits are likely to be seen where best practice fox and corvid control takes place as part of released gamebird management.

No evidence of increased fox activity where gamebirds are released

It is widely assumed that gamebird releasing attracts foxes like a honeypot and is to blame for keeping fox numbers artificially high. However, the National Gamebag Census shows that while gamebird releasing

in the UK has steadily increased over the last 30 or 40 years, fox numbers haven't²⁵. Furthermore, a recent two-year comparative study at ten release and eight non-release sites indicated that the relationship between released gamebirds and foxes is not as simple as is often assumed. The study found no increased fox activity where pheasants were released (see **FIGURE 3**). It is likely that fox control by gamekeepers at the release sites suppressed fox activity. Other possible reasons for local increases in the fox population can be overlooked, including greater availability of anthropogenic food sources such as livestock, human refuse and dog faeces, which in another recent study was shown to be a key food item for many rural foxes²⁷. The various causes are clearly complex and require further studies.

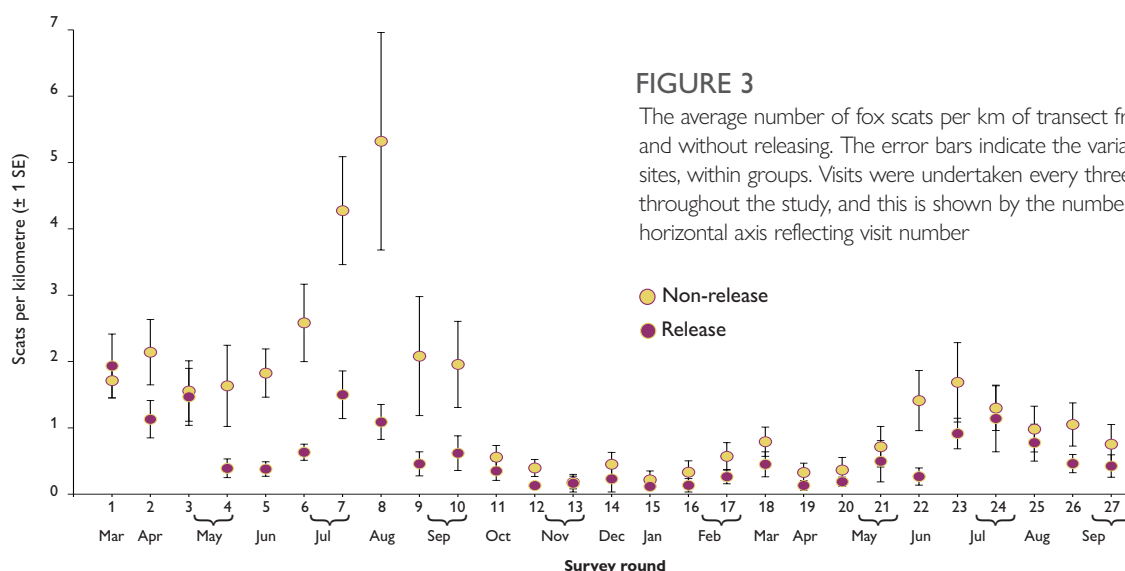
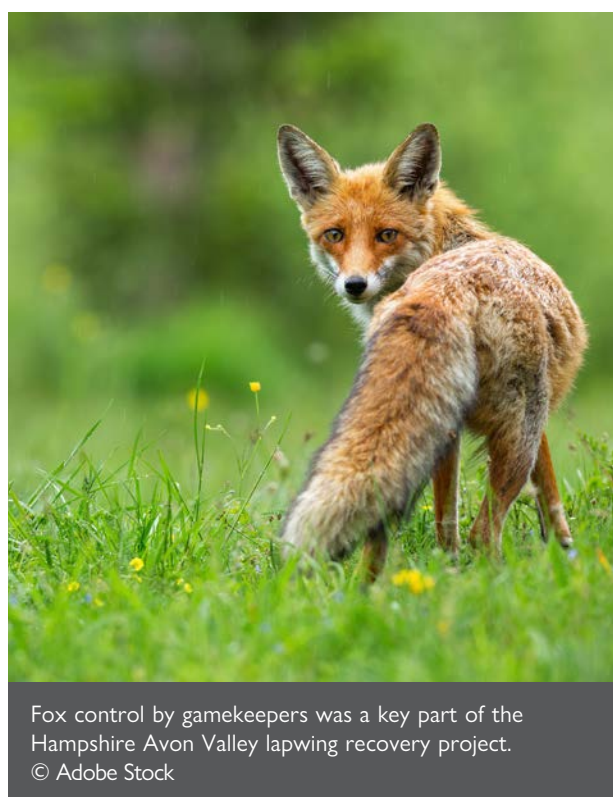


FIGURE 3

The average number of fox scats per km of transect from sites with and without releasing. The error bars indicate the variation between sites, within groups. Visits were undertaken every three weeks throughout the study, and this is shown by the numbers along the horizontal axis reflecting visit number

LANDSCAPE-SCALE POSITIVES VERSUS LOCALISED NEGATIVES

The great benefits to biodiversity and the countryside referred to above can only be guaranteed when game management is implemented in accordance with the law and relevant codes of practice including GWCT's Guidelines for Sustainable Gamebird Releasing.²⁸ These include zero tolerance of illegal killing of raptors, guidance on food and habitat provision, the densities of birds in release pens, and best practice predation management. If these are not adhered to, game management like any land use can have an overall negative impact.

It is also useful to appreciate that most environmental damage related to the release of gamebirds, especially pheasants in woodlands, is limited to the area in and around pens and can be minimised provided mitigating measures are in place, such as reducing densities at release sites. The large area over which the birds are eventually dispersed means the density and resulting impact decreases further out from the release site. For example, if birds disperse over a 1km area from a pen containing 1,000 birds, the density is approximately three birds per hectare³. At these levels the impact on the environment would be negligible, though the extent of disease transmission and fox predation remains unclear.

On the other hand, the positive impacts of releasing, such as the provision of cover crops and feed hoppers, tend to be at the scale of the whole farm or landscape²⁹. In 2006 a survey of the shooting community estimated that there are 93,000 hectares of game crops in the UK³⁰. Many of these crops produce up to 2 or 3 tonnes of seed per hectare. The far-reaching benefit of game crops to songbirds is well illustrated by a series of research papers which document more birds in and around those

crops throughout the year (see p13).

The effect of releasing on flora is a good example of small-scale negative impact versus large scale positive. GWCT research shows that soils and ground flora can be negatively affected in pheasant release pens and around feeding stations^{3,31} with more bare ground, lower plant density and lower average species diversity of herbs and ferns than in other parts of the same woodlands outside the pen³¹.

Though local damage can occur, release pens are not devoid of plants and the impact can be mitigated by restricting densities to 1,000 birds per hectare and avoiding sensitive areas. When siting pheasant pens in Ancient Semi Natural Woodland game managers are recommended to reduce stocking densities further to 700 per hectare of pen²⁸. Red-legged partridges are usually released onto cultivated ground and the potential for damage at release and feed sites is very limited.

There is further new evidence that pheasant releases don't affect ground floras and soils away from release and feed sites and in the wider woodland. A study undertaken by the GWCT and funded by DEFRA and NE showed that lower order plants such as lichens on tree trunks are affected away from the release pen area but only up to 100 or 200m away³².

**Most associated environmental
damage is limited to the
area in and around pens. In
contrast, the positive impacts
of releasing tend to be at
the scale of the whole farm**



There is no evidence of a negative impact on invertebrate abundance. Scorpion fly © Peter Thompson

Other studies show that released game management can enhance the variety and abundance of flora on a landscape scale through better maintained and increased hedgerows, game crops and woodland. For example, the large area of woodlands in England managed for pheasants will have more open canopy, denser herb layer and more ground level vegetation^{6,7}.



It is likely that invertebrates benefit from game management on a landscape scale through game crops and other habitats. © Alex Keeble/GWCT

Though adult pheasants' diet is primarily plant based and more grain is supplied to them than they need, they are omnivorous and will eat insects³. Studies have shown that invertebrate communities inside release pens are altered with, for example, fewer large woodland beetles but there is no indication of an overall decline in insect abundance³.

As with soils and ground floras, there is no good evidence that pheasants are reducing invertebrate populations in the wider countryside and it is unlikely given that gamebirds become very thinly distributed away from release sites. On top of this dispersal effect, pheasants become generally much less common in spring (10% of total release) and summer when the most insect species emerge³. Research by GWCT commissioned by Natural England found no measurable effect on invertebrate abundance, species richness or diversity even where 20 birds per hectare were present across large areas. The same study showed that on arable farmland, invertebrates typically made up less than 3% of the adult diet³³. On the other hand, it is likely that certain invertebrates benefit from game management on a larger scale through better woodland and hedgerow maintenance and the presence of game crops.

Another potential issue in and around release pens is an increased chance of ticks carrying the *Borrelia* spp. bacteria, which cause Lyme disease. A recent study found 2.45 times higher prevalence in

ticks collected in pheasant-release woods, compared with ticks from other woods without pheasant releasing³⁴. The abundance of adult, but not nymphal, ticks was greater in pheasant-release woods, which corresponds with earlier studies which showed that pheasants host mainly tick nymphs. If you don't remove ticks carrying *Borrelia*, there is a chance of developing Lyme disease, but this varies dependant on several other factors. The prevalence of *Borrelia* spp. is far greater in adult ticks than nymphs and humans are typically bitten by nymphs and only rarely by adult ticks. Woodland managed for pheasants tends to have more shrubs and ground cover, which is beneficial to wildlife but may promote ticks and tick-host interactions³.

Some diseases affecting gamebirds can be passed to wild birds, but if GWCT guidelines on stocking densities, codes of practice on biosecurity and veterinary guidelines are followed, the risk can be minimised. There is no evidence that disease transmission from gamebird releasing is having a widespread impact on wild bird populations.

Conversely, the impact of prohibiting releasing to control Avian Influenza could have far-reaching unintended consequences for threatened species. For example, in recent years, the revoking of gamebird release licences on or near European designated sites owing to hypothetical risks of gamebirds transmitting avian influenza to wild birds, poses a serious risk to some endangered ground nesting birds as it threatens to end the predation and habitat management carried out by gamekeepers.



Predation management carried out by gamekeepers protects red-listed ground-nesting species such as stone curlew. © David Mason

GWCT ONLINE SHOOT BIODIVERSITY ASSESSMENT

PRELIMINARY RESULTS



7 in 10

SHOOTS PROVIDE
NESTING BOXES
FOR WILD BIRDS



76%

OF SHOOTS PROVIDE
WINTER SEED CROPS
FOR WILD BIRDS



82%

OF SHOOTS PROVIDE
SUPPLEMENTARY FEED FOR
WILD BIRDS OVER WINTER



56%

OF SHOOTS
HAVE POLLEN
AND NECTAR MIXES



75%

OF SHOOTS
RELEASE BIRDS AT
BEST-PRACTICE DENSITY



75%

OF SHOOTS
FEATURE PONDS
ON THEIR LAND



92%

UNDERTAKE PREDATION
CONTROL TO PROTECT
GAME AND WILD BIRDS

38%

OF SHOOTS HAVE
ESTABLISHED WILDFLOWER
RICH MARGINS

GAMEBIRD RELEASING AS A DRIVER FOR CONSERVATION

We don't have a clear picture of how many shoots across the UK adhere to the Guidelines for Sustainable Gamebird Releasing²⁸ and achieve a biodiversity net gain and how many fall short. However, most of the measures that benefit biodiversity described above are entirely necessary to achieve a successful released gamebird shoot and are directly associated with its management. It is therefore reasonable to suggest that they are widely adopted.

In addition to the positive practices that are directly linked to gamebird management, there are a range of other measures beneficial to wildlife often found on released bird shoots. There is increasing evidence suggesting these conservation practices are more common on farms with shoots than those without. This new evidence base is starting to show that gamebird releasing is a driver for diverse wildlife and habitat conservation in the context of a farmed environment where land managers often lack incentives to make space for nature.

An example of practitioner evidence supporting this principle, is the GWCT's 2023 Big Farmland Bird Count, which saw 1,240 farmers count birds on their land (1.5 million acres in total). It found that farms managed for gamebirds had, on average, 36% more songbirds than those without. Of the 36% of participants who said that they run a wild or released gamebird shoot, nearly 44% grew wild bird seed mixtures and 62% put out supplementary food for farmland birds. In contrast, of those without a shoot, only 21% grew wild bird seed mixtures and 32% put out supplementary food³⁵. Data from the Big Farmland Bird Count in years since has shown similar differences, with declining farmland birds more common on sites with shoots.

In addition, the GWCT's online shoot biodiversity assessment tool grades participating shoot owners on their habitat and management practices. Though there is no comparison with non-shooting estates, preliminary results indicate that shoot managers are undertaking wider conservation activities. These include 75% having ponds, 7 in 10 putting up bird boxes, 38% planting wildflower-rich margins and 56% establishing pollen and nectar mixes (see opposite). One study of this type of habitat on a released bird shoot showed 15 times more butterflies, 40 times more bumblebees and up to 90% more weed species³⁶.

The GWCT also supports an annual game and conservation benchmarking survey, which gives a sense of the environmental credentials of the sector. The 2024 results revealed that 76% of shoots were controlling invasive non-native species, 59% were creating habitat for wildlife and 73% were feeding songbirds over winter³⁷.

BENEFITS TO FARMLAND BIRDS IN WINTER

2 to 3%

AREA OF GAME CROPS ON FARMS WITH RELEASING

.....

180,000

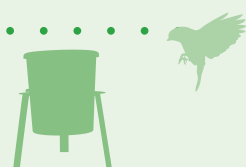
TONNES OF SEED PER YEAR IN GAME CROPS

.....

25%

VISITS TO FEEDERS MADE BY SONGBIRDS

.....



Woodland butterfly species such as speckled wood benefit from management associated with gamebird releasing.
© Adobe Stock

POTENTIAL FOR A COLLABORATIVE APPROACH

The economic, social and cultural relationship between hunting and conservation is globally recognised, and is increasingly appreciated in the UK^{1,38}. The GWCT's Principles of Sustainable Game Management are aligned with the Bern Convention European Charter on Hunting and Biodiversity³⁹. That charter is in turn based on the Addis Ababa Principles and the Malawi Principles (Guidelines for Sustainable Use of Biodiversity and the Ecosystem), which are supported by the International Union for the Conservation of Nature (IUCN), the global authority on the status of the natural world and measures needed to save it. The IUCN positions community-based grass roots conservation as the solution to restoring nature, which released

gamebird management has the potential to deliver in collaboration with farmer clusters and local communities.

This report outlines the far-reaching landscape-scale biodiversity net gain resulting from best practice released gamebird management and the possibility of mitigating localised negative impacts. Many examples already exist across the UK of projects where privately-funded released gamebird managers are partnering with scientists and expert advisors to monitor wildlife and achieve species recovery. There is great scope to build on these conservation successes by creating more partnerships, drawing on gamebird managers' skills and knowledge of local ecosystems to achieve the common goal of reversing biodiversity decline on a national scale. ■



A collaborative project involving farmers and gamekeepers reversed the decline lapwing in the Hampshire Avon Valley. © Adobe Stock

REFERENCES

1. Shootinguk, 2023. RSPB CEO Beccy Speight interview on shooting and conservation. Shooting Times.
2. Stoate, C., 2022. Farming with the Environment: Thirty Years of Allerton Project Research. 1st ed. Routledge, London.
3. Sage, RB, Brewin, J, Stevens, DC, et al., 2021. Gamebird Releasing and Management in the UK: A review of ecological considerations, best practice management and delivering net biodiversity gain. Fordingbridge.
4. Sánchez-García, C, Buner, FD, and Aebischer, NJ, 2015. Supplementary winter food for gamebirds through feeders: Which species actually benefit? The Journal of Wildlife Management. 79: 832–845.
5. Sage, R, Woodburn, M, McCready, S, et al., 2024. Winter game crop plots for gamebirds retain hedgerow breeding songbirds in an improved grassland landscape. Wildlife Biology. 2024: e01156.
6. Draycott, RAH, Hoodless, AN, and Sage, RB, 2008. Effects of pheasant management on vegetation and birds in lowland woodlands. Journal of Applied Ecology. 45: 334–341.
7. Gilbert, J. (2007) National inventory of woodland and trees (1995-99): Analysis of Management and Biodiversity Data. Forest Research, Forestry Commission
8. Parish, DMB, and Sotherton, NW, 2010. Game crops and threatened farmland songbirds in Scotland: a step towards halting population declines? Bird Study. 51: 107–112.
9. Fuller, RM, Groom, GB, Thomson, AG, et al., 1992. Countryside Survey 1990. Mapping the land cover of Great Britain using satellite remote sensing: a demonstrator project in remote sensing.
10. Draycott, RAH, Hoodless, AN, Cooke, M, et al., 2011. The influence of pheasant releasing and associated management on farmland hedgerows and birds in England. European Journal of Wildlife Research. 58: 227–234.
11. Wolton, R, 2009. UK Biodiversity Action Plan: Priority species linked to hedgerows, a report to Hedgelink.
12. Siriwardena, GM, Calbrade, NA, and Vickery, JA, 2008. Farmland birds and late winter food: does seed supply fail to meet demand? Ibis. 150: 585–595.
13. Rackham, O, 1994, The Illustrated History of the Countryside, 48
14. Hopkins, JJ, and Kirby, KJ, 2007. Ecological change in British broadleaved woodland since 1947. Ibis. 149: 29–40.
15. Mason, CF, and Macdonald, SM, 2002. Responses of ground flora to coppice management in an English woodland - A study using permanent quadrats. Biodiversity and Conservation. 11: 1773–1789.
16. Robertson, PA, Woodburn, MIA, and Hill, DA, 1988. The effects of woodland management for pheasants on the abundance of butterflies in Dorset, England. Biological Conservation. 45: 159–167.
17. Hoodless, AN, and Draycott, RAH, 2006. Effects of pheasant management at woodland edges. in: The Game Conservancy Trust Review of 2005, Fordingbridge, pp. 30–31.
18. BTO, 2023. 73 million birds gone since 1970 – but which have vanished near you? Bto.Org.
19. DEFRA, 2025. Wild bird populations in the UK and England, 1970 to 2023. Gov.Uk.
20. Massimino, D, Harris, MJ, Noble, SJ, et al., 2019. BirdTrends 2019: trends in numbers, breeding success and survival for UK breeding birds. Thetford.
21. Roos, S, Smart, J, Gibbons, DW, et al., 2018. A review of predation as a limiting factor for bird populations in mesopredator-rich landscapes: a case study of the UK. Biological Reviews.
22. White, P.J.C., Stoate, C., Szczur, J. & Norris, K. 2014. Predator reduction with habitat management can improve songbird nest success. Journal of Wildlife Management, 78, 402–412.
23. Stoate, C., & J. Szczur. 2001. Could game management have a role in the conservation of farmland passerines? A case study from a Leicestershire farm. Bird Study 48: 279–292.
24. Game & Wildlife Conservation Trust, 2020. Saving Our Lapwing: A guide to successful working conservation. Fordingbridge, Hampshire.
25. Sage, R, Gamebird releasing and foxes. In: Review of 2022: A Full Report of the Activities of the Game & Wildlife Conservation Trust, pp. 76–79.
26. Sage, R, Understanding gamebird releasing and foxes. in: Review of 2023: A Full Report of the Activities of the Game & Wildlife Conservation Trust, pp. 80–81.
27. Waggershauer CN, Taberlet P, Coissac E, Kortland K, Hambly C, Lambin X (2022) Interspecific coprophagia by wild red foxes: DNA metabarcoding reveals a potentially widespread form of commensalism among animals. Ecol Evol 12(7):e9029.
28. GWCT Advisory Service, n.d. Guidelines for sustainable gamebird releasing. Fordingbridge.
29. Sage, RB, Hoodless, AN, Woodburn, MIA, et al., 2020. Summary review and synthesis: effects on habitats and wildlife of the release and management of pheasants and red-legged partridges on UK lowland shoots. Wildlife Biology. 2020: 1–12.
30. PACEC. (2006). The Economic and Environmental Impact of Sporting Shooting.
31. Sage, RB, 2018. Impacts of pheasant releasing for shooting on habitats and wildlife on the Southern Exmoor estates. Game & Wildlife Conservation Trust, Fordingbridge.
32. Sage, R, 2025. The effects of pheasant releasing on habitats in designated woodland areas. in: Research Report 2024: Tackling biodiversity recovery with evidence-based research, pp. 28–31
33. Sage R.B., Callegari S.E., & Pressland C.L. 2026. Do farm-reared and released pheasants and red-legged partridges affect ground invertebrate communities? A selective review of evidence with a focus on two unpublished PhD theses.
34. Michels, E., Hansford, K., Perkins, S.E., McDonald, R.A., Medlock, J.M. & Tschirren, B. 2025. The release of non-native gamebirds is associated with amplified zoonotic disease risk. Ecology Letters 28, e70115
35. www.bfbc.org.uk
36. Parish, DMB, and Sotherton, NW, 2004. Game crops as summer habitat for farmland songbirds in Scotland. Agriculture, Ecosystems & Environment. 104: 429–438.
37. Game & Wildlife Conservation Trust, 2019. Results from shoot benchmarking survey unveiled.
38. Chesterton, C, 2009. Natural England Research Report NERR030: Environmental impacts of land management. Sheffield
39. GWCT Advisory Service, n.d. Principles of Sustainable Game Management. Fordingbridge.

About us

The Game & Wildlife Conservation Trust is the home of working conservation. As an independent wildlife conservation charity which has carried out scientific research into Britain's game and wildlife since the 1930s, we believe that wildlife can thrive if we focus on integrating it alongside other land uses. From producing food to providing space for nature, we understand these need to happen in the same place. To balance these needs our research aims to solve problems with practical solutions, and its importance is growing. The GWCT is unique in the breadth of research it carries out, seeking to ensure that game management continues to be sustainable and benefit wildlife at a landscape scale.

If you would like support from our expert advisors on any of the topics included in this document, please contact the Advisory team by phone at 01425 651013 or by email at advisory@gwct.org.uk

Contact us

GAME & WILDLIFE CONSERVATION TRUST
Burgate Manor, Fordingbridge, Hampshire SP6 1EF

01425 652381
info@gwct.org.uk

gwct.org.uk

© Game & Wildlife Conservation Trust, September 2026.
Registered charity in England and Wales (No. 1112023) and in Scotland (No. SC038868). All rights reserved. No reproduction without permission.
Cover: A colourful peacock butterfly. © Adobe Stock



Game & Wildlife
CONSERVATION TRUST