



*GWCT scientists use radio-tracking to monitor tagged birds as part of their research © GWCT*

## 10. Research & Monitoring

### Research

What is now the Game and Wildlife Conservation Trust has a lengthy history, with perhaps surprising roots. The original ancestor of GWCT was the ICI Game Research Station in 1932, as a result of the forward thinking of Major H. G. Eley. At a time when little attention was paid to conservation for gamebirds, he realised that investment into cartridge technology to promote sales would be futile without similar efforts to protect the gamebirds themselves.

Practical research performed by gamekeepers and advisory officers at the first headquarters in Knebworth aimed to “make two birds fly where one flew before” through sensible conservation and game management. The underlying ideology of the trust of a sound basis in scientific research was established early when two scientists joined the Game Research Station in the first few years, and has remained a foundation of our work ever since. We now have over 60 scientists working at the GWCT.

Scientific research, the practical application of this knowledge and the much-needed advisory service have gone hand in hand throughout the history of the trust. The demand for education and training grew, and educational courses and keeper training followed to satisfy the need for high quality training on sustainable game and countryside management that meets best practice.

On a journey through changes of name and structure, the Game Research Station became the independent Game Conservancy in 1969, no longer associated with Eley Cartridges, and in 1980 became a charity – The Game Conservancy Trust.



*GWCT runs a highly-valued training service to promote best practice. © GWCT*

In order to better reflect the breadth of our work, the Game Conservancy Trust became the Game & Wildlife Conservation Trust in 2007. Today the GWCT is a pioneer in conservation research in areas both related and unrelated to game species and associated countryside management. Our approach allows the practical application of these techniques and contributes to sustainable increases in biodiversity across the countryside.

***1. Our work is underpinned by robust scientific evidence.***

Where this evidence exists, we work to apply it successfully. Where it is lacking, we address knowledge gaps with scientific research projects.

**2. Application of scientific knowledge to the real world.**

Using our demonstration sites and in collaboration with landowners, we test the application of scientific findings to demonstrate practicality. Examining the efficacy and practicality of techniques in this environment allows a genuine assessment of whether they will work when integrated into a farming or countryside management package.

**3. Integration of practitioner feedback.**

The input of practitioners who will apply and manage these conservation techniques on the ground is invaluable in assessing their viability.

**4. Work to establish successful management techniques into policy.**

When efficacy has been demonstrated, we work to integrate successful techniques into government policy, thus enabling inclusion in Agri-Environment Schemes, and incentive payments. This approach allows subsidies to be paid and therefore increases uptake by farmers, resulting in maximum benefit for wildlife.

**5. Advisory service.**

The GWCT runs an education and training service, to disseminate our knowledge of successful techniques, wherein we promote use of best practice in all aspects of countryside management.

**6. Monitoring.**

Long term monitoring projects allow evaluation of success and assessment of continual adjustments or improvements that can be made.

Our scientific reputation is based on the strength and quality of the research produced. Often researching areas that are not prioritised by others, we contribute to the understanding of game and wildlife, and improvements in biodiversity.

**Did you know?**

The GWCT developed from the ICI Game Research Station set up in 1932 to develop ways to protect wild game birds. ICI owned Eley cartridges at the time.





On average, we produce 30-40 peer-reviewed papers in scientific journals each year, contributing to advancements in knowledge. Three particular areas of interest are: species recovery, how game management can contribute to wider biodiversity, and how land managers can do more alongside economic land use to improve wildlife conservation.

Scientific progress in all areas is driven by research, and this is no different in the field of game management. Our ongoing research programme continues to provide the evidence base for effective game management, conservation and environmental policy. We are still looking to improve outcomes for both game and biodiversity, and this book represents another effort to raise standards and strive for a working countryside that is rich in game and wildlife.



*Insect sampling provides an insight into how land managers can do more to improve wildlife conservation alongside economic land use. © Jen Brewin*

## **Long-term monitoring**

### **The National Gamebag Census and Partridge Count Scheme**

National long-term monitoring schemes can be seen as an early warning system for how species are faring, as well as helping us to understand recent changes in relation to historical ones. Understanding how numbers change over time is critical for managing wildlife populations, and long-term monitoring programmes underpin all effective wildlife management. Locally, they can help identify which management measures are helpful or damaging for different species, guide research into factors responsible for change, and inform management decisions on when and how to shoot quarry species.

#### **How is it done?**

By counting animals on an annual basis using consistent methods. There are lots of different national monitoring schemes in place, run by different organisations, covering for instance breeding bird abundance (British Trust for Ornithology, Royal Society for the Protection of Birds, Wildfowl & Wetlands Trust), mammal abundance (British Trust for Ornithology, Bat Conservation Trust, British Deer Society, Vincent Wildlife Trust, People's Trust for Endangered Species) and butterflies (Butterfly Conservation Trust). In order to monitor game and pest species, the GWCT runs two long-term monitoring schemes, the National Gamebag Census and the Partridge Count Scheme.

### **The GWCT National Gamebag Census (NGC)**

#### **What is the NGC?**

The NGC is a voluntary nationwide system of bag monitoring, set up in 1961, formalising earlier surveys of game shooting begun at Oxford University in the 1930s (a “bag” is the number of a particular species that has been shot). At the end of each season, participating shoots submit their bag records to the GWCT's NGC Co-ordinator, who is responsible for maintaining the NGC database. More information on the NGC is available on the GWCT website, at: [www.gwct.org.uk/ngc](http://www.gwct.org.uk/ngc)

### **What species are recorded in the NGC?**

The NGC covers all quarry species and most so-called “pest” species that may be legally shot or trapped within the UK. The species covered include 25 huntable bird species, 12 “pest” bird species (species that may be killed or taken under General Licence) and 20 mammal species (see table 1).

### **Does that tell us how many are shot across the country?**

No, because we do not know the percentage of shoots nationally that submit bag records to the NGC. But we can monitor national trends in bags of the different species by averaging changes in bag per unit area from year to year. The trends are relative to the start year, which is set to 1 and usually corresponds to 1961, when the NGC formally began.

### **Is it just how many are shot?**

No, NGC participants also provide information on the number of shoot days, gamebird releases and bag composition. This is how the numbers shot were made up, for example in terms of young or old birds, female or male deer.

### **Why is this important?**

The NGC is the only central UK database of bags from shoots and shooting estates. Because we have such long sets of reliable data, the bag records are an important source of information on long-term trends, in some cases reaching back over 100 years<sup>170</sup>. Changes in the number killed can give indications of changes in the underlying species abundance. For some species, in particular mammals, the NGC is the sole UK monitoring scheme able to provide trends over time<sup>171</sup>. They also give a unique historical perspective on changes in shooting itself<sup>69</sup>. More information on the mammals recorded in the NGC is available at: [www.gwct.org.uk/ngcmammals](http://www.gwct.org.uk/ngcmammals)

### **How do shoots take part and what does it cost to do so?**

New contributors are always welcome, and we are most grateful to owners, keepers and shoot managers who send their returns to the NGC each season. Participation in the NGC is free, and there is no requirement to be a GWCT member. Individual shoot returns are kept strictly confidential, and the records contribute to an invaluable source of monitoring.



As well as an annual census form, participants receive an annual newsletter that reviews bag trends of selected species and illustrates how NGC data can contribute factual information on topical issues.

Please sign up, or encourage your shoot providers to sign up, by visiting: [www.gwct.org.uk/ngc](http://www.gwct.org.uk/ngc) or contacting the NGC co-ordinator at [ngc@gwct.org.uk](mailto:ngc@gwct.org.uk).

Huntible bird species	Pest bird species	Mammal species
Pheasant	Woodpigeon	Rabbit
Red-legged partridge	Feral pigeon	Brown hare
Grey partridge	Collared dove	Mountain hare
Red grouse	Carrion crow	Grey squirrel
Ptarmigan	Hooded crow	Brown rat
Black grouse	Magpie	Red deer
Common snipe	Rook	Sika deer
Jack snipe (NI)	Jackdaw	Fallow deer
Woodcock	Jay	Roe deer
Golden plover	Herring gull	Muntjac
Mallard	Great black-backed gull	Chinese water deer
Teal	Lesser black-backed gull	Wild boar
Wigeon		Hedgehog
Tufted duck		Fox
Pochard		Wildcat
Goldeneye		Feral cat
Pintail		Stoat
Shoveler		Weasel
Gadwall		Polecat
Pink-footed goose		American mink
White-fronted goose		
Greylag goose		
Canada goose		
Coot		
Moorhen		

*Table 1. The NGC collects data on the following species.  
NI: Northern Ireland*





*The Partridge Count Scheme provides feedback for participants about what management techniques are working well © GWCT*

## **The GWCT Partridge Count Scheme (PCS)**

### **What is the PCS?**

The PCS is a voluntary scheme run by the GWCT and its predecessor organisations since 1933, to collect information on the annual abundance and breeding success of grey and red-legged partridges.

### **Can't this information come from the NGC?**

No, the NGC records information about animals that are killed. The PCS collects count data on the number of partridges that are alive in spring and autumn. Many sites that contribute partridge counts to the PCS do not shoot, so would not participate in the NGC.

### **Why do we monitor partridges so closely?**

Because grey partridges in particular are in need of conservation<sup>172</sup> (see chapter 3). We use the information from counts to estimate partridge breeding success and survival. If either or both of these values are low, they will prevent the population recovering. Using the counts, we provide feedback to participants about what management is working well and what additional management would help to address bottlenecks in the



partridge life cycle. This further encourages landowners and managers to strengthen their efforts. This approach seems to work, as our research shows that PCS participants select more agri-environment options that benefit farmland birds than non-PCS participants<sup>70</sup>.

### **What does it measure?**

We encourage PCS participants to count their partridges twice a year, in spring, and in autumn after harvest:

- The spring count measures breeding abundance. How many are breeding?
- The autumn count measures breeding success. How well did they reproduce?

Counts are done in early morning and late evening when partridges are most active. Partridge counts are done using a four-wheel drive vehicle, which acts as a mobile 'hide' allowing large areas to be counted more easily. We provide participants with detailed instructions on how to count.

### **Who takes part?**

Farmers, landowners, land managers, keepers, wardens, rangers – anyone who is interested in helping conserve grey partridges on their land, regardless of whether they shoot or not. We receive counts from wildlife trusts, the RSPB and National Nature Reserves as well as from farms and shoots.

### **How many grey partridges do you need in order to take part in the PCS?**

There is no lower limit, nor do you have to be interested in them as a quarry species – every one counts. In fact, many participants do return 'zero' counts as it is also important for us to gather information from areas where there are few or no grey partridges.

© David Mason

### **Did you know?**

The Partridge Count Scheme contains many sites that do not shoot including RSPB-managed reserves and national nature reserves.



### **How may I take part and what does it cost to do so?**

New participants are always welcome, and we are ever grateful to participants who take the time to count their partridges and send us the results. Participating in the PCS is free, and individual returns are kept strictly confidential. Please sign up online at [www.gwct.org.uk/pcs](http://www.gwct.org.uk/pcs).

You do not have to be interested in shooting grey partridges or be a GWCT member to take part, it is grey partridge conservation that is paramount. PCS participants receive instructions on how to count partridges, are sent spring and autumn newsletters and invitations to grey partridge meetings and farm walks. Based on returned counts, they receive help and advice on how to improve the environment for grey partridges and how to provide the additional support the birds may need<sup>69</sup>.

## **Ask the shoot**

1. Are you a member of the National Gamebag Census?
2. Are you a member of the Partridge Count Scheme?