

Working Conservationists

The land managers saving British wildlife

A series of case studies
produced by the Game &
Wildlife Conservation Trust

- 
- Inside
- West Sussex Wildflowers
 - Hampshire Harvest Mice
 - Scottish Partridges
 - Devon Ducks
 - East Sussex Woodland
 - Welsh Grouse
 - Wiltshire Songbirds
 - Avon Valley Waders
 - Yorkshire Heather



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Contents

29

Trees galore in the North Wessex Downs

- 5 FOREWORD**
Defra Secretary of State the Rt Hon Michael Gove MP sees farmers as key to successful conservation
- 7 INTRODUCTION**
Sir Jim Paice on how farming can produce both food and wildlife
- 9 A SHINING BEACON OF HOPE**
The Peppering project delivering the holy grail of farmland wildlife
- 13 ANCIENT WOODLAND RESTORATION**
Restoring woodland on a small farm in East Sussex
- 17 IN THE FOOTSTEPS OF GILBERT WHITE**
Farmers joining forces to save their local species
- 21 A CHAMPION FOR CURLEW**
Tom Orde-Powlett is determined not to see curlew disappear on his watch
- 25 ELEVEN PONDS AND COUNTING**
Passing on a family passion for conservation
- 29 HOW TO PLANT A MILLION TREES**
A wildlife paradise on the North Wessex Downs
- 33 RETURN OF THE WELSH GROUSE**
An exciting project to restore wildlife to the hills of Powys
- 37 A PIONEER WITH A PASSION FOR PARTRIDGES**
Applying science to dramatically increase birdlife on a Scottish farm
- 41 A HAVEN FOR HAMPSHIRE LAPWINGS**
Taking an intelligent approach to predation management in the Avon Valley





Foreword

Farmers are the original friends of the earth; they know that we cannot have a healthy economy, healthy society or healthy individuals unless we have a healthy environment.

The nine case studies in this collection provide some outstanding examples of how our agri-environment schemes can work to drive land management and food production that is truly healthy, both for humans and for the environment. And when we leave the Common Agricultural Policy we will be able to follow evidence like this with even greater ambition – we will be able to incentivise the kinds of collaboration and innovation that bring the transformative, landscape-scale changes outlined in our 25 Year Environment Plan.

In the UK we are fortunate to have some of the most talented and committed farmers in the world. I look forward to continuing to work alongside GWCT and its members to identify ways to create a system that conserves our environment and wildlife, alongside profitable and wholesome food production.

We all have a special mission to protect, preserve and enhance nature for future generations. While these are the stories of the men and women who own, manage and have an equity in the land, there is no doubt that we, and our children and grandchildren, will all profit from their significant achievements. This collection of case studies provides a vision of a country of which we can all be proud.

**The Rt. Hon Michael Gove MP,
Secretary of State for Environment, Food and Rural Affairs**



Introduction

For many years farmers asked me whether the Government wanted them to produce birds or food to which my answer was that it is not an 'either/or' question; both are possible. These case studies prove that it can be done by farms of different sizes, different types and in different regions. Another argument I have regularly had is that I don't want to have to go to a reserve to see wildlife. Isolated patches of abundance may ensure survival and be great for 'spotters' but I want to be able to see wildlife as I go about my daily business and I believe most people do too.

The issue is one of scale. When you consider that farmland covers around 17.2million hectares, or 70 per cent of the UK, whereas RSPB and Wildlife Trusts nature reserves combined cover less than 250,000 hectares, the vital importance of private stewardship on farmed land becomes clear.

But we must never forget that farmers' main aim is to produce food and to make a living from doing so. If our farmers are to survive outside the protection of the CAP and against cheaper imports then they must be properly rewarded for the environmental measures they provide. It is expensive not just in terms of direct costs but in foregoing crop income and in management time. So whatever schemes the Government brings forward must recognise that. But if those schemes are to really succeed they need to be flexible enough to allow flood plains to fulfil their original function, our uplands to act as massive sponges and carbon reservoirs and our woodlands to be brought back into management. None of these produce income but they are our heritage and of massive public benefit.

The wonderful conservation work that happens on private land, on individual farms and estates is little understood. The aim of this series of publications is to highlight that and encourage the wider public to see that continuing to support the farmers that deliver these impressive wildlife gains is support worth giving. And there are plenty of instances across the UK where redlisted species are bucking the

trend. The places to look for this are not necessarily nature reserves or protected areas. It is often on farms and estates where the greatest successes can be found. A case in point is the Peppering Project in West Sussex where redlisted skylarks have gone up by 57%, linnets by 94% and corn buntings by 30% (see p.9). Or Bisterne Estate on the Avon Valley where breeding success of lapwings went from 0.4 up to 1.3 chicks per pair in 2016, almost twice what is required for a sustainable population (see p.41). Looking ahead as our ever-shrinking countryside is increasingly contested, spaces will have to work harder by performing numerous functions. Both Peppering and Bisterne are good examples of outstanding conservation work integrated into profitable farming businesses, which also support the local community and economy.

So we need a new deal for farming: a recognition by government that without farmers the landscape would either fall into neglect or have to be maintained at taxpayers' expense; an acceptance that maintaining and enhancing it costs money and a system whereby farmers are entrusted to get on with it without a myriad of rules and inspectors getting in their way. These are the principles behind the proposals which GWCT has put to Government to guide us in the future.

I am, therefore, delighted that the Secretary of State for Defra Michael Gove has leant his support to this new publication and welcome his acknowledgement of the key part farmers play in protecting our environment.

None of these nine case studies would claim to be unique but they are pioneering examples of how farming and wildlife can successfully co-exist and how powerful individual motivation can be in delivering a better countryside. I commend them to all readers.

**Sir Jim Paice,
GWCT Chairman of Trustees**

A shining beacon of hope

By working together, the farming and keeping teams at Peppering have achieved the holy grail of farmland wildlife restoration



Farm Facts

Location: West Sussex

Type of farming: Arable and sheep

Acreage: 3,100

Percentage in conservation: 12

Funding grants: HLS, Higher Tier Stewardship

Conservation measures: Hedge planting, fencing footpaths, grass margins, wild bird seed covercrop strips, conservation headlands, predator control, low input extensive grazing areas, lapwing plots, feeders, supplementary feeding, pond restoration, and over-wintered stubbles.

In 2002, the late Dick Potts, GWCT scientist and head of the Sussex Study into farmland wildlife visited the Duke of Norfolk and Estate Manager Peter Knight to ask if they could help prevent the extinction of the grey partridge on the Sussex Downs. Dick made clear that unless action was taken the species would become extinct on the South Downs within 10 years. Determined to reverse the decline, in 2003, they established the Peppering Project on a 3,100-acre area of the Norfolk Estate and the recovery has been remarkable. From six wild birds, the team has built a sustainable population of 300 breeding pairs of wild English partridge with September stubble counts of over 2,000 partridges providing a shootable surplus in most years. This is a species which has declined by 93 per cent across the UK since 1970. Dick Potts monitored the project at the outset and a wide range of red-listed farmland species have made a spectacular recovery because of the management system put in place, including skylark up 57%, linnet up 94%, yellowhammer up 20%, and lapwing up 71%. Corn buntings increased 30% since 2010 and following the disastrous summer of 2012, when their numbers nearly halved, they have rebounded. In addition, brown hare numbers have risen considerably and birds of prey have benefited hugely. Kestrels and short-eared owls in particular are thriving.

So how was this extraordinary transformation achieved? One of the key principles was to demonstrate that conservation could work alongside profitable farming. This meant a radically different approach was required. Work began to transform the farming by combining new techniques with traditional methods. The modern practise of block cropping or growing large areas of a single crop means wildlife has to travel long distances to find food, shelter and breeding habitat, so a greater range of commercial crops was sown in a more complex rotation and field sizes were reduced by planting nine miles of new hedges.



Peter Knight, far left, hosting a visit to Peppering with GWCT chief exec Teresa Dent, far right

The start of the project coincided with an increase in agri-environment schemes funded by Natural England and Peppering is perhaps the best example in the country of how, with the right approach, these agreements can achieve the dual outcomes of efficient food production and effective wildlife conservation in other words linking environment and farming. Fertilizer, herbicides and pesticides are applied to 90% of each field in the normal way, enabling profitable yields and all the conservation is done around the edges with stewardship payments roughly compensating for income forgone. However, this is not simply a case of leaving the land fallow. Without meticulous planning and careful management of the crops sown for wildlife, the system would not work. Currently the farm has 12 percent of the land in conservation measures with 20 different Higher Tier stewardship options working alongside its commercial rotation.

From six wild birds, the team has built a sustainable population of 300 breeding pairs of wild English partridge.

Managing the options once they are in the ground is equally challenging and has been a continuous learning curve. A case in point are 8-metre wide conservation headlands, which are drilled wider than commercial crops to give light to broadleaved weeds and space for partridge chicks to move around easily. This option is contentious from a farming point of view because herbicide use is limited, potentially causing a build-up of grass weeds. The weedkiller Glyphosate is an essential conservation tool in this regard, controlling the build-up of weeds in readiness for a new year of cropping. If it were banned, conservation headlands would



© Jen Brewin

L-r: Conventional crop in the field centre; conservation headland; bare strip for partridges to dry off, covercrop with feeder, grass margin and hedge

be impractical, putting the Peppering Project at risk.

Thanks to conservation headlands, some of the UK's rarest wildflowers including prickly poppy, night-flowering catchfly and narrow-fruited cornsalad and comflower, having been dormant in the soil for decades have remerged. These plants provide food for the insects that the birds rely on, in particular partridge chicks, which need 1,500 insects a day in the first 12 days of life. Peter explained that as a farmer you have to have a change of mindset from seeing weeds as an indication of poor management to recognising the benefits they can have, provided they are restricted to certain areas of the field.

The Duke and Peter are full of praise for the research and development that Natural England along with the GWCT have put into the stewardship options and the support received. The farm operates at a profit thanks to the stewardship payments, but Peter admits that the extra work demanded by smaller field sizes and more complex cropping is difficult to calculate. For example, having gone from 38 fields to 92 they now have to change the headers on the combine harvesters over 30 times.

Wildlife restoration would not have succeeded without the gamekeeping on the estate and Peter is in constant communication with headkeeper Charlie Mellor.



Charlie Mellor (right) shows insects from a headland at an open day

With eyes on what the birds need at any given time, Charlie has responsibility for planning the six-metre strips of wild bird seed mixes around the field margins, which provide both cover from predators and a food source. Grain is also distributed via about 700 barrel feeders kept topped up until May.

The three pillars of food, habitat and legal predator control are all key to successful conservation

The miles of hawthorn hedges edged with strips of long grass provide ideal ground-nesting sites protected from birds of prey, but it is essential that they are left high (about six feet) and are thick at the base. Recently, Charlie has overseen the cutting and laying of some of the hedges planted at the beginning of the project. This traditional method thickens them up at the bottom, providing shelter from predators and the weather. It also offers better nesting habitat for other farmland birds within the hedge itself. This past year, a birdwatcher counted 80 various nests in just one section of cut-and-laid hedgerow of approximately 1,500 metres.

The three pillars of food, habitat and legal predator control are all key to successful conservation, if one is missing the project will fail. Predator control is the most time-consuming and important part of job for Charlie and his two full-time underkeepers. Prime target is the fox, especially at nesting time when it will kill sitting birds so destroying both the adults and their clutches. As well as rifle shooting at night (lamping) the team use legal GWCT breakaway snares, which are designed simply to tether the fox before it is humanely despatched by the keeper. Charlie explained that without this essential conservation tool the continued existence of the grey partridge on the South Downs would be threatened.

GWCT Research in Practice

The Sussex Study

Julie Ewald, GWCT head of GIS



The GWCT's Sussex Study was initiated by Dr Dick Potts in 1968 to explain the decline of grey partridges on the South Downs. Dick and the Sussex Study team monitored not only grey partridge numbers but also their environment, including cropping patterns, food and nesting resources. The monitoring is now in its 50th year, with GWCT research staff carrying on after Dick Potts passed away in 2017. Myself, Ryan Burrell and the rest of the Geographical Information Systems team collate information on invertebrate numbers, the occurrence of arable flora and partridge numbers, as well as mapping the changes in cropping, crop management and habitat provision. Steve Moreby identifies all the insects and a whole team of researchers assists with autumn grey partridge monitoring on a yearly basis.

The long-running nature of the Sussex Study means that it is possible to compare the cereal ecosystem on the Peppering Project area before it was a sustainable grey partridge shoot. Dick Potts had counted both farmland birds and brown hares on the Peppering area. This will be carried on by Ryan in 2018, with Lucy Capstick, part of the GWCT Wetlands team, monitoring lapwing chick survival. Peter Thompson, GWCT farmland advisor, has also provided assistance and advice on how to best combine farming and wildlife with the options available through Defra's agri-environment schemes.



Wildlife Highlights

- Grey partridge (left) • Skylark •
 - Corn bunting • Yellowhammer •
 - Song thrush • Linnet •
 - Lapwing • Turtle dove •
 - Hen harrier* • Kestrel (inset) •
 - Short-eared owl •
- red listed • amber listed *wintering
- Brown hare

Peppering has gone from 38 fields to 92 and planted nine miles of hedgerows

Corvids take the eggs and small chicks of farmland birds, so they are targeted from March until July. The keeping team also runs tunnel traps for rats, stoats and weasels, which they check daily in accordance with the law and best possible practice. It is the countless hours Charlie and his team put in particularly during the nesting season that has restored a more balanced ecosystem. All the work of the gamekeeping team is funded by just two or three partridge shoots per year. However, this leaves the budget highly vulnerable to the weather. If partridges have a poor breeding season due to harsh conditions during hatching, and the numbers are too low, the shoot days are cancelled.

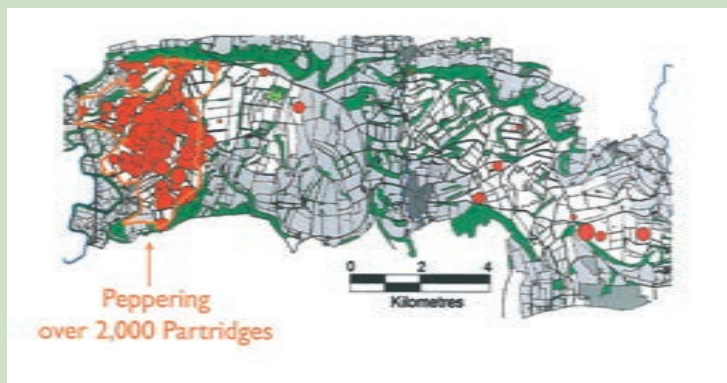
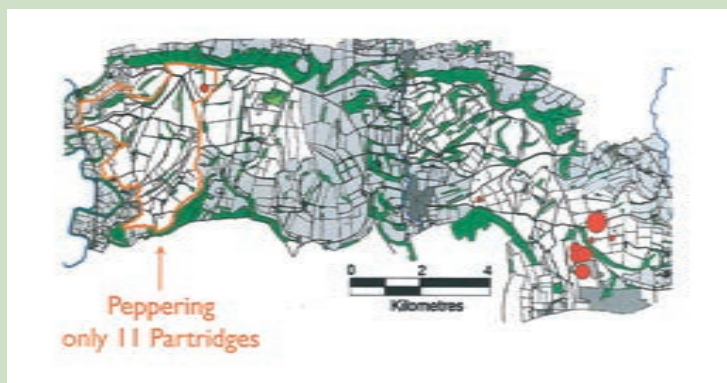
Naturally the abundance of wildlife attracts members of the public to the estate and early on the decision was taken to fence off the large number of footpaths to protect the ground nesting birds from dog walkers and general disturbance. They would have struggled to achieve success without the fencing, but birdwatchers have reported that they see far more than before because wildlife has gained the confidence to come up to the rights of way.

When a rare pallid harrier visited one summer, 2,400 people were able to see it over a six-week period. The Duke, Peter and Charlie are keen to engage people with the project and do regular farm tours and talks for the local and wider community.

Looking ahead, the team plans to cut and lay more hedges and devote greater attention to boosting insect numbers. They have recently completed the new Higher Tier grant application, which includes nectar and pollen mixes as well as floristically enhanced grass margins. They will also continue to seek GWCT advice and support, which Peter said has been essential from the beginning and he stresses the importance of building a good team particularly with such a complex operation.

Above all it is clear that this wildlife restoration project

has been driven by a passion. A determination from the Duke of Norfolk to see the grey partridge survive during his watch and a similar dedication on the part of Peter Knight, Charlie Mellor and the whole team to make it happen.



Above (top): Partridge distribution in the Sussex Study area in 2003 with the Peppering Project outlined. Above (lower): In 2014 the dramatic increase in partridge numbers is clear

Ancient Woodland Restoration

Why a conservation charity is delighted to have James Mulleneux's pheasant shoot in its wood

Farm Facts

Location: East Sussex

Type of farming: Beef

Acreage: 340

Funding grants: HLS, Forestry Commission

Conservation measures: Arable reversion to grassland including wildflower mixes, low input extensive grazing areas, covercrops (wild birdseed mixes), woodland management, hedge and tree planting, fencing, pond restoration, low input spring cereals and over-wintered stubbles.

Website: www.holbeamwood.com

James and Jane Mulleneux run 340-acre Holbeam Wood Farm, in East Sussex, in the beautiful rolling hills of the High Weald AONB. The farm was once part of the neighbouring Whiligh Estate, which famously supplied the ancient oak for Westminster Hall, and came into the family in 1958 when it was bought by James' grandfather. It divides into 250 acres of permanent pasture, 50 acres of arable and 40 acres of woodland and the shooting rights on a further 60 acres of Ancient Semi-Natural Woodland (ASNW). The pasture provides fodder for an award-winning herd of 50 native breed Sussex beef cattle, with the remaining grassland used by sheep graziers. Winter wheat and spring barley provide some feed and bedding straw for the livestock.

Income from the cattle, the CAP Basic Payment Scheme and an HLS agreement mean the farm breaks even but the Mulleneuxs do not draw a salary and rely instead on income from farm cottages, a holiday let in the old dairy and general storage. In addition, James works for the CLA. He explained: *Our soil is poor. We have a bit of Tunbridge Wells sand, but mostly heavy Wadhurst clay, which only produces 2.5 tonnes an acre. Farms in the area were traditionally mixed, primarily dairy with fruit trees and hop gardens, but like many others we stopped milking in the 1970s and switched to beef, sheep and arable.*

James was brought up with an appreciation for nature and is determined to return some of the wildlife that existed on the farm when he was younger. He said: *I love the land and seeing birds and butterflies in summer, it all goes together. In the old days we used to let grassland grow to a seedhead, so you had different levels of sward. There were nettles and piles of vegetation left lying about. We employed Old Pom and all he did was fencing, and cutting and laying the hedges by hand. Back then we had six people working on the farm, now I couldn't afford to employ anybody full time. The way we manage the landscape has changed hugely. It is manicured with machinery*



James Mulleneux with his Sussex Bull

and I have to make a conscious effort not to cut everything back.

The farm entered a 10-year HLS agreement in 2009 with an emphasis on the restoration of species-rich grassland and native woodland. In the first three years James received capital works payments for arable reversion to grassland, pond renovation (Holbeam Wood has all three species of British newts), hedge planting, and fencing. For the remainder of the agreement he receives an annual maintenance grant of about £20k.

This requires him to grow low input spring cereals with over-wintered stubbles to provide food for birds. His grassland has low levels of fertilizer, herbicides and insecticides. Cutting, harrowing and rolling are restricted to protect nesting birds. The UK has lost 97 percent of its traditional hay meadow, but at Holbeam Wood the swards are maintained at a range of heights and different grass species and wildflowers have been sown including a mix of common bent, cock's foot, Timothy, crested dog's tail, smooth meadow grass, meadow fescue, red fescue, black knapweed, oxeye daisy, common bird's foot trefoil, common sorrel and red clover. .

“Much of the money we get goes into the local economy”

James said: *Some of the leys we planted look fantastic. If we leave fields to cut hay it's the most beautiful sight full of insects and butterflies. Birds like linnets and skylarks have come back because grassland is allowed to go to seed. Also much of the money we get goes into the local economy by buying farm equipment and paying people to do the cultivations, hay making fencing and hedging.*

The shoot is central to the farm and brings essential conservation ingredients to the mix. It releases 2,800 pheasants in four pens, and shoots eleven days per year including one let day to cover costs and a beaters' day. The average bag is 96. They top up the feeders and scatter feed throughout the winter and into the hungry gap, which benefits farmland birds. Several gamecrops are located across the farm. These hold the pheasants but are also hugely beneficial to songbirds and pollinators, providing habitat and food. For example, a bees and birds mix includes phacelia, mustard, brown mustard, fodder radish, gold of pleasure, sunflower, kale, rape and buckwheat.

James is GWCT Sussex chairman and insists on all syndicate Guns being members of the GWCT. When the farm and syndicate bought the sporting rights on 60 acres of ancient woodland owned by a local charity called Bellhurst Nature Conservation Trust, he asked GWCT advisor Mike Swan for advice on how to minimise impact and increase biodiversity. The Bellhurst trustees were aware that if too densely stocked, woodland in a release pen can be damaged by the birds, but they were shown how this could



Trees are carefully selected for pollarding and coppicing to allow light in.



Squirrel damage is a serious threat

be avoided by fencing off a large enough area in one of the least sensitive pieces of habitat. James said: *Mike suggested where the pen should be and we worked out the size according to the Code of Good Shooting Practice (700 birds per hectare for ancient woodland). It's important for the Guns and the Bellhurst Trustees to know we have done it on the back of GWCT advice and we can show best practice.*

In exchange for firewood, the shoot engages a woodsman to help coppice a new section every year. Letting the light back in has meant the understorey of smaller plants, flowers and brambles has returned providing habitat for woodland birds and butterflies. The other key part of woodland management is deer and predator control. The shoot cannot afford to employ a full-time gamekeeper but a part-time gamekeeper Doug and a team of stalkers Steve, Graham, Dave and Mike share the work between them and keep a meticulous tally. Last season, the team accounted for 54 squirrels and 14 deer both of which do huge damage to the trees and understorey if not managed properly.

There are large numbers of foxes and corvids in the area, which kill songbirds and eat their eggs. On their small farm the team despatched 44 foxes and 805 crows, jackdaws and magpies last year. James explained: *Though we control them, you still appreciate predator species. The sight of a healthy fox on the farm is a joy to behold, but since we started the shoot combined with habitat and food supply through the HLS scheme, there has been a noticeable increase in the number of song birds*

including skylarks, linnets, yellowhammers and finches. I want to go further this year and start putting different songbird mixes in the feeders and on the ground in the spring.

The Bellhurst Trust has been impressed with the work, which they would otherwise have to fund themselves. One of its trustees Jason Lavender, is also co-director of the High Weald Area of Outstanding Natural Beauty (AONB). He is a big supporter and has organised several visits to the shoot to demonstrate the value of game management for woodland within the AONB.

James recognises the importance of opening the farm to the outside world, though he worries about people bringing increasingly urban attitudes to the countryside, for example, walkers not controlling their dogs in the farmland bird breeding season. He explained: *Farmers must win over society and justify the money we receive from the tax payer. We need to remind people what goes into producing food. I'm proud of what we do and want to share it. It's incredibly important for children to understand how farming works, for example, that milk actually comes from a cow not a bottle. We used to have school trips and we still do a lot of open days for Girl Guides, Natural England and FWAG, Duke of Edinburgh Award participants camp on the farm each year.*

“We have this special landscape in Britain and we must look after it.”



Management of James's award-winning native breed Sussex cattle fits well with conservation measures

Finally, James' advice for successful conservation is: *Your heart must be in it and the more knowledge you can get the better, that's why the GWCT is essential because you can't argue with the science. In the end, we have this special landscape in Britain and we must look after it. The most cost-effective solution is for farmers to do it, and we have a duty to show how we can be on the side of the angels.*



Above: Rare grass species and wildflowers thrive at Holbeam
Below: The pen was built in accordance with the Code of Good Shooting Practice

GWCT Research in Practice

An advisor's perspective



Mike Swan,
GWCT advisor and head of education

I first went to Holbeam Wood when James's father, Peter was thinking about setting up a small family shoot in the mid-1990s. By the time of my return visit, in 2012, the shoot was well established.

Having acquired the sporting rights on the neighbouring 60 acres of ancient semi-natural woodland, James and his team were keen to enjoy some sport from its splendid contours. My job as GWCT adviser, was to steer them in a way which would not harm this lovely old wood, rather it should enhance its conservation value. Also, I had to help convince the conservation trust which owned it that what was proposed was both good and sustainable. To develop this, we needed a pheasant release pen, and there was nowhere suitable outside the wood. Luckily, the best site for the shoot was also the least sensitive. Rather than big ancient trees, and characteristic ancient woodland herbs, it has a scrubby slightly heathy feel, with bracken beds, smaller trees and some chestnut coppice, which may even have been planted. These factors combined with the modest stocking of the right size pen meant I was confident that there would be no issues.

The shoot's woodland renovation works have helped the Belhurst Trust to achieve their conservation objectives – a win-win situation all round.



Wildlife Highlights

- Linnet •
- Yellowhammer •
- Grey wagtail •
- Wood warbler • (above)
- Song thrush •
- Skylark •
- red listed • amber listed
- Hedgehog
- Great-crested newt (inset)

© Dave Krier

In the footsteps of Gilbert White

How Farmer Cluster member Kate Faulkner has been helping her harvest mice



Farm Facts

Location: Hampshire

Type of farming: Arable

Acreage: 700

Percentage in conservation: 22

Funding grants: HLS, Forestry Commission, AONB

Conservation measures: Six metre strips, areas of wild bird seed and pollen and nectar mix, woodland management, hedge planting, cutting and laying, over winter stubbles, barn owl boxes

Kate Faulkner helps to manage the 22 per cent of land in conservation measures on the 700-acre Norton Farm near Selborne on the edge of the Hampshire Weald. Her husband Andrew and father-in-law Derick run Norton, which is part of a machinery and labour sharing collaboration with two neighbouring farms, covering an arable area of approximately 2,800 acres, growing wheat, oilseed rape, oats, barley and beans in rotation. Kate also represents the farm on the local 10,000-acre Farmer Cluster. She explained that there had always been a keen interest in conservation on both sides of the family:

Derick used to put old tea chests up for barn owls to nest in and throughout his farming life has planted a huge number of trees as well as restoring our 13 acres of ancient hanger woodland to good heart. I also grew up on a farm on chalk downland in Hampshire. My Dad had a particular meadow he was very proud of and whenever we went for walks he'd tell us what plant was what.

The farm first entered into Countryside Stewardship in 1998 and Kate became involved when they entered a Higher Level agreement with Natural England in 2009. All the arable fields have six-metre margins of long grass and the family has planted over 2,000m of hedgerow in the past 20 years. There are 97 acres of "low input" grassland, which means chemical application is limited. These are grazed by sheep, making it an ideal site for breeding lapwings from a nearby nesting plot to bring their chicks to feed. There is no shoot on the farm, but Derick puts out Larsen traps for corvids in the spring to protect nesting songbirds and has installed 10 barn owl boxes.

Norton Farm has been part of the Selborne Landscape Partnership Farmer Cluster since 2014 when it was started by local farmer William Wolmer. It now involves 16 farmers co-ordinating conservation initiatives across 10,000 acres

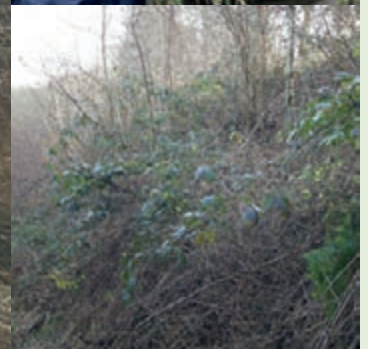


Kate Faulkner with a partnership tractor

around the village of Selborne. The Cluster benefits from including the adjacent GWCT demonstration project at Rotherfield Park, which shows how to re-introduce grey partridge where they have gone extinct and the wider benefits this has for farmland biodiversity. This includes testing habitat measures such as covercrops and wild bird seed mixes aimed at partridges in partnership with Oakbank seed suppliers. Chief scientist at Rotherfield Francis Buner attends all the Cluster meetings and visits its farms to provide advice. Kate explained the value of his involvement: *Our cluster has been on numerous farm walks at Rotherfield. It really is a gold-standard showcase, so when Francis came out last November, I thought his suggestions might be over the top, but they were actually very achievable. I'm a big fan of the GWCT, they can show scientific proof of how their conservation measures are benefiting wildlife and at the same time their advisors are very practical and can see things from a farming perspective. A collaborative approach is far more appealing than being dictated to.*

For one of its first projects the Cluster chose to improve habitat for harvest mice, inspired by the famous 18th-century naturalist Gilbert White. White lived in nearby Selborne and identified the harvest mouse as a separate species.

“I’m a big fan of the GWCT, they can show scientific proof of how their conservation measures are benefiting wildlife”



Clockwise: View from the Farm of Gilbert White’s Walk; Liz Truss MP learns to spot a harvest mouse nest at the Cluster; understory in the woodland



Farmers counted 472 nests across the Cluster

In 1999, only one harvest mouse nest was recorded around the village of Selborne, so after receiving tuition from GWCT, several teams went out in the winter of 2014/2015 and counted 472 separate nests across the cluster. Inspired by the project, the Faulkners decided to improve their hedgerows. One 10-year-old hawthorne hedge was straggly at the bottom

and was letting the wind through at the base, so they invited Rob Nichol, local South Downs National Park ranger, to organise a weekend's training for farmers to learn how to cut and lay hedges to provide better nesting habitat for harvest mice. If you do something for one species, it often helps others. In this case whitethroats and yellowhammers, which nest lowdown in hedgerows, now benefit from increased insect life and protection from predators.

According to Kate, the farm received little recognition for its conservation work until it joined the Farmer Cluster. The resulting higher profile has enabled them to inspire others in

a way that wouldn't be possible as a single farm. For example, South Downs National Park volunteers came and finished the full length of cut-and-layed hedge started by the Cluster and the fact that the hedge was on a footpath drew in the village of Farringdon and encouraged others to get their hedges layed. In addition, a regular column in the parish magazine communicates the work of the cluster to the local community.

Kate said: *Much of the recognition for the harvest mouse project was down to the GWCT. Peter Thompson was instrumental in getting DEFRA secretary of state Liz Truss to visit us in 2016 and that led to high profile interest from national and local papers and radio stations. We were counting our harvest mice around the time that the State of Nature report came out and I felt despondent about the reported declines in wildlife, which is a shame because there is so much going on. I worry people still think we are all ripping out hedgerows, but that hasn't been the case since the '80s. There are also many environmental benefits of having more sophisticated machinery. For example, nowadays sprayers can be operated with much more precision, significantly reducing the amount of chemical used. This greater efficiency in the middle of the field allows us to have a bit more mess round the edges, which is good for wildlife.*

Kate's work for the Farmer Cluster is voluntary as is some of the woodland maintenance work on the farm. The farm also shared the cost of some of the hedge planting, deer fencing and restocking of hazel and oak with East Hants AONB, before it was subsumed into the South Downs National Park in 2011. As well as financial support, advice and encouragement has been key to success.

She explained: *Our local AONB ranger Nick Heasman was great to work with and hugely helpful in securing grants. Another inspiration has been our FWAG advisor Debbie Miller. She helped us with the original countryside stewardship scheme and subsequent ELS/IHLS application. Having advised many of the farmers in the area Debbie is now our Farmer Cluster facilitator funded by Natural England for five years to advise and oversee the landscape scale project. William Wolmer our lead farmer in the Cluster has been another key figure as a fellow farmer who is a passionate conservationist, as are GWCT advisors Francis Buner and Peter Thompson who helped facilitate the set-up of the cluster in 2014. As well as advice on management they have taught us so much about how to read the landscape for wildlife.*

“It's to do with getting advice from people who talk the same language and understand the realities of farming.”

Kate believes compromises can be found between the conflicts of modern farming and conservation. At one stage, they decided against having lapwing and skylark plots in the centre of the arable fields as it was too difficult to manage, but she is confident that, through good communication, most options can be accommodated. For example, you can site a beetle bank to suit the drill widths and boom length of the sprayer and all the tractors have a map of the field margins in the cab to flag them up to operators. So, if it's possible to run a viable farming business and have space for wildlife, what stops more farmers getting involved?

GWCT Research in Practice

Farmer Clusters

Peter Thompson, GWCT biodiversity advisor



Farmers do a lot for Britain's rural environment, but there is only so much that an individual, acting in isolation, can do on his or her own farm. The Farmer Cluster concept, developed by the GWCT in association with Natural England, is a plan to help a number of farmers work more cohesively together in their locality, enabling them to collectively deliver greater benefits for soil, water and wildlife at a landscape scale.

Following a pilot scheme run by the GWCT, to test if farmers would indeed work together, Natural England has put £7.8 million into a "facilitation fund". The pilot scheme found that it was important for a Farmer Cluster to have an organising conservation adviser to over-see and help implement the plan for the group.

A Farmer Cluster is therefore designed to start life at a bottom-up, farmer level, under the guidance of a lead farmer. They devise their own conservation plans, with the help of their own chosen conservation advisors, (whom they already know and trust) who are aware of local conservation priorities.

There are now 98 farmer clusters across England with around 1,680 farmers involved, covering 450,000 ha (1,112,000 acres).

Kate said: *I'm sure it's a lot about time. Farming gets ever more bureaucratic with health and safety regs, employment law and so on. In the new stewardship schemes there's more requirement to record what you are doing, adding a whole new layer of paperwork. Success relies on building a rapport, you need to trust the people you're dealing with otherwise it becomes adversarial very quickly. We have been in HLS for eight-and-a-half years and during that time we have had six different Natural England advisors. I think it is important to have continuity of advice and the ability to build a good working relationship. Another stumbling block can be inflexible restrictions and the application of penalties. Early on in our agreement we had a two-hectare field containing both birdseed and pollen-and-nectar mixes. Because we slightly miscalculated and planted more of one than the other we were penalised, even though both options paid the same.*

In spite of the challenges, Kate is positive about the future for wildlife in the area. Along with the rest of the Cluster, the farm is planning to cut and lay more hedges and incorporate a supplementary feeding stewardship option where grain is spread for birds during winter months, something not yet tried on a landscape scale. They will also be learning how to do an official hare count which will help the preservation of the species in the area and work with Rotherfield to boost lapwings, the rare Duke of Burgundy and brown hairstreak butterflies and, of course, the harvest mice. Kate's advice for fellow working conservationists: *It helps to collaborate, to talk to your neighbours and to get guidance from the GWCT. It's to do with getting advice from people who talk the same language and understand the realities of farming.*



Thanks to the GWCT Kate knows where to find harvest mice nests

On Norton Farm well-managed hedges next to six-metre grass margins and over-winter stubbles provide food and habitat for a wide range of wildlife



Wildlife Highlights

- Lapwing •
- Linnet •
- Starling •
- Stock dove •
- Yellowhammer • (left)
- Song thrush •
- House sparrow •
- Bullfinch •

• red listed • amber listed

- Brown hare
- Harvest mouse
- Duke of Burgundy (above)
- Brown hairstreak

A champion for curlew

Tom Orde-Powlett is determined not to see curlew disappear on his watch and is hoping to host a pair of hen harriers



Farm Facts

Location: Bolton Castle Estate, Wensleydale, North Yorkshire

Type of farming: Tenant farms, sheep, beef, dairy and grouse moor

Acreage: 12,500

Percentage in conservation: 60

Funding grants: HLS, Forestry Commission, Yorkshire Dales National Park

Conservation measures: (On the moor) cool muir burn, predator control, bird surveys, protection of water catchment, woodland management, hedge and tree planting, tagging curlew, (in the valley) extensive grazing, low input grassland, fencing, predator control, winter feeding, overwinter stubbles, feeders, corrugated iron shelters, cover crops and beetle banks.

Website: www.boltonestate.co.uk

Tom Orde-Powlett is involved with a wide range of conservation projects on his family's estate at Bolton Castle in Wensleydale, North Yorkshire. The 12,500-acre estate includes 6,000 acres of upland grouse moor run by Tom's father Lord Bolton with a low intensity grazing regime. The remainder is made up of 23 tenant farms averaging 260 acres with a mix of sheep, beef and dairy much of which supplies the local Wensleydale Cheese Creamery. Some permanent pasture and wildflower hay meadows remain alongside the silage fields, which make up the majority of the cropping regime.

Tom's interest in conservation started at a young age and grew from his love of country activities. He said: *I've always loved fishing and grew up dreaming of having salmon and otters in the river, which we now have. The management of the fishing put me in touch with the Rivers Trust and we've worked with them and the Environment Agency on the Ure recovery project, which has been incredibly successful. Contrary to the global trends our wild salmon are increasing.*

When asked how much unpaid work Tom does for conservation he replied: *After a time the real interest starts to become the management. Last season I probably fished for two hours but spent several days working on the river bank coppicing some ancient woodland. If you asked my wife she'd say "far too much!"*

Tom's current conservation focus is the curlew, which is globally threatened and since 1970 has declined 64 per cent across the UK, 97 per cent in Northern Ireland and 80



Tom Orde-Powlett wants hen harriers to nest on his moor

per cent in Wales. Bolton has one of the remaining healthy populations of both breeding and overwintering birds left in the UK.

Tom said: *My step-grandfather come up here a few years ago and we drove over the moors in spring listening to the calls of the curlew and he was close to tears saying this is what his native Shropshire used to be like only 40 years ago. I don't want to be part of the generation that loses the curlew in Wensleydale.*

Last April, a 180-acre farm known to support a good population of curlew and lapwing, came back in hand and Tom engaged GWCT advisor Jennie Stafford to develop a conservation plan. The farm presents some challenges. The drainage is largely blocked so it's wet, which is great for waders, but most of the boundaries will need to be repaired before they can plan a proper grazing regime to deliver the desired fauna and flora. There is also a mole infestation, which are a serious problem in the Dales. Tom explained why it is an example of a clash between modern farming methods and conservation, whether hay or silage: *When a cut is taken, any earth picked up contaminates the crop making it useless, so farmers usually chain harrow the ground to get rid of the molehills. This is fine in most places, but not here where we have ground-nesting lapwing, curlew and skylarks, so we need to find a way round.*

"I don't want to be part of the generation that loses the curlew in Wensleydale."



Heather moorland is rarer than the rainforest and the UK has 75 per cent. Bolton's would have been lost to forestry were it not for grouse shooting

In addition to the farm and hosting an annual Curlew Conference to bring stakeholders together, Tom has teamed up with the British Trust for Ornithology, Jill Warwick of the local Nosterfield Nature Reserve and licensed canon netter Robin Ward of the International Wader Study Group to tag some of the overwintering birds. So far, they have managed to colour mark 41. Of these, 28 have been re-sighted post 2016 breeding season, one of which was also seen with two chicks on the moor, just eight kilometres from its winter roost.

Another essential pillar of curlew conservation is control of generalist predators such as foxes and crows. At Bolton this is carried out by the gamekeepers who are employed by the grouse and lowland pheasant shoots run by Tom's father. He explained: *The benefits of keeping were definitively proven by the GWCT's Otterburn study. If driven grouse shooting ended, predator control would stop and there would be no future for any ground nesting birds in the uplands. Across the country you would be looking at 100,000s of curlew, lapwing, golden plover, merlin, ring ousel, all disappearing, over the next 30 years.*

Tom believes there is much common ground between non-shooting conservationists and the shooting community because the vast majority on both sides want to see a healthy balance of predator and prey. The divergence is often about where that balance lies and the current controversy surrounding hen harriers is a case in point. He explained: *I couldn't be more positive about having a pair of hen harriers nesting at Bolton, but I would be terrified of having*

a colony because it would make grouse shooting unviable and when we could no longer afford to employ keepers, all the vulnerable prey species like curlew and golden plover would be lost.

The brood management scheme supported by GWCT and recently launched by Natural England allows qualified experts to remove hen harrier chicks from the nest to be reared and released elsewhere. Tom sees it as a solution to the conflict. He said: *I wish more of the debate about hen harriers and brood management had focussed on curlews. Predation has played a huge part in their decline and brood management is fantastic way of protecting our remaining strongholds of curlews and other vulnerable waders, alongside increasing the numbers and range of hen harriers. I am absolutely confident that we can have sustainable populations of curlews and hen harriers, but both will depend on gamekeepers maintaining their habitats and controlling predation.*

For Tom, rather than being in conflict with conservation, driven grouse shooting is actually driving it. He said: *The irony is that moors were designated SSSIs because of their management as grouse moors. It is thanks to 150 years of keeping that they look as they do and support such a range of wildlife. In the '80s it was only grouse shooting that protected these uplands from forestry and if they ever become woodlands it would be bye bye waders. Simply stamping SSSI on something won't help the wildlife in itself. Like all designations, someone's got to actively manage it.*



Hen harrier chicks are vulnerable to predation

GWCT Research in Practice

Managing for waders

Jennie Stafford,
GWCT north of England advisor



Pasture management is very important for waders. If stocking densities are too high during the early spring, eggs risk being trampled, conversely, if the stocking densities are too low, the grass can become too tall for waders to nest happily. Sheep grazing while chicks are very young can be useful as predators often mistake sheep droppings for lapwing chicks thus camouflaging the chicks. The presence of cow muck is useful as foraging areas for chicks once they are a little larger due to the large number of insects it attracts.

Once we had assessed every field on the holding based on a combination of visits and survey data, we were able to identify areas of the farm where future management should focus on providing the best possible habitats for waders. This will incorporate grazing calendars, rush management programmes and fertiliser limits. We investigated the possibility of managing these measures through Countryside Stewardship Mid-Tier options. Such a targeted approach allows fields which are not suitable for breeding waders to be farmed more conventionally. For example, they can be grazed by livestock and cut for silage without seasonal restrictions.

“Brood management is a fantastic way of protecting our remaining strongholds of curlews and other vulnerable waders.”

Tom explained that when the estate first entered HLS in the early 90s a lot of traditional moorland was being lost so a lot of Natural England's emphasis was on increasing heather cover. It is now agreed that a more varied habitat with patches of heather, sphagnum moss and white grass is preferable. Management at Bolton has changed accordingly with tree planting in ghylls, controlled grazing and burning only the tops of the heather (cool burn) and in smaller patches so the sphagnum can be allowed to grow where it would otherwise be stifled, eventually producing more peat. It has taken more than 20 years but it's starting to bear fruit with greater areas of moorland coming into “favourable condition” every year.

The impact on birdlife is striking. A breeding bird survey has been done on the same grid square since 2007 and the number of bird species as increased by over 200% from 13



Wildlife Highlights

- Curlew •
- Ring ousel (left) •
- Merlin (inset) •
- Woodcock •
- Red grouse •
- Short-eared owl •
- Kestrel •
- Hen harrier* •
- Lapwing •
- Pied flycatcher •
- Ringed plover •
- Redshank •
- Tawny owl •
- Snipe •

• red listed • amber listed *wintering only

- Atlantic salmon
- Water voles
- Brown trout
- Otter

An area of cool burn at Bolton where the top has been burned off the old heather. This method can be used to restore spagnum moss, which forms peat

to 40 and total birds of any species from 87 sighted to 444, including, curlew, red grouse, golden plover, lapwing, snipe, woodcock, oyster catcher. As well as wading birds the moors are host to many raptor species including, short-eared owls, kestrels, merlins. Tom said: *People often see more birds of prey on a day of driven grouse shooting than almost anywhere else and it isn't unusual to see red kite, hen harrier, buzzard and peregrine on the same day.*

Despite putting up signs asking people to keep to the footpath and dogs on leads, those who ignore the countryside code pose a serious threat to birds. *If birds are being disturbed on the nest frequently when it's cold and they leave for too long, the eggs or chicks will chill and die.* However, Tom recognises that improving public access to the countryside is essential and welcomes walkers to the moor. He said: *I've stopped to talk to 100s of walkers over the years. The vast majority understand the work that goes in and want to celebrate what a beautiful place it is and how many birds they've seen. We leave our shoot lunch hut open for walkers to take shelter and we've had some lovely comments.*

Looking ahead Tom would like to see a return to a less polarised situation on both sides of the driven grouse debate and more collaborative relationship between conservationists and the people who work the land for the benefit of curlew and other wildlife. For everyone involved it's got to be about genuine collaboration. *You've got to be able to go and have a pint and listen to each other's points of view. Tension soon breaks down and you discover a joint passion for birds and so much knowledge to share.*



The smaller patches of burning are clearly visible on the hill. After 20 years, this management technique is starting to bear fruit

Eleven ponds and counting

Mark Chattey is a Devon beef farmer with a passion for creating wetlands



Mark is keen for people to enjoy the wildlife on his farm, and plans to create more residential huts to make this possible

Farm Facts

Location: Devon

Type of farming: Beef and arable

Acreage: 284

Percentage in conservation: 12

Funding grants: Mid-tier, Forestry Commission, Environment Agency

Conservation measures: 11 ponds, fenced off water course, low input grassland, covercrops, wildflower mix, tree plantations, barn owl boxes

Website: clworley.wixsite.com/langford

Mark Chattey from Langford in East Devon runs an Approved Finishing Unit for beef animals from TB restricted herds and sells to Waitrose's premium Dovecote Park label. In the past 15 years, he has turned over 35 of his 284 acres to conservation (about 12 percent) and created 11 ponds on the farm. His inspiration comes from his family and his love of the natural world.

He said: *I'm inspired by birdsong and the beauty and joy I get from walking round a more varied habitat. I was interested in nature from a young age and my Dad set a good example creating the House Pond to encourage swans to nest. It's also important to think about the next generation. Two years ago, I planted a 2.5 acre woodland to celebrate the birth of our daughter and named it Evelyn's Copse after her.*

Evelyn's Copse was made possible thanks to a Forestry Commission grant and Mark also received a payment from the EA to protect the stream running through the farm, which funded 5 miles of fencing to create his "conservation area". Besides that, all other tree planting and landscaping has been done out of his pocket and in his own time.

Although he has learned a lot for himself, he sought expert advice on funding. He said: *I am a GWCT member and I often pick up useful information from Gamewise and the website, and FWAG (Farming and Wildlife Advisory Group) helped me with the woodland grant. Where I really need guidance is filling in the forms. I think it's more complicated than it needs to be. In terms of getting more farmers involved funding is key, but I also believe we can inspire each other. For example, If we joined together we could help hare recovery by linking enough permanent pasture.*



Mark Chattey rears beef for Waitrose

This year, Mark entered into a Natural England agri-environment scheme for the first time. His mid-tier agreement is worth about £10,000 per year for five-years for planting annual cover crops plus £60,000 for capital works including putting in two miles of hedges. He explained: *The grant will cover the costs of seed and the contractors to drill it and it's not far off the value of wheat in a bad year, but I think agreements should be more flexible and results based so you are awarded for attracting more wildlife.*

In addition to the cover crops, there is a range of conservation measures on the farm, providing food and habitat for many nationally declining species. The ponds have been dug at different depths with islands and inlets to appeal to both diving and dabbling ducks. They offer an autumn day roost for good groups of mallard and teal. In the spring, tufted, mallard and swans breed and wigeon and shoveller have been known to flight in, despite the farm being 12 miles from the coast. Otters and kingfishers are regular visitors (the river Otter is only six miles away), and a range of bat species come to feed over the ponds in the summer. Mark is already planning to dig his next one in a waterlogged patch of ground. The 25 acres of "conservation area", runs the length

"I planted a 2.5 acre woodland to celebrate the birth of our daughter and named it Evelyn's Copse after her."



Wildlife Highlights

- Woodcock •
- Mute swan (left) •
- Shoveler •
- Teal (right) •
- Tawny owl •
- Mallard •
- Tufted duck •
- Wigeon •
- Kingfisher •
- red listed • amber listed
- Otter

As well as being home to several species of duck, the ponds provide habitat for otters, kingfishers and bats



Mark with his daughter Evelyn in the copse he planted for her

of the farm and its mix of long and short grass is ideal for voles and mice, a key food source for barn owls.

Mark said: *My uncle Richard built me two barn owl boxes and after only two years both were occupied and several broods have hatched. As well as long grass, I like to leave big patches of nettles, brambles and thistles in the conservation area, which attract bees and butterflies and a healthy population of grass snakes. For my cover crops, I chose wildflowers, kale, and a bumblebird mix, which benefits both songbirds and pollinators. I've also gone for an option developed by GWCT which pays £70 per hectare for putting out grain for farmland birds.*

No pheasants are released on the farm but it hosts a regular roughshoot with five Guns shooting six days and an average mixed bag of six including pheasant, duck and pigeon. This provides an extra incentive to plant covercrops, feed up the ponds and put out feeders and Mark uses a Larsen to trap up to 30 magpies to protect nesting birds in March and April. He is proud to have four species of deer on the farm, a red deer calf was born on the farm last year, a sika is a regular visitor and as a keen stalker, Mark manages the fallow and roe to protect his trees. There is a footpath on the farm and looking to the future, Mark feels access to the wildlife could provide another revenue stream for the business. He said: *I love sharing the wildlife experience and I am keen to have more paying guests. We have a fishing hut we let out and I'd like to have 10 residential huts, sell guests local produce, take them shooting and have horses for children to ride.*

Though there are challenges to overcome, he is in no doubt that you can run a profitable business and find space for nature. He said: *My farming is conventional and I tend to keep it fenced off from the conservation area so it doesn't really impact. I have sacrificed some of my headlands, but they are often bits of land where the farming was difficult and it's fine to lose those funny little corners. Spraying can be an issue, I won't spray on the fields if the wind is blowing that way, but it's not a big problem.*

Finally, Mark's advice to budding conservationists is to be bold: *Don't be afraid to experiment. The wider variety of trees and cover crops you plant, the greater the diversity of species you will attract. And don't forget that some weeds are a challenge, but others are beneficial and pleasing on the eye.*

GWCT Research in Practice

Stewardship schemes

Dr. Alastair Leake,
GWCT head of policy



GWCT research has influenced 30 of 37 arable stewardship options currently available to farmers, seven of which are based entirely on its science. For example, studies at the GWCT Allerton Project clearly showed that farmland birds make frequent use of feeders filled for pheasants, particularly in the late winter and early spring. When supplementary food was made available, twice as many birds were present on the farm than when no extra feeding was done and this increased the number of nesting territories the following spring. It was our work that persuaded Defra and Natural England to introduce supplementary winter feeding as an Environmental Stewardship option.

Both pollen and nectar mixes and wildlife seed mixes are particularly good measures to include in any land management scheme. Both require good management however and the use of inputs to get the best results. We know from the work in the GWCT Sussex Study the direct impact that increased insect numbers have on the survival of grey partridge chicks, and this is true for many other species of birds. Likewise, the seed-bearing wildlife mixes provide an important food source in winter, but even this is often not enough.

Whilst good management of farmland can certainly help in achieving conservation objectives, scale is important too. GWCT's involvement in the Farm4Bio project showed that ideally around 12% of the land is needed to be managed for nature to achieve results. Much of this can be found from unproductive areas so on many farms crop yields per hectare actually increase.

“Don't forget that some weeds are a challenge, but others are beneficial and pleasing on the eye.”



Mid-tier agreement options such as wildflower mixes require good management and the use of inputs to get the best results



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How to plant a million trees

On a previously desolate part of the North Wessex Downs Konrad Goess-Saurau has created a wildlife paradise



Farm Facts

Location: Wiltshire

Type of farming: Arable

Acreage: 2,000

Percentage in conservation: 25

Funding grants: HLS, Forestry Commission, NIA, SWFBI, North Wessex Downs AONB

Conservation measures: Six metre strips, cover crops (wild birdseed mixes) woodland management, hedge and tree planting, pond creation, long grass and extensive grazing areas.

Konrad Goess-Saurau farms 2,000 acres of Wiltshire downland on the edge of Marlborough. Over 30 years he has transformed an intensive arable farm into an award-winning combination of profitable agricultural business and wildlife haven with 500 acres (about 25 per cent) devoted to conservation. Since he bought Temple Farm estate in 1985, he has planted more than 23 miles of hedges and 1 million trees. To put this in perspective, at the 2015 General Election the Government pledged to plant 11 million trees across the whole of the UK by 2020 and so far has managed 2.5million.



Konrad Goess-Saurau in front of his chapel

Growing up on an estate in Austria, the traditional hunting culture played a strong part in Konrad's upbringing, instilling a love of wildlife and a conservation instinct. He has built a traditional Austrian-style chapel containing memorials to family members in a tranquil spot tucked into a slope on the farm. On the back wall is a beautiful painting depicting the animals of both the Austrian mountains and the Marlborough Downs.

The reintroduction of wildlife is in the family tradition. Konrad said: *In the 1950s, my grandfather reintroduced the ibex to Austria after it had been wiped out through hunting. If you don't recreate the habitat, you miss out on the delight of happening upon nature, unexpectedly coming upon a deer or a bird, these encounters are magical.*

Konrad started his transformation of the farm as soon as he arrived but it was a gradual process: *When I first came it was desolate and so windy I didn't get out of the car. There was nothing you'd expect from an English estate, not so much as a*

mouse. The land had been owned by English Farms, a business set up to maximise agricultural production after the World War II by ploughing up the Wiltshire Downs, prior to that, it had been largely grazed.

The first aim was to create a pheasant shoot with an emphasis on wildlife habitat. Konrad asked GWCT advisor Ian McCall, who had helped his brother in Austria, to work on the project alongside current chief executive Teresa Dent. He said: *The GWCT is very important. They are the first port of call on what to plant where, which covercrop mixes to use and how to manage gamebirds.*

“There was nothing you would expect from an English estate, not so much as a mouse”

Ian planned new covers and planting to wind-proof the few existing ones with shrubs round the edges. Hedges were put in consisting of two parallel rows of trees a couple of yards apart creating a tunnel for the pheasants to move between drives. Other conservation measures on the estate include a mix of areas of long grass and grazing by rare breed White Park cattle. Some of the higher ground was sown with traditional grasses and left to revert to scrub and the gorse and wildflowers have returned. Much of this is designated SSSI in part due to several prehistoric standing stones dating back to 5,000BC.



Some of the higher ground was sown with traditional grasses and left to return to scrub. Since then the gorse and wildflowers have comeback

GWCT Research in Practice

Getting NIA status

Teresa Dent CBE, CEO GWCT



The history behind the Marlborough Downs, and the Temple Estate, becoming the only farmer-led Nature Improvement Area (NIA) is an interesting one. GWCT, along with LEAF and FWAG, became concerned with negative publicity about agri-environment schemes (AES); in particular the perception the farmers only went into them for the money and that they were not committed to conservation outcomes. This portrayal jarred fundamentally with our understanding of the farmers we knew and worked with. Even if it was a reality in some cases, we felt the situation could be changed if AES were less top-down and less prescriptive. Let's face it, many were 'sold' to farmers on the basis that they would get paid if they entered.

The nagging must have worked, because when NIAs were launched in July 2011, I was asked by a senior Defra official to find a group of farmers who would be prepared to do an NIA. I appealed to a farmers' discussion group I am a member of, and two farmers bravely put in group applications. Only one was successful and so the Marlborough Downs NIA was created.

Temple Estate, and the conservation work Konrad had done there, served as a nucleus for the NIA, but that should not detract from the fact that many of his neighbouring farmers were also extremely good conservationists. GWCT was delighted to help the farmers access the NIA funding, usually reserved for mainstream conservation charities and other bodies such as National Parks. It is difficult for individual farmers, or even groups of farmers, to access Government, HLF or EU funds beyond AES. GWCT has been pleased to help on four occasions in recent years: NIA funding for the Marlborough Downs' farmers; the Wales Nature fund for Welsh moorowners; Welsh Sustainable Management Scheme funding for the same moorowners; and most recently helping Curlew Country in Shropshire access Heritage Lottery Funds.

GWCT receives the vast bulk of its support and income from farmers and other land managers; it is nice to be able to support them in return.

Konrad explained: *There was no grand plan and anyone embarking on a big project who says they got it right from the start is lying. What's extraordinary is how little there was before and how much has returned.*

The creation of nine traditional, clay-lined dew ponds attracted wildfowl and the area now boasts breeding populations of threatened birds including corn bunting, stone curlew, grey partridge and visiting short-eared owls, all of which had previously disappeared. Temple Farm's headkeeper Phil Holborrow commented: *The RSPB were impressed when they counted 115 lapwings in addition to stone curlews, yellowhammers, turtle doves, tree sparrows and skylarks.*

Konrad is keen to prove that it's possible to make a profit in agriculture and still leave space for nature. The farm has abandoned conservation headlands, those areas in the field which are not sprayed, as they were struggling with the build up of weeds. Instead they decided to plant wild bird mixes where they had previously had headlands and keep them completely separate. Much of the 25 per cent that's not in production is on steep banks that would be very difficult to farm and taking the field margins out of production does not mean the farm is no longer profitable even if revenue is reduced. Konrad explained: *If your intention is to spend the entire summer in St Tropez then you might need to farm right up to the field edge, but if you are happy to spend some of it in England, then why not create a long grass margin that is good for wildlife and nice to walk on.*

The farm is only viable if you include the agri-environment schemes, which help cover multiple costs including tree planting and maintenance and drilling of annual cover crops. Konrad is keen that taxpayers should get value for money from environmental subsidies. Though he welcomes DEFRA secretary of state Michael Gove's recent proposals to switch grants to environmental measures post Brexit, he is concerned that the dual outcomes of high-quality food production and more wildlife, must be achieved. *If you can no longer make a profit farming, there is a risk you will stop producing food and simply plant the whole farm with trees, then what has the nation achieved?*

At the same time, he would also like to see a more flexible approach from government agencies and one which rewards results. He explained: *On one occasion, I planted a 140-acre wood on a 3m-by-3m basis to ensure even growth. When we had finished, they wouldn't give us the last 10 per cent of the grant because it wasn't planted 2m by 3m.*

“You have to see conservation as rewarding in its own right and genuinely want to see the wildlife return.”

There are plenty of footpaths through the estate from which walkers can enjoy the wildlife but Konrad thinks it is important to have some parts of the farm where not even he or his keeper go. He said: *Ninety-five percent of people are happy with sticking to footpaths and avoiding disturbance is key to conservation. We encourage visits from local schools and universities, but the right to roam anywhere would be damaging. Imagine people with dogs wondering everywhere during the songbird breeding season. I put this to the RSPB, which was pushing for greater access to private land at the time. I suggested we work together to create the Swindon bird watching club. I offered to put up a hide on every pond on the farm and set up a website for bookings.*

One of nine dew ponds created at Temple



We could then charge birdwatchers a subscription and split it between us. Sadly, the idea didn't catch on.

Temple shoot releases 6,000 pheasants and 6,000 partridges and shoots only cock birds in order to encourage the wild pheasant population. This method has clearly worked with over 50 clutches counted last year. Predator control is a key element in Temple's success story and the work of Headkeeper Phil Holborrow keeping rats, foxes, rabbits, corvids, weasels, stoats and grey squirrels under control, is essential to songbird survival. Every year, five or six roebucks are culled to manage the population and Konrad's cousins come over from Austria to help. He explained: *When I was a child in Austria, we had many gamekeepers and their work revolved around maintaining a healthy deer population and conserving the surrounding nature. Since we were small boys we went deerstalking with our parents, my mother loved deer and all wildlife. These days some modern foresters see roe deer as a pest, but it is the most beautiful animal and if a few trees get nibbled that's nature. A forest without deer is a dead forest.*



Bryan Hanlon's Altarpiece depicts the wildlife of Austria and Wiltshire

Recognition for Temple Farm's remarkable transformation rightly came in 2010 when it was chosen to launch Natural England's South West Farmland Bird Initiative (SWFBI), due to the abundance of key species on the estate. In 2012 along with 41 other farms on the Marlborough Downs, the estate was listed as one of only 12 Nature Improvement Areas (NIA) in the country and in November 2013 it won gold in the Purvey Awards for Game and Conservation.

Konrad shows no sign of slowing down the tree planting and more holm oaks are planned for the slopes of the Temple Estate. He believes to achieve conservation success you have to have a passion for it. He said: *It's no good just doing it for the money. You have to see conservation as rewarding in its own right and genuinely want to see the wildlife return.*



Wildlife Highlights

- | | |
|----------------------|-----------------------------|
| Turtle dove • (left) | Stone curlew • (right) |
| Yellowhammer • | Corn bunting • |
| Lapwing • | Skylark • |
| Grey partridge • | Short-eared owl • |
| Tree sparrow • | • red listed • amber listed |

Brown hare

© David Kiaer



Since Konrad bought Temple Farm estate in 1985, he has planted more than 23 miles of hedges and 1 million trees.

Return of the Welsh grouse

David Thomas is working on an exciting project to restore wildlife to the hills of Powys



Moorland Management

Location: Beacon Hill, Powys

Acreage: 5,000

Percentage in conservation: 100

Funding grants: Sustainable Management Scheme supported by the Rural Development Programme

Conservation measures: Predator control, brashing, wiping, cool burning, pond digging, and bird surveys.

Website: www.powysmoorlands.cymru

David Thomas is a gamekeeper on Beacon Hill moor, 5,000 acres of the Crown Estate near Pilleth in Powys, the site of Owain Glyndwr's famous defeat of the English at the battle of Bryn Glas. The land is grazed by sheep farmers who hold commons' rights and the shooting rights are rented by a small local syndicate captained by Peter Hood, a retired hill farmer. David's post is funded by the Welsh Government (WG) as part of the Powys Moorland Partnership which includes three separate moors aiming to restore grouse and other endangered moorland birds.

The project started after the 2013 State of Nature report revealed continued declines of wildlife in Wales. Frustrated that despite a considerable investment in conservation work there was very little success to show, the WG announced a new pilot program called the Nature Fund to deliver environmental, economic and social outcomes through collaborative action within two years. Out of that came the Sustainable Management Scheme (SMS) now funded by the Rural Development Programme. GWCT's Teresa Dent and Ian Coghill helped to put together a partnership of land managers and applied successfully to the SMS for funding for the Powys Moorland Partnership and the North Wales Moorland Partnership.

David is in the first year of the current three-year funding programme but has been working fulltime on the hill for three years. After the initial Nature Fund grant finished in 2015, rather than let the work go to waste, he decided to work for nothing and spent his own money on equipment while waiting for the SMS money to come through.

In the nineteenth century Beacon Hill was a prodigious grouse moor. You can see the remains of a grand Victorian shooting lodge on the hillside and there was even a railway



David Thomas (left) and shoot captain Peter Hood

station to bring guests right up to the moor by train. These days the grouse are clinging on at about 30 brace in the autumn counts and the waders and other moorland species have been similarly reduced. The reasons are complex. Since the 1960s as the great estates disappeared, many of the Welsh uplands were ploughed or planted with woods and the remaining heather moors became isolated. In the 1970s headage payments were introduced under the CAP, which meant farmers received subsidies according to the number of sheep on their land. As a result, heather, bracken and grass were over grazed, leaving little, food, nesting habitat or shelter for waders and other birds. Since headage was replaced by area payments after the Foot and Mouth crisis the transformation has been dramatic, with heather and bracken returning to the hillside. David feels the grazing level is about right, except during winter months when ideally the number of sheep would be reduced.

Sheep grazing plays a crucial role in keeping down scrub and trees and the farmers on the hill are supportive and keen to make the project a success. It helps that David and Peter were both sheep farmers and they believe most are conservationists at heart. Peter said: *They have a soft spot for the hills and the wildlife and they are also tickled pink by the crow control David has achieved.*

“Sheep grazing plays a crucial role in keeping down scrub and trees and the farmers on the hill are keen to make the project a success.”



The view from Beacon Hill, which has become an island moor with no game management for miles around

Overgrazing may have been an issue in the past, but for David the current principal challenge is predation. As with elsewhere in the UK, generalist predator numbers have been increasing steadily. The prime threat to grouse and waders is the fox. The problem lies in the fact that there is no other keeping for grouse or pheasant shoots within 15 miles, so any vacuum created on the hill is quickly filled. Covering 5,000 acres on his own is a big challenge for David. Use of GWCT approved humane snares is essential and they are deployed in a highly targeted manner. A nightvision rifle scope is also invaluable as foxes can be alarmed by the infrared lamp. If he is after a particular fox, David regularly stays up several nights in succession until the small hours of the morning and is still not guaranteed success.

I'm currently putting in an 80-hour week. If it's dry and there's a full moon I lamp four or five hours every night. This winter I've accounted for 85 foxes up here and each year I get more because I'm getting better at it, but it's still the tip of the iceberg. Another keeper described the hill as the perfect place for predators as it's an island moor.

In addition to foxes, avian predators, in particular carrion crows, take the eggs and chicks of ground-nesting birds in the breeding season. David controls them by means of Larsen and ladder traps and has caught about 2,700 in the past three years. His trapping line, which includes tunnel traps for stoats, weasels and rats takes five hours to check every morning. Crow numbers may also have been boosted by less lambing on the hill. Peter explained: *Farmers used to control crows because they would kill the newborn lambs. These days you see many who will walk under a crow's nest without noticing.*

Grouse can be found on areas of the moor where they hadn't been when David started and on one part of the moor numbers have trebled according to this year's spring counts, but they are starting from a low base and the challenge is great. Other birds species are making a more rapid recovery including mistle thrushes and skylarks and cuckoos can now be heard in profusion in spring. These like to lay their eggs in meadow pipit's nests, which have also increased. Hare

numbers have boomed and so too have kestrels and merlins. This year, more extensive bird counts will be carried out for the first time so progress can be mapped more accurately. Another endangered species to have benefitted, which is close to David's heart is the curlew. He said: *We have managed to increase curlew broods on the hill, which I am delighted by. When you hear the bird's call on the moor at the end of February, it's the first sign of spring and I stop to admire the sound spilling from the sky, equalled only by the skylark.*

Impressive results on Beacon Hill and other moors in the partnership have fed into the Shropshire & Welsh Marches Recovery Project, a grassroots curlew conservation campaign run by Amanda Perkins. Notes based on GWCT science are now being used as guides by the local community groups involved in the project.

“Everyone involved knows we need to share this special place with everybody.”

Another large part of David's work is restoring a balance of habitat by creating a patchwork of heather, bracken, white grass and moss as well as digging ponds to provide water for grouse and to attract insects. In the past, the heather was either overgrazed or allowed to grow too tall and large areas have been overtaken by bracken, which is controlled by wiping the plants with herbicide rather than spraying to avoid damage to the grass and moss beneath. Younger heather can be brashed (cut) and the older, leggier areas show far better restoration through burning. David has initiated a ten-year rotation of small areas of cool burn to avoid damaging the moss and peat underneath. One of the biggest challenges is the tiny window. He explained, *Our permitted burning period is two weeks shorter than in England and Scotland. You need three clear sunny days and no snow to burn and because there is so much rainfall it is difficult to keep within the timeframe.*



David's custom-made all-terrain vehicle is essential in covering the 5,000 acres of ground



Wildlife Highlights

- Cuckoo (left) •
 - Curlew (inset) •
 - Ring ousel •
 - Hen harrier •
 - Grouse •
 - Meadow Pipit •
 - Winchat •
 - Mistle thrush •
 - Skylark •
 - Merlin •
 - Kestrel •
- red listed • amber listed
- Brown hare**

Grass is returning to an area of bracken that David wiped with herbicide last year, creating a more diverse habitat on this part of the hill

Members of the shoot volunteer their time to lend a hand with brashing and burning. They release a few redleg partridges every year for two informal shoot days. Peter, whose family has held the shooting rights since 1950 explained: *Our way of shooting is very unusual it's similar to a family picnic. Wives and children come out on ponies and we drive the ground, it's more like a grouse count. The butts have long since disappeared, so I place the Guns.* In the 1960s the syndicate had eight days with an average bag of 15 brace on each, this year they limited the whole season's bag to three grouse. The aim is eventually to fund David's work through one or two let days per year. There is still a way to go, but the syndicate is fully supportive of the broader conservation project and happy to keep going until grouse numbers return.

From the WG's point of view one of the positives of the SMS approach is the potential through keeping to provide employment in remote upland areas. Another is the opportunity to engage the community and get more members of the public out onto the hill and enjoying the wildlife. David is confident this can be achieved provided existing laws, which require people to stick to footpaths and keep dogs on leads around livestock, are enforced. He said: *Everyone involved knows we need to share this special place with everybody. They manage to do it on the grouse moors in the north of England so we can here.*

Looking ahead, David is hoping to have an assistant keeper from October until the spring. Current funding is due to end in 2020 and he is hoping that should grouse numbers not yet be sufficient to pay for the management, the wider conservation successes such as greater numbers of curlew and other waders will persuade the Welsh Rural Development Programme to continue supporting the project. He said: *I want to see viable Grouse shooting back in Wales with all the benefits to the other ground nesting birds that brings. As the WG has backed the project with considerable investment, I want it to repay their trust and to show that shooting can fund great conservation work.*

GWCT Research in Practice

Sustainable Management Scheme

Sue Evans,
GWCT Wales director



Following a pilot study in 2013, GWCT, CLA Cymru and FWAG Cymru gathered a number of grouse moor managers together to see if there was an appetite among them to reinstate active moorland management. After a successful joint bid for funding from the Welsh Rural Development Programme under the Sustainable Management Scheme (SMS) the group established the 16,000-acre North Wales Moorland partnership and the 20,000-acre Powys Moorland Partnership in Mid Wales with Cath Hughes acting as facilitator and continued guidance from GWCT.

The demise of wildlife in Wales highlighted by the 2013 State of Nature Report meant that a different approach was crucial in order to save the birds on the endangered list. The SMS focuses on tangible results or outcomes, gives greater flexibility to the farmers/landowners about how these can be achieved and works on a landscape scale through cooperative partnerships. This collaborative approach engages a much greater number of people from across the rural community and beyond, linking the preservation of natural resources to the nation's health in line with the Well-being of Future Generations (Wales) Act 2015.

A pioneer with a passion for partridges

How Alastair Salvesen is applying science to dramatically increase wildlife on his farm



Farm Facts

Location: Midlothian

Type of farming: Mixed arable, beef and sheep

Acreage: 2,500

Amount in conservation: 7 percent

Funding grants: Zero

Conservation measures: Mosaic cropping, hedgerow maintenance, three metre grass margin, four metre wild bird cover, woodland management, hedge and tree planting, fencing, predation control, winter feeding, overwinter stubbles, feeders, corrugated iron shelters, five-acre plots of cover crops and beetle banks.

Alastair Salvesen's Whitburgh Farms comprises 2,500 acres of mixed arable and beef overseen by farm grieve (manager) Jim Nichol. The pasture is concentrated at one end of the farm, along with sheds to house 180 Aberdeen Angus beef animals and 200 sheep. At the other is a hi-tech bio-fuel grain storage and drying facility and in between a wide range of crops including oilseed rape, winter wheat, spring wheat, spring barley and winter barley. Some of the barley goes to Macallan malt whisky and part of the wheat goes to Grants of Girvan for blended. In the past 10 years, Alastair has increased beneficial habitats to cover seven percent of the land (175 acres) and has seen wild grey partridges (a species that has nationally declined by 95% since 1975) go from 0 to 400 birds according to autumn counts.

Alastair's approach is forward looking, embracing new technologies and finding novel solutions to the twin challenges of increasing biodiversity and farming profitably. Whitburgh Farms is a demonstration partner in the EU North Sea Interreg Region PARTRIDGE project lead by the GWCT. This works with 10 sites in five different countries to try to show how agri-environment schemes can be improved, using existing solutions that work for grey partridge, along with trialling new ideas. One of the challenges is to achieve partridge recovery within the standard CAP Greening regulations. Under Greening, farmers have to take five percent of their land out of production as a condition of the EU Basic Payment Scheme. Whitburgh has managed to meet this target with hedges alongside uncropped eight-metre margins around every field.

The farm boasts an impressive 28 miles of hedgerows, which provide shelter from weather and predators. Alastair



Alastair Salvesen
in his hi-tech grain store

explained: *We keep the hedges in good shape. We never cut both sides in the same year and try to widen them at the base and let them go up a bit higher. Either side of the hedge are three metres of grass, which offer nesting sites and next to that four metres of wild bird cover and one metre unplanted to allow birds to dust themselves. Working in partnership with Oakbank Seeds and Kings, GWCT has succeeded in developing suitable cover crop mixes including wildflowers to produce insects for chicks, seed for food and broadleaves to protect from weather and predation. Results have been positive but for Alastair other aspects of the Greening and agri-environment prescriptions are impractical and counterproductive.*

“If we were allowed to spray early in the year, it wouldn't do any damage to the other plants and would allow aphids to multiply for the birds.”

We are trying to explain to the Scottish Government that not being allowed to spray the margins for thistles is very detrimental to the farming operation and makes you very unpopular with neighbouring farms. We had to abandon the five-year agri-environment scheme where you had to top the thistles instead of spraying, because, if you cut them in the breeding season, you risk killing the partridges and after that it is too late, the seed has spread on the wind. If we were allowed to spray early in the year, it wouldn't do any damage to the other plants and would allow aphids to multiply for the birds. Spraying shouldn't be forbidden, it's a matter of when you do it.



Alastair (left) with grieve Jim Nichol and the first bulls in the Whitburgh Farms line. Developing a closed herd is part of the drive for greater self sufficiency.

One of the principle challenges to making Greening work is the Scottish weather. Unlike the south of England, frost free conditions can't be guaranteed until 1 June, so most cover crop mixes have to go in late. This means trying to find mixes that last two or three years to provide cover all year round. The heavier rainfall also creates problems. Alastair explained: *Because of the rain this year one field of straw was turned seven times. The headache we have is some of our crops ripen quite late and gaps in the weather are few and far between. It is important to avoid baling straw after dark as the young partridges may be roosting, but changing weather patterns could mean that this is the only way to keep abreast of the harvest and replanting programme.*

No longer being in the agri-environment scheme means the farm picking up more of the bill. Alastair said: *We get assistance under the Greening system, but we recognise that it's not going to cover the whole cost. I still believe it is possible to have successful conservation and profitable farming, but it's far more marginal than I would like.* He is convinced that it is only by gathering the evidence that these messages will be heard by the Government's agricultural departments and lead to new legislation. He said: *They will only listen to us because we are working with the GWCT, which has the scientific expertise.*

Alongside the farming operation, gamekeeping is an essential element. The pheasant shoot means Alastair can employ a fulltime keeper Graham Rankine who puts out feed for the birds in winter and spring and controls all the generalist predators that can be legally managed. However, the partridges and other farmland birds are increasingly under attack from buzzards and sparrowhawks, both protected



Harsher weather in Scotland means it is vital to find three-year cover crops such as this kale still providing cover in February

species, whose numbers have increased dramatically. Part of the GWCT study at Whitburgh Farms project is to try to establish scientific evidence to determine whether raptor predation could threaten similar conservation projects across the country. Alastair explained: *We have up to 12 buzzard nests on the farm plus three nests nearby. According to published estimates, we therefore have more buzzards per hectare than anywhere else in Europe. We tagged several partridges and the average mortality rate from 3-years of tagging was one third lost to raptors with several tags turning up in buzzards' nests.*

Walkers are welcome at Whitburgh Farms as long as they stick to footpaths and keep dogs under close control, but there is an unintended consequence of the Right to Roam law, which could have catastrophic consequences for Scotland's grey partridges. The legislation allows members of the public to walk anywhere on private property and encourages walkers to go round the edges of fields to avoid crop damage. This means partridges and yellowhammers risks losing their broods to dogs when they raise them in the margins.

Alastair is motivated to overcome all these challenges by the success of wild grey partridge, a bird he is clearly captivated by. He said: *When I bought Whitburgh my predecessor had been buying grey partridge eggs, rearing and releasing. For the last 10 years we have not added any eggs or poults to the wild stock and the birds are far more aware and able to cope with danger. Last year was our first day's shooting. We shot 25 birds, but seeing over 300 flying that day was magic and appreciated by all the Guns and beaters alike.*

GWCT Research in Practice

The PARTRIDGE Project

Dave Parish, GWCT head of Scottish lowland research



The project is part-funded by the EU's Interreg, North Sea Region programme. It aims to show how farmland biodiversity can be increased by at least 30% in a three-year period through sympathetic management on 7% of farmland, at 10 demonstration sites, two each in Scotland, England, Belgium, Germany and The Netherlands, so that future agri-environment schemes can be improved. All the 500 ha demonstration sites are making improvements to their local habitats and monitoring biodiversity to see how it responds.

One key measure being implemented on all sites is a new cover crop comprising many plant-species, designed to support biodiversity year-round with abundant invertebrate food supplies in the breeding season, lots of seed in winter, excellent nesting cover for ground-nesting birds and escape cover for wildlife to hide in from aerial predators. As the name implies, all sites will demonstrate what can be done to support wildlife to farmers and policy makers across Europe via farm walks aimed at local, regional, national and transnational participants, as well as regular media stories.

“We are working with GWCT to help people understand what's realistic in farming and how nature works.”



A beetle bank of grasses and wildflowers (left) next to a newly sown cover crop offers refuge from predators, food and shelter in the middle of the field

The grey partridge is an indicator species, and the greater biodiversity on the farm has helped threatened species including yellowhammers, lapwing and tree sparrows. Hares have benefitted in particular, numbering in their 100s.

This impressive outcome is the result of a huge degree of commitment and cooperation from everyone working on the farm. Alastair said: *We are doing everything in hand and everyone involved has to have a good working relationship from the gamekeeper to the grieve.* Jim explained how the crop rotation system he manages at Whitburgh is uniquely geared to farmland bird conservation. He said: *In a conventional block system with huge areas of one crop, when a crop is harvested, birds may suddenly have to travel long distances to find food or shelter, so we have divided the farm into four quarters with a rotation of wheat, barley and oilseed rape within each. This gives them a wide range of habitats close together, from stubbles for winter roosting to insect rich areas for young broods.*

Looking to the future, Alastair has impressive plans for Whitburgh Farms employing the latest technology. The farm has one of the best carbon footprints in the country thanks to solar panels on the cattle sheds and a state of the art woodchip burner to dry the grain, which uses chippings from the estate saving £40k of oil per year. The drive for self-sufficiency also extends to the cattle. Jim is developing a closed herd of Whitburgh pedigrees and is pleased with their first young bulls. On the arable side, the farm is using satellite mapping to find where the structure of the ground changes, to reduce fertilizer usage and it is trialling a live bacteria treatment to help soil structure. Finally, Alastair's fundamental principle for sustainability is to listen to people who work the land. He said: *Here at Whitburgh Farms we are trying to create evidence for the regulators and come up with something that is sensible and works. If you are just thinking about these things in the heat of an office you cannot comprehend what is happening out in the field. We are working with GWCT to help people understand what's realistic in farming and how nature works. The GWCT has always recognised it's a question of balance and I believe in that strongly.*

Wildlife Highlights

- Grey partridge •
- Yellowhammer •
- Tree sparrow •
- Lapwing •
- Song thrush (inset) •
- Tawny owl •

• red listed • amber listed

Brown hare (left)

© Laune Campbell

To ensure a range of habitat for grey partridge, the farm is divided into four quarters with a rotation of wheat, barley (above) and oilseed rape in each

A Haven for Hampshire lapwings

Gamekeeper Rupert Brewer is taking an intelligent approach to predation control in the Avon Valley



Farm Facts

Location: Bisterne, Hampshire

Type of farming: Arable, dairy, beef

Acreage: 4,000

Amount in conservation: 39%

Funding grants: Three Higher-tier agreements

Conservation measures: Mosaic cropping, hedgerow maintenance, wild bird mix cover crops, pollinator mix, woodland management, hedge and tree planting, fencing, predation control, water meadow grazing, winter feeding, overwinter stubbles, feeders, scrapes, lapwing plots and beetle banks.

Website: www.bisterne.com

Walking onto the water meadows on the Bisterne Estate in Hampshire in February you can see great clouds of lapwings swirling in the wind. This beautiful sight is increasingly rare in England and Wales where the species has declined by 80 per cent since 1960. Bisterne is a partner in the GWCT's LIFE+ Waders for Real project, an EU funded programme involving scientists, farmers and the local community working together to reverse the decline of breeding waders in the Avon Valley. The fact that the estate is bucking the national trend with a growing population of breeding lapwings is thanks in a large part to the work of gamekeeper Rupert Brewer.



Rupert Brewer with one of his wader scrapes

The Hampshire Avon is similar to other river valleys in comprising many small farms, and only a handful of larger privately-owned estates where gamekeepers are employed. A lot of farmers have successfully created the right habitat for waders with the help of agri-environment schemes, but without addressing predation, they are struggling to increase numbers. As elsewhere in Britain, lapwing productivity in the Avon Valley is currently poor due to high levels of nest and chick predation, with many lost to common generalist predators like foxes and carrion crows. Rupert explained: *Bournemouth Airport area to the south of us has one of the highest densities of urban foxes in the UK. To the north we have Ringwood and then the New Forest, where there is no predator control. In the week before Christmas we culled 23 foxes on the meadows. The other problem we have is carrion crows. If you go to any carpark in the New Forest you will see two carrion crows waiting by the bin and in early hours of the morning we have a massive flight over us.*

While controlling foxes and crows is clearly important, Bisterne also has its fair share of protected predators, notably badgers and otters, which have returned to the Avon. Rupert welcomes the otter's return, but has witnessed them taking ducklings and goslings as well as emptying a swan's nest of eggs, making them a potential threat to the young of any ground nesting bird. Currently, the only way of protecting nests from badgers and otters is electric fencing, but it's expensive and can be difficult to use on wet river meadows grazed by cattle.

When the LIFE+ Waders for Real project was looking to

establish four hotspot sites from which to build up the local lapwing population, it is no accident that three of the sites selected were on two kept estates, Bisterne, owned by Hallam Mills, and Avon Tyrrell. Here, efforts to increase wader numbers are working. Lapwing need to fledge on average 0.7 chicks per pair each year to sustain a population. Before the project began, lapwing on Bisterne were averaging about 0.4 chick per pair, but in 2016 they averaged 1.3 chicks per pair.

Rupert explained: *It is a two-part job for me. Part of my core work is for the shooting syndicate, but there is also the whole conservation aspect, which they fully support. We always did a bit to control foxes and crows, but we have really been stepping it up and at the right time.*

When we started I remember seeing a pair of lapwings and 25 crows on the meadows. Last year I saw about 25 lapwings and one crow. That means they've got a chance to see it off.

“Last year I saw about 25 lapwings and one crow. That means they've got a chance.”

A great amount of work and skill goes into effective fox control and Rupert has been working with GWCT to make sure it's targeted. GWCT wader scientists run around 20 camera traps across the Bisterne river meadows during the nesting season to monitor predator activity, and the fox records and other signs of activity are helping Rupert understand how foxes access the area.

On his side, Rupert is keeping a meticulous diary, detailing all of his fox culling activities. As well as recording when, where and how he kills foxes, he notes how much effort he puts in with different control methods, such as by lamping, using night-vision and thermal imaging equipment, and with fox snares and cage traps. This information will help GWCT scientists calculate how much effort is required to minimise fox predation risk when waders are vulnerable.

Mike Short, a predation scientist at GWCT, explained: *Bisterne Estate has worked hard to improve wader productivity by getting the breeding habitat right, but the key icing on the cake is*



Clouds of lapwing fill the sky above the water meadows of the Bisterne Estate in February. It is increasingly rare to see them in such numbers in the UK

Rupert's steadfast resolve to keep these areas free of foxes and other generalist predators during the nesting season. Elsewhere in the valley, we've collected lots of fox scats on river meadows to investigate fox diet, but in 2017 our team didn't find a single fox scat on Bisterne, which gives an indication of how thorough Rupert's fox culling effort is. His detailed record keeping will complement the results of our fox-tagging work elsewhere in the valley. I'm fitting foxes with GPS-trackers to help answer a whole string of important questions about how foxes use river meadows. This will enable us to provide better guidance on how to reduce the impact of foxes on breeding waders.

This research has wider implications. For those farmers without a gamekeeper on their land, predator control presents an extra expense both in time and money. It's clear that predation must be addressed if lapwing and other waders are to breed better. For this reason, Mike is keen to see both lethal and non-lethal predation control funded through countryside stewardship agreements. However, this will need to be done as cost effectively as possible, which is why the current research is so valuable.

One of the tools that make Rupert's huge challenge possible is snaring and he is keen to get past the misconception that a snare chokes the fox. The snare simply tethers the animal until the keeper arrives to humanely despatch it and by law they are checked at least once a day. Rupert uses a breakaway snare design developed by the GWCT, which allows heavier non-target species such as badgers or deer to escape. Rupert explained: *There is nothing inherently cruel about snaring provided it is done properly. I have the policy that six carefully sited snares are better than 100 random snares. I film the area first or use field craft to establish that there is a fox present, then set the snare and if I don't get it within two or three days I pack it up and try somewhere else. This minimises the risk of capturing a non-target species.*

Of course, waders would not be present if the right breeding habitat wasn't there and Bisterne's 4,000 acres has an extraordinary range of landscapes including water meadows, heathland, arable, permanent pasture, mature oak woodland and softwood plantation. Its owner Hallam Mills is a committed conservationist. He previously entered the estate into Higher Level Stewardship and has just entered Higher Tier Stewardship.



Foxes are being tagged to discover how they use water meadows

In addition, the home farm has switched to an all-grass dairy, which supplies milk to Morrisons through Arla. On the arable side, the farm grows a wide range of crops including Rye for the local Ryvita factory in Poole. The use of pesticides on all headlands is limited and a system that minimises use of the plough, reducing nitrogen use and helping look after the soil. Rupert said: *Hallam encourages everyone involved in land management on the estate to help decide what conservation measures we select. Recently, I've opted for more hedges as well as nectar and pollen mixes, as I feel we need to do more for insect life.*

As well as work on the pheasant shoot that benefits farmland birds such as covercrops and winter feeding, Rupert has implemented specific measures aimed at waders, he said. *The GWCT has close connections with Sparsholt College and they arranged for students to help us take out any alders that made good lookout trees for crows. We've dug several scrapes pulling the surface off with a digger at low points in the meadows so that water lies on the surface. These save chicks from foraging too far*

“Look what you've got on your doorstep, grab a species and you'll find that your interest grows.”

GWCT Research in Practice

Life+ Waders for Real

Lizzie Grayson,
GWCT Wetlands
research assistant



The Waders for Real project has brought together a network of farmers, land owners and keepers to target lapwing conservation. As a result of this cooperation we are beginning to see some successes through the implementation of new habitat features, increased habitat management, increased predator control, well managed grazing regimes and the use of temporary electric fences.

Increased monitoring of lapwing and redshank has allowed us to better determine the factors affecting breeding success. In particular, our monitoring of lapwing chick movements is improving our understanding of what habitat features are needed for foraging and this is being fed directly back into management techniques.

Wet features, mainly ditches and scrapes, are extremely important for lapwing and redshank chick rearing. These habitats are rich in invertebrates which the chicks feed on and the soft ground facilitates feeding. In many areas we have been removing vegetation that is blocking ditches and re-digging ditches that have dried out. By creating more in-field wet features we are providing increased chick foraging habitat away from field edges, which are often used by mammal predators when hunting. The benefit of creating these wet features will also be seen during the winter months for wintering waders and waterfowl, including black-tailed godwit, snipe, wigeon, teal and pintail.



which makes them more susceptible to predation.

Another key element for successful lapwing conservation is the commitment and co-operation of all those on the ground from the keeper to the farm contractor. Monthly estate meetings ensure everyone is in the loop and coordinating cropping regimes and covercrop rotations is vital. Bisterne used to have numerous tractor drivers but now has one, so contractors

are used occasionally but importantly they are kept abreast of the requirements of the Waders for Real project. Rupert explained: *We had lapwings going down in the field next to the house, which was due to be ploughed so our arable manager's wife went out with markers and the contractor Kevin made the effort to plough round them. It saved eight nests and the following week there were 16.*

GWCT hosts two open house meetings a year at its Fordingbridge headquarters for all the farmers, landowners and conservation bodies involved directly in the Waders for Real project and anyone in the local community with an interest. It's a chance to update people on the research and hopefully inspire them to go the extra mile. The aim is to have as many farmers on board as possible. If you have just 100 acres of unkept ground among 2,000 it could harbour enough foxes and crows to scupper the control effort of others. In addition, Rupert's wife edits the Bisterne news, which always includes an article about the project to help to get the word

out to the wider community. Rupert said, *When people walk a footpath and see a grey partridge or a lapwing they understand that if the keepers weren't there they simply wouldn't see them in the future.* Rupert recognises the importance of public access to educate people about the countryside and show off the successes public money has helped to achieve. The estate created a public area on the edge of the water meadows where people were invited to come and walk their dogs provided they kept them on leads on the footpaths.

Looking ahead Rupert wants to build up his Japanese cross pheasants to eventually switch to a wild bird shoot where he no longer releases, enabling him to focus more resources on conservation measures. He is also planning to step up his predator control on the part of the estate where he has curlew nesting. His advice to those who want to be successful conservationists: *Look what you've got on your doorstep, grab a species and you'll find that your interest grows. A lot of people wouldn't be interested in a lapwing but it does for me and, if you can sort things out for them, many other species will benefit.*



A work party from Sparsholt College helped out on the meadows

Bisterne boasts a wide range of habitats from water meadows (pictured below) to heathland and pasture



Wildlife Highlights

- Lapwing •
- Black-tailed godwit •
- Oyster catcher •
- Mallard •
- Mute swan •
- Pintail •
- Brown hare
- Otter
- Curlew •
- Grey partridge •
- Redshank (left) •
- Teal •
- Snipe •
- Sand lizard (above)

• red listed • amber listed



How GWCT helps working conservationists

As the UK's leading wildlife research charity, GWCT is uniquely placed to enable the transformation to the pioneering approach of working conservationists. For more than 80 years it has worked closely with farmers and gamekeepers on the ground to produce original science, including some of the longest running farmland wildlife monitoring projects in the world. A defining element of the GWCT approach is to apply research a second time in the field to validate practical solutions, for example, in the case of the predation control study in the Avon Valley. The rural landscape of Britain today has all been fashioned by farming and as it shrinks we all need to share it. Sometimes that means certain wildlife populations get too large in a given area to the detriment of other wildlife. Where that occurs our evidence shows that lawful control is necessary for all to exist.

In some cases our research turns up results which don't fit our approach; in such cases we don't hide the result but accept it. That is the nature of using evidence rather than preconceived ideas. As a result of this evidence-led approach, statutory bodies including DEFRA, Natural England, Scottish Natural Heritage and Natural Resources Wales have based much agri-environment policy on GWCT research.

The guiding principle of "working conservation" is that wildlife can thrive alongside other land uses. The GWCT recognised that gamekeepers were no longer the Victorian villains but the unexpected champions of this multiple outcomes approach as farming modernised to meet the post-war demand for food. It carefully studied how they began to use their range of techniques, from trapping to growing small strips of cover crop, to maintain their bird numbers without hindering farm production. Today these game-keeping techniques are vital conservation tools because they support wildlife in a working countryside.

Wildlife knows no boundaries so despite the ever increasing size of farms it is essential that schemes encourage farmers and landowners to work together on a landscape approach. GWCT created the first 'Farmer Cluster' which is led by farmers to join up their conservation efforts through mutual encouragement as well as practical support. Similarly, projects such as the river catchment improvement at GWCT's Allerton Project require high levels of co-operation between landowners.

Past experience has shown that where funds are more specifically targeted and farmers respond voluntarily, rather than through compulsion, with the benefit of good advice, better outcomes can be achieved. A far better approach than heavy handed regulation which creates resentment and resistance.

Specialist knowledge is a key ingredient of any such initiative and GWCT advisors provide practical advice on how to manage land with a view to improving biodiversity. Few organisations have the same degree of trust from land managers developed over generations and with ever greater pressure on the countryside to increase food production, provide space for housing and a deliver a range of public benefits, the survival of our wildlife will depend on that trust.

Find out more about the GWCT and support us at www.gwct.org.uk.



Do you have a working conservation project to be proud of?

If you combine a passion for wildlife conservation with farming, recreation or other types of land management, we would like to hear about it.

When we asked a farmer recently how much recognition he received on a scale of one to 10 for his fantastic conservation work he said zero and sadly he is not alone. Some of the UK's most spectacular conservation achievements, are the work of individual farmers, landowners and gamekeepers who have volunteered their own time and money to increase biodiversity on the land they look after and we feel it's time they were recognised.

This is not a new competition or award scheme and we don't require detailed information, just a name, place, type of farming or other business operation and anecdotal evidence of conservation success.

We are looking for people from all backgrounds and scale of business and there doesn't have to be a shoot on the land. We can then build case studies, share best practise and demonstrate how vital private stewardship is to reversing the decline of British wildlife.

Any information will be confidential and we will of course seek consent before contacting individuals or making any information public.

If you would like to be included in our next set of *Working Conservationists*, please email jdimbleby@gwct.org.uk

Game & wildlife management

Good productivity is essential for all shoots; whether from the rearing field or achieving maximum productivity from wild stock

Get the best advice now

The GWCT's advisory team are the most experienced consultants in their field, able to provide advice and training across all aspects of game management, from wild bird production and farm conservation management to the effective and sustainable management of released game and compliance with the Code of Good Shooting Practice

Renowned for our science-based game and wildlife management advice that guarantees the best possible outcome from your shoot, we will work closely with your farm manager, gamekeeper and existing advisors to identify ways of making your game and shoot management more effective by providing tried and tested advice backed by science

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