

Working Conservationists

The land managers restoring British wildlife

Ratty returns to the Monnow

Saving Suffolk
turtle doves

Rewilding
Test trout



Game & Wildlife
CONSERVATION TRUST

Welcome



Joe Dimpleby
GWCT Communications
Team Writer

This collection of case studies aims to raise awareness of the many working conservationists across the UK whose stories often go 'untold', their efforts unrecognised. They demonstrate how, given the right support, private land managers are best placed to deliver vital biodiversity gains. They are committed for the long term, know intimately their bit of countryside and are experts in practical management, which can deliver key habitats alongside food production. Their passion drives them to put their own money and countless hours of their time into looking after wildlife. The GWCT has always recognised this, which is why it partners with land managers and offers practical advice based on science tested in the field.

To have a shoot or fishery on your land is not a prerequisite for being featured in these pages and all those profiled are instinctive conservationists regardless, but they demonstrate the importance of shooting and fishing as drivers of conservation.

If other land managers are to be encouraged to follow their lead, adequate funding must be available for the public goods they produce, whether it be biodiversity, carbon capture, or the health of our soils. It is also essential that they are freed as much as possible from stifling bureaucracy so they can get on with the job.

I would like to thank all the Working Conservationists for inviting us to visit their projects and giving up their time. I hope you enjoy reading about these inspirational individuals as much as I enjoyed meeting them and discovering how they have helped wildlife return to some beautiful parts of Britain.

Front Cover Image: © Laurie Campbell

Words: Joe Dimpleby

Design and layout: Chloe Stevens

© Game & Wildlife Conservation Trust, July 2019 (Formerly The Game Conservancy Trust)

Burgate Manor, Fordingbridge, Hampshire, SP6 1EF

01425 652381 info@gwct.org.uk

Registered Charity No. 1112023.

No reproduction without permission.

All rights reserved.

ISBN 978-1-901369-33-5

CONTENTS



“We’ve restored more than 6,000m of hedges and the results have been remarkable...”

ALAN WALTERS



“I want to put something back and to leave the environment a little better than I found it...”

ROB DENNY



“We must give farmers the flexibility to manage their conservation areas properly...”

ANT GRIFFITH

-
- | | | | |
|----|--|----|---|
| 5 | FOREWORD
Adam Henson makes the case for investing in farmers to deliver conservation gains | 23 | THE BIRD MAN OF CORS CARON
Terry Mills turned a Ceredigion sheep farm into a habitat haven for wildlife |
| 7 | A TURTLE DOVE TRIUMPH
Graham Denny keeps his 200-acre Suffolk farm an oasis for rare summer visitors | 27 | BIG CAN BE BEAUTIFUL
On Exmoor birds are thriving thanks to land managers Darren Ninnis and Pete Stanbury |
| 11 | REWILDING THE TEST
From a chalkstream to a woodcock wood, Richard Wills is a conservation champion | 31 | RATTY'S RETURN
Rob Denny recruits an army of volunteers to bring water voles back to the Monnow |
| 15 | DONSID E DUCKS
John Riley's love of digging ponds attracts some unusual avian visitors | 35 | GREENING WELSH GRASSLAND
Denbighshire dairy farmer Ant Griffith says keeping it simple is the way forward |
| 19 | THE HEATHER DOCTOR
How Geoff Eyre has single-handedly restored the UK's precious uplands | | |
-

“

*... To have a big impact
conservation needs to be
on a landscape scale.*

”



Foreword

by

Adam Henson

English Farmer, Author and Rural Television Presenter

.....

If we are to reverse biodiversity losses and repair our natural environment, wildlife-friendly farmers like the inspirational land managers in this new edition of *Working Conservationists* will play a central role. Seventy-five per cent of the UK's land mass is farmed, so Ant Griffith (see p.35) is right that if farmers devoted a small percentage of their less profitable land to conservation together they could make a real difference.

I know from personal experience that combining farming and conservation is not easy. Our farm in the Cotswolds has been in agri-environment schemes for 25 years and it's a constant learning curve, incorporating many options from lapwing plots to pollen and nectar mixes. At agricultural college I was taught how to look after crops and livestock but not how to manage for conservation and we have relied upon expert advice over the years. I am a great supporter of the GWCT whose guidance to farmers and research into developing measures for wildlife that fit with the practical realities of farming is much needed.

Farmers are stewards of the countryside and we should want to do our bit for the natural environment and encourage biodiversity. However farming can be a tough business, and our *Arable Manager* will tell you that it is easier to grow 500 acres of wheat than 50 acres of conservation margins. In future the bureaucracy and agronomy of agri-environment schemes must be simple enough to manage to encourage farmers to take part. Most importantly, conservation measures must be adequately funded and payment received on time.

We also need a collaborative approach and it is encouraging that so many of the case studies show the benefits of cooperation. On the farm at home we have joined with other like-minded neighbours and together we are working for wildlife over 4,000 acres. To have big impact, conservation needs to be on a landscape scale as the hugely successful GWCT-developed *Farmers Cluster* approach has shown.

It's important for farming's public profile that we take a lead from the efforts of the land managers in this collection to enhance our wildlife and countryside, which is a national asset. These uplifting stories of increasing wildlife remind us of the real opportunity for British farmers to lead the world in producing the food and environmental goods we urgently need.



Adam Henson

How GWCT helps working conservationists

As the UK's leading wildlife research charity, GWCT is uniquely placed to incorporate the pioneering approach of working conservationists into national conservation policy. For more than 80 years it has worked closely with farmers and gamekeepers to publish ground-breaking science, including some of the longest running farmland wildlife monitoring projects in the world.

The Allerton Project in Leicestershire and our second demonstration farm Auchnerran in Aberdeenshire, allow us to test our research in the context of real farming businesses. In some cases, the science turns up results which don't fit our previous approach and when this occurs, we don't hide the findings but accept them. That is the nature of using evidence rather than preconceived ideas. Another defining element of the GWCT approach is to apply research a second time in the field to validate practical solutions, a good example of which is the water vole reintroduction project on the River Monnow (see p. 31). 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 rural landscape of Britain today has been fashioned by farming and the guiding principle of "working conservation" is to achieve thriving wildlife alongside food production. Gamekeepers have done this successfully for generations using a range of techniques from supplementary feeding to growing cover crops, which allows them to support game and wildlife without hindering farming operations. We study these

techniques to improve them and make them available to farmers across the country through agri-environment schemes.

Wildlife knows no boundaries, so it is essential that schemes encourage farmers and landowners to work together on a landscape approach. GWCT created the 'Farmer Cluster' principle of cooperative farmer-led conservation projects driven by mutual encouragement and supported by expert advice. This initiative has been hugely successful with over 100 Farmer Clusters now established across the country, aided by Natural England's Facilitation Fund.

Past experience has shown that where funds are more specifically targeted, and farmers respond voluntarily, rather than

“The rural landscape of Britain today has been fashioned by farming”

through compulsion, with the benefit of good advice, better outcomes can be achieved. Specialist knowledge is a key ingredient for success and GWCT's advisory service provides practical advice across the UK on how to manage land with the aim of increasing biodiversity.

Few organisations have the same degree of trust from land managers established over generations and with ever greater pressure on the countryside to produce food, provide space for housing and deliver a range of public benefits, the future of our wildlife will depend on that trust.

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

A turtle dove triumph

How Graham Denny has made his 200-acre Suffolk farm an oasis for one of our most threatened birds



Farm Facts

Location: Suffolk

Type of farming: arable

Acreage: 200

Funding grants: HLS, Woodland Grant, RBAPS

Conservation measures: hedgerow management, coppicing, arable reversions to low input grassland, hedge planting, tree planting, pollarding, scapes, supplementary feeding, wild bird mix, pollen and nectar mix, grassland field corners, grass margin buffer strips

Conservation in Numbers

32,000 birds ringed

16 cover crop plots

365 days of the year with food on the ground

1 hour every day spent feeding in winter

30 tonnes of grain put out for birds

30 squirrels controlled annually





Brewery Farm boasts a variety of hedgerow types to support a wider range of species. Turtle doves favour brambles growing into fruit trees or tall hedges

Turtle doves are the poster bird of British wildlife decline, often in the news as the UK's most rapidly declining migrant species. Their numbers have fallen by 96% since 1970, yet in 2018, Graham Denny had nine calling males and four pairs bred successfully on his farm, despite a poor breeding season nationally. His success is not limited to these beautiful summer visitors. Since 2006, Graham and his friend John Walshe, an accredited British Trust for Ornithology (BTO) bird ringer, have tagged an incredible 32,162 birds on the farm including 4,897 yellowhammers, 2,474 linnets and 5,150 greenfinches. John's meticulous records indicate a rise in numbers over time, for example ringed song thrushes go from one in 2007 to 25 in 2016 and lesser redpoll from 0 to 61 in the same period.



Graham Denny's passion for songbirds runs in the family

to believe not long ago there were so many starlings and sparrows they were considered pests."

This tradition of feeding wild birds is key to success. There is never a day when there isn't food on the ground. As well as 15 tonnes of hand-fed wheat for his pheasants, Graham chose the supplementary feeding option developed by GWCT as part of his Higher Level Stewardship (HLS) agreement, which paid for two tonnes of grain. On top of that he pays for three tonnes of mixed seed and 10-15 tonnes of rape dressings for the songbirds meaning up to 30 tonnes of grain in total. Graham scatters a range of seed for a variety of species. "I use naked oats, which are soft smaller seeds, for yellowhammers, linnets and reed buntings. Rape dressings work well all year round and I've found white millet more popular than red." Clearly hand-feeding takes a lot of

"Graham and John have tagged an incredible 32,162 birds on the 200-acre farm"

So how has this miracle been achieved? Brewery Farm has been in the family since 1902 and was always rich in biodiversity, engendering a love of nature in the Denny genes. Graham said: "My interest in conservation came from my father Henry and my grandfather Victor who used to feed turtle doves and other songbirds in the yard with rolled barley and wheat. The birds became quite tame and were very much part of the farm. It is hard



Five tonnes of mixed bird seed are spread on the farm every year



Squirrels present a real threat to birds during the breeding season

Graham's spare time. In the winter he is out on the quad most days for an hour scattering seed by hand in his cover crops or hedgerows, so that the little birds can feed safe from predators. In the early summer the turtle doves get the benefit.

He said, "Initially, the RSPB advised against feeding turtle doves as they thought there was a risk of spreading disease, but we've been doing it for generations and after seeing it work here they asked me what I fed them and have adopted my method and mix as part of their conservation strategy."

As well as feeding, Graham is committed to providing the right breeding habitat. Turtle doves have particular requirements, preferring large bramble bushes supported by a small trees to give strength and structure. Their nests take the form of a few sticks making a flimsy platform deep inside the thicket. Roughly the size of a blackbird, these beautiful doves are hard to spot through the undergrowth, which helps protect them. At Brewery Farm several pairs nest in the hedge next to the main road unbeknownst to passers-by, but their distinctive "purring" call can be heard, if you listen carefully. Graham has actively encouraged bramble growth in his orchard and believes better hedge management will be essential if we are to reverse farmland bird declines. He said, "It frustrates me the way these days hedges are cut lower each year and rarely coppiced. If you cut one side every other year, it will save you time and money and provide hedgerow food in the winter. Some species prefer higher hedges and others wider and denser, so you need a mix."

Wild bird habitat and food also come in the form of the 16 cover crop plots scattered across the farm. Covers on his HLS scheme are a mix of maize, sorghum, white and red millet, fodder radish, mustard and dwarf sunflowers. He has put in extra plots, paid for by the farm's small partridge shoot, of maize, sorghum stripped with white and red millet and fodderradish, oil seed rape and mustard. Finally, he has a trial mix of spring wheat, triticale, barley and naked oats with direct drilled maize and sunflowers and broadcast fodder radish and

"The birds show remarkable fidelity to particular sites"

white and red millet. Graham is always keen to experiment, "You need to keep an open mind. Maize gets a lot of bad press but it often stands when other crops fail, providing vital winter protection."

He takes the same care over cover crops as he does his commercial crops, liaising closely with the contractors to drill at the key moment and restricting insecticide use. About 10 years ago a broad spectrum insecticide called Dursban was applied two years running to combat orange wheat blossom midge. Graham believes that birds in his area never fully recovered. He said: "Everybody sprays at the same time in the summer when all the insects are out and it killed everything. Nothing came back from that and the knock on effect for the birds was terrible."

Predation management is a key element of Graham's success and he undertakes it as part of his work on the shoot. Fox control is carried out throughout the year and Larsen traps are

set in the spring to prevent carrion crows and magpies stripping the hedgerows of songbirds eggs and young. According to Graham, the grey squirrel is an underrated threat. "I have seen squirrels attack swallows nests in the barn looking for young and in the summer a male will empty a hedge of eggs at breeding time." He believes another predator having a serious impact on turtle doves is the sparrowhawk. "I was approached to be involved in an RSPB project to radio tag 10 doves, which ended with five being killed by sparrowhawks in the UK. Conditions in Africa will be partly to blame for their decline, but so is predation on these shores."



This yellowhammer was ringed on Brewery Farm eight years ago and caught again this year

Wildlife Highlights



Lesser Redpoll
106 ringed

© Steve Childs



Yellowhammer
4,897 ringed



Turtle Dove
18 ringed

© Richard Bennett



Linnet
2,474 ringed

© Steve Oakes



Redwing
47 ringed



Song Thrush
132 ringed

© Frank Vassen



Graham maintains that by leaving some hedges to grow out over grass margins he provides the right thickness for winter cover and nesting

Bird ringing at Brewery Farm has demonstrated that farmland birds show remarkable fidelity to particular sites. Graham makes the point that if you are successfully attracting birds to your land or nature reserve, there is a responsibility to protect them from predators, or you could be doing more harm than good.

The commercial seed corn and fodder rape crops grown on the farm fetch a premium and Graham does some building and digger work to make ends meet. The agri-environment HLS payments are essential and he invests in a huge amount of his own money and spare time. He said: *"I wouldn't have done nearly as much, if I wasn't shooting minded and I wouldn't have been able to plant as many hedges without the HLS funding."*

Natural England (NE) advisor Kim Pearce has been central to making the HLS schemes work, granting Graham retrospective derogations, where necessary. For example, last

"I wouldn't have done nearly as much if I wasn't shooting minded"

year a sudden snowfall required him to cut a cover crop for the birds, which were starving. He said: *"I'm a good advert for HLS in that I've got a lot of wildlife, but if you asked have you stuck to the prescription, I'd say no. Kim is happy with how I do things because I send her the ringing reports and she can see the birds increasing."*

There is however, a cloud on the horizon. The Rural Payments Agency is due to take over the inspection of agri-environment schemes from NE and Graham is worried he maybe forced to cut back his hedges or lose his Basic Payment. The reason is that the schemes stipulate four or six-metre grass margin but in many cases hedges have been allowed to grow out onto the verge to provide better habitat.

He said: *"My fields have never shrunk so there's no reason why I should lose my Basic Payment. You have to let hedges go for your warblers and whitethroats and "scrub" suits the turtle doves. So I've chosen to come out for a year and lose the payment rather than destroy a habitat that's working so well."*

Looking ahead, there is some evidence the government is listening to farmers and aware that the system needs greater flexibility. Indeed, Graham is one of 20 farmers who have been piloting Results-based Agri-environment Payment Schemes (RBAPS) with NE, which are designed to reward land managers for the quality of habitat they create and the extent of wildlife on their land. Graham is determined to do his best for the birds whatever happens and as a former Suffolk FWAG Silver Lapwing and Purdey Game and Conservation award winner; he has an impressive track record. He puts his remarkable achievements down to a holistic approach: *"You've got to put everything into it. If you plant cover for breeding birds, but you don't have feed on the ground, it won't work. If you feed it, but don't control any rats, for example, you create more problems. It's no good doing one thing, but not the others."*



An RBAPS trial mix of spring wheat, triticale, barley and naked oats with maize, sunflowers, red and white millet and fodder radish

GWCT Research in Practice

Payment by results

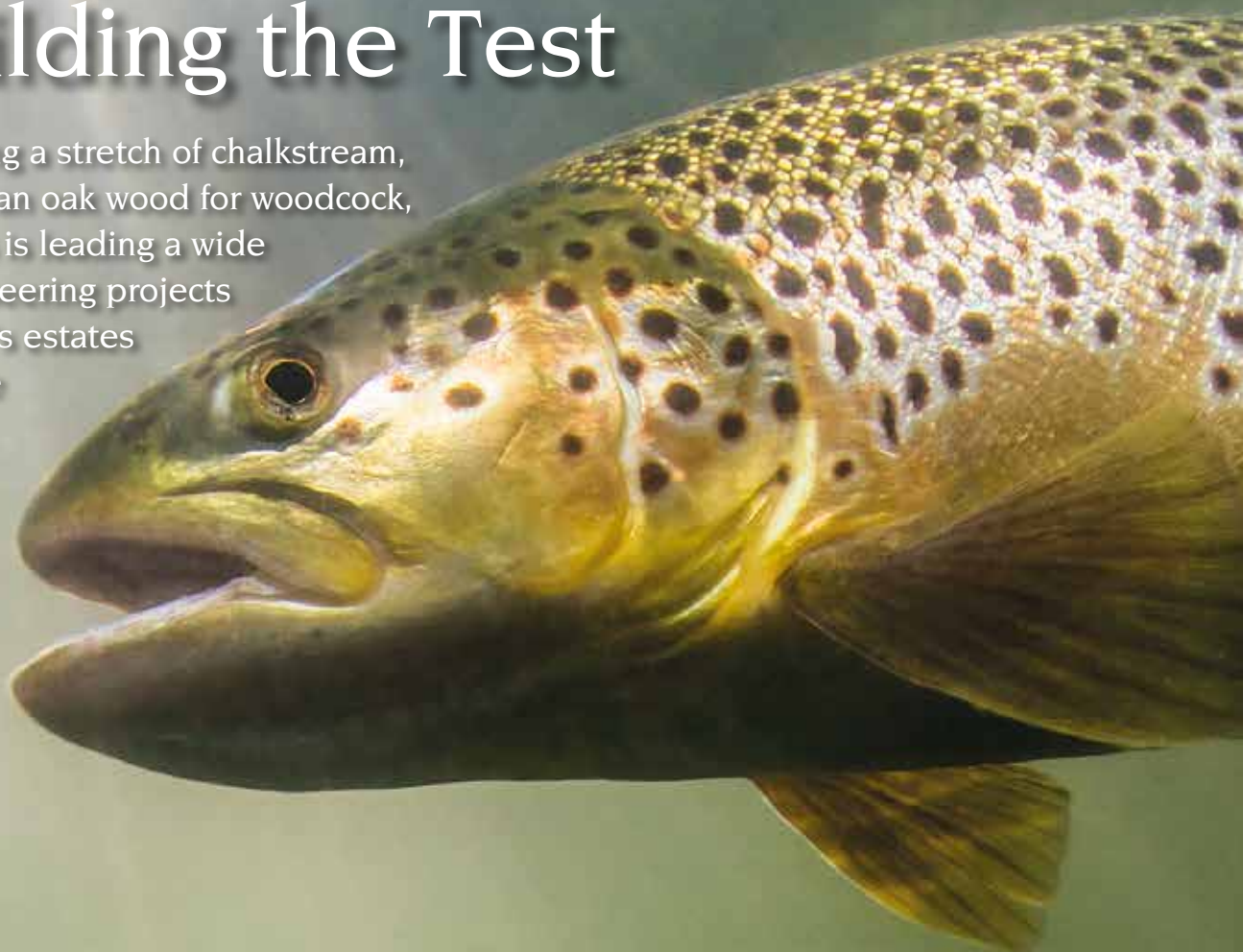


Roger Draycott
GWCT Head of Advisory

The GWCT has long been interested in rewarding land managers for the quality of habitat they provide and the extent of biodiversity they deliver. It was at the Allerton Project many years ago that we demonstrated that the application of nitrogen fertiliser to kale based wild bird seed crops dramatically increased the level of seed production – and hence food available for farmland birds – compared with when the crops received no inputs. Farmers should be rewarded for growing high yielding crops of pollen and nectar for pollinators and seeds for birds in the same way they are rewarded for growing high yielding arable crops. There are other examples of where this concept could work. Within current agri-environment schemes farmers can be paid to provide nesting plots for lapwings and these plots often attract breeding pairs. But, without measures to reduce predation, productivity is often very low. So, why not pay farmers to provide a lapwing plot but pay them a higher rate if they take measures to reduce predation rates too?

Rewilding the Test

From restoring a stretch of chalkstream, to designing an oak wood for woodcock, Richard Wills is leading a wide range of pioneering projects on his family's estates in Hampshire



Farm Facts

Location: North West Hampshire

Type of farming: arable and water meadows

Acreage: 6,500 (combined estates)

Funding grants: HLS, Capital Grant Scheme

Conservation measures: (Farmland) beetlebanks, conservation headlands, brood rearing cover and wild bird seed mix, hedge restoration, reduced field sizes, varied crop rotations, predation management, daytime working. (River) wildlife surveys, enhancing bankside vegetation, gravel washing, island building, creating fish nurseries. (Woodland) felling and mixed density replanting, creating rides, understorey management, predation management

Conservation in Numbers

4,500m beetle banks

53,000m 6m conservation headlands

3 miles Test rewilded

50 hectares woodland replanted

16 hectares brood rearing cover and wild bird seed mix



Richard Wills has a record of breaking new ground with conservation on the Middleton, Portway and Wades estates. His team won a Laurent Perrier Award in 1990 for rewetting the water meadows for waders and in 2016 they received a Purdey Award for grey partridge restoration. He is currently rewilding three miles of the Test as well as researching how to improve woodland for woodcock.

Alan Walters, headkeeper on the 1,800-acre wild gamebird project, increased the rare grey partridge from one to 60 pairs in eight years and a count of 500 birds is anticipated this autumn. After 10 years, grey partridge numbers are stable and the wild pheasant and redleg populations have gone from strength to strength with bags for the season rising from 50 to 1,000 in the first five years and still increasing. Since the project started, a wide range of threatened farmland species including skylark, yellowhammer, lapwing and stone curlew have benefited from the game management measures.

Richard said: "As a shoot manager you have to ask yourself, have you enhanced the countryside? Have you put back more than you have taken? It should be a natural instinct to try to increase your wild pheasant population."

A great deal of work has gone into building up the wild birds. First on habitat creation where the farming operation, run by contracting company HLM Agri Ltd and overseen by estate manager Chris Hewitt, plays a central role. After taking advice from the GWCT, the farm put in 4,500 metres of beetle banks, 53,000m of six-metre conservation headlands, 16 hectares of brood-rearing cover and bird seed mix and restored 6,000m of hedges. Other major changes to the farming were stopping night-time operations and perhaps most importantly, reduced field sizes, creating an impressive 16 fields out of five and



Riverkeeper Andy Clay (left) and Richard Wills (right), on a new section of bank created to speed up the flow of water in the river

adopting more varied crop rotations.

Combining farming and conservation is challenging. Chris said: "The payment side is overly bureaucratic and often delayed. It would be better if the agri-environment schemes were more flexible, but we are lucky to have Harold Makant who has been our Natural England advisor for 20 years. He knows our track record, so he helps us through the bureaucracy with advice and derogations when necessary."

Though payments through agri-environment schemes are essential, they don't cover costs. For example, the net cost of capital works in the most recent (2013) Higher Level Stewardship (HLS) scheme has been £50,000. But the estates are being run efficiently, so they can afford the conservation work and still reinvest in the businesses.

Richard said: "It is about having a holistic approach whereby the property side and the farming provide an income while also paying for river, shoot and woodland management. But it's very important to get the message to Government that the driver is the possibility of flushing a wild grey partridge or catching a wild trout. We haven't shot a single grey partridge and yet that gamebird has inspired 10 years of conservation of huge benefit to biodiversity."

An essential part of making the wild shoot a success was employing a second keeper and upgrading equipment with the addition of night-vision. Brown hares have seen a dramatic increase thanks to efficient fox control. Fox and crow numbers are now at a manageable level, but the remaining threat to wild

"You have to ask yourself, have you enhanced the countryside."

birds and hares are raptors, in particular buzzards, red kites and female sparrowhawks. Winter losses to raptor predation are a major factor in halting the grey partridge population growth, particularly in the period after Christmas when they pair up and don't have a covey for protection. Richard likes to see birds of prey but struggles to understand the logic behind the current licencing system. He said: "After killing a leveret, buzzards are often driven off by a red kite and so go on to kill another hare. We have a big enough population to cope with that, but if you were trying to get hares back from scratch you might be wasting your time. I can get a licence to kill a cormorant to protect my fish and the brown trout is not a rare thing, but I wouldn't get a licence to control another protected species, whose numbers are increasing, to save lapwing or stone curlew, which are much rarer."

Richard's current focus is a 10-year plan to transform a previously intensively stocked fishery to a purely wild trout stretch of the Test. This was inspired in part by the promise of better fishing. He said: "A wild trout is so much more challenging and rewarding to catch than a stocked fish. Restoring the fishery to how it once was is very satisfying."



Wild bird Keeper Alan Walters with a cut and layed hedge. More than 6,000m of hedges have been restored as part of an ongoing project



An artificial island created from willow withies by John Simmonds Conservation has increased the current sufficiently to allow ranunculus to grow

Before the project began three years ago, trout were being released on a large scale and the syndicate operated a catch-and-release policy. As part of the rewilding project the fishing pressure was reduced and grayling are no longer fished during the trout spawning period. Richard said: *“The loss of cash flow is significant, but the conservation dividend that will come in the long term makes it worthwhile.”*

A beat has been made available to the GWCT and the Salmon & Trout Association for research, and the Wessex Chalk Stream Rivers Trust and the Wild Trout Trust are providing most of the science driving the practical work.

Measures to ‘rough-up’ the chalk stream overseen by riverkeeper, Andy Clay, include planting sedges and reeds to enhance the depth of bankside vegetation, cleaning sediment off gravel spawning grounds with jet washers, building an island to increase flow to preserve the Ranunculus, and felling trees into the water to provide nursery areas for fry. Richard has commissioned extensive surveys of insect life to show progress and detailed measurement of water quality shows that the river gets cleaner as it passes through the estates.

However, improvements are limited by factors beyond Richard’s control i.e. water quality and quantity. He said: *“We need to improve fly life but, if the water is low and dirty due to abstraction and pollution from cress beds upstream, or farmers*

planting cereals near the bank and spraying chemicals and fertilisers, we will struggle.”

Abstraction is a growing problem graphically illustrated by the reversal of the 1990 water meadow/snipe project. When the sluices were repaired the meadows were flooded and the waders returned, now water levels are too low to flood the

“Restoring the fishery and seeing the wild trout thrive is very satisfying.”

fields and the birds have gone. He said: *“The fact that water is limited is ignored and authorities need to wake up. Despite seven out of the past 10 winters being under average rainfall, Southern Water still takes the same amount. Added to that, Wheelabrator is planning to build a vast 500,000-plus-tonne waste incinerator power station nearby, which will have a disastrous effect on the water table and wildlife.”*

Alongside rewilding the river, the team is working with the GWCT on a three-year project to research what factors might be affecting the breeding success of the resident woodcock population. Six years ago, Richard began felling what now totals

Wildlife Highlights



Brown Hare

© Laurie Campbell



Duke of Burgundy Cased Caddis

© Peter Eeles



Southern Iron Blue Mayfly
Scarce Purple Dun

© Stuart Croft



Bullhead Brown Trout
Brook Lamprey



Woodlark
Skylark
Grey Partridge

© RSPB



Stone Curlew
Yellowhammer
Woodcock

© Dave Kjaer



“If we don’t put something back, we’ll lose it and deserve to”

(Left) Habitat measures have helped the grey partridge

© Dave Kjaer

50 hectares in the belief that an active forestry policy would attract more resident and migratory woodcock. He is replanting the oak at varying densities and creating wide sweeping rides for easier access. On the woodland floor, bramble is encouraged next to areas where the understorey is cut low to the ground, providing a variety of habitat for protection from predators and nesting. As ground-nesting birds, woodcock are vulnerable to predation during the breeding season, so Steve Ridge, headkeeper on the family syndicate reared bird shoot, carries out predator control and the woods will be left largely undisturbed. The cost of felling is only just covered by timber sales, so the replanting comes from estate coffers to avoid the prescribed densities that are stipulated by grants.

Looking ahead, as well as improving the farmland soil structure, Richard wants to increase insect life and rare arable plants and expand the wild pheasant population. He said: *“We can’t keep on taking from the countryside. If we don’t put something back, we’ll lose it and deserve to. It’s your asset and when you see it enhanced it’s very heartening. If we could achieve a stable population of wild trout and I could take a 2lb fish home for supper once a year, that would be lovely.”*

(Below) More than 50 hectares have been felled and replanted at differing densities in an effort to create the ideal woodland for woodcock

GWCT Research in Practice

Woodcock study

Andrew Hoodless
GWCT Head of Wetland Research



Whilst numbers of migrant woodcock wintering in Britain appear to have been stable in recent years, our resident breeding woodcock have been in decline over the last 40 years. We don’t fully understand the reasons for this but our research has shown that woodland size and diversity have a positive impact on breeding woodcock numbers, while higher fox numbers have a negative influence.

Richard has large blocks of oak at Middleton, with hazel understorey in places, some birch and smaller stands of conifers. He has had a small, but stable, breeding woodcock population for many years, but a greater structural diversity and more open space within the woods is needed to help support higher numbers. Past GWCT studies have demonstrated that woodcock will nest in mature woodland, but often prefer to feed in, and take their broods to, younger stands or areas with denser shrub cover. The work that Richard is doing on habitat, coupled with efficient predation control, should boost woodcock numbers. Using radio tracking, we are monitoring the response of both residents and migrants so we can improve our recommendations for other landowners.



Woodcock © Steve Round



Donside ducks

John Riley has transformed his family farm in Aberdeenshire with a spirit of adventure



Farm Facts

Location: Aberdeenshire

Type of farming: arable, cattle, sheep

Acreage: 300

Funding grants: ESAS

Conservation measures: hedge and tree planting, woodland management, pond digging, wetland creation, flood management, supplementary feeding, cover crops including wild bird seed mix, fish ladder construction, predation management, extensive grazing, low input grassland and arable, wildflower mix

Conservation in Numbers

4 miles of hedges

6 ponds dug

3 covers planted

4 tonnes of grain put out

25 acres trees planted



Semeil Farm nestles in a beautiful Upper Donside glen on the edge of the Cairngorms National Park, 15 miles from the Balmoral Estate. When John Riley purchased Semeil in 1985 there were no hedges or trees on the south side of the 300 acres of mixed farmland, so he asked GWCT advisor Ian McCall to design a planting plan. Ian's scheme mirrored John's vision and 34 years later, the trees and hedges have matured, producing an impressive dividend for both wildlife and game management. The wide range of species attracted to the farm includes goldeneye duck, osprey red squirrel and snow bunting. Good numbers of bullfinches and great flocks of chaffinches gather in winter and house sparrows fill the farmyard. John, said: *"As well as using the latest technology, I think it's important to consider how things used to be. When we came, people said there were never hedgerows in this part of the world, but I discovered 200-year-old records of hedge lines at Semeil."*

John has a self-confessed weakness for digging ponds (six in all), and being a keen fisherman he has stocked them with brown trout, which have bred successfully. He said: *"One morning we looked out of the window and saw three or four ospreys stacked up like kestrels hovering over the pond after the trout up there."* A wide range of duck species including teal, mallard, goldeneye, wigeon, tufted and scoter, of which there are only 53 breeding pairs in the whole of the UK, are

regular visitors. Care has been taken with planting around the ponds. Heather and juniper, one of the UK's three native evergreens, have been re-established and they have begun to regenerate naturally thanks to areas being fenced off from grazing cattle, sheep and deer. During the winter, John feeds the duck with barley every day in the shallows. Each pond is stream-fed to maintain its level in the summer and in many cases the outflow is allowed to spread over the mossy ground, creating a wetland habitat attracting snipe and vast hatches of frogs, whose tadpoles feed the trout in turn.

Another passion is salmon conservation. John bought the farm partly because it came with fishing on 1¾ miles of single bank on the magnificent Don river and he has the fishing rights on a further ½ mile. On one of his beats he is part funding a new fish ladder to replace an old concrete one at a cost of £12,000 to help the salmon migrate over the weir to the upper reaches. He said: *"Our stretch near the wear is one of the few places you can see fish both breeding and swimming up the river to spawn in the same place. Much is made of what happens to salmon in our rivers and I think predation maybe a cause, but on the East coast we don't have to contend with fish farming. The problem is when salmon go out to sea they don't come back and we can't understand why."*



John Riley feeding his Hebridean sheep brought from Uist



One of six new ponds on the farm stocked with breeding trout. On one occasion three or four ospreys were spotted over the water hunting for fish



The old concrete fish ladder is to be replaced to help salmon migration



John's Archimedes' screw generates enough power for 90 homes

As well as fishing, the river provides hydroelectric power in the form of a giant Archimedes' screw, which John bought and helped to install. Driven by the flow of the water, it produces enough electricity to run 90 homes. Initially, the Don Salmon Board objected to the scheme on the basis that the fish might be crushed by the action, but that has not proved to be the case and the tail race has provided a new spawning ground.

Hydroelectric is not the only source of renewable power at Semeil. A pine plantation was ready for clear fell when the Riley's moved to the farm, ensuring a huge supply of logs, so John had a biomass burner installed to heat the farm house and plumbed in parts of the underfloor heating himself.

Both the forestry and the salmon board have, on occasion, caused stumbling blocks to innovation and conservation. John

said: "I found the Forestry Commission quite risk-averse in terms of what trees can or can't be planted. The people on the ground seem to be nervous of getting it wrong and often won't approve a planting plan, even if it makes more sense for the particular location than the accepted formula." At the same time, without agri-environment scheme funding, the farm would not have been able to deliver the biodiversity benefits it has achieved. He said: "We were the second farm to go into ESAS in the 1980s which worked well because it was simple, and we've been in most of the schemes since."

John and his wife Jacqueline recently acquired a croft on the Isle of Uist in the Outer Hebrides and they approached its management with the same drive for self-sufficiency. For example, they have filled new drainage ditches with scallop shells from the local shellfish factory, rather than gravel, and regularly use seaweed from the shoreline as an organic fertilizer. In addition, they are bringing their Highland cattle and Hebridean sheep from the island to be finished in Aberdeenshire, echoing a traditional movement of livestock from West to East Scotland. The heritage breeds are natural foragers and can stay outside longer during the winter months. John believes meat production in parts of Scotland would do well to return to native livestock. He said: "On Uist and other islands you find Continental breeds, which grow quickly, but require processed food to be shipped out as they won't fatten on the grass. We are opting for quality rather than quantity, charging a premium for rare breed meat from a place where it's harder to farm intensively, such as the Western Isles."

"Snow buntings regularly come down from the ski slopes to feed at the farm"

The cattle and sheep from Uist allow a mixed farm system at Semeil with livestock providing fertilizer for commercial rotations of oats, barley, red clover and oilseed rape. More recently John has grown heritage seed from Uist including rye, oats and Bere barley, the oldest grain in the UK, brought over by the Vikings. Heavy snowfalls are guaranteed after Christmas making winter crops unviable, so John keeps his stubbles until later in the year, which benefits farmland birds. He said: "By late November the birds have gleaned the oats and barley but rape stubble is still there and snow buntings regularly come down from ski slopes to feed on it in the harsher times of year."

Wildlife Highlights



Goldeneye



Red Squirrel

© Michael Appleton



Juniper



Salmon



Snow Bunting

© Pete Thompson



Common Scoter

© Derek Moore



Semeil Farm lies in the Upper Donside Glen near the Cairngorms



Jacqueline's rare Norwegian Fjord ponies are part of the grazing regime



Four miles of hedges have gone in Twenty-five acres of trees planted

An impressive four miles of hedge-planting gives vital shelter for farmland birds in winter and essential nesting habitat in spring and early summer. Blackthorn and hawthorn are the principal plants, offering good protection from birds of prey at nesting time. John tends to wait until late December once the fruit has gone before trimming them. In addition, across the farm he has planted stands of mixed deciduous and conifer trees including rowan and Norway spruce, which he believes should be considered a native as they were here before the last ice age and are the main food source for the local red squirrels.

Another source of food and shelter are cover crops planted next to the hedges. At 1,000ft maize struggles, but strips of fodder rape and oats have proven popular with seed eating songbirds and canary grass offers winter cover. Most of the plots have to be fresh drilled each year, so to keep costs down next year's planting plan will see more Caledonian kale which lasts two or three years. In addition, grain is spread by hand and in hoppers until the end of May, providing a critical source of food for the farmland birds during the hungry gap. *"I think you have to experiment and take risks. For example, I started with millet, which looked fantastic, but soon discovered by trial and error that you need to stick to the crops that work on your land."*

John and his father moved from Scotland to rural Lincolnshire when he was 10. Growing up in the country sparked his love of nature and beating on a local shoot inspired him to want to be a gamekeeper. *"My Dad said I wouldn't make a good keeper because I would want to do things my own way. He suggested I found a way to buy my own farm and run a small shoot myself."* Having followed his father's advice, John's DIY shoot releases 100 birds to accommodate three days shooting a year with a modest mixed bag of 30 pheasant and duck on each. In recent years, only cock pheasants have been released and the wild population is growing with the long-term aim being switch to a purely wild-bird shoot. To preserve the pheasants and songbirds on the ground during the breeding season, foxes and corvids are controlled. Tunnel traps are used for stoats and rats on the farm and mink on the river, which kill the wild duck as well as the fish.

Looking ahead, John is handing over the main farm business to his son John, but will continue with the shoot and conservation work. The hedges he planted 34 years ago are becoming leggy and drafty so he is going to begin cutting and laying them. Jacqueline, who runs her own equestrian centre and keeps rare Norwegian Fjord ponies on the farm, plans to organise farm tours to promote the rare breeds and wildlife conservation. The Rileys' determination to keep improving the habitat and land at Semeil Farm comes from a belief in the need to leave a legacy. John said: *"All three of my boys John, Toby and Freddie share a love of shooting and fishing, so I'm hopeful they will continue the conservation work. Time in this world is limited, you want to get on and make a difference."*

GWCT Research in Practice

Seeds from Semeil



Merlin Becker, GWCT Scotland Policy and Advisory Officer

Semeil is only nine miles from our Scottish Demonstration Farm Auchnerran and in 2017 John kindly gave a tonne of barley to our winter-feeding programme after reading a blog about our conservation work. The following year he donated a Uist oat and rye mix, sowing them in two plots for us, which we used as part of an EU-funded LIFE Laser Fence trial to assess and control rabbit damage. One plot was fenced and the other left open. The fenced plot established well and came away eventually, in spite of the bone-dry summer. A good number of songbirds were recorded in this game strip over the winter months and it attracted more pheasants than had previous cover crops. Unfortunately, the lasers failed and the unfenced site was ravaged by bunnies, but useful data was gathered, combining research and its practical application. For a second year running several loads of grain for our feed hoppers were donated by Semeil Farm. Without the generous support and passion of people like John, the GWCT would not be where it is today.

The Heather Doctor

How Geoff Eyre has restored the UK's precious uplands with a mastery of invention



Farm Facts

Location: Derbyshire

Type of farming: sheep, arable and grouse moor

Acreage: 1,200

Percentage in conservation: 90

Funding grants: Walling grant

Conservation measures: (on the moor) bracken and grass control, moorland flora restoration, cool muir burn, predation management, bird surveys, protection of water courses, (in the valley) woodland management, hedge and tree planting, feeders, wild bird mixes, pollinator mixes

Conservation in Numbers

40 square miles of moorland restored

40 upland plants cultivated

69 pairs of curlew

30 pairs of ring ouzels

G Geoff Eyre likens his moorland restoration work to gardening on a grand scale. Over 30 years he has pioneered methods of collecting the seeds of upland native plants and sowing them, single handedly restoring more than 40 square miles of wild moorland to its former glory. This has been mostly done in his "spare time" alongside running his 200-acres of farmland, the 1,000 acres of grouse moor he bought in 2012 and the family business an agricultural merchants, which has been operating in Brough in Derbyshire's Peak district since 1885. Growing up in the stunning surroundings of the Hope Valley he developed a passion for wildlife "I love being out on the moor. From a very early age I'd be off for hours after rabbits or helping the gamekeepers".

After the war, the drive for food security meant many of the Peak District's privately-owned moors were sold to local farmers and cleared for agriculture and forestry. During this period, more than 40 per cent of the UK's historic heather moorland was lost. The National Trust (NT) became a big landowner in the Park in the 1950s and in the late 1980s there was a call for moorland flora to be restored backed by public funding in the form of MAFF and Joint Nature Conservation Committee's Environmentally Sensitive Areas programme. Geoff rose to the challenge, setting to work on 5,000 acres across the Peak District including the National Trust's Howden Moor, on which he still rents the shooting rights.

He said: "In one case what is now the United Utilities company asked for help with a large area of bare peat damaged by wildfire. The soil was too acid for anything to grow so we dropped lime on the area by helicopter and then as a trial we sowed strips of everything from turnips to sunflowers. I planted fast growing rye grass in one area and no-one believed it would work but within



Geoff Eyre on his moor with a restored area beyond the bracken

a few weeks there was a patch of bright green like a lawn on the hill. People said you shouldn't grow grass on the moor, but it was to establish a soil structure for the heather to follow and it worked."

A self-taught engineer and inventor, Geoff applied the same principles to moorland restoration as you would to agriculture. By adapting existing agricultural machinery, he developed a special harvester, which even incorporates pizza spacer discs that pre-clean the seed. Once cut, the heather is processed at Geoff's farm supplies business where a series of custom-built machines separate the seeds. After discovering that fire stimulates heather germination, Geoff extracted a liquid chemical from heather smoke using water-cooled radiators acting as condensers. The seed treated with the extract went from 5 to 80 per cent germination. In all, Geoff has managed to cultivate 40 different moorland plants including the microscopic spores of Sphagnum moss and was awarded an honorary doctorate by Liverpool University for his work.



Growth returns on a burned patch after one year. Geoff helped develop the "cool burn" technique, which enables burning in winter

Gathering the seed is only the start of the process, getting it to establish is another challenge. Geoff has applied a deep understanding of moorland ecology and agronomy learned from years of practical experience to develop a range of fascinating techniques from harvesting sorrel seed on the hill with a Flymo to covering clay pellets in Sphagnum spores so they can be cast using a fertilizer spreader.

To establish a seedbed, herbicide is used to clear monocultures of molinia grass, or bracken, which provides little in the way of habitat, is inedible to livestock and produces carcinogenic spores. Geoff then scatters the seed, a mix of plants such as heather, cotton grass, bilberries, crowberry, native cranberry and deschampsia grass. He has also discovered that certain plants make good pioneer species by forming a platform for others. For example, deschampsia protects young



Reseeding has achieved a balance of heather, grasses and berries



Harvested seed stored at Geoff's farmers suppliers business



Tiny heather seeds separated from the brash and ready for sowing

heather from extremes of weather while it gets a foothold and Sphagnum provides an ideal bed for berry species, while sheep sorrell works well after bracken. The results are spectacular. Vast expanses where barren swathes of bracken or molinia grass held sway are transformed to colourful mixes of different hues of heather, varieties of grasses and the magical sight of red and blue berries growing through the extraordinary sponge-like structure of the Sphagnum.

Once the habitat is restored, the wildlife returns with insects, reptiles and many of our most loved and threatened birds including curlew, ring ouzels, lapwings, skylarks, dunlins and golden plover in abundance. On one 1,500-acre piece of restored moorland, bird counts went from six to 1,000 with the highest density of lapwings in the area, 30 pairs of ring ouzels, 69 pairs of curlew and good numbers of white hares as well as several species of birds of prey.

The work of maintaining habitat for specialist moorland birds continues through grazing regimes. In the 1980s headage payments led to overgrazing and a lot of heather was destroyed. Today, the number of sheep on Peak District moorlands has been reduced by two thirds, but it is a delicate balance and Geoff feels it may have gone too far the other way. He said, "The reduction in sheep is a concern, as grazing helped create natural firebreaks and good nesting areas for rare birds." The ancient stone walls that criss-cross the Peak District are to keep the sheep in and on his own moor Geoff employs a stonewaller who is restoring these important parts of Derbyshire's rural heritage.

As well as grazing, the other key management technique is controlled burning or muirburn, which rejuvenates the heather and other plants, including peat-forming Sphagnum moss. Geoff said: "In my experience, Sphagnum only spores after fire, allowing

it to recolonise large areas and eventually form carbon-capturing peat." By burning between October and April when the earth is damp and cold, grouse moor managers avoid fire getting into the underlying peat or soil and destroying the heather they are trying to preserve. About 30 years ago, Geoff developed a variation of this method known as "cool burn" which enabled burning earlier in the year when it's wetter and so safer. Cool burn involves cutting a fire break strip around a small patch of older heather and getting a line of fire to travel across without



Deschampsia is a perfect pioneer plant, providing a platform for the heather (inset)

spreading beyond the edges. This technique results in regrowth of heather from root stock in the first year and is now used on most of the UK's grouse moors. He said: "To demonstrate

"Sphagnum recolonises large areas and forms carbon-capturing peat"

how effective it is, I bury a Mars Bar at ground level. The burn goes over in a matter of seconds, singeing off the heather without even burning the wrapper or melting the chocolate, so you can imagine that the peat and mosses underneath the heather remain unharmed."

Wildlife Highlights



Curlew
Jack Snipe
Common Snipe

© Dave Kjaer



Ring Ouzel
Meadow Pipit
Whinchat

© David Mason



Short-eared Owl
Kestrel
Merlin

© Scott Newey



Mountain Hare
Brown Hare

© Dave Kjaer



Lapwing
Woodcock

© Dave Kjaer



Grey Partridge
Red Grouse

© Dave Kjaer

“I bury a Mars Bar at ground level, the burn goes over in a matter of seconds”

The heather on Howden (pictured above) is part of 5,000 acres restored by Geoff

This form of burning is not only controllable it also creates a series of firebreaks across the moor, which will be vital as the threat of wildfires grow. In addition, the ATVs which gamekeepers have specially adapted for managing cool burn can be employed in the event of a wildfire when normal fire engines are not capable of getting on to the moor or have to clock off at night due to safety regulations. For this reason Geoff is concerned the current reduction in a careful muirburn regime in the National Park could lead to devastating fires in the future. He said: “In 1993 four local grouse moors were



One of the many stone walls being repaired on Geoff's grouse moor



ATVs adapted for controlled burns can be used to fight wildfire

designated SSSIs by English Nature (EN) because of the wildlife produced by the management system. Natural England (NE) recognised the benefits it brought. Since then it seems NE and the National Parks Authority have moved away from grouse management and there is a danger that all the work will be undone, putting wildlife at risk.” The 1992 Rio Convention on Biodiversity ratified the global importance of UK heather moorland. Its open vistas, stunning colours and unique wildlife are much loved the world over. In the future, Geoff hopes grouse managers like him will again be encouraged in their efforts to maintain this precious habitat and the threatened species which depend on it. In the meantime, he is looking forward to restoring more of the moorland plants and repairing the stone walls on his own moor. His advice to fellow conservationists: “Like gardening, you have to like solving problems and be prepared to persevere!”

GWCT Research in Practice

Muirburn study

Dr Sián Whitehead
GWCT Uplands Scientist



In contrast with wildfires, managed burning of heather, if done responsibly, doesn't burn the underlying peat and rather than damaging blanket bog may actually help to regenerate it. Results from a long-term burning experiment at Moorhouse National Nature Reserve, a high altitude, deep peat site in the North Pennines, showed that 10-year burn intervals favoured the main peat-building species of sphagnum mosses and cotton grass. In contrast, longer burn intervals (20 years) or no burning resulted in increases in heather cover, but no such increases in sphagnum or cotton grass. We explored how the results from these experimental trials at Moorhouse may be translated to a site where different intervals of prescribed burning have been used as part of ongoing active grouse moor management. Using aerial images we identified burns from within five different age categories from which we collected information on plant species composition and abundance. We found that the heather cover removed by burning gradually rose to almost complete ground cover on areas burnt more than 17 years before. In contrast, the highest levels of Sphagnum moss and cotton grass were found on areas burnt between three and ten years previously, and were very low more than 17 years after a burn. For more information about GWCT's moorland research, visit gwct.org.uk

The bird man of Cors Caron

How Terry Mills transformed his Ceredigion farm into a habitat haven

Farm Facts

Location: Tregaron, Ceredigion

Type of farming: beef, sheep

Acreage: 720 (510 farmland and woods, 210 wetland)

Area in conservation measures: 100%

Funding grants: Glastir Advanced

Conservation measures: extensive grazing, hedge and tree planting, hedgerow and woodland management, pond creation, hay meadow reversion, cover crops, supplementary feeding, livestock fencing, predation management

Conservation in Numbers

144 species of bird seen, 80 bred

16 km hedges

160,000 trees and shrubs

12 ponds

50 acres deciduous woodland





Cors Caron Nature Reserve has a unique beauty, but its wildlife is struggling. Nearby Cruglas Farm has far healthier populations of waders and wildfowl

After travelling the narrow winding pass through the wild beauty of the Cambrian Mountains in Ceredigeion, you descend into the magical landscape of the broad Teifi river valley. At its centre, encircled by hills, is the vast wetland of Cors Caron the largest raised bog in Britain. Its unusual topography of scrub on wet peatland built up over 12,000 years is reminiscent of Arthurian legends and its remoteness provides a rare tranquillity.

Famous for being a safe haven for previously rare species such as the red kite and the polecat, the region has the appearance of a wildlife paradise, but its biodiversity has declined in recent decades. Like many other parts of the country, headage payment for sheep in the 1970s and '80s led to overgrazing and the loss of mixed farming with its arable fields and hay meadows.

The challenge of restoring a piece of countryside with potential to host a wide range of species was one of the things that drew Terry Mills and his wife Jo to Cruglas Farm on the edge of Cors Caron and since they took it on in 1996 wildlife has returned. As an ornithologist who has been fascinated by the natural world all his life, Terry keeps meticulous records. He said: *“Eighty species of bird have bred here of 144 sighted. We have 26 types of butterflies, nine species of bat and almost every large mammal. The farm was not rich in biodiversity when we moved here, but nature is incredibly rewarding, if you produce the right habitat.”*

The most dramatic effects have been where grazing has been reduced or restricted altogether. Cruglas is 510 acres and Terry rents another 210 acres from the National Nature Reserve, which borders the farm. Over time he has reduced his flock from 800 to 550 breeding ewes. He said: *“Areas fenced off from livestock have shown the most dramatic results with many species re-emerging including marsh cinquefoil, purple loosestrife and devil's bit scabious.”* But he would stop short of

total rewilding and believes farming and conservation can work together. He said: *“Of the 720 acres we manage, only 200-300 is half-decent farmland, so there is plenty of room to create more*

“Nature is incredibly rewarding if you produce the right habitat”

wildlife habitat as well as producing food.”

The land rented from the nature reserve is a good example. It is grazed by a small suckler herd of Welsh Black cattle in summer with the agri-environment grant coming to the farm. When sheep were on the bog they grazed most plants but left the juncus grass, which then dominated, and it has taken 10 years for the cattle to begin to clear it, allowing important species such as sphagnum moss, bog beans and heath spotted orchids to thrive. Terry said:

“Welsh Black are much better foragers than Continental breeds. They graze in a methodical way eating the rough grasses like a herd of wildebeest moving slowly across the plains.”

In winter the hardy cows are taken off the bog but remain outside. Their cowpats produce a lot of worms and woodcock flight up from

the bog every evening to feed in the fields which are softened by their hooves. Terry feels banning supplementary feeding of livestock to prevent the ground being poached could be damaging to bird life. *“It shows a complete misunderstanding of land use. Poaching is only a problem in areas near water courses. Starlings and lapwings come and feed in the fields because they are poached and I'm sure part of the reason you don't see as many yellow wagtails anymore is because there are fewer cattle out in winter.”*



Terry and Jo Mills. The TV shows live footage of their barn owl box

There's no doubt that the dedication and skill of stockman Aled Thomas in managing the grazing regime has played a large part in the success story. The other major transformation has been the restoration of many traditional features lost to grazing. Most of the hedges were eaten out when the Mills arrived so Terry got hold of the old tithe map from 1781 and replanted the hedgerows marked on it, 16km in total.



16km of hedges have been planted along the old lines

Traditionally, stones cleared from the fields were piled up and a hedge planted on top. Many of these lines of stones can still be found marking old field boundaries, but there's not enough soil to plant on them. Instead two mixed hedges are planted either side and then fenced off. For variety, some remnants of old hedges with trees in them have been left and the rest aren't cut lower than 2.5m and then only at the very end of winter. This maintains a larder for the large flocks of overwintering farmland birds including redwing, fieldfare and starlings. Terry said: "I once saw 100 redwing strip a holly bush of berries in 20 minutes. Hedges are vital habitat for birds. I'm sad to see they are often cut right down and allowed to dwindle. Perhaps, if there was more financial help to manage them, they wouldn't be so neglected."

To date, 160,000 trees and shrubs have been planted at Cruglas including 50 acres of deciduous woodland. There are new tree plantations on the most unproductive ground spread throughout the farm. Twenty acres of hay meadows have been restored allowing the wild flowers to return and game crop mixes of kale, millet and triticale provide food for songbirds that would have been more readily available on a traditional mixed farm. At 550ft not all game crops will germinate but

brassicacs do well attracting sparrows, finches, redpolls and siskins. Twelve new ponds around the farm provide breeding grounds for ducks and geese in spring. One pond even features

"To date, 160,000 trees and shrubs have been planted at Cruglas"

an artificial bank with pipes to provide safe nesting holes for sand martins. In winter, Terry puts out barley for migratory wildfowl including about 400 teal and 200 mallard and he is particularly proud of a troupe of rare whooper swans, which take up residence every November.

Foxes and magpies, crows and squirrels are controlled in spring to protect nesting songbirds. The polecat traditionally associated with this part of the world is considered a voracious predator, but Terry believes there has not been the population explosion people feared and their reputation is undeserved. Otters kill young wild ducks and take the trout which Terry introduced to his new ponds, but he believes current regulation around predator control has the balance right, especially when it comes to birds of prey, which he welcomes. Long-eared owls and hobbies nest in the woods making their homes in



An artificial sand martin colony in one of Terry's 12 new ponds

old crows nests and Terry once had his hat knocked off by a hen harrier. This part of Wales is famous for goshawks and a pair regularly breed on the farm. They do not pose a threat to the 500 pheasants released on the small family shoot, in fact they help control corvids, which take the wild pheasant chicks and eggs. Terry said: "When a goshawk decides to kill a crow it's

Wildlife Highlights



Long-eared Owl

© Getty Images



Polecat

© David Mason



Lesser Redpoll

© Rebecca Nason



Heath Spotted
Orchid



Grasshopper
Warbler

© Jeff Hall



Goshawk

© Iosto Doneddu

like a slow-motion cruise missile. As soon as it locks on, the crow makes a pitiful as it knows there's no escape."

The habitat creation and predator control means Cruglas outperforms the neighbouring nature reserve in terms of conservation. He said: *"I do the Wetland Bird Survey counts for the British Trust for Ornithology on the farm and my friend Andy does southern part of the reserve. We have 700 acres, he's counting on 2,000 acres and generally Cruglas has two thirds of the waders and wildfowl. I'm perhaps most proud of our record*



An entrance for barn owls built into a barn converted for holiday lets

on warblers we have all eight species native to the area and they have increased over the years."

Terry would like to see other farms in the area adopt some of the conservation measures that have made Cruglas such a success but acknowledges the challenges. The farm benefits from a mix of revenue streams with Government grants making up about 50% of income, recently established holiday lets about 10% and farming around 40%. He said: *"I'm lucky*

"I'm most proud of our record on warblers, we have all eight species"

to be able to put my profit back into wildlife measures. Making a living from sheep farming alone is very difficult, but there is now money available for landscape-scale conservation projects and several of my neighbours have shown an interest."



Terry with a calf pen tuned into a makeshift birdwatching hide

Looking to the future, Cruglas is part of an application for a grant for a community project aimed at restoring wildlife to Cors Caron. The bid for Sustainable Management System (SMS) funding from Welsh Government is led by the GWCT

"Now we need to see that nature is the farmer's friend"

and would see land managers working together to achieve clear goals (see panel below). Terry is keen to keep improving habitat at Cruglas with plans for more and varied cover crops. He said: *"When I was young there was plenty of wildlife, but nature was regarded as the enemy of good farming, whereas now we need to see that it's actually the farmer's friend."*

GWCT Research in Practice

Tregaron SMS

Matt Goodall
GWCT Wales Advisor



In Wales we are using the Government funded Sustainable Management Scheme (SMS) to help facilitate the GWCT-developed Farmer Cluster concept. The scheme encourages a number of farmers to work more cohesively together in their locality, collectively delivering greater benefits to wildlife, soil and water at a landscape scale.

We have successfully helped set up several SMS projects across Wales and will be putting in a bid to help Terry and several other landowners around Cors Caron bog. Cruglas Farm, and the work Terry has done there, really is magnificent and the idea is to use Cruglas as a blueprint for what can be done in the surrounding area on neighbouring farms, expanding Terry's efforts to a landscape scale.

The group are under no illusions as to how competitive this round of applications for SMS funding is, but their enthusiasm and commitment to conservation friendly farming is outstanding and I'm sure, whether it's through SMS funding or otherwise, great things will come from their collaboration.

Without our own demonstration farm in Wales, GWCT Wales are helping to develop projects such as this to demonstrate GWCT science and best practice on the ground in Wales, aiming to deliver better outcomes for wildlife, soil and water without disrupting farm profitability. I would ask anyone interested in working with the GWCT in Wales to get in touch.

Big-scale bird food

Britain's farmland birds are in dramatic decline, but on the shoots of Exmoor they are thriving thanks to land managers like Darren Ninnis and Pete Stanbury



Farm Facts

Location: Exmoor

Type of farming: sheep and beef

Acreage: 1,000 (including 450 woodland)

Funding grants: Countryside Stewardship Higher Tier

Conservation measures: wild bird seed mixes, woodland management, predation management, tree planting, hedgerow management, beekeeping, scrubland

Conservation in Numbers

2.5 times more breeding birds than on similar farmland without shoot management

90 acres game crops

14 acres largest game crop

500 acres in Countryside Stewardship

Large shoots are often criticised for having a negative environmental impact due to the greater numbers of birds being released, but a new ground-breaking scientific study by the GWCT found that where farmland birds are concerned, the opposite was the case. Exmoor is a region traditionally associated with large-scale gamebird release and the study, the first of its kind, took place on seven shoots covering an area of 10,000 hectares. The results were startling, revealing that, on average, Exmoor shoots had 2.5 times more birds breeding farmland birds than nearby unkept countryside and the secret is the scale of operation. For example, cover crops average three hectares on Exmoor compared to 0.65 hectares on shoots elsewhere. Crops such as bird seed mix,



Farm manager Darren Ninnis (left) and headkeeper Pete Stanbury

when the crops are all up they are full of small birds and the butterflies love the white flowers of the fodder radish. We leave them for two or three months after the season ends before ploughing them up, which provides food through the hungry gap.”

On most UK shoots cover crops are planted as strips on the margins but on Exmoor whole fields are sown. These large areas are key to conservation success because research shows that you need a plot of at least one hectare to provide enough food and habitat for songbirds such as linnets, bullfinches and tree sparrows to overwinter and then breed in adjacent hedgerows.

The other advantage of having a number of large shoots next to each other is that they offer diversity of habitat on a landscape scale, which is key to species recovery. The old style

of mixed farming provided cereals, next to meadow, next to roots, next to pasture, whereas modern cropping systems often result in large blocks of grass or cereals. The GWCT study showed that shoot cover crops mirror the cropping patterns on Exmoor in the 1960s before the switch to predominantly livestock farming and intensive grass production. Similarly, as well as growing food for birds, the gamekeepers distribute grain for pheasants which provides another food source for wildlife throughout the shooting season.

These days there is little profit to be made from costly woodland management but on Exmoor, shoots pay for gamekeepers to cut wide rides for pheasants and clearings to let in sunlight. Opening up the canopy encourages undergrowth, so benefitting a range of species from butterflies to woodland birds. The size of ground available to keepers means they can build more extensive release pens, allowing for lower stocking density and less pressure on the woodland environment. Pete said: “We have three big pens and several

“In late summer when the crops are up they are full of small birds”

kale, miscanthus and maize are planted for gamebirds but also offer food and shelter for farmland birds and insects.

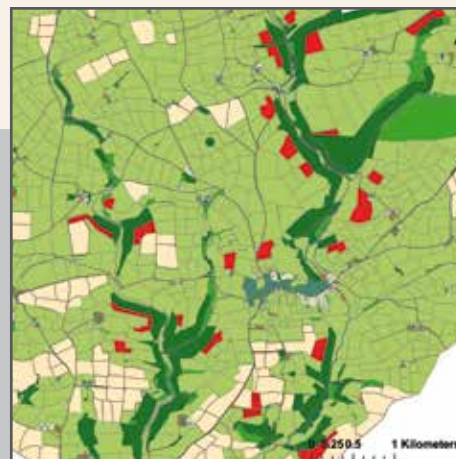
On the 1,000-acre Hollam estate in the Exmoor National Park farm manager Darren Ninnis and headkeeper Pete Stanbury integrate 90 acres of game crops with the farming operation. Darren, who rears all the birds and hosts the shoot days said: “On Exmoor, game crops have changed a lot since the days of blanket planting maize. We have learned over the years that whatever is good for nature is good for pheasants as well.” Pete added: “Seventy per cent of our mixes are different types of kale and fodder radish and the rest are cereals including triticale, reed millet, sorghum and linseed. In late summer/early autumn,



1960s cropping map



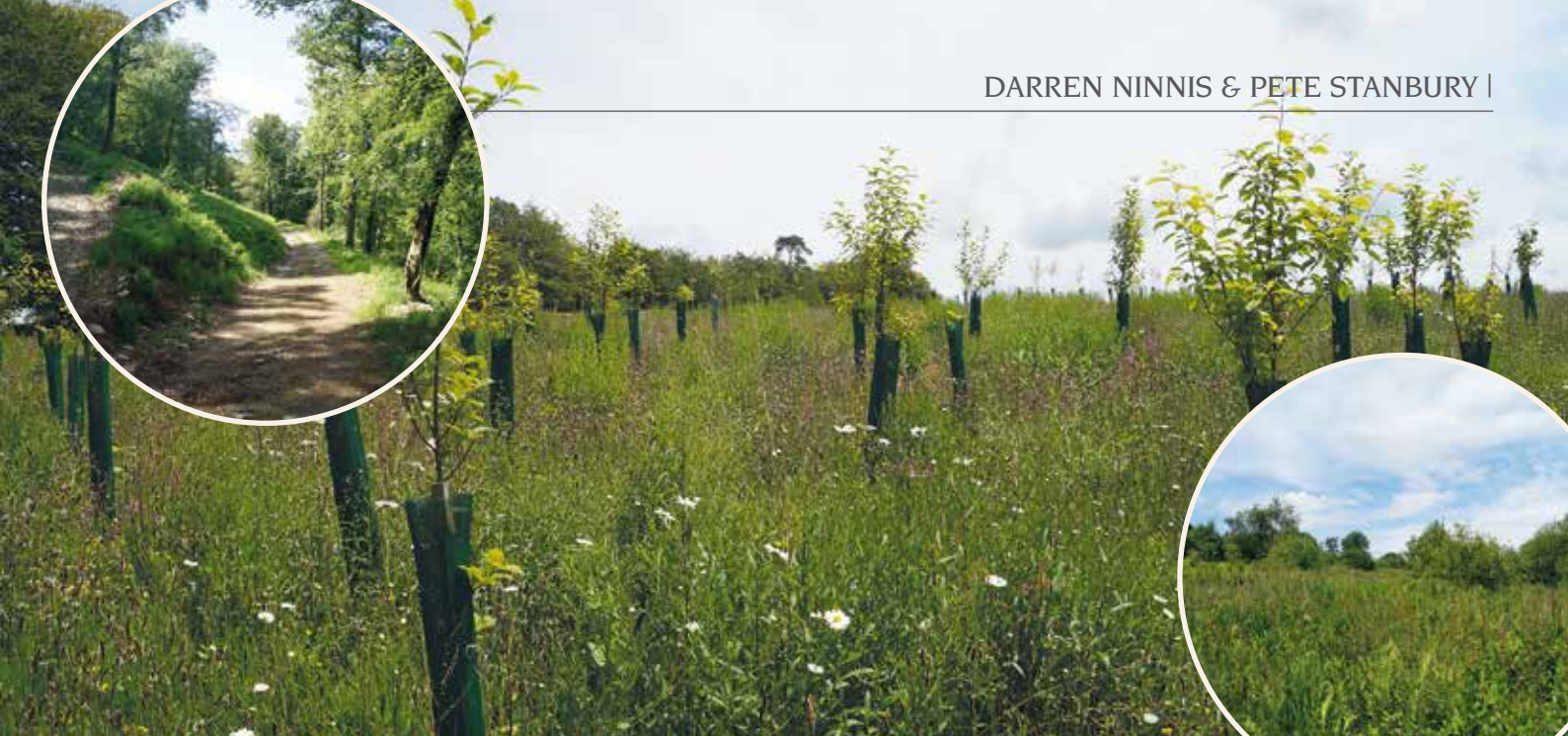
Modern day without game crops



Modern day with cover crops

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

Arable Woodland Cover crops Grassland



(Above) The shoot allows the farm to leave areas of long grass and flowers
(Inset left) Work to clear rides for pheasants helps woodland butterflies

(Inset right) A two-acre field left to revert to scrub is full of bees and other wildlife

smaller ones and we are constantly adjusting them to create more space. Once the season has ended, we begin work on the woods from end of February to May removing dead or dangerous trees, cutting them back from the tracks and thinning areas. Conservationists come and look inside the pens and they love it. In fact, they say we have all our best trees in there because we keep the gates shut, which protects them from deer damage.”

Estate owners Annie and Preben Prebensen are committed to farming in an environmentally sensitive way and having the shoot means there’s less financial pressure to graze every inch of the land. There are several areas of the farm where an area of scrub or long grass has been allowed to develop. One such was a field of wild flower mix planted with cherry trees which the pheasants like to use as cover. After three years there are still plenty of flowers in the long grass and it’s full of insects. On the other side of the valley, a field on a steep slope has been left to revert to scrub. It acts as a break to stop pheasants wandering too far and hosts a wide range of wildlife, its bramble bushes abuzz with bees in the summer months. Darren said: “You could say it’s a form of rewilding on a two acre plot. It just shows if you leave something it quickly becomes a magnet for wildlife. It’s no good for silage. You could take the fence down and turn it back to paddock, but I think that would be sad. I’d rather keep it and see what happens.”

Another key conservation element provided by the keepers is predation management. Foxes and crows are controlled in the spring when they are a threat to breeding songbirds. Pete said: “We don’t have large numbers of corvids but we do some fox control in the spring and summer. We’re not trying to wipe them out, just relieving the pressure on the wild birds and pheasant poult at the key time.”

“We have learned that what’s good for nature is good for pheasants as well”

As well as the gamekeeping team, the number of people involved in the shoot extends widely into the local community. On each shoot day around 25 people are employed including a team of 16 beaters and seven pickers-up, who retrieve the birds with two or more gundogs apiece. Beaters and pickers-up take the opportunity to socialise, keep fit and access beautiful parts of the moor. Pete said: “We have all ages coming out on shoot days. At weekends the kids come with their grandads, the shooting season is their favourite time of year.”

Wildlife Highlights



Bullfinch
Goldfinch

© Dave Kjaer



Song Thrush
Blackcap



Chiffchaff
Dunnock

© Dave Kjaer



Tree Sparrow
House Sparrow



Linnet
Mistle Thrush



Yellowhammer
Reed Bunting



On Exmoor shoots the areas sown with seed mixes are larger, providing enough food for birds to overwinter and breed successfully

Shooting on Exmoor also puts money into the local economy through purchase of cover crop seed, fencing materials, other equipment. Making a living is tough for the small family farmers who are the bedrock of the community. Many of the farmers sons drive machinery for the contractors who sow and harvest the cover crops, or put in the fencing. This work is a lifeline for those farms which only make enough to employ one family member. In addition, game management is essential for the survival of the tourist industry through the winter. Pubs and hotels depend on people coming to the region to shoot from September to the end of January. Overall game shooting participants spent an estimated £38.5million on shooting goods and services in the Exmoor region. The turnover maybe high but so are costs for the shoots, more than half of which are run on a not for profit basis: Darren said: *“We don’t run the shoot with profit in mind. We have a budget of £350,000 and any surplus is ploughed back into the infrastructure each year replacing vehicles and kit, repairing pens and maintaining woodland and game crops. Annie and Preben continue with it because they love being able to host their friends and as passionate conservationists they can see the benefits to the countryside.”*

Hugh Thomas is founder of the Greater Exmoor Shoots Association (GESA), which was formed 15 years ago and

“Game management is essential for the survival of the tourist industry”

represents 65 shoots including Hollam. He is proud of the keepers he works with and the way shoots cooperate and embrace the latest knowledge and best practice in different aspects of the operation from ensuring all the game gets into the food chain to managing public access. He said: *“We have a very good relationship with the National Parks Authority. If they have a complaint from a member of the public they let me know and I contact those involved and aim to resolve the matter the same day.”*

Hugh encouraged GESA to support the GWCT’s scientific study because he believes there is a powerful conservation argument for shooting on Exmoor and he is committed to

respond to all its findings. For example, in spite of the large size of release pens on some of the bigger shoots, the research showed that pheasant droppings fertilize the woodland floor preventing certain “lower order” species, which prefer nutrient poor soils, from growing. Hugh said: *“GESA’s strapline is ‘Keeping ahead of the Game’ and we strive to pioneer best practice in game management, so we got the report done partly to see what we need to change and then work out how to change it. If pheasants are getting too much protein that is being wasted as ammonia we can see what feed changes can do to save money and reduce the nutrient enrichment.”*

As well as improving standards, Hugh hopes the research will help to counter misconceptions about Exmoor shoots by proving that in a region where intensive livestock farming dominates, they represent a lifeline for farmland birds and insects, enriching this spectacular landscape. He said: *“Some of the young keepers come out of college knowing well how to look after pheasants, but what they learn here is that gamekeeping is about looking after the environment and the countryside.”*

GWCT Research in Practice

Exmoor study

Rufus Sage, Head of Lowland Gamebird Research



We worked with Hollam and other GESA shooting estates from 2015 to 2018. With the owners blessing, Darren gave us free access to the estate, to measure the impacts we wanted and to liaise with anyone in his team.

Previous studies found that game management does improve broadleaf woodland for birds and other wildlife. On Exmoor we looked at game managed conifer woods for the first time and again found better habitat and more birds.

The interesting thing about the game crop work was the scale of plantings and the fact that these winter crops actually lead to more breeding birds in the surrounding hedgerows in the following summer.

In studying pheasant release pens we found, as we have elsewhere, that usually there was more bare ground and fewer woodland plants inside the fence than outside. Some mosses and liverworts on trees were also affected. I am pleased that GESA plans to make some changes in response to these findings.

If time had allowed it would have been interesting to have looked at other effects. For example, we wondered if pheasant dung might have had a temporary impact on woodland streams near to pens in the autumn. At the same time, we noticed that many of these waterways and banksides in the valley bottoms were cleared of trees to provide sunning areas for pheasants and for Guns on a shoot day. We could see that these clearings with streams were providing lovely woodland glade type habitats and on sunny days they teemed with butterflies – I just wish we’d had the time to measure these things!

Ratty's Return

Rob Denny recruited an army of volunteers to restore water voles to the Monnow



Farm Facts

Location: Herefordshire/Monmouthshire

Type of farming: sheep, beef, arable

Acreage: 42,200 hectares

Funding grants: Defra, GWCT, Monnow Fisheries Association, Wild Trout Trust Salmon & Trout Association, Grayling Research Trust, Environment Agency (Wales)

Conservation measures: fencing riverbank, installing river gates, felling mature trees, maintenance of bankside vegetation, catch and release policy, predation management



Conservation in Numbers

70 km riverbank restored in three years

300 increase in the number of fishing visits to the Dore

6,411 man hours on mink control (2006-2010)

40 local community volunteers

5,000 hours of voluntary work by mink monitors

The Monnow, which flows along the English/Welsh border before joining the Wye near Monmouth, was once a Mecca for flyfishermen. In 1904, *The Field* described it as one of the best trout streams in Britain, but its fish went into serious decline in the 1980s. This deterioration was checked in 2003 thanks to a pioneering restoration project led by the Game & Wildlife Conservation Trust (GWCT) in partnership with the Monnow Rivers Association.

Local land agent and former Monnow Rivers Association chairman, Rob Denny remains a driving force behind the restoration work. His unflinching commitment and understanding of the challenges faced by farmers were essential in winning the support of the river owners. He said: *"In the late 1990s GWCT advisor Ian Lindsay suggested we could transform the Dore. He lived locally so was able to get key figures in the community on board and I spent a lot of time knocking on doors."*

It was clear from the outset that it would be vital to win the farmers' hearts and minds. Trout were suffering from soil and fertilizer runoff from the fields, erosion of banks and grazing out by livestock, which was stifling the flow. Rivers with a good current are self-cleaning, the flow of water removes sediment from the gravel beds where the trout lay their eggs, but silt was clogging the stones and starving the young fish of oxygen. Moreover, the water was overshadowed by trees, preventing beneficial bankside vegetation from establishing.

An ambitious plan was hatched to coppice and fence off large stretches of the Monnow tributaries. As well as keeping livestock out, this would create a buffer of varied vegetation, which would stop nitrogen, silt and slurry run off and create good habitat for fly life. Farmers were initially apprehensive about fencing off their river banks, but could see that there was less likelihood of their livestock being lost and it would save the cost of tree felling and repairing the banks. Working with the Wye and Usk Foundation, Rob also designed an ingenious way

for flyfishers to pay for the fishing. Metal boxes were set up on each river beat, fishermen bought a day ticket from the local post office or pub and then deposited it wherever they were fishing. At the end of the season the land owner was paid according to the number of tickets in the box. These days it can all be done online but the principle is the same and it has opened up parts of the river that were previously unavailable for fishing. Rob said: *"It wasn't a huge amount, but it was important for farmers to get something in return for allowing access."*

Enticing more visiting fishermen to provide an economic boost to the area was central to the plan and helped secure funding of £1.1 million over three years from Defra's England Rural Development Project.

Work commenced in 2003 on the Dore and several other tributaries of the Monnow, including the Honddu, with three local men



Rob Denny's love of fishing drives his passion for conservation

"It was important for farmers to get something in return for allowing access"

employed full-time to carry out the felling and fencing and install cattle crossing points with water gates to stop livestock. By 2006, 70km of bank had been restored and changes to the river habitat were immediate. The gravel was cleaner and a great range of bankside flora grew up, boosting land-based insects for the trout and aquatic fly life associated with a range of plant species. Rob said: *"The project was a huge success in terms of local engagement. We even ran lessons for our local primary school literally in the river, so we could show where to find insect larvae and other aquatic life. Many of the pupils were farmers' children and I hope they are inspired to continue the work of their parents in protecting their river."*



Having been coppiced early on, some trees need cutting back again, but this time the thinner trunks mean volunteers won't need chainsaws



Where the light is allowed in and the farmers maintain a margin, the bankside vegetation flourishes, creating the perfect habitat for water voles

The annual catch increased and the Monnow and its tributaries became an increasingly popular fishing destination. An annual fishing festival was established, attracting people from across the UK. Rob said: *“Fishing for wild trout here is very different to a Hampshire chalkstream. It’s popular because it’s accessible, a fraction of the price and takes you to some wonderfully wild and tranquil spots.”*

“We ran lessons for our local primary school, literally in the river”

The second chapter in the restoration project came out of the incidental creation of the perfect habitat for water voles. These much-loved creatures, which inspired the *Wind in The Willows* character Ratty, had last been seen 15 years earlier and were thought to be extinct in the area. The rejuvenated riverside vegetation now offered a perfect food source, but the voles would need to be reintroduced artificially and the local mink tackled. A non-native invasive species and voracious predator, mink is largely responsible for the water vole being among the UK’s fastest declining mammals, vanishing from 85 per cent of sites in just seven years. The GWCT had already invented the mink raft, a floating platform with a clay-filled tray designed to detect the predator’s presence by its paw prints.



A cattle crossing on the Dore. The use of river gates and fencing keeps erosion to a minimum and has saved farmers from losing livestock



Previously soil run-off clogged the gravel, suffocating the trout eggs



Reducing erosion and increasing flow has cleaned the riverbed

Once mink have been discovered, a trap is set on the raft. GWCT senior scientist Dr Jonathan Reynolds said: *“The GWCT mink raft had been trialled on the Hampshire chalkstreams, but we needed a larger-scale demonstration, so our research interests*

“Mink is responsible for the water vole being among the fastest declining mammals”

coincided with the dreams of the Monnow Rivers Association.”

Jonathan set up a research project on the Dore in 2006 and employed the local vicar’s sons Ben and Owen Rogers, who had the trust of the farmers on whose land they were working. It only took a few weeks to remove the mink on a stretch of river and continuous monitoring allowed a rapid response to reinvasions from adjacent catchments. Reintroductions began



At a local Monnow Rivers Association event, Rob (right) explains the need to protect the river system from non-native invasive species

Wildlife Highlights



Water Vole

© David Mason



Brown Trout



Eurasian Otter

© Richard Bennett



Freshwater Pearl Mussel

© Andrew Shaw



Brook Lamprey

© Howell and Jenkins



March Brown Mussel

© Craig Macadam

almost immediately and after nine months, 500 voles had been released at more than 50 separate locations along a 18-mile stretch of the Dore. The project was a stunning success and remains unique as a scientific study of lethal population control, eradication in the face of continual immigration and turning back the clock on biodiversity loss.

When research funding ran out in 2010, Jonathan donated the GWCT equipment and offered guidance to Rob and the rest of the team to continue the monitoring through volunteers. He said: *“It was clear that government could not pay for the required effort in every river catchment, nor could conservation charities. The question was: did the local community really care and were they willing to do something about it? What we needed were people who wouldn’t have to go out of their way to check a raft, such as dog walkers living close to the river, and each landowner should only have to deal with one person whom they knew. We then met with all the farmers and they could see that there was no outside agenda, the attitude was, ‘It’s a beautiful little river, its ours so we should look after it and its wildlife.’”*

Rob employed his impressive skill at galvanising local support and the team of 40 volunteers is now run by part-time coordinator Nick Longman, whose post is funded by the Monnow Rivers Association. In addition to checking the traps,

“It’s a beautiful little river, its ours, so we should look after it and its wildlife”

the volunteers are helping to clear the pernicious non-native plants Himalayan balsam and giant hogweed. The result is that eight years after the externally-funded work finished, the water voles are still in residence, a fantastic achievement.

The work to restore and maintain large stretches of the Monnow Catchment continues, benefiting a wide range of aquatic life from water voles to invertebrates and Rob is planning to mobilise his army of volunteers to expand the mink-free area so people may one day see Ratty return to the Wye. When asked what inspires him he said: *“A simple desire to put something back into a sport and a landscape I love and to try and leave the environment a little better than I found it.”*



Volunteers clearing rubbish from the Monnow Catchment area. The whole community has been involved in restoring the river system



Ben Rogers checks a mink raft. It was a huge advantage that the original monitoring team were already known to the farmers



The Stones family is among the 40 volunteers who regularly check the GWCT-designed mink rafts for signs that the predator has returned

GWCT Research in Practice

Mink raft study

Jonathan Reynolds
GWCT Head of Predation



The GWCT ‘mink raft’ is designed to be home-made in large numbers. Its greatest benefit is in sensitively indicating the presence of mink. Most of the time, the raft operates passively with no trap on it and is checked once a week. If there are no mink tracks when the raft is checked, there’s no need to deploy a trap, which has to be checked every day, so saving work. If there are mink tracks, a live-catch trap is added, and the mink is usually caught within a few days. By 2006, when the decision was taken to reintroduce water voles into the Monnow catchment, GWCT’s predation team had already figured out what spacing of rafts ensured that no mink went un-detected. In the four-year project that followed, two fieldworkers made 8,109 checks of individual rafts. Mink were detected on 574 of these and traps set in response, resulting in 115 mink captures. The data chronicle both the challenges and success of the strategy. Of course, the ultimate test was the long-term survival of the reintroduced water voles.

Greening Welsh grassland

Denbighshire dairy farmer Ant Griffith says a new approach to agri-environment schemes could reverse wildlife declines

Farm Facts

Location: Trefnant, Denbighshire

Type of farming: dairy

Acreage: 1,500 (120-acre woods and 150 acres tenanted)

Funding Grants: None

Conservation measures: extensive grazing, hedge and tree planting, woodland management, pond creation, hay meadow reversion, cover crops, supplementary feeding, fenced off water courses, tussocky grass and scrubland areas unploughed field margins

Conservation in Numbers

50 acres fenced off rough grassland and scrub

16 km of hedges managed for wildlife

3.5 km fenced off water course

15 ponds



Following a family tradition of conservation, Denbighshire dairy farmer Ant Griffith says adapting agri-environment schemes to livestock farming could save wildlife in Wales. Ant Griffith believes a new approach to conservation is needed and that with practical schemes and the right kind of incentives, Welsh farmers can reverse biodiversity declines. He said: *“The entry level Glastir, the old agri-environment scheme, was discontinued because it didn’t have the hoped for impact, but it was never farmer friendly. We must keep it simple to get farmers on board.”*

The Griffith family has been farming in the Vale of Clwyd in Denbighshire for more than 200 years and a love of nature runs in the family. Ant’s father was a passionate conservationist and commissioned a survey of the wildlife on the estate in 1975, which was rich in now rare species such as lapwing and curlew. Today Ant runs the family’s 1,500-acre Plas Newydd estate and is in a share farm agreement with his partner Rhodri Ellis who manages their organic dairy herd, soon to be expanded to 850 cows. No insecticides, herbicides or fertilizers, except for manure, are used on the land, but Ant recognises that pasture alone does not provide the necessary range of wildlife habitats. He said: *“Though we are organic, it is still what you might call an “intensive” system, our grass leys have only three species and are grazed hard and cut for silage so we need to work at retaining and restoring biodiversity.”*

Agriculture in Wales is predominantly livestock farming, so it is vital that future agri-environment schemes are better geared to intensive grassland management than the previous more hill-

“We must give farmers the flexibility to manage their conservation areas well”

farm focussed agreements. It’s harder for dairy, beef and sheep farmers to take field margins or headlands out of production as they would need to be fenced off, but Ant believes there are other ways of creating space for nature: *“In the old scheme there was no option for simply fencing off odd corners of less productive, harder to access land and letting the grass grow. The bits that I did off my own back are now full of native plants and insects, which in turn feed the songbirds, so why shouldn’t they be funded?”*

The farm has taken 50 acres of such land out of intensive production, including two fields preserved as traditional hay meadows. In addition, there are several areas of tussocky grass, which are lightly grazed by cattle in September and topped every three years to stop blackthorn encroaching. No longer being in a scheme means Ant can decide when to cut them. He said: *“Farming is dependent on being able to do things when the timing is right. In past agreements we were not permitted to cut hay meadows before 15th July, but if the weather’s right and the wader chicks have hatched you should be able to get on with it. We must give people the flexibility to manage their conservation areas well.”*

Traditional mixed farms which produced a combination of livestock and arable crops are largely a thing of the past. The switch to grass monocultures has seen an increase in predator species that feed on the larvae and worms in the soil such as



For Ant Griffith, simplicity is key to conservation success

crows and jackdaws, but has drastically reduced availability of food for smaller song birds such as finches. To mitigate this, Ant sowed a field of spring barley primarily as a nesting ground for the resident five pairs of lapwings and he planned to leave it unharvested for the smaller birds to feed on in winter. Sadly the lapwings failed to return and the crop was devastated by wireworm, but by late May it was re-drilled with a wider variety of seed including red clover, chicory and phacelia to cater for a greater range of birds. He said: *“It has been a learning curve for us as we are inexperienced at arable. I think this will be the same for many farmers in Wales and advice on what to plant where and how to cultivate it will be essential.”*

Another aspect of the old schemes which Ant feels put people off was the overly bureaucratic box-ticking culture that would instantly fine farmers for any deviation from the regulations, even if it was an honest mistake and the intention was good. He said: *“Towards the end of my agreement, I was fined £3,500 because I failed to describe winter stubbles as a secondary crop on the form and forgot to send in a copy of my dairy contract, yet had gone way beyond fulfilling my agri-environmental conditions. They only backed down five days before my appeal hearing. I was saddened by the whole thing as it*



Grassland offers little food for songbirds, so Ant has sown a seed mix

seemed counter to the idea of building trust and partnership.” On another occasion, he cut down a group of poplars and Natural Resources Wales (NRW) insisted that the area should be replanted. Ant said: “We have 130 acres of woodland on the farm all slightly different and trying to achieve different goals, what we don’t have is enough managed areas of scrub so I wanted to leave the plot to its own devices. Natural Resources Wales only relented when I described it as “natural regeneration”, but they told me they would come and inspect it in five years and it would have to be replanted, if no trees had grown.”

As well as the unnecessarily aggressive enforcement of impractical restrictions, Ant is convinced more ‘easy wins’ would make the schemes much more appealing. One of

“I want us to have unploughed margins in every field on the farm”

these could be paying farmers to cut hedges every two years rather than every year, which would hugely increase the amount of hedgerow fruit available to birds over winter. This is straightforward to instigate and could actually reduce the bill for hedge cutting. Plas Newydd has adopted this approach and has a mix of hedge types to suit different bird species with some allowed to grow taller before being cut and laid. Another simple measure being introduced on the farm is permanent pasture margins. The organic system requires the grass to be ploughed and re-sown every 10 years to help keep weeds at bay, which means it doesn’t develop the thatch of organic material that is home to insects. Ant said: “Eventually I want us to have unploughed margins around every field on the farm. My partner Rhodri was sceptical at first but he’s coming round to the idea. I said 3m, he said 2m, but no doubt we’ll meet somewhere in the middle!”

Fencing off water courses on farmland to stop livestock getting into the river and eroding the banks is another ‘easy win’ for Ant. Through one of the measures under the previous Glastir agreement he fenced the mile of the Clwyd which runs through the estate. This benefits fly life and aquatic plants but sadly sea trout remain in decline in the river and salmon are very scarce. The poor health of Wales’ rivers is why Welsh Government is increasingly focussed on protecting water catchments from farming pollution and is offering farmers grants to improve their waste management systems. Plas



One of several pond dug on the farm to support greater biodiversity

Newydd has invested in a new slurry lagoon, meaning they can avoid having to spread muck at the wrong time. Ant said: “There is no justification on any level for polluting streams and rivers, we have to take responsibility. NRW is rightly going to start hammering those caught polluting, but really we need a cultural shift where farmers want to avoid it because it’s wrong, rather than because they will be punished.”

Ant believes part of the reason why the farming culture is slow to change mindset is a lack of understanding of the long-term impacts many modern farming practices will have on ecosystems and ultimately farm businesses. He said: “Since the War, government policy focussed only on production and so

“Farmers are more likely to take up measures, if they understand the reasons for them”

it is understandably deeply engrained in farming culture. Farmers are much more likely to take up conservation measures if they can see the good reasons for them, so it’s vital this information gap is bridged.” With this in mind he recently hosted a day for farmers to visit Plas Newydd and hear talks on these issues by experts from the GWCT including director of the Allerton

Wildlife Highlights



Bullfinch

© Francis C. Franklin



Sparrow

© Laurie Campbell



Swift



Thrush

© JJ Harrison



Snipe

© Laurie Campbell



Shelduck

© Dick Daniels



At Plas Newydd 50 acres of field corners have been taken out of production allowing wild plants and insects to thrive

Project Demonstration Farm Alastair Leake. Ant said: “We had some very positive feedback from the day. I think the penny finally dropped for many of those who attended that you can farm profitably while making a real difference to the environmental health of your land. GWCT is needed in Wales because it is

produces solutions based on scientific evidence while at the same time understanding the practical challenges of farming. The research it has done into cover crops for different species and regions of the country will be invaluable in enabling more Welsh farmers to plant food for birds.”

According to Ant, there is reason to be optimistic about the future of more environmentally-friendly farming, but only if Government policy actively engages with farmers, schemes are adequately funded and advice is readily available. Looking ahead, the estate is bringing 350 acres back in hand, which mean that Plas Newydd will have more permanent pasture

GWCT Research in Practice

Working with farmers

Sue Evans - GWCT Wales Director



GWCT research on its Allerton Project Demonstration Farm shows that even in a relatively intensive farming system, it is possible to increase biodiversity and food production at the same time. The science also shows that to boost bird numbers every leg of the three legged-stool of habitat, protection from predators and food must be in place, which is why in Wales, where farms are mainly grassland, it is even more important to provide crops for birds through the winter and early spring. The dairy farmers at our Soils and Biodiversity event at Plas Newydd were all keen to help the declining species they remember such as curlew, lapwing and hare. Improving the farmed environment for wildlife is something every farmer could easily do and it would have an immediate and significant positive effect. We are working with farmers in Wales to develop more suitable schemes and talking to the Welsh Government about incorporating them into policy. As part of this we are looking for partner farmers to help us demonstrate wildlife-friendly measures in the context of a working farm. We are also planning to build a network of volunteers to help measure biodiversity on farms and offer training for farmers to do surveys themselves. This citizen science approach has proved successful through the Big Farmland Bird Count and Farmer Clusters where volunteers monitor barn owls, harvest mice and other species. It's very rewarding for a farmer to hear praise from a conservationist monitoring wildlife on their farm.

“You can farm profitably and make a real difference to the health of your land”

margins, hedge management and areas of scrubland. He has also asked GWCT to carry out a biodiversity assessment to establish a benchmark to measure any increase in wildlife as a result of changes to the farm system. Ant said: “Everywhere you look the Welsh countryside is bulging with livestock. I realise I am lucky to have enough land be able to fence off 50 acres, but if every farmer was supported in taking five percent of their farm out of production it could create a habitat network with a real chance to reverse declines and return some of the wonderful wildlife we have lost.”

The river has been fenced off to prevent erosion and slurry run off





Make sure you never miss the latest news and events by joining the Game & Wildlife Conservation Trust

As a member of the Trust you will not only be helping to fund the scientific research, you'll be the first to hear about it.

What you receive when you become a **GWCT** member

- ✓ Priority access to dozens of unique courses and events taking place throughout the year.
- ✓ Free copies of *Gamewise*, our feature-packed magazine produced three times a year.
- ✓ Your own free personal copy of our annual Review.
- ✓ An invitation to the GWCT's Scottish Game Fair at Scone Palace.
- ✓ Regular email updates containing all our latest news and research findings.
- ✓ Membership of your local county group and invitations to events in your area.
- ✓ Pleasure from the knowledge that you're helping the British countryside thrive both now and in the future.



What our members say...

“ Belonging to an organisation that is so dedicated to preserving the countryside makes me proud to be doing my bit. The perks that come with it are just the icing on the cake. ”

Three easy ways to join today

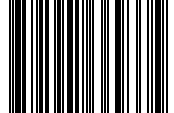
PHONE 01425 652381
ONLINE www.gwct.org.uk/join
POST GWCT, Burgate Manor, Fordingbridge, SP6 1EF



Game & Wildlife
CONSERVATION TRUST



ISBN 978-1-901369-33-5



9 781901 369335 >

UK £3.95

