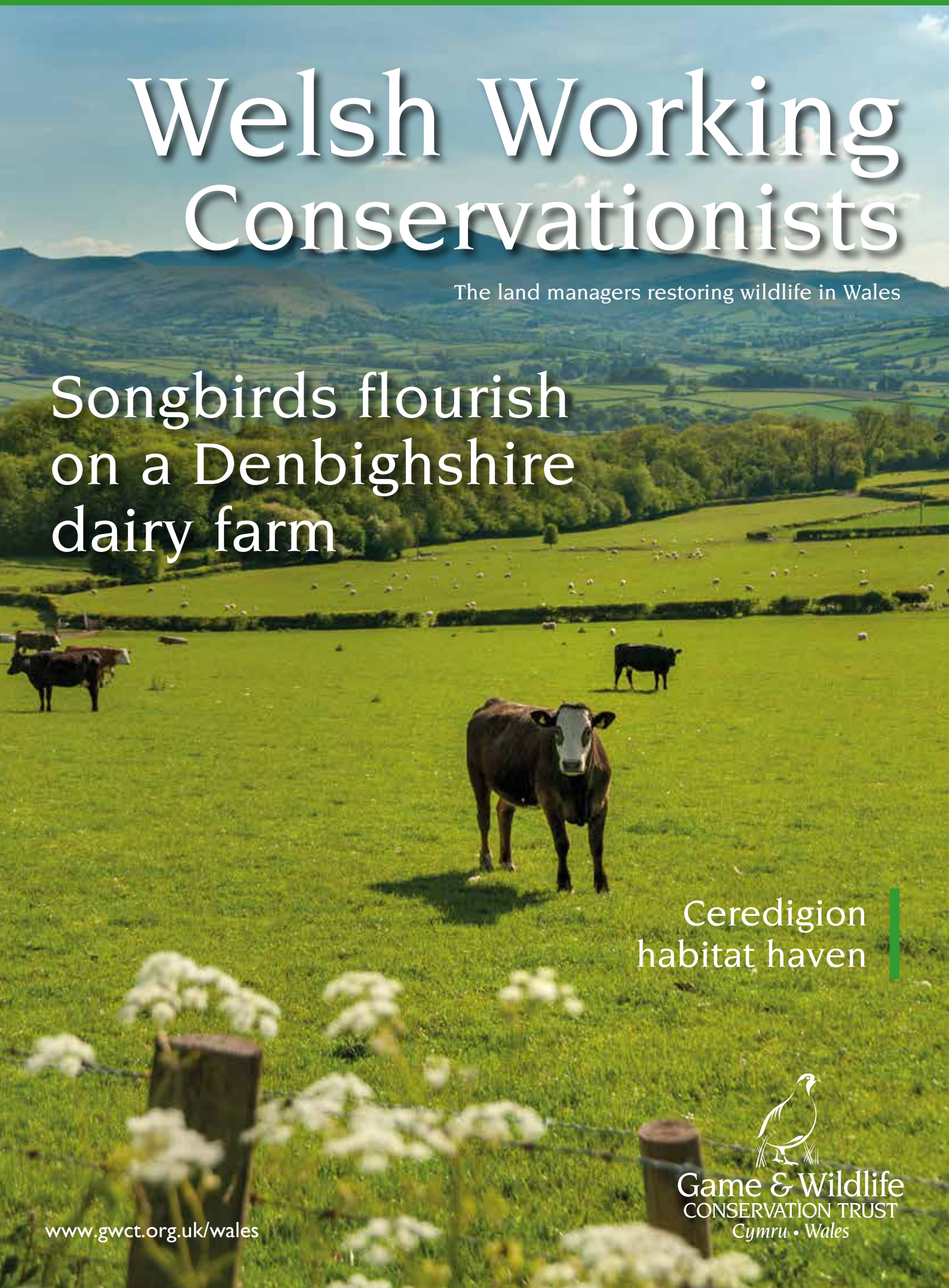
Welsh Working Conservationists

The land managers restoring wildlife in Wales

Songbirds flourish on a Denbighshire dairy farm

Ceredigion habitat haven



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Welcome
to the Welsh Working Conservationists

We are all constantly told of the crisis that is the decline in nature. The State of Nature reports have highlighted that everything done in recent decades, the money invested in Nature Reserves and through schemes has not been enough to reverse the decline of species. At GWCT, we have more than 80 years of research and practical experience of working on the land to demonstrate what is necessary to reverse the decline in many species and improve the health of our soils and waterways. With the right levers and encouragement, our farmers and those working in the countryside are the right people to reverse the decline in species. The farmers we speak with are all keen to increase the numbers of species on their land. From hedgehogs and lapwing to curlew and barn owls, the list of species they would like to see more of goes on. Today, people working on the land are approaching us to help them to work together and do more for nature. They want to leave a countryside in a better way than they found it. They have the willingness and know-how to achieve their aims - it is now up to the public and policy to put right mechanisms in place to enable them to do so and help our nature thrive.

"Our farmers and those working in the countryside are the right people to reverse the decline"

As policy changes, we are presented with many opportunities but must also stay aware of the threats to our rural way of life. Shooting seems to be coming under increasing scrutiny, as political opinion seems swayed by the idea that the wider public do not like shooting taking place in Wales. This we disproved when we carried out a poll of 1,000 people in November last year:-

- 61% responded yes when asked whether they would like pheasant shooting to continue in Wales
- 57% say the Welsh Government was wrong to ignore the NRW evidence review
- 85% of people say the benefits of shooting are poorly understood

But in this world of social media, it's easy to get a sensational negative response to a shocking photograph

"We must showcase the best of what our passion for shooting, fishing or farming can create"

and a knee jerk reaction calling for the end to anything associated with the perceived atrocity. It's difficult to explain the complexity of land management and the ways in which it can benefit nature. It's time to demonstrate what we achieve for nature in Wales. We must showcase the best of what our passion for shooting, fishing or farming can create. I hope the examples in here do that. If we fail to do so, all the wider public and politicians see is the narrow negative snapshot without ever having the opportunity to appreciate the great outcomes which we are able to deliver alongside meaningful management of the land.

Our people in Wales

Sue Evans
GWCT Wales Director

Sue was appointed Director GWCT Cymru in April 2017. She recently completed her Nuffield Farming Scholarship and report on the best way for farmers to influence policy and regulation. She worked as a Senior Advisor to Welsh Government's Natural Resource Management team on sabbatical for two years until October 2015. The main task was to design and deliver the Nature Fund. Established Tir Enterprises Ltd in 2000 and later worked as Director of Policy CLA in Wales.

A Welsh-speaking farmer's daughter from Anglesey, she qualified as a Chartered Surveyor in 1995 and as a Chartered Mediator in 2003. Her mediation skills have been invaluable from managing change within sectors to finding succession solutions for families or better planning outcomes for communities while maintaining and developing good relationships between all parties.

Dylan Roberts
GWCT Head of Fisheries

After working for the National Rivers Authority and its successor the Environment Agency, Dylan joined the Game & Wildlife Conservation Trust as a fisheries scientist in 1998. Between 1998 and 2007 he undertook a range of studies to investigate the impacts of riparian management, stocking juvenile and adult triploid and diploid brown trout on wild fish, which guided policy for the Environment Agencies National Trout and Grayling Fisheries Strategy.

He became Head of Fisheries for GWCT in 2006 and has since focused on project management, delivering contract work, fundraising and managing the fisheries department. During his tenure, the fisheries research department has grown from a team of three full time staff to 9 staff and 4 PhD students. He is currently managing projects to provide novel information to improve the management of migratory salmonids in coastal and transitional waters and to better understand the implications of climate change on these fish.

Matt Goodall
GWCT Wales Advisor

Matt joined the GWCT in July 2018 as an Advisor and has played a vital role in building the GWCT's profile in Wales since; working on our Welsh projects and undertaking advisory visits, biodiversity assessments, training courses and talks across Wales. Having trained as an Ecologist, Matt worked previously as an ecological consultant, biodiversity officer and game management lecturer training the next generation of gamekeepers and countryside managers.

He is passionate about the work of the GWCT, especially its role in demonstrating how wildlife declines can be reversed and the roles best practice game management and farming play in this.

Greening Welsh grassland

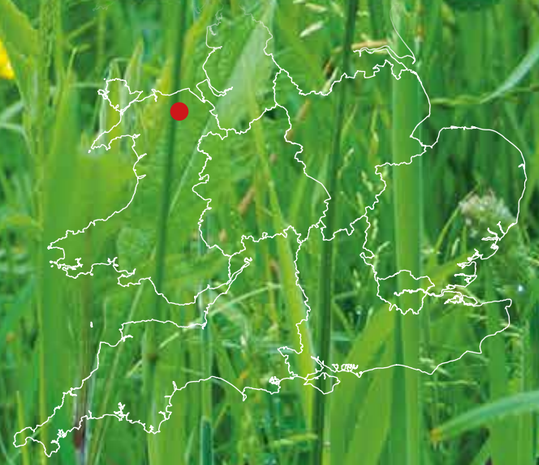
Denbighshire dairy farmer Ant Griffith says a new approach to agri-environment schemes could reverse wildlife declines

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."*

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

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-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

For Ant Griffith, simplicity is key to conservation success.

species that feed on the larvae and worms in the soil such as 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 a 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."*

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

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 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

One of several ponds dug on the farm to support greater biodiversity.

grants to improve their waste management systems. Plas 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."*

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

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 it is understandably deeply engrained in farming culture. Farmers are much more likely to take up conservation measures if they can*

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.

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 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 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."*

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.

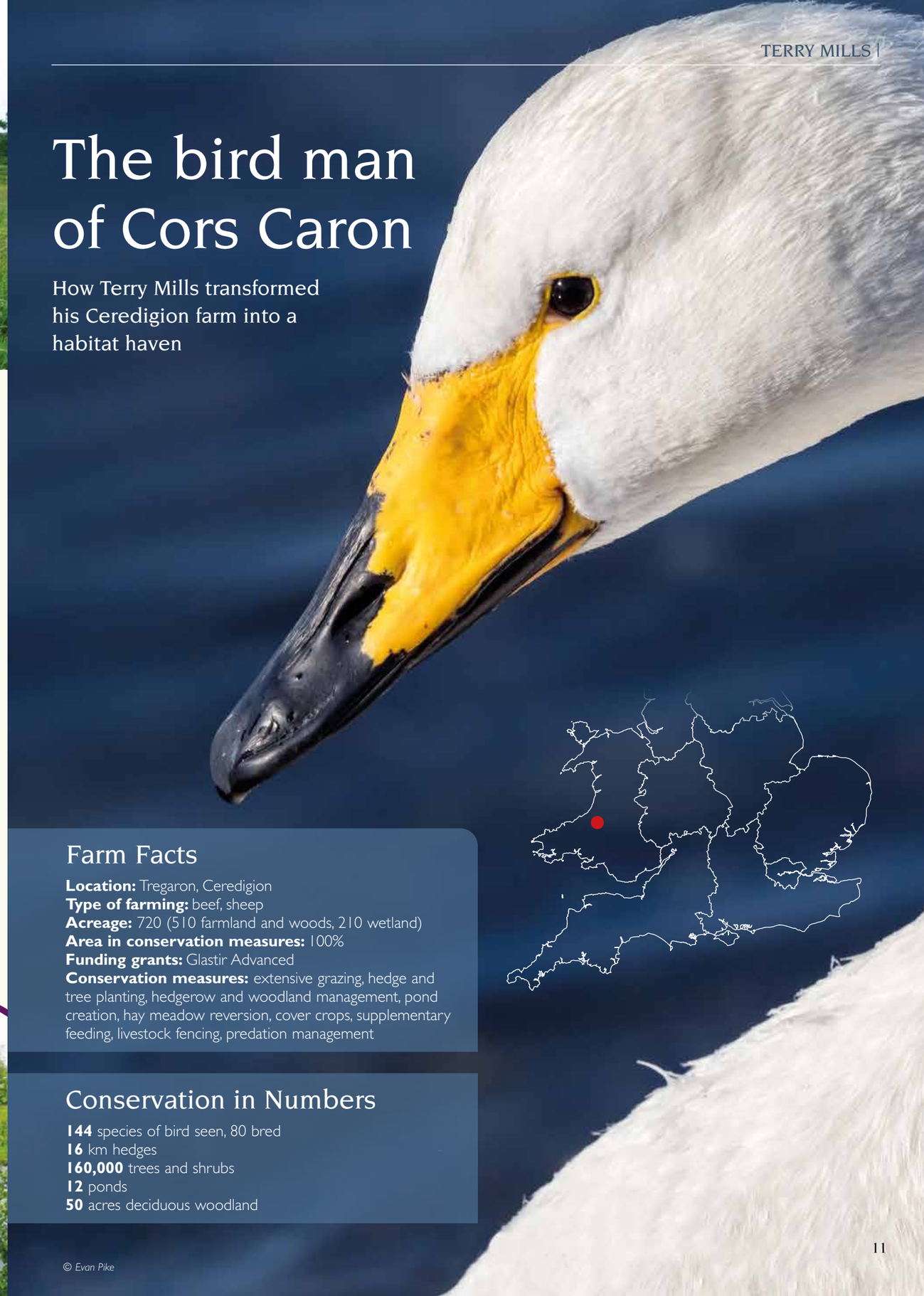
> ***"You can farm profitably and make a real difference to the health of your land"***

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 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.

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.

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

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 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."*

"Nature is incredibly rewarding if you produce the right habitat"

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."*

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. 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."*

16km of hedges have been planted along the old lines.

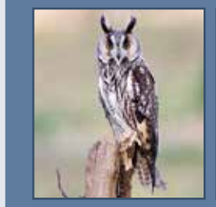
To date, 160,000 trees and shrubs have been planted at Cruglas including 50 acres of deciduous woodland. There are new tree plantations on the most unproductive ground spread throughout the farm. Twenty acres of hay meadows have been restored allowing the wild flowers to return and game crop mixes of 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 brassicas 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 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.

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

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 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

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

Wildlife Highlights



Long-eared Owl

© Getty Images

Polecat

© David Mason

Lesser Redpoll

© Rebecca Nason

Heath Spotted Orchid

Grasshopper Warbler

© Jeff Hall

Goshawk

© Iosto Doneddu

and eggs. Terry said: *"When a goshawk decides to kill a crow it's 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 on warblers we have all eight species native to the area and they have increased over the years."*

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

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

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 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 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."*

"Now we need to see that nature is 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.

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.

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

Local land agent and former Monnow Rivers Association chairman, Rob Denny remains a driving force behind the restoration work. His unfailing 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 important for farmers to get something in return for allowing access"

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 £1.1million 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 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. 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 coincided with the dreams of the Monnow Rivers Association."*

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

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

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

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.

Wildlife Highlights

Water Vole © David Mason

Brown Trout

Eurasian Otter © Richard Bennett

Freshwater Pearl Mussel © Andrew Shaw

Brook Lamprey © Howell and Jenkins

March Brown © Craig Macadam

reinvasions from adjacent catchments. Reintroductions began 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.' "*

"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, 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."*

© Peter Dawson

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.

Return of the Welsh grouse

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

© Laurie Campbell

Moorland Management

Location: Beacon Hill, Powys
Acreage: 5,000
Percentage in conservation: 100
Funding grants: Sustainable Management Scheme supported by the Rural Development Programme
Conservation measures: Predator control, brashing, wiping, cool burning, pond digging, and bird surveys.
Website: www.powysmoorlands.cymru

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

David Thomas (left) and shoot captain Peter Hood.

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

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

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

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

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

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

Overgrazing may have been an issue in the past, but for David the current principal challenge is predation. As with elsewhere in the UK, generalist predator numbers have been increasing steadily. The prime threat to grouse and waders is the fox. The problem lies in the fact that there is no other keepering for grouse or pheasant shoots within 15 miles, so any vacuum created on the hill is quickly filled. Covering 5,000 acres on his own is a big challenge for David. Use of GWCT approved humane snares is essential and they are deployed in a highly targeted manner. A nightvision rifle scope is also invaluable as foxes can be alarmed by the infrared lamp. If he is after a particular fox. David regularly stays up several nights in succession until the small hours of the morning and is still not guaranteed success. He said: *"I'm currently putting in an 80-hour week. If it's dry and there's a full moon I lamp four or five hours every night. Last winter I accounted for 85 foxes and each year I get more because I'm getting better at it, but it's still the tip of the iceberg. The hill draws in predators as it's an island moor."*

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

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

Grouse can be found on areas of the moor where they hadn't been when David started and on one part of the moor numbers have trebled, but they are starting from a low base and the challenge is great. Other birds species are making a more rapid recovery including mistle thrushes and skylarks and cuckoos can now be heard in profusion in spring. These like to lay their eggs in meadow pipit's nests, which have also increased. Hare numbers have boomed and so too have kestrels and merlins. More extensive bird counts are planned so progress can be mapped more accurately. Another endangered species to have benefitted, which is close to David's heart is the curlew. He said: *"We have managed to increase curlew broods on the hill, which I am delighted by. When you hear the bird's call on the moor at the end of February, it's the first sign of spring and I stop to admire the sound spilling from the sky."*

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

> *"Everyone involved knows we need to share this special place with everybody."*

Another large part of David's work is restoring a balance of habitat by creating a patchwork of heather, bracken, white grass and moss as well as digging ponds to provide water for grouse and to attract insects. In the past, the heather was either overgrazed or allowed to grow too tall and large areas have been overtaken by bracken, which is controlled by wiping the plants with herbicide rather than spraying to avoid damage to the grass and moss beneath. Younger heather can be brashed (cut) and the older, leggier areas show far better restoration through burning. David has initiated a 10-year rotation of small areas of cool burn to avoid damaging the moss and peat underneath. One of the biggest challenges is the tiny window. He explained: *"Our permitted burning period is two weeks shorter than in England and Scotland. You need three clear sunny days and no snow to burn and because there is so much rainfall it is difficult to keep within the timeframe."*

Members of the shoot volunteer their time to lend a hand with brashing and burning. They release a few redleg

Wildlife Highlights

• red listed • amber listed

Curlew •
Ring Ouzel •

Cuckoo •
Skylark •

Grouse •
Meadow Pipit •

© *Laurie Campbell*

Mistle Thrush •
Winchat •

Hen Harrier •
Merlin •
Kestrel •

© *Laurie Campbell*

Brown Hare

© *Dave Kjaer*

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

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

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

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

GWCT Research in Practice

Sustainable Management Scheme

Sue Evans
GWCT Wales Director

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

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

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

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

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

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

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

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

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