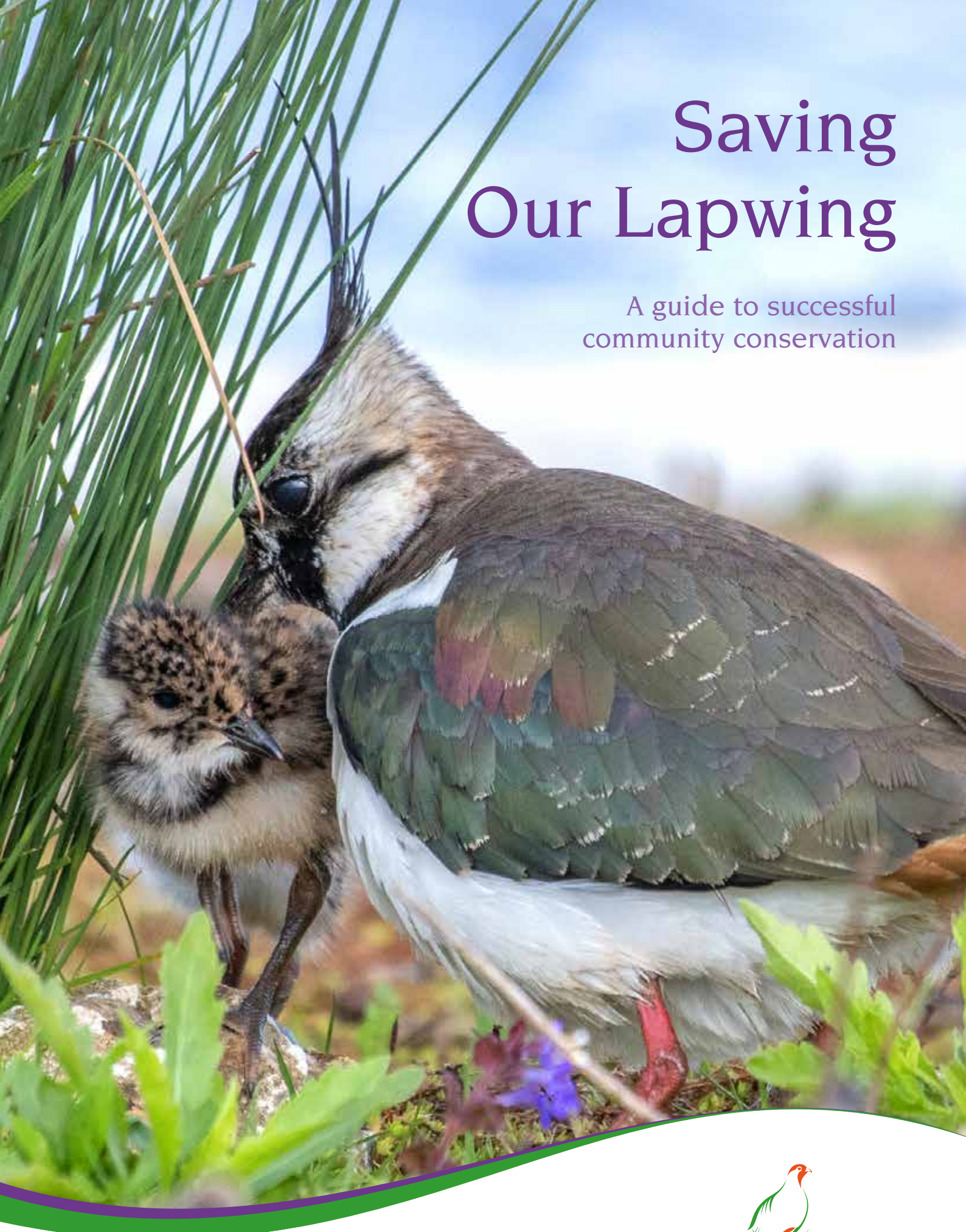


Saving Our Lapwing

A guide to successful community conservation

www.gwct.org.uk

LIFE Waders for Real

Game & Wildlife CONSERVATION TRUST

CONTENTS

A CONSERVATION SUCCESS STORY

TERESA DENT CBE
CHIEF EXECUTIVE, GAME & WILDLIFE CONSERVATION TRUST
2001 - PRESENT

> If we want to see species recovery, we need this type of community, generational project all around the country

GWCT, formerly the Game Conservancy Trust has been based in the Avon Valley since 1946. We started monitoring lapwing, redshank and snipe numbers in the valley in 1996. By 2011 lapwing breeding pairs had gone down and down, despite the best efforts of Natural England getting farmers into all the available Agri-Environment Schemes.

When the lapwing fell to 61 nesting pairs we decided we could not stand it any longer and called a meeting of all the farmers in the Avon Valley between Salisbury and Christchurch (the sea!). About 25 came to that early evening meeting, and we told them: *"if you want your grandchildren to see lapwing on your farms, you need to decide to save them."* We explained that our research showed that the population decline was due to poor breeding success, with predation of nests and chicks the main issue. Our message was: *"Despite the good habitat measures done within the agri-environment schemes, unless you decide to do more to improve habitat, tackle the issue of predation, and really get determined to save your lapwing, you will lose them."*

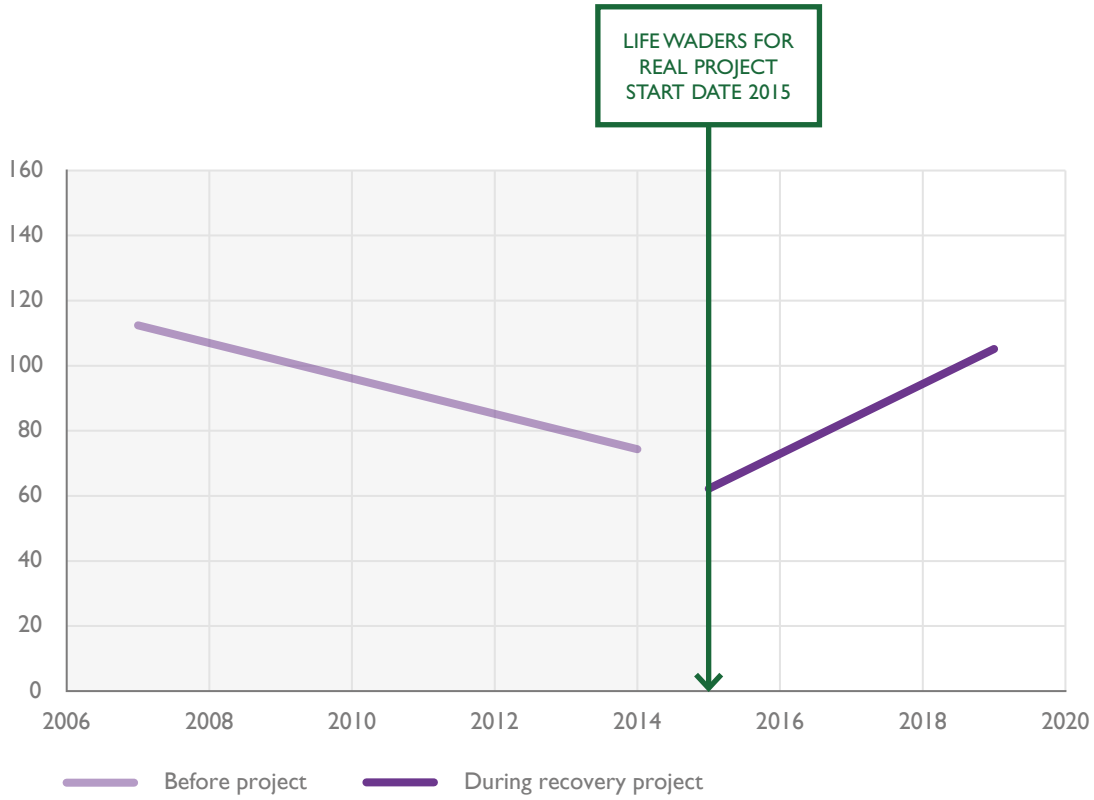
All the farmers, the game and river keepers have played their part, as the pages that follow show. But for me there was one particularly important person there that night: Peter Martin, whose family dairy farm is just south of Salisbury. Peter, as a second-generation valley farmer, talked eloquently about the large numbers of lapwing nesting in the valley when he was a boy, and what a precious thing would be lost if they did not take action. Peter died in late 2018 but I like to think this project is one of his legacies, and I am sure his grandson (John) and his three great-grand-daughters will feel as passionately about lapwing as he did.

Andrew Hoodless, the scientist who was doing the monitoring, now has pleasure of plotting a graph with a line going up. There are not many places in England where that is happening for lapwing. I am very proud of Andrew's team who have worked so closely with the farmers in the valley to produce this fantastic result.

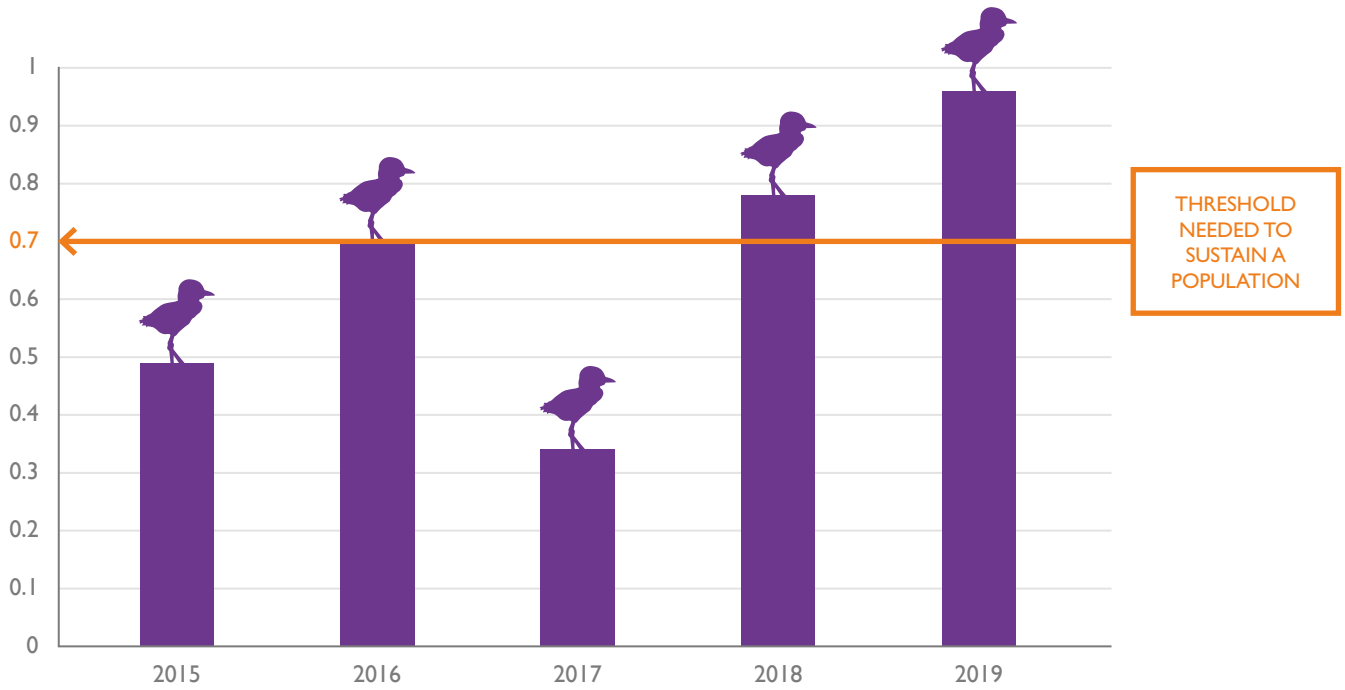
The valley farmers have seen the merits of working together at landscape-scale, and a greater respect and understanding has been built up as a result of this joint endeavour. They adopted those 61 pairs of lapwing that night and made them their own and they should be immensly proud. The wider lesson for all of us in the conservation world, is that if we want to see species recovery we need this type of community, generational conservation project happening all around the country. The people who live on and manage the land are often the best people to do that as they have shown so poignantly in this case.

The River Avon at Ringwood. © Nick Lucas

AVON VALLEY LAPWING PAIR RECOVERY



AVON VALLEY LAPWING PRODUCTIVITY 2015-2019



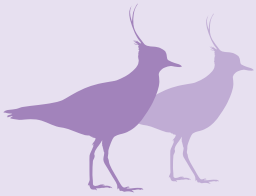
CONSERVATION IN NUMBERS

80%
OF LAPWING LOST IN ENGLAND AND WALES SINCE 1960

0.7
CHICKS FLEDGED PER PAIR PER YEAR, NEEDED TO SUSTAIN A POPULATION

0.75
CHICKS FLEDGED PER PAIR ON HOTSPOTS DURING THE PROJECT

61
PAIRS IN THE STUDY AREA IN 2015



105
PAIRS IN THE STUDY AREA IN 2019

REVERSING LAPWING DECLINE ON THE AVON

The lapwing is one of the nation's favourite birds, with its distinctive crest, flight pattern and 'peewit' call heralding the arrival of spring. Only a generation ago, large flocks of lapwing were a familiar sight across the country, but the population has fallen by 80% since 1960 in England and Wales. They remain in decline and on the UK's red list of endangered species. Despite this, it is possible to increase breeding rates and boost populations at a local level, offering a ray of hope for this beguiling bird.

This booklet outlines the conditions lapwing need to thrive in river meadows and on arable/mixed farmland (where the bulk of the UK population breeds). Though the main focus is on water meadows rather than arable or upland grassland, many of the underlying principles are the same. It draws on the findings of the LIFE Waders for Real initiative, which has managed to reverse the loss of lapwing and other waders from the Hampshire Avon Valley. In 1982, the Avon Valley was one of the top eight lowland wet grassland sites in England and Wales for breeding waders, but since then it had seen dramatic declines. The key to the success of the project was the local community of private land managers driving it forwards and working together to help their lapwing population. The GWCT provided an essential facilitating role, securing funding and providing advice, scientific monitoring and administrative support.

In 2015 the Waders for Real team of GWCT ecologists embarked on working with farmers, gamekeepers and riverkeepers to improve habitat and protect those birds that still bred in the valley. They focused on hotspots which had the largest numbers of lapwing, but work was carried out across the study area. Since the project began, the downward trend has stabilised, and numbers of lapwing have started to rise. There were 61 pairs on the study area in 2015 rising to 105 in 2019. But the greatest achievement has been improving breeding success, which is critical to reversing declines. To remain stable a local population needs to fledge an average of 0.7 chicks per pair each year. Prior to the project, lapwing productivity had dropped as low as 0.4 young per pair in the study area. In 2019 after just five years, the figure was 0.9 and the average figure for the hotspots over the course of the project went from 0.51 to 0.75, surpassing the crucial level for sustainability.

Waders for Real has demonstrated how given the right kind of funding, advice and encouragement and by working together, farmers can boost biodiversity in the wider working countryside. This is important because nature reserves are not enough to meet the challenges of national decline for many species. Seventy-two percent of the land in Britain is farmed, therefore it is essential that private land managers are properly supported to carry out conservation on a landscape scale.

LIFE Waders for Real

COMMUNITY CONSERVATION

GWCT Head of Wetland Research Andrew Hoodless had been monitoring waders in the Avon Valley since 1996 and had built up good relations with the local farmers and estate owners. Using his data he was able to identify four hotspots where lapwing and other waders were still present in numbers and so targeted management would be worthwhile. The Waders for Real strategy was to concentrate on reversing declines in these areas so that the population could expand into other parts of the valley.

Before applying for funding it was essential to find out if the land managers were motivated to save their lapwing. Almost all the farmers were already in Higher Level Stewardship schemes funded by the Government Agency Natural England to carry out measures to help breeding waders, but these had failed to reverse declines. As well as giving scientists access to their land they would need to be ready to fund and carry out additional conservation work and be happy to go the crucial extra mile for wildlife.

Farmers could remember when large groups of lapwing bred each spring in their fields, but they had seen numbers fall and were deeply concerned about the birds. One of the motivating factors was the realisation that if they didn't take action their children and grandchildren may never experience lapwing breeding on their land. They all agreed to the strategy and Andrew was able to go ahead with the funding application, securing a £1.25million five-year project co-funded by GWCT and the EU LIFE programme. He said: *"Our role was to open eyes to the issues and instigate some of the actions, but nothing would have happened without engagement from the farmers and keepers. Once they had a bit more knowledge about what needed to be done, they rose to the challenge. The work they have put in has been truly inspiring."*

The GWCT team understood the importance of building relationships and trust with everyone involved from estate owners to tenant farmers, gamekeepers and riverkeepers and the local community, as well as the need to communicate the progress of the project as a whole. Regular stakeholder meetings allowed land and wildlife managers to discuss the challenges and gave them the opportunity to share their experience. School visits were made to educate and enthuse young children about lapwing and the wider conservation benefits. In addition, regular updates in the form of reports, blogs and newsletters kept people informed and Waders for Real had a stand at the New Forest Show every year to explain the project and its aims to the public.

ANDREW HOODLESS
HEAD OF WETLAND RESEARCH

> "Our role was to open eyes to the issues and instigate some actions. The work the land managers have put in has been inspiring"

Opposite page, clockwise from top left: community engagement at the New Forest Show; one of the regular gatherings for land managers involved in the project; the end of project conference brought conservationists and farmers together, Open Farm Sunday on the Bisterne estate; GWCT advisor Jess Brooks on the stand at a local primary school.


Game & Wildlife
CONSERVATION TRUST


Caution Ahead

CHAPTER ONE: WHAT DO LAPWING NEED TO BREED?

Successful breeding is key to sustain a lapwing population and like other ground-nesting birds they need the right combination of factors to fledge their young. These include suitable nesting habitat, food and protection for chicks when they hatch and reduced levels of predation and disturbance. Lapwing breed in several different habitats, including wet grasslands, upland grassland and arable farmland, particularly on spring-sown crops, ploughed fields and fallow plots.

PART 1: WET GRASSLAND AND WATER MEADOWS

- In order to create optimal conditions the following spring, the ideal grassland structure from October is grass of less than 5cm tall covering more than 70% of the area with scattered clumps of 10-15cm or occasional taller tussocks making up about 20% of the sward. Hoof marks from cattle created in autumn and winter make small holes in the sward in which lapwings may nest and feed.

- Lapwing prefer short vegetation in large fields, so that the bird on the nest has a clear view all around to see predators approaching, with some tussocky clumps of grass or rush to take cover in. Ideal grassland structure in March is a predominantly short sward of 3cm over at least 80% of the area for feeding and nesting with occasional bare patches (up to 10%). There should be a scattering of small clumps or tussocks (10-15cm tall on up to 20% of the area) for chicks to hide in.

- They don't like to be disturbed too often, so tend to choose quieter sites.

CHALLENGES

- Modern grass cutting for silage means that fewer fields are suitable for lapwings. Grassland enhanced by fertilizers or re-sown with ryegrass grows faster than traditional meadows and silage grass is usually too dense and tall for lapwings to nest in. Early silage cuts in spring can destroy nests and chicks.

Lapwing need soft ground they can probe for invertebrates.

- High stocking densities or the use of young cattle herds can heighten the risk of nests being trampled.

- In today's countryside, peace and quiet can be hard for breeding birds to find. People, dogs, machinery, livestock and predators are just some of the many and increasing sources of disturbance, which can push a bird off its nest.

Birds face disturbance from many sources including dogs.

CONSERVATION IN NUMBERS

IDEAL SPRING LAPWING HABITAT

80%
SHORT GRASS IN FIELD

3 CM
IDEAL HEIGHT

10%
BARE PATCHES

20%
TUSSOCKS

Farmers reduced numbers of livestock to avoid nests being trampled.

WADERS FOR REAL APPROACH

- As part of agri-environment agreements, farmers in the Avon Valley are restricted from taking cuts of grass until 1 July. If it is necessary to cut earlier because the hay or silage is ready or the weather is right, farmers can apply to Natural England for a derogation to cut. The Waders for Real team help land managers to ensure there are no nests or small chicks in the fields in order to apply for a derogation to take an early cut. The meadows are then topped in late summer to control rush vegetation and create a good sward height for the following spring.

- Cattle grazing is best for creating the mix of short grass and tussocky clumps required by lapwing. The number of cattle is limited to a light grazing regime by mature animals in early spring and young cattle are not turned out into the field until the end June to protect young chicks and any very late nests. Low intensity grazing continues until mid-July. Grass is then grazed more heavily in late summer through until October or November for a short sward the following spring.

- Public access to the countryside is important for health and wellbeing, and to inspire people to look after the natural environment, but it can disturb wildlife. An important nesting area neighbouring a public footpath was suffering from excess disturbance from dogs. An electric fence was erected to protect the birds, combined with a sign explaining the importance of the waders and that they were nesting nearby. This reduced disturbance and made it possible for the gamekeeper to carry out legal predator control (see chapter 3) where it had previously been impossible.

WORKING WITH PEOPLE: WILL & JUDY MITCHELL BEEF FARMERS

Will and Judy Mitchell's Meadow Farm is on the Avon Tyrrell Estate, which is one of the Waders for Real conservation hotspots. The tenant farm comprises 500 acres spread over different sites including water meadows and rough pasture. Will and Judy are passionate about livestock. The family keeps chickens, ducks, pigs, sheep and goats, and the farm's main source of income is a suckler herd of mixed native and Simental beef cattle. Payment from the estate's Higher Level Stewardship agreement has allowed a reduction in the number of cattle on the water meadows, which Will believes is crucial to lapwing success. He said: *"In the old days we took a cut of silage off the water meadows in the spring and then let all the young dairy cows on them for the rest of the summer so no waders would have been able to nest there."* Will's beef cattle are turned out as early as February, which goes against the normal advice, but they are the exception to the rule. He said: *"The cows have access to the nearby barn so if the weather gets bad they come inside which avoids churning up the ground. It's amazing how they know to avoid the lapwing nests and pass that knowledge on to the younger animals."* The result is the ideal sward with tussocks and large hoof prints, which hold moisture and insects for the young chicks, so when the lapwing arrive they actually choose the fields where the cows are. Will has supported the Waders for Real team in habitat work creating scrapes and reinstating old ditch lines in his fields and has taken out some 'lookout' trees favoured by crows and birds of prey. He would like to do more conservation work, but margins are tight and it depends on future Countryside Stewardship schemes delivering payments on time, which has not been the case in recent years. Will said: *"The agri-environment support makes all the difference, but we will always try to do what we can for the birds."*

> "The agri-environment support makes all the difference, but we will always try to do what we can for the birds"

The Mitchell's fields are perfectly suited to nesting lapwing and the cattle pose no threat.

> Hopefully what has been achieved with the lapwing at the southern end of the valley will spread up here

Lapwing plots are cultivated unseeded areas.

WORKING WITH PEOPLE: ANDREW CARTER ARABLE & BEEF FARMER

Andrew Carter runs 680-acre Standlynch Farm, which is part of the Longford Estate. He travels to Scotland every year to ring seabirds and has had an interest in wildlife from a young age. He said: *"Apparently, my interest in birds started when I was taken out on the farm as a baby and couldn't take my eyes off the rooks wheeling overhead."* Andrew's sheep flock and pedigree Aberdeen Angus herd graze 300 acres of grass and his 300 acres of arable include winter wheat, winter barley, spring barley and spring oats. The remainder is in agri-environment options under a Higher Level Stewardship (HLS) agreement including a stone curlew plot, which sees two to three pairs of lapwing nesting each year. He said: *"Nominally it's a measure for stone curlew, but we welcome whatever turns up. We find the lapwing usually come in the last week of February, so we cultivate it ideally around the 20th."* Andrew believes Natural England's advice to wait until 1 March before preparing the plot risks putting off the birds. To make it easier to manage the rest of the field, the area is sited near the edge rather than in the middle. Importantly, it is next to a field under arable reversion to grassland, which was sown with traditional hay meadow flowers and grasses that harbour the insects the young chicks need. Andrew said: *"If the lapwing nest on the plot they do well, but if they are elsewhere in the field, it's more of a problem. One year, a young lad contractor flattened a nest with the roller and when I told him he said, 'Oh do you mean those blackbirds'. I asked him to drive round next time he saw one and he did. They are hard to spot, so it's a good idea to mark them out for the tractor driver if you find them."*

Under Andrew's HLS agreement, which has just come to an end, there was flexibility on how to manage grazing and cutting for lapwing and his NE advisor provided derogations when necessary. He said: *"Our NE manager knows I'm very into the natural history side, so she trusts me to get on with it."* Andrew believes this land-manager-led approach should apply to any new schemes and farmers must be assured that they will receive long-term funding. He said: *"Some of the options like six-metre grass margins at the field edge can't easily be brought back into production because after a time, the woody growth makes them tricky to plough up, so farmers need to be sure the money isn't going to be suddenly turned off."*

There is no shoot on the farm and therefore no gamekeeper to undertake predator control and Andrew would like to see future schemes for waders include funding for predation management. He said: *"We have a lot of foxes on our water meadows here, but sadly no lapwing breeding. If we got them back we'd have to consider predator control."* Looking ahead, he is keen to be part of the planned farmer cluster (see page 36). He said: *"Hopefully what has been achieved with the lapwing at the southern end of the valley will spread up here. We did have redshank nesting when I was a boy and above my land there's a meadow that is perfect for them. My neighbours do a fair bit for wildlife and I'm sure others can be persuaded, provided there was proper financial compensation. It would be good to link everyone up."*

PART 2: ARABLE NESTING SITES

About a third of the lapwing breeding in England and Wales nest on arable land. They will nest on both light and heavy soils ideally in large open fields in flatter country. In hillier farmland they typically choose a crest near the centre of large fields. Bare plough and stubbles are preferred, but they often opt for spring-sown cereals such as wheat or barley, or other winter-sown crops which are still very short at nesting time.

- They favour an open landscape, away from thick cover which may harbour mammalian predators, or vantage points for avian predators to use, such as pylons, trees or fence posts.
- They need a ready food source close by, which is provided by soft ground that adults and chicks can probe with their beaks to find invertebrates such as insects, larvae and earthworms (see chapter three).
- As with river meadows, they don't like to be disturbed too often, so tend to choose quieter sites.

CHALLENGES

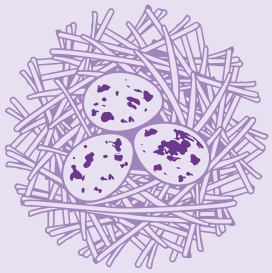
- Lapwing like to nest on bare ground or very short vegetation to have a clear view around the nest. The change from sowing cereal crops in spring to drilling in autumn to increase production means growth is often too high and dense by nesting time to attract them.
- Overwintered stubbles are now rare due to autumn sowing. If converted to fallow or cultivated in spring, these fields traditionally attracted breeding lapwing.
- Without pasture or other good chick-rearing habitat nearby, insect food for chicks can be very limited on modern, arable farmland and chick survival can be low.
- Use of pesticides and lack of broad-leaved weeds, wildflowers and native grasses reduces the insect food available for lapwing chicks.
- Nests made on farmed fields are at risk of being destroyed by agricultural machinery.

Lapwing eggs are patterned to blend into bare ground.

CONSERVATION IN NUMBERS

1-2HA
SIZE OF LAPWING PLOT

77%
NEST SURVIVAL ON LAPWING PLOTS



40%
OF PLOTS USED BY LAPWING

8.5%
CHICK SURVIVAL DURING FLEDGING PERIOD

Figures from Hoodless, MacDonald. (Defra 2014). Lapwings on Agri-Environment Scheme Fallow Plots

On arable land lapwings need a nearby source of invertebrates.
© Laurie Campbell

© Chris Knights (rsp-images.com)

WADERS FOR REAL APPROACH

- Rather than drilling spring-sown crops across the whole field, ideal nesting habitats can be created by providing cultivated areas left unseeded or "lapwing plots" in blocks of 1-2 ha in the centre of large open fields. These plots can be funded through agri-environment schemes.
- Ideally the fields with the plots will be adjacent to permanent pasture where the chicks can feed and not bounded by high hedges or woodland from which predators can see them.
- Lapwing plots or fallow fields should be cultivated before breeding lapwing arrive at the end of February otherwise there is a risk of disturbing them or destroying their nests.
- Grass margins with wildflowers or areas sown with pollinator mixes with restrictions on insecticide usage can boost the numbers of insects available to chicks.
- On cultivated fields, visually marking nests with canes a few metres either side can help prevent them being crushed when sowing or spraying.

Tractor drivers were careful to avoid running over lapwing nests.
© Wayne Hutchinson

WORKING WITH PEOPLE: LIZZIE GRAYSHON LEAD ECOLOGIST

Waders for Real aimed to improve redshank and snipe breeding success alongside lapwing. The two smaller species prefer to nest in grass/rush tussocks rather than short sward, but benefit from many of the conservation techniques used for lapwing including predation management. Breeding redshank have steadily risen over the years of the project, increasing from 19 to 35 pairs between 2015 and 2019. Snipe no longer breed in the valley but in 2018 and 2019 their mating call was heard for the first time in many years, however no definite evidence of breeding was found. As well as the waders, a host of other wildlife has benefited from the work. GWCT ecologist Lizzie Grayshon said: *"To show land managers that their actions have helped other species, encourages those who are disappointed that lapwing haven't nested on their land. If we can tell them about the rise in reed buntings or wintering wildfowl, it makes a big difference. I'm particularly pleased about the redshank increase as, unlike lapwing, they won't nest in arable fields, so are restricted to the river meadows in the valley."*

Reinstating ditch lines has also helped dragonflies and damselflies and big flocks of wintering teal, mallard and snipe have been recorded on camera traps feeding on the scrapes. In a year with flooding in winter the valley fills with 1,000s of wigeon and teal, but crucially the new scrapes provide wet habitat in a dry winter.

Lizzie has seen land managers become more enthused by the project as it has progressed. She said: *"In choosing the hotspots we started with estates that were keen like Somerley where John Levell started work in the first year. Some farmers were not hugely convinced about the habitat measures but were happy for us to access the land. Once we started getting results their enthusiasm grew."*

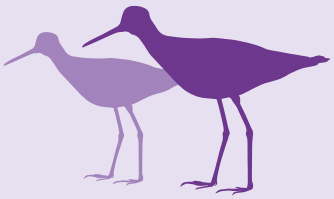
After seeing how effective the electric fences were in protecting nest sites one of the estates has volunteered to put them out themselves next year. Another is keen to fund more ditching work. Lizzie said: *"One river keeper was initially sceptical of the project, but after seeing real gains he is now fully supportive. He regularly checks for lapwing and redshank nest sites and avoids sending fishermen near them in the breeding season in case they accidentally damage them."*

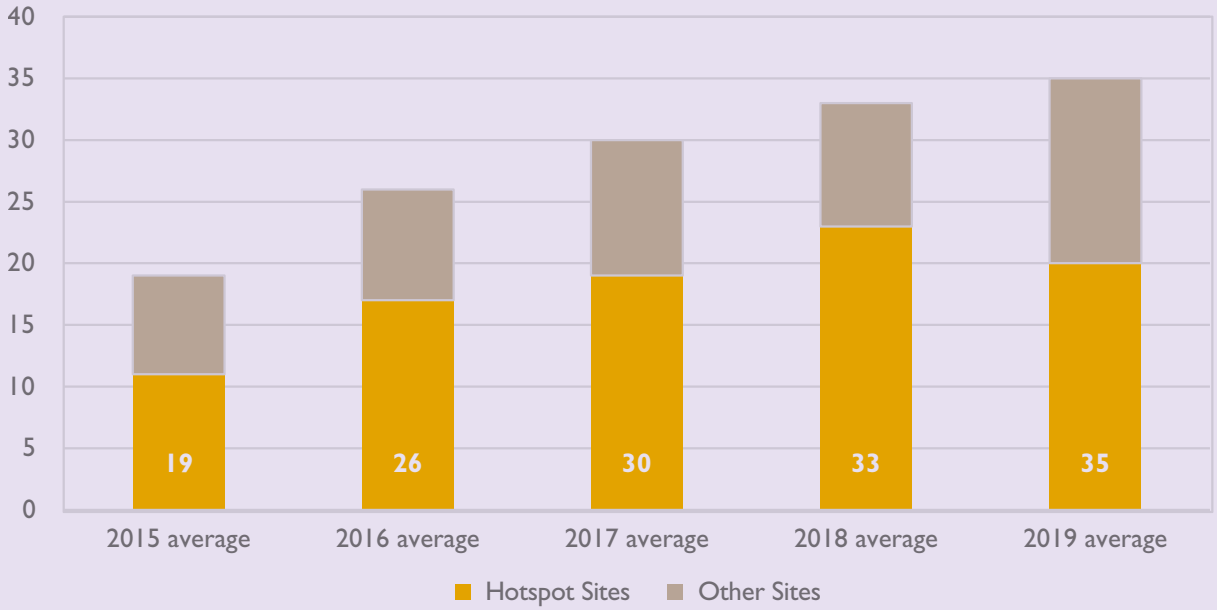
Consulting land managers was essential when establishing new habitats. Lizzie explained: *"If you want to create or improve habitat, look for options that can work for both conservation and farming such as areas that are already wet or inappropriate for intensive agriculture. We always walked out on the fields with the land manager to discuss where suitable spots might be. It was so crucial to seek their advice as they know their land and where the birds are.*

> "It is so important to listen to farmers as they know their land and where the birds are"

Above: teal use the new scrapes and snipe (inset) have been heard drumming for the first time in many years. © Laurie Campbell

AVON VALLEY REDSHANK PAIRS





OTHER SPECIES TO BENEFIT

GADWALL

Winter migrants such as teal, wigeon and mallard benefited from the creation of scrapes and gadwall from nesting habitat in the reinstated and new ditches lines.

BROWN FLATSEDGE

The improved condition of the meadows due to changes in management for lapwing, suit brown flatsedge and other specialist flora.

DESMOULIN'S WHORL SNAIL

Like other invertebrates Desmoulin's whorl snail will benefit from reinstating ditches and creating new ones.

SCARCE CHASER

Increased habitat through restored river margins.

CHAPTER TWO: MANAGING PREDATION

The foundation of all successful conservation projects is providing enough good quality habitat. However, this is not always enough and in the Avon Valley, despite some good habitat creation through Higher Level Stewardship schemes, nest and chick predation was still too high for the lapwing and redshank population to thrive. Temporary electric-fencing around nests proved successful and the lethal control of foxes, crows and American mink carried out by gamekeepers and riverkeepers on some of the Avon Valley sites reduced predation pressure further and increased breeding success in these areas.

The best approach depends on the specific area, but a more thorough understanding of predator densities and movements around breeding waders, will improve lethal and non-lethal management options aimed at their recovery. The Waders for Real team has published information on this and other aspects of their findings including a practical guide to using electric fences to protect breeding waders (see page 34).

CHALLENGES

Predation is a serious problem for breeding waders in many areas of the UK and Continental Europe. This is partly due to the number of generalist predators such as crows and foxes rising while wader populations are falling. Where lapwing numbers are high enough, they tend to nest in groups and can work together to fend off predators. They fly at approaching threats, diving and calling to discourage attack. This approach can be very effective at driving away crows. However, if there are many crows and only few lapwing they have little chance of protecting their eggs and chicks.

Old fences and dead trees were removed to deter carrion crows.
© David Kjaer

The research gave insights into fox densities on water meadows.
© Paul Burgess

Once lapwing chicks have hatched they are vulnerable to a wide range of generalist predators such as stoats, weasels, foxes and crows. These species can make use of a variety of natural and human food sources and adapting to different environments. In some areas they are present in high densities. On a site where waders no longer breed but habitat remains favourable, GPS-tracking revealed foxes living at more than 13 foxes per km^2, which was more than twice the density of areas where lapwing were still breeding.

Lapwing chicks are also vulnerable to protected predators such as buzzards, red kites, kestrels, grey herons, polecats, badgers and otters, all of which, except for kestrel, have increased in numbers in recent years.

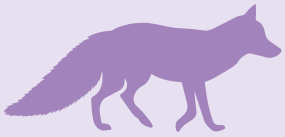
Temporary electric fencing is a good way of keeping mammalian predators away from sensitive nesting sites and is an important management tool. However, it is not 100 percent impregnable, no use at protecting chicks from avian predators, or those that wander outside the fence, and there is a risk of grazing livestock and wild deer destroying it.

Fencing can keep protected predators such as badgers at bay.
© Peter Thompson

CONSERVATION IN NUMBERS

14 KM²
AREA COVERED BY CAMERA TRAPS

37
FOXES GPS-TRACKED DURING THE NESTING SEASON



200
INK-TRACKING TUNNELS IN NESTING AREAS

56
MINK RAFTS AROUND RIVER MEADOWS

Lapwing chicks were killed by a range of predator species.

WADERS FOR REAL APPROACH

- On the lapwing breeding hotspots, the team removed in-field features such as willow scrub, which can conceal predators near the nests. They took out old fences and isolated dead alder trees, both to allow nesting birds a better view of their surroundings and to remove perching posts for crows and birds of prey. On some sites, grazing schemes were altered to create a mosaic vegetation structure and water levels were raised. The intention was to increase hiding cover for foraging chicks and reduce access to mammalian predators.

- To protect eggs, temporary electric fences (pictured above) were erected around nesting areas in early spring to keep out foxes and protected predators such as badgers and otters. These increased the number of nests that hatched chicks. After hatching, lapwing chicks are mobile almost immediately, and their parents move them to feeding areas within hours. If chicks must travel outside of the fence to find such areas, they lose the protection it can afford. Therefore, efforts were made to include invertebrate-rich scrapes or pools within the fence so the brood did not need to leave this safe zone to feed.

- Where the hotspots coincided with farms or estates that ran a shoot, gamekeepers carried out predator control to protect the nests and chicks. This was restricted to those species that eat eggs and kill lapwing chicks and for which lethal control is allowed by law, specifically foxes, crows, magpies, rats, stoats and mink. The predation management was concentrated on the lapwing breeding season. The intention was not to eradicate those predators from an area but rather to tip the balance in favour of the lapwing breeding successfully.

Continued overleaf >

- At the nesting and chick stage lapwing are vulnerable to both mammalian and avian predators. For example, radio-tagging (see chapter four) revealed that raptors including buzzards, kestrels and peregrines all predated on lapwing chicks. Birds of prey are protected, but lethal control of crows and magpies at some hotspots meant avian predation pressure was reduced.

- Improving productivity was also helped by increasing wader numbers. Lapwing breeding at higher densities are more effective at mobbing and discouraging predators.

- To understand the risk posed by small mammalian predators, the team installed up to 60 mink rafts and 200 ink-tracking tunnels (which capture the footprints of the animals) across the four hotspot sites. All mink activity was reported to the relevant gamekeeper or riverkeeper enabling them to be trapped. In addition, 40 camera traps were used over 80 locations to monitor larger predator activity. Camera records of foxes and mink were also reported to gamekeepers on sites where they were being controlled.

- Foxes are an important predator of waders that breed on wet grassland sites, yet until recently little was known about their ecology in these habitats. Over the course of the Waders for Real project, GWCT predator scientist Mike Short caught 37 foxes and fitted them with GPS-collars to understand their lives on river meadows. This research has filled important knowledge-gaps and provides a much better understanding about the density, movement and diet of foxes in a river valley.

Right: as generalists, foxes can adapt to different food sources.
Below: Around 56 rafts were put out to discover if mink were present.
© Laurie Campbell

WORKING WITH PEOPLE: RUPERT BREWER GAMEKEEPER

> I remember seeing a pair of lapwings and 25 crows. Three years later I saw 25 lapwings and one crow, which means they've got a chance to see it off

Rupert Brewer is headkeeper on the Bisterne Estate, which holds two of the hotspot sites. He was inspired to get involved in the project by one of the first meetings for land managers, where it was made clear that if something wasn't done lapwing would become extinct in the Valley. At that time lapwing productivity on Bisterne was poor due to lack of breeding habitat and high levels of nest and chick predation, with many lost to foxes and carrion crows. Rupert explained: *"The Bournemouth area to the south of us has one of the highest densities of urban foxes in the UK. To the north we have Ringwood and then the New Forest where there is little predator control."*

A great amount of time and skill goes into effective predator management. In an effort to make it more targeted, Rupert worked with the GWCT scientists monitoring fox movements. Twenty camera traps were set up across the Bisterne river meadows during the nesting season to monitor predator activity, and any signs of fresh fox activity were reported to Rupert. He said: *"We always did a bit to control foxes and crows, but we stepped it up, focussed it at the right time and changed our approach. For example, in the past I would have lamped foxes from a vehicle, but I now go on foot. When we started, I remember seeing a pair of lapwings and 25 crows on the water meadows. Three years later I saw about 25 lapwings and one crow, which means they've got a chance. Being able to control corvids under the General Licences and foxes means we can maintain a balance, which is essential for stopping lapwing decline."*

As part of the 4,000-acre estate's Countryside Stewardship scheme and with help from student volunteers from Sparsholt College, Rupert has also implemented habitat improvements for waders. These include taking down trees favoured by crows, digging shallow ditches and scrapes in the water meadows for the birds to feed in and helping the GWCT team to install electric fences. The result has been a dramatic reversal in lapwing decline. Before the project began, lapwing on Bisterne were rearing only 0.4 chicks/pair on average. In 2016 they hit the 0.7 threshold for a sustainable population and in 2019 they reached 1.16 chicks/pair, making it one of the most successful hotspots. Since the project began Rupert's commitment to lapwing conservation has increased. He said: *"Look what you've got on your doorstep, grab a species and your interest will grow. For me it's lapwing, if you can help them, other wildlife will benefit."*

Work parties of student volunteers from Sparsholt College helped Rupert Brewer to dig scrapes and clear dead trees.

WORKING WITH PEOPLE: MIKE SHORT PREDATION ECOLOGIST

Lethal predator control is a controversial subject and it's imperative that practitioners follow best practice guidelines and relevant codes of practice. In the Avon Valley, GWCT predation scientist Mike Short provided training and advice to land managers using traps and humane snares, to ensure the highest standards were being met. In doing so, he forged close relationships with estates where fox culling was taking place. For example, Rupert Brewer from the Bisterne Estate (see page 21), submitted a meticulous diary, detailing his annual fox culling effort. As well as recording the date, location, age and sex of foxes killed, he noted how much time he put into different control methods, such as lamping, thermal imaging, fox snares and cage traps. Mike explained: *"Rupert's detailed record keeping helped us answer a raft of important questions. Is it worth investing in expensive thermal imaging equipment? Will you detect and shoot more foxes travelling on foot, or by driving? How quickly are culled foxes replaced by others from surrounding areas. All this is critical to improving fox culling strategy."*

As part of the project Mike and his team collected fox scats and carcases to find out what the local foxes were eating. He said: *"Stomach contents only tell you about the fox's last meal but that's still useful to know. For example, as well as natural prey items like small mammals we found the remains of a McDonalds. Understanding what food resources are exploited by foxes will help inform their management."* In addition, GPS-tagging told the team a great deal about fox movements on river meadows. This work wouldn't have been possible without the goodwill of the landowning community. Mike said: *"We invested heavily in our fox-tagging research. It takes a lot of effort to catch and tag foxes and I'm grateful to the many farmers and gamekeepers for their support."* Some of the tagged foxes occupied areas where electric fencing was used to protect nesting birds. He said: *"We had a unique opportunity to see how effective temporary electric fencing can be. One particular fence design was breached on several occasions, but following improvements to its design, we had no evidence of it being infiltrated by resident tagged foxes the following year."*

Another important finding from the tagging work was that the impact of predators can vary greatly between sites in the same valley and from year to year. Mike said: *"In 2019, we were surprised that lapwing productivity was highest on our Hucklesbrook hotspot site, where foxes were GPS-tagged and no predator management took place. Despite this, 10 pairs of lapwings fledged an impressive 1.41 chicks per pair. This illustrates how complex predation risk is, and the value of doing more research to understand how to best manage it."*

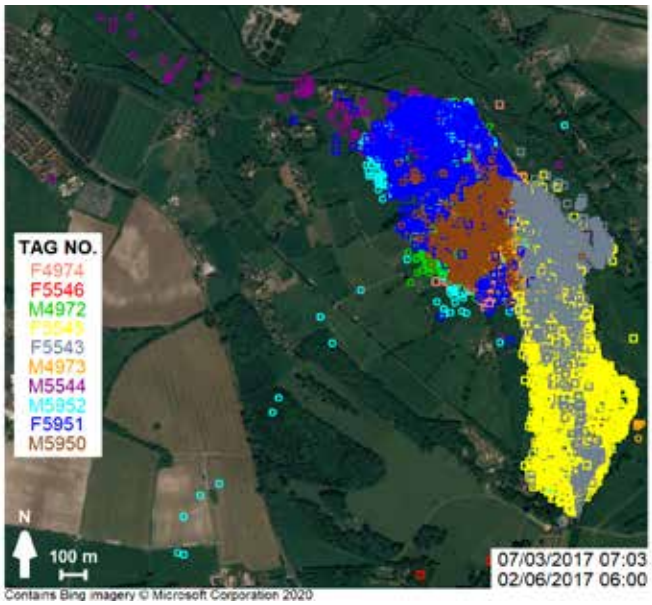
Mike's ground-breaking work will help wildlife managers become more efficient, and hopefully inform policy. He said: *"It's all very well relying on gamekeepers to reduce predator numbers, but what about on private land where there is no shooting interest? It's wasteful to pay farmers for tip-top habitat for nesting birds, if their eggs and chicks are likely to get eaten. What the birds*

> "It's wasteful for Government to pay farmers to provide tip top habitat, if lapwing eggs and chicks are likely to get eaten"

Above: all ground-nesting birds are vulnerable to nest predation.

need are schemes that properly fund their protection. Currently, agri-environment money is available for electric fencing, but this should be extended to cover the cost of using lethal control measures where they are needed, such as Larsen traps to catch carrion crows and mink rafts to remove mink. For some wading bird populations, time is quickly running out and we must use all our knowledge, and all the legal management tools in the box to prevent them from disappearing for good."
(See page 34 for policy recommendations.)

Clockwise from right: dietary studies showed water voles to be an important prey item for foxes living on river meadows; tracking collars informed us about fox movement behaviour and habitat use; GPS tagging shows that foxes can live at very high densities in the upper Avon Valley, near Salisbury. © Mike Short



CHAPTER THREE: CHICK REARING HABITAT

Once chicks have hatched, it is important that the parents can find a suitable environment in which to rear them. Lapwing chicks forage for themselves as soon as they hatch, so this means an area with a rich supply of insects and worms accessible to the chicks, as well as places to hide. Moisture is key, both to support a good number of invertebrates and so that the soil is soft enough for the chicks to probe with their beaks. For effective lapwing conservation, not only should these two different types of habitat be present, but they should also be close to each other. If they aren't, parents will lead the chicks to find somewhere better. This journey can be dangerous, and the shorter it is, the safer the family will be.

CHALLENGES

- The modern farmed landscape is a much drier place than it used to be. Forty percent of agricultural areas in the UK lowlands are thought to be under-drained, with a system of channels or pipes underground keeping the soil dry enough to be productive. Many wetlands and wet grasslands, which were ideal brood-rearing habitat because they teemed with insect life, have been drained to improve them for agriculture. This drier environment is better for grazing or cultivation, but supports many fewer insects and lower biodiversity as a whole.

Can you see it? Lapwing chicks are patterned to blend into the mud.

- Combine this with the increased use of pesticides, contributing to a steep decline in insect life across the country, and the resulting landscape is far less lapwing-friendly.

- Long fertilized grass of the kind found in modern silage fields, is hard for newly hatched chicks to navigate and struggling through rain-soaked vegetation can cause them to die of cold or starvation.

- Arable environments often provide little food for lapwing chicks. It is important to have chick foraging areas of grassland close to arable nesting sites such as fallow plots or spring-sown crops, to enable chicks to feed and take cover from predators.

In their first 10 days chicks cannot regulate their temperature, so require the right density of grass to be able to move freely and stay dry.

CONSERVATION IN NUMBERS

31
NEW SCRAPES

2KM
OF NEW DITCHES

3KM
OF HISTORIC DITCHES

3.7KM
OF OLD FENCING REMOVED

RYAN TO SUPPLY WADERS FOR REAL SIGN PICTURE TO GO HERE

Signs inform the public of habitat restoration.

Restrictions on spraying help boost insect life.

WADERS FOR REAL APPROACH

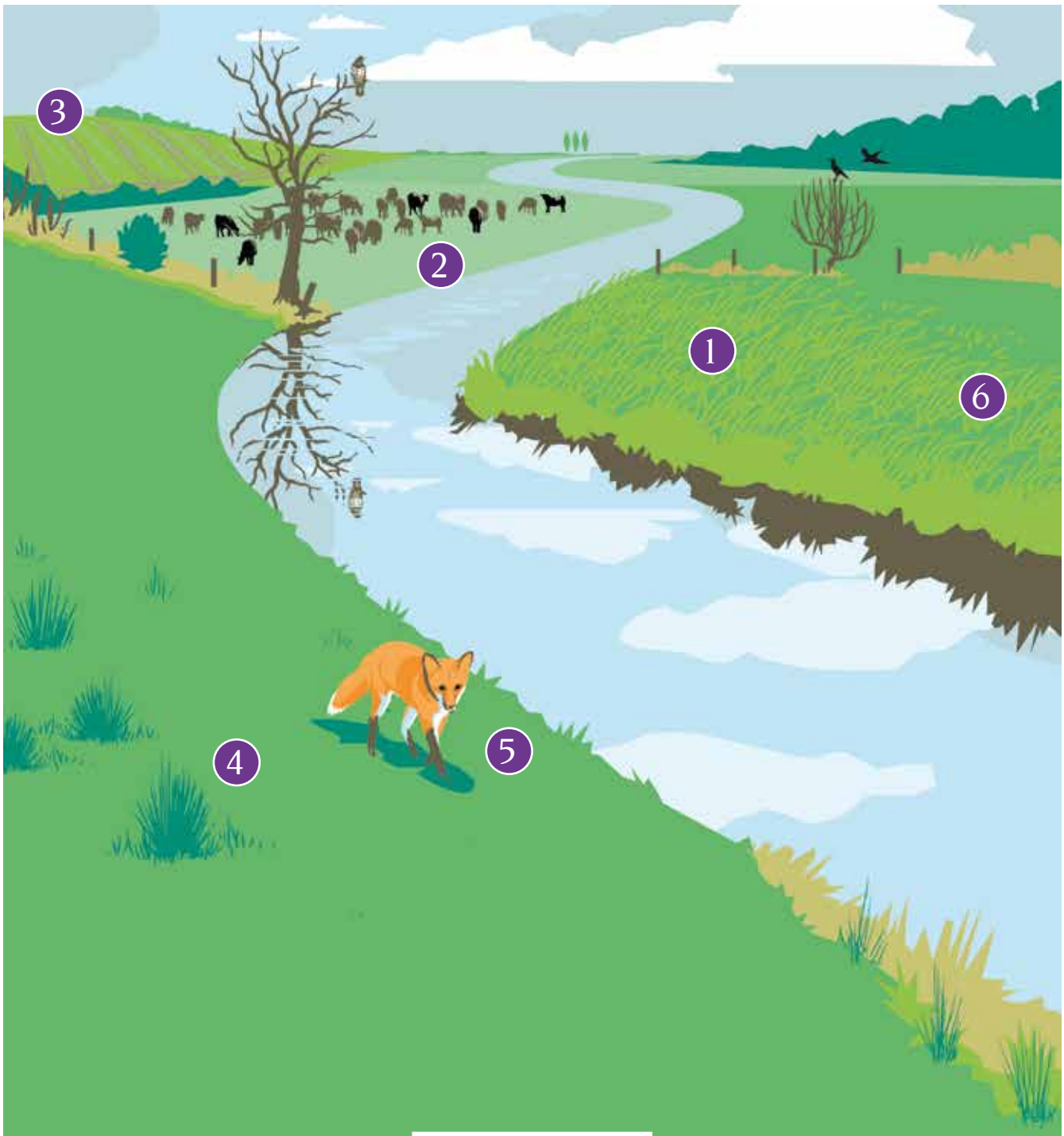
- Re-instating wet features in fields and meadows by enlarging areas which are already lower or wetter, can increase the supply invertebrates on which wader chicks feed. Chicks can probe the soft soil, and the surrounding vegetation provides places to hide in case of approaching predators. In the right habitat, lapwing chicks are well camouflaged and experts at concealing themselves. So far, land managers in the Avon Valley have created an impressive 31 new scrapes.

- Ditches have muddy edges which provide feeding areas for lapwing chicks. After a time they clog up so they need to be maintained. Land managers have restored almost 3km of historic ditches within the project area and dug 2km of new ditches.

- Insecticide and herbicide use is restricted on designated areas and Countryside Stewardship options for botanically rich water meadows and meadows for breeding waders compensate farmers for avoiding pesticides. The farmers' management of grazing and cutting has provided a richer invertebrate life.

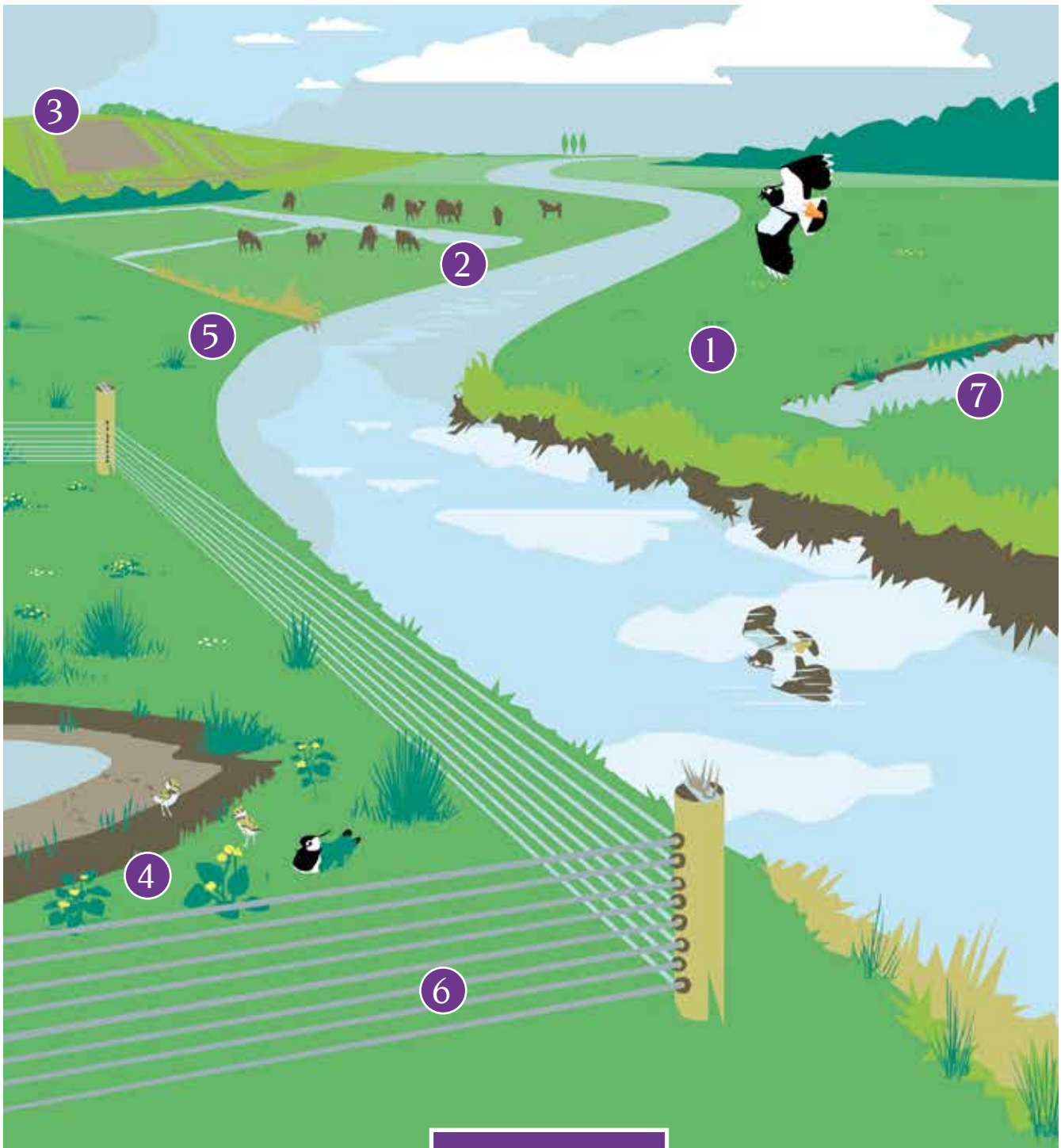
- Farmers' providing swards with both short and taller patches means chicks can easily move between food sources without getting wet and cold.

Scrapes near nesting sites provide a food source for young lapwing.



BEFORE

1. Silage grass is too tall for lapwings to nest in and early cuts can destroy nests and chicks.
2. High stocking densities of young cattle herds can heighten the risk of nests being trampled.
3. The change to drilling cereal crops in autumn means growth is often too high by nesting time.
4. Grazing regimes reduce wild plants and flowers and the insects that depend on them.
5. Lapwing chicks are very vulnerable to predation from a wide range of generalist predators.
6. Due to agricultural drainage, the modern farmed landscape is a much drier place than it used to be.



AFTER

1. Farmers receive payments to avoid cuts of grass until 1 July.
2. The number of cattle is limited to a light grazing regime by mature animals.
3. Nesting sites are provided by 'lapwing plots' of cultivated unseeded areas.
4. Changes to less intensive grazing regime allows growth of more wild plants, so increasing insects for chicks.
5. Dead trees, willow scrub and old fencing are removed to deny predators perches and hiding places.
6. Temporary electric fences with scrapes dug inside keep out foxes and protected predators.
7. Restoring old ditches and digging new ones provides feeding grounds for lapwing chicks.

WORKING WITH PEOPLE: JOHN LEVELL RIVER KEEPER

John Levell has an extensive understanding of river systems thanks, in part, to his work for Ordnance Survey in the early part of his career, which took him to almost every catchment in the UK. He ran the fisheries on the Somerley Estate's lakes and stretch of the Hampshire Avon river before his current role, which combines riverkeeping and general management. He is a keen naturalist whose blog about nature on the Avon has more than 20,000 followers and is passionate about the water meadows and the river. He said: *"These water meadows are special. Sadly, over the past 35 years they have been mown and grazed too hard and much of the wildlife has disappeared. This landscape is protected by almost every designation there is, but that does not mean the species and habitats are preserved. For conservation to be successful the right management must also be in place."*

A big part of this is maintaining, repairing and improving the series of hatches and ditches that control the water. Somerley, which is one of the project's four wader hotspots, has two areas of 'floated' meadow which can be flooded by letting in water from the river at the top and closing hatches elsewhere. John said: *"In several places we have replaced the dilapidated hatches with culverts which are simple to control using a board system. Being able to increase water flow to create the optimum level has helped the breeding conditions of the waders and a host of other species. It also provides ideal habitat for juvenile fish including salmon, sea trout, brown trout, chub, barbel, roach and in turn the pike and perch that feed on them."*

Historically, tenant farmers, under guidance from MAFF, straightened and deepened ditches to drain the grassland. John is reinstating wider, more shallow-sided, meandering channels with soft soil and muddy margins, which allow wader chicks to get to the invertebrates. He said: *"All these measures lower the farming yields on the fields and this is compensated for with reduced rents for tenants. Defra funded capital grants and other schemes help, but it is important to appreciate that the conservation work is in large part privately funded through the estate's fishery budget."* In addition, and in conjunction with the Waders for Real project, he has put in 12 scrapes and restored three oxbow lakes providing over 6,000sqm of cleaned channel with 15,000sqm of fenland habitat. The new water course has exposed, muddy edges in the spring providing feeding areas for breeding waders and migrants such as green and common sandpiper and the surrounding fenlands are rich in invertebrates and cover attracting nesting reed, sedge and Cetti's warblers.

> "This landscape is protected by almost every designation, but the right management must also be in place"

A restored oxbow lake at Somerley provides habitat for Cetti's warblers (inset). © Michael Erwin

AVON VALLEY DESIGNATIONS

The Avon valley is protected by several EU and UK designations, for different habitats and species.

- Natura 2000 site (EU): this is an umbrella term for the network of protected sites made up of Special Areas of Conservation and Special Protection Areas. As both an SPA and an SAC, the Avon Valley is part of the Natura 2000 network.

- Special Area of Conservation (EU): Area protected under the EU's Habitats Directive. The Avon Valley is protected for the river itself, which contains rare and important aquatic plant species such as water crowfoot, for the Desmoulin's whorl snail, and fish species including sea and brook lamprey, Atlantic salmon and bullhead.

- Special Protection Area (EU): Area protected under the EU's Birds Directive. The valley is protected for Bewick's swan and gadwall.

- Avon Valley Site of Special Scientific Interest (UK): Designated for its wide range of habitats and diverse plant and animal life, the valley is important for breeding and wintering birds, an outstanding diversity of plants including several nationally rare species and many invertebrate species including dragonflies, grasshoppers and snails. The SSSI designation highlights the importance of the valley, which provides a nationally important breeding ground for wading birds dependent on wet grasslands, including redshank, snipe and lapwing.

SPECIES CITED IN THE DESIGNATIONS

ATLANTIC SALMON

KINGFISHER

BEWICK'S SWAN

EURASIAN OTTER

MEADOWSWEET

WATER AVENS

MARSH MARIGOLD

LOUSEWORT

Images © Laurie Campbell and Sue Kennedy (rsp-images.com)

CHAPTER FOUR: MEASURING SUCCESS

Monitoring is an important part of lapwing conservation. It measures success and helps to understand the impact of various management techniques to help improve the approach.

This includes measuring the nest temperature to discover egg predation or other failure, ringing and radio-tagging chicks to find out how they use the habitat, where they go after hatching and what happens to them. Measuring productivity is essential to understand whether a conservation project is simply drawing birds into a sink of further decline or providing a solid platform for an expanding population.

In the Avon Valley when chicks died or were predated, the scientists were able to use the radio-tracking data to find the remains and identify the predator responsible. The data on survival and cause of death was used to understand the greatest pressures on lapwing in the valley. Intensive monitoring was focused on the farms within the hotspot sites. It found, that after five years of the project, breeding increases were highest in the hotspots. However, in the rest of the study area there was an increase from 0.47 per pair to 0.53 and as more suitable habitat becomes available, it is anticipated that lapwing will reach sustainable levels on other sites.

Colour-ringing chicks enabled ecologists to identify individuals.

Telemetry was used to track the movements of radio-tagged chicks.

Research included estimating chick age from bill length.

CHALLENGES

- Measuring numbers of chicks hatched was the key challenge for the Avon Valley project as improving lapwing productivity was vital to the project's success. Productivity data is difficult to collect. Regular site visits are required to record chicks and alarm calling behaviour (you can tell from a call if a bird has young) through the breeding season.

- As well as monitoring lapwing, the team was gathering data on other waders including redshank and snipe. They were also monitoring vegetation, taking soil samples to gauge habitat improvement and running camera traps to capture wildlife movements, all of which takes time. Therefore, with limited resources, lapwing monitoring activity had to be focussed on determining which pairs fledged chicks and, where possible, how many.

- Land managers were naturally worried about too much activity disturbing the birds and their concerns rightly had to be taken into account.

All nest monitoring is done in line with the Wildlife and Countryside Act 1981 licenced by Natural England.
All metal ringing, colour ringing and radio-tagging is done under BTO licence through the Wildlife and Countryside Act 1981.

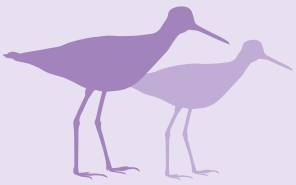
CONSERVATION IN NUMBERS

135
NUMBER OF CHICKS RADIO TAGGED

79
NUMBER OF CHICKS COLOUR RINGED

19
NUMBER OF REDSHANK BREEDING PAIRS IN 2015

35
NUMBER OF REDSHANK BREEDING PAIRS IN 2019



Redshank productivity increased during the project. © David Mason

WADERS FOR REAL APPROACH

- The nesting areas were closely monitored as pairs form and clutches are laid. Nests are recorded, hatch dates estimated and returned to at that date. Temperature loggers were used to indicate whether nests had been abandoned and when predation occurred. For example, of those nests monitored 61 percent were lost at night and 39 percent during the day. Most avian predators only hunt during the day, revealing that the majority of eggs were predated by mammals.

- Soon after hatching, a sample of chicks were ringed with a numbered leg ring. This allowed identification if the chick was caught again, or found dead. One chick per brood on hotspot sites was also fitted with a small radio-tag, which allowed the scientists to monitor its movement and receive vital information on survival rates.

- Shortly before fledging, young lapwing were colour ringed, which allows identification of individual birds from a distance for the rest of their lives. This means the birds can be reported and tracked whenever they are seen. One surprising finding was that several young birds, which hatched on the meadows, moved to arable fields outside the valley, or to heathland in the New Forest to breed the following year, so they weren't loyal to a particular site.

- Weekly team meetings allocated resources to make site visits more efficient and minimise disturbance.

- The scientists understand the protocols required to avoid negative impacts from nest site visits. They restricted monitoring to a level which balanced the need for gathering adequate data with the need to avoid disturbance, remembering this is a recovery project. Using temperature loggers and radio-tagging helped reduce the amount of direct disturbance to breeding birds.

WORKING WITH PEOPLE: ANDREW FIELDER NATURAL ENGLAND

Andrew Fielder is Natural England's lead on conservation designations in the Avon Valley. He first worked in the area as an advisor in 2001 and has kept in touch with the local land managers. He said: *"I think one of GWCT's key successes in the Waders for Real project is that Lizzie Grayshon and the rest of the team have been able to build up a rapport with the farming community. When I'm out and about I hear good things about the project and that's important because it soon spreads. Farmers and landowners tend to identify with people rather than organisations. That's why keeping the same advisors in post and building trust over time is so important."*

This trust is key to the success of agri-environment schemes funded by Natural England, which pay farmers for wader conservation. The agreements compensate for revenue lost because of measures which benefit wildlife and habitats. For example, if land managers are restricted from using herbicides on the meadows they will have to employ more costly control techniques like topping and spot weedkilling.

When protection areas were first designated in the Avon Valley, the funding schemes associated with them were highly prescriptive and inflexible. Andrew said: *"Farmers treated the first designations as big brother interference and didn't really recognise the potential upside of the agri-environment payments that came with it. Today's schemes are an improvement, but they are still viewed as overly bureaucratic."*

Andrew believes that there is a place for regulation but it won't work on its own and can be counterproductive. He said: *"Regulation is at the base level of habitat improvement. It stops people ploughing up the meadows or putting a caravan site on them, but it's not good for encouraging positive action. Too much regulation can put farmers off doing things like clearing ditches for fear of getting it wrong. Waders for Real works because it provides advice and encouragement to help farmers get the most from their agri-environment schemes. Financial support is essential but it isn't everything. The people who succeed genuinely want to see more lapwings on the farm and will go the extra mile to achieve that."*

Andrew would like to see simpler, more flexible agri-environment schemes in future and hopes Waders for Real's work will feed into the new Environmental Land Management Schemes. *"Up to now agri-environment schemes have put a finger in the dyke and stopped things going backwards, but they don't allow for innovation. There are certain areas that GWCT is uniquely placed to advise on. I hope it communicates the findings from this project to DEFRA particularly on working with land managers and predator control. I think it could take the chick survival story a step further and could be applied Europe wide."*

(See page 34 overleaf for recommendations.)

> "The people who succeed genuinely want to see more lapwings on the farm and will go the extra mile"

The core Natural England management options for Higher Tier Countryside Stewardship in and around the Avon Valley

NAME OF OPTION	OPTION CODE	PAYMENT RATE
Nesting plots for lapwing	AB5	£524 per ha
Creation of wet grassland for breeding waders	GS11	£406 per ha
Creation of wet grassland for wintering waders and wildfowl	GS12	£310 per ha
Management of wet grassland for breeding waders	GS9	£264 per ha
Management of wet grassland for wintering waders and wildfowl	GS10	£157 per ha

N.B. These are schemes and figures at the time of publication, please visit **www.gov.uk** for up-to-date information.

Lapwing in the marsh. © David Mason

A LEGACY FOR LAPWING

LIFE funding for Waders for Real came to an end in December 2019, but the project will benefit lapwing for years to come and the GWCT is committed to building on success by securing funding for future research projects in the Avon Valley. The project has a wider legacy beyond the Valley as it inspired the Farmer Cluster concept developed by the GWCT. This model of groups of land managers running their own conservation projects with the support of a Government-funded facilitator has proved popular (see more details below). The land managers engaged in the Waders for Real Project were keen make their Cluster official and nominated project leader Lizzie Grayshon as their facilitator. Lizzie's application for the Natural England Facilitation Fund was successful and the Avon Valley Farmer Cluster has been established.

Findings from the project will be communicated to policy makers to help shape future agri-environment schemes and importantly estimated costs will be included for recommended measures. For example, in the absence of a gamekeeper, it is calculated that annual cost of employing a professional predator controller to cover 1,220 acres would be £7,000.

Recommendations for future agri-environment options for waders will include:

- More flexible, farmer-led schemes with extra payments for measurable increases in wader productivity
- Built in derogations that pre-empt potential conflicts with farming practice
- Provision of easy-to-access, high-quality and consistent advice
- An end to delayed payments
- New measures for predator management including tree removal and fence clearance, temporary electric fencing and lethal control
- Option to fund monitoring and communications

For further details visit: www. wadersforreal.eu

> "We wouldn't have got anywhere, if we hadn't worked with the farmers and gamekeepers"

FURTHER READING

In addition, practical advice will be disseminated through guidance notes which are available via the Waders for Real website (see link below). Groups of farmers from other parts of the UK whose land offers potential for similar landscape-scale lapwing conservation will be invited to visit and talk to the land managers involved.

For project leader Lizzie Grayshon, the three key elements for success of the project were beginning with good breeding populations of lapwings in the hotspots and the incorporation of predator control alongside habitat creation. Most importantly, nothing would have been possible without the commitment of the land managers. She said: *"The project wouldn't have worked without the farmers and gamekeepers driving it themselves. They put in an amazing amount of extra work to help the lapwing on their land, and I'm sure they will continue to do so."*

OTHER WADERS FOR REAL PUBLICATIONS

All reports can be downloaded from www.gwct.org.uk/wadersforreal

Layman's Report

Leaflet for Wetland Site Managers Summarising the Avon Valley Results on Fox Density and Diet

Guidance Note for Farmers on Electric Fencing to Protect Wader Nests and Chicks

EU LIFE PROGRAMME

The LIFE programme is the EU's funding instrument for the environment and climate action created in 1992. To date LIFE has co-financed more than 4,600 projects. Until 2013, LIFE had contributed approximately €3.1 billion to the protection of the environment. During the current 2014-2020 funding period the programme will contribute approximately €3.4 billion.

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- ✓ Your own free personal copy of our annual Review.
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- ✓ Regular email updates containing all our latest news and research findings.
- ✓ Membership of your local county group and invitations to events in your area.
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POST GWCT, Burgate Manor, Fordingbridge, SP6 1EF

Game & Wildlife CONSERVATION TRUST

FARMER CLUSTERS: HOW THEY WORK AND HOW TO FORM ONE

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

A Farmer Cluster is designed to start life at a bottom-up, farmer level, under the guidance of a lead farmer. They devise their own conservation plans, helped by their own chosen conservation advisors, whom they already know and trust. Although the work is often supplemented by existing agri-environment schemes, several Clusters have set up with no funding.

The GWCT had seen success in involving farmers nationwide in conservation through the Partridge Count Scheme and by helping to start up the Marlborough Downs Nature Improvement Area (NIA), the only farmer-led NIA in the country, so were aware of the potential of bringing farmers together to deliver conservation on a landscape scale.

HOW FARMER CLUSTERS WORK

The GWCT approaches any prospective Farmer Cluster project with a single open question: *"What wildlife do you want on your farm?"* This is the first step in generating a farmer-led and outcome-oriented approach, in which farmers appoint a lead farmer, choose their own advisor, set their own targets, and record their own progress.

This approach has driven the popularity of the programme with farmers, and as a result the Clusters established across southern England as part of the pilot scheme (2013- 15) have grown to 100, aided by Natural England's Facilitation Fund.

Farmer Clusters form the bedrock of major GWCT research projects. There are also Farmer Clusters centred on our demonstration farms at Loddington, Leicestershire, and the Howe of Cromar, Aberdeenshire, the latter being the first of its kind in Scotland.

Our team of experienced advisors can provide advice on setting up Clusters and can offer training courses for facilitators and farmers. For further details, please contact Jess Brooks via email: **jbrooks@gwct.org.uk**.

Farmer Clusters
Game & Wildlife
CONSERVATION TRUST

ABOUT THE GWCT

As the UK's leading wildlife research charity, GWCT is uniquely placed to incorporate the pioneering approach of working conservationists into national conservation policy. GWCT employs 22 post-doctoral scientists and 50 other research staff with expertise in birds, insects, mammals, farming, fish and statistics. For more than 80 years it has worked closely with farmers 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 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. As a result of this evidence-led approach, statutory bodies including Defra, Natural England, Scottish Natural Heritage and Natural Resources Wales have based much UK agri-environment policy on GWCT research. The Trust is also responsible for a number of Government Biodiversity Action Plan species and is lead partner for grey partridge and joint lead partner for brown hare and black grouse.

Wildlife knows no boundaries, so it is essential that agri-environment schemes encourage private land managers to work together on a landscape-scale approach. GWCT created the 'Farmer Cluster' principle of cooperative farmer-led conservation projects driven by mutual encouragement and supported by expert advice (See page 36).

Past experience has shown that where funds are more specifically targeted, and farmers respond voluntarily, rather than through compulsion, with the benefit of good advice, better outcomes are 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.

Game & Wildlife
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Lapwing and chick. © David Mason

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