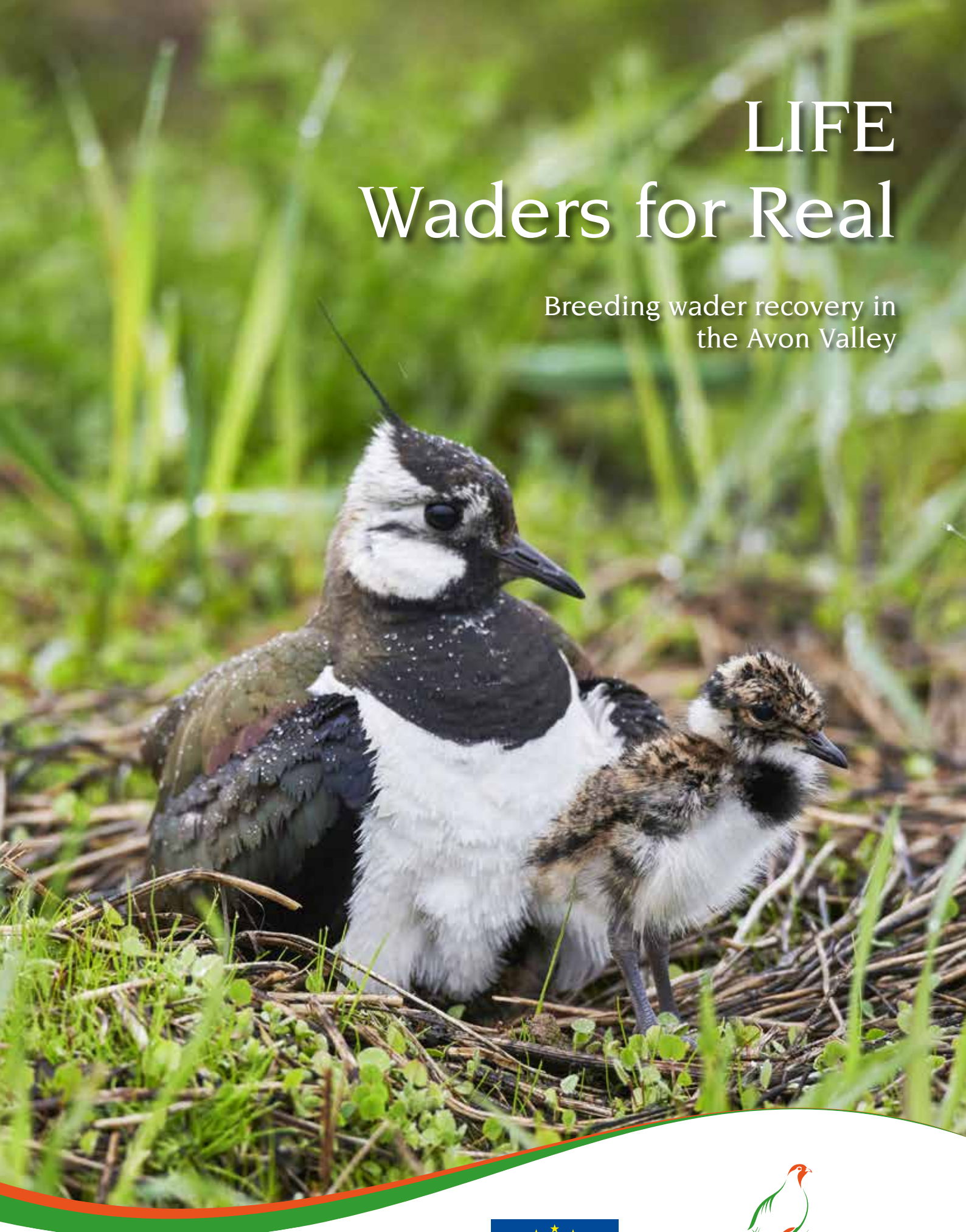


LIFE Waders for Real

Breeding wader recovery in the Avon Valley

www.gwct.org.uk

LIFE Waders for Real

Life

Game & Wildlife CONSERVATION TRUST

The River Avon at Ringwood. © Nick Lucas

INTRODUCTION

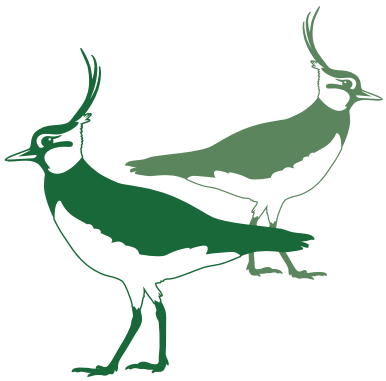
The Avon Valley is a special place, protected by various designations to safeguard its wildlife and natural beauty. The winding river with its floodplains and water meadows create an ideal habitat for many creatures, including breeding waders such as lapwing and redshank.

However, the number of waders breeding here has been falling sharply in the past 50 years, a trend that is seen across the country. There are many reasons for this, but changes in farming such as drainage, autumn sowing and improving wet grasslands for livestock are important contributors, as well as high levels of predation.

The LIFE Waders for Real project is a £1.25 million scheme, running for six years from 2014-2020. Financial support from the European Commission's LIFE-Nature programme was matched by the Game and Wildlife Conservation Trust (GWCT). The project's overall aim was to reverse the decline in breeding waders in the Avon Valley.

The project scientists worked closely with farmers, gamekeepers, landowners, volunteers and the local community to both improve habitat for the valley's waders and reduce predation. This approach has been successful, with lapwing and redshank numbers rising and snipe returning to the valley during the 2019 breeding season.

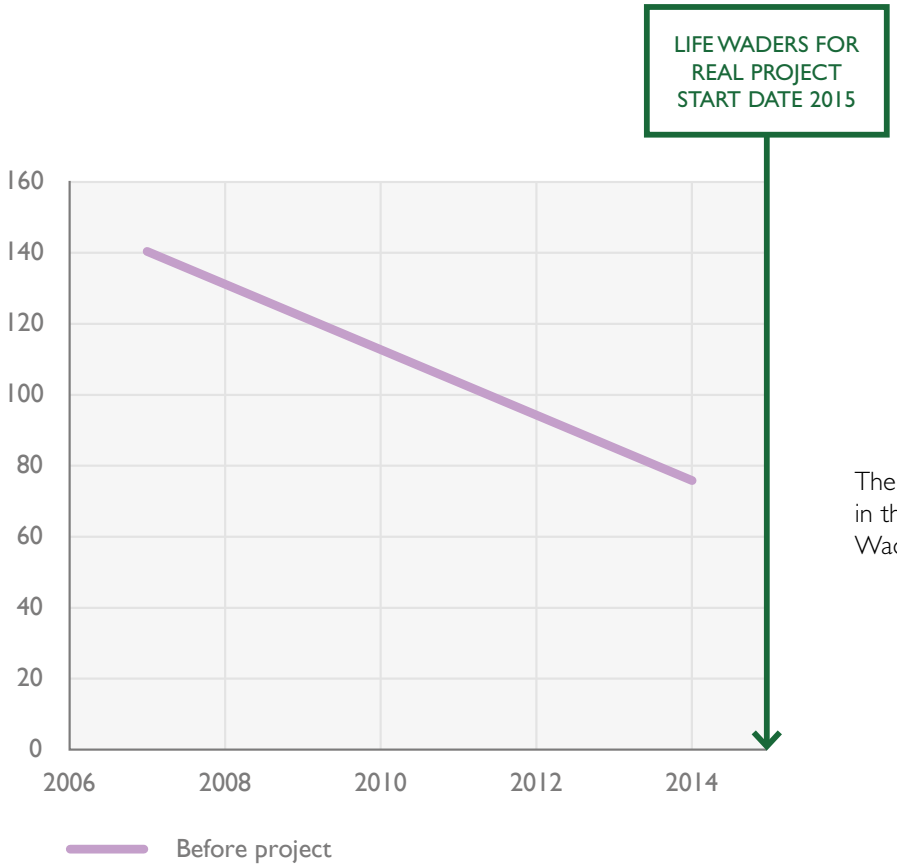
WHY WADER CONSERVATION



In 1982 the Avon Valley was one of the top eight lowland wet grassland sites in England for breeding waders. Since then, surveys have shown a dramatic decline in numbers of breeding waders, mirroring trends seen across Europe. The number of lapwing pairs has fallen from 208 in 1990 to 61 in 2015. Pairs of redshank dropped from 117 to 19, and common snipe from 29 to none.

There are many reasons for these declines, including the loss of nesting habitat, less abundant insect food for chicks, and high levels of predation. Drainage of fields and wetlands means that wader chicks cannot find enough food in the dry environment; and the change from sowing crops in spring to sowing in autumn means fields are not suitable for nesting lapwing. The young plants are too tall by nesting time for the nesting bird to have a clear view of approaching predators. These factors combine to produce a challenging environment for breeding waders to breed, in an area that was once a haven for them.

Overall in the Avon Valley at the start of Waders for Real, wader breeding success was low, and numbers were continuing to fall. For lapwing to maintain a stable population, each pair needs to fledge an average of 0.7 chicks per year. Before the project began, average productivity was well below this threshold, at 0.47 chicks per year. Nesting lapwing had been lost from the northern part of the valley, and to avoid the same fate in the southern half, conservation techniques to support these species were desperately needed to reverse these declines and help their recovery.



The average number of lapwing pairs in the Avon Valley was falling before Waders for Real began.

Lapwing. © Nick Lucas

THE PROJECT

The LIFE Waders for Real project used a combination of habitat restoration and predator management to achieve its aims:

- Increase lapwing numbers in the Avon Valley, by creating several 'hotspot' areas of ideal habitat and lower predation.
- Increase numbers of lapwing chicks fledged at 'hotspots' so that numbers are high enough for lapwings to better fend off potential predators on their own.
- Halt the decline of redshank in the Avon Valley by increasing breeding success.
- Create conditions to encourage breeding snipe to return.
- Use a new approach called Planning for Real to deliver lasting conservation action.
- Demonstrate how far habitat manipulation can push the balance in favour of waders rather than predators and assess predator behaviour in manipulated landscapes.
- Demonstrate the most appropriate techniques for excluding or reducing predators and study the benefits and/or problems that may come with predator control.
- Study the costs of these different techniques and the time they may take to increase wader numbers.
- Monitor the effects of the project on wildlife and biodiversity in the valley, especially the plants, invertebrates and wintering wildfowl.

Lapwing in the marsh. © David Mason

WHAT DO WADERS NEED?

Lapwing breeding on wet grasslands and water meadows need:

NESTING SITES

- Short vegetation of less than 3cm tall in spring over most of the area, with scattered clumps of taller or tussocky grass or rush. Hoof prints can provide small divets in which lapwing may nest or feed.
- Large, open areas so that the bird on a nest has a clear view all around to see predators approaching. The tussocks or clumps provide areas for chicks to take cover.
- Quiet sites with little disturbance.

PREDATION

- Protection from predators. This can be from improved habitat, exclusion from nesting areas, management of predator numbers or a combination of these.

CHICK REARING

- A rich supply of insects and worms for chicks to feed on, which needs a fairly moist environment.
- Vegetation that is short and open enough for chicks to move through, with patches of bare ground to feed in and areas of vegetation to provide cover. Good chick feeding areas need to be close to good nesting sites, so lapwing parents do not need to travel far to reach them.

WADERS FOR REAL APPROACH

Waders for Real catered for the needs of breeding waders by focussing on four hotspot sites through the lower valley. We used the approaches below to improve the habitat and reduce predation levels to improve breeding success on these sites. Two further hotspots were added in 2018 to extend the benefits of the project further up and down the valley.

TECHNIQUE	BENEFIT
Adding scrapes, ditches and wet features in fields	To improve food supply for wader chicks. Chicks eat insects and other invertebrates from the wet mud. Wet areas in fields provide habitat for these insects to thrive, so the chicks have a rich food source. Modern fields are often drained and improved for grazing, which support fewer insects and chicks can struggle to find food. These mini-wetlands also support dragonflies, damselflies, molluscs, important wetland plants as well waders and waterfowl in winter.
Removal of scrub and isolated dead trees	To remove cover for approaching predators and high points for birds of prey to perch. Isolated dead trees can give a good view, so birds of prey use them as a vantage point. These are removed if they are not of other ecological value. Old fence lines and shrubby areas which are no longer useful for the farmer are removed. This opens up the landscape, so lapwing have a clear view around the nest to be able to see approaching predators.
Sward height management	Cattle grazing is best for creating the right mix of short grass and tussocks for waders. Farmers in the project use a light grazing approach, with a low number of mature animals in fields when nests and young chicks are vulnerable. Heavier grazing through the late summer until early winter keeps the grass short for the following spring. Farmers do not usually cut grass for hay until July, so that nests and chicks are not threatened. Where birds are no longer using a field and earlier cuts are appropriate, farmers can apply for a derogation.
Temporary electric fencing around nesting areas and wet features for chick rearing	To keep out foxes, badgers and otters during the breeding season Erected just for the breeding period to protect waders from ground-based predators, temporary electric fencing can improve nest success and is removed when no longer needed, around July.
Management advice	Targeted, best practice lethal control to remove foxes and crows, reducing predator pressure on nests and chicks. If background numbers of predators are high and wader numbers are low, removing generalist predators can aid recovery and improve chick survival.

Carrion crow. © David Kjaer; Tagged fox. © Mike Short GWCT

Above: John Levell, Riverkeeper.
Below: Andrew Fielder, Natural England.

WORKING WITH THE COMMUNITY

Before the project began, it was essential to find out if the land managers were motivated to save their lapwing. Almost all the farmers were already part of schemes funded by the Government agency Natural England to adjust their farming in order to help breeding waders, but not all were proving successful. The financial support from these schemes is extremely important to compensate farmers for the income they lose as a result of putting the environment first, but in the valley these alone had not been enough. The LIFE project built upon what was already being done, and land managers agreed to give scientists access to their land as well as being prepared to fund and carry out additional conservation work where it was needed.

For the project to work, it had to be land manager driven from the start. 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 for many of those involved was the realisation that if they didn't take action now, their children and grandchildren may never experience lapwing breeding on their land. The hard work, commitment that was shown and relationships that were built during the project have been key to its success.

> "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."
>
> **– Rupert Brewer**

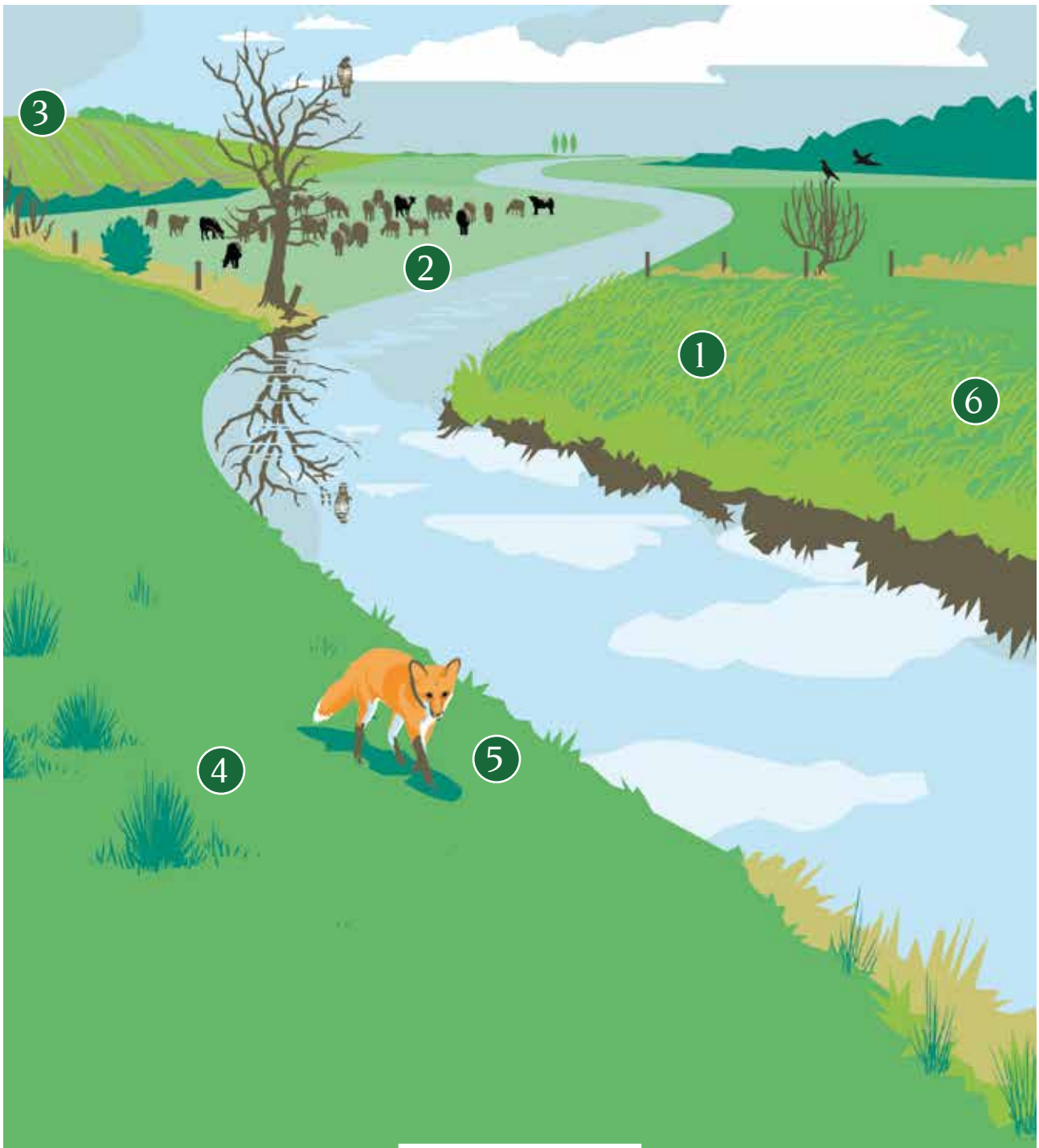
WILL & JUDY MITCHELL BEEF FARMERS

Will and Judy Mitchell run Meadow Farm, on the Avon Tyrrell Estate, which hosts one of the Waders for Real hotspots. Their small herd of beef cattle graze the rough pasture of the Avon Valley water meadows. To help lapwing, the Mitchells have reduced the number of cattle, for which they receive some support from an agri-environment agreement aimed at increasing breeding waders. Will's cows are unusual because they are let out on the water meadows from early in the year, but they have access to a barn which they go into in bad weather and they have learned to walk around the lapwing. Will says: *"it's amazing how they know to avoid the lapwing nests and pass that knowledge on to the younger animals."* The hollows in the ground made by their hoofs support insect life and the tussocky sward created by cattle grazing form the ideal habitat for lapwing. As well as managing the sward, Will has supported the Waders for Real team in habitat work on the farm, creating scrapes and reinstating old ditch lines and removing 'lookout' trees favoured by crows and birds of prey.

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

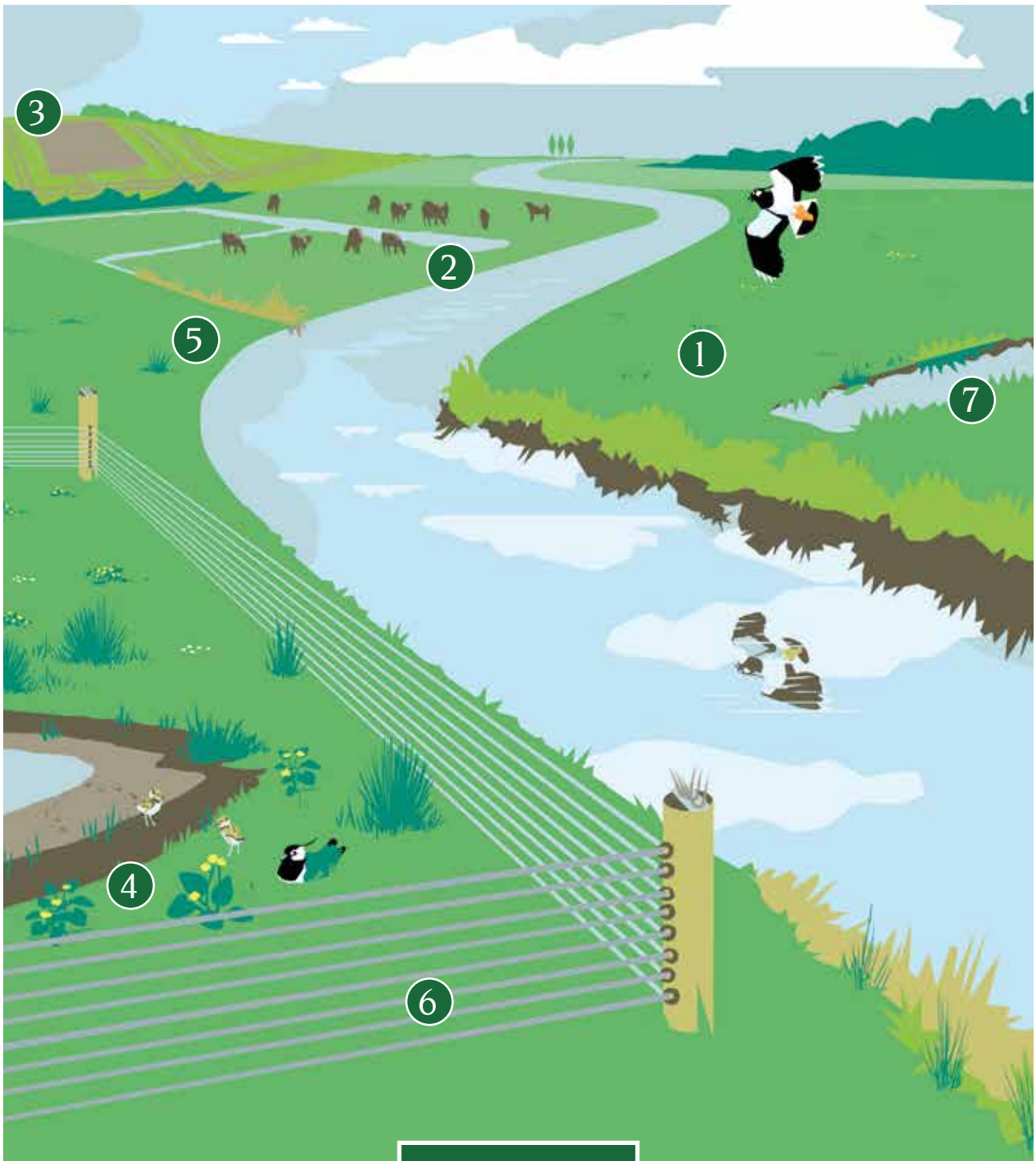
RUPERT BREWER GAMEKEEPER

Rupert is the head gamekeeper on the Bisterne Estate south of Ringwood, which has two of the original Waders for Real hotspots. He was inspired to get involved in the project after attending a Waders for Real meeting where scientists explained that lapwing could be lost from the Avon Valley. Reducing the number of foxes and crows can help protect breeding waders. Rupert stepped up his control efforts on crows during the waders' breeding season and worked closely with GWCT scientists to monitor and record fox movements in order to achieve a more targeted and effective approach to predation management. 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. 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."* Rupert also assisted the Waders for Real team and volunteers from Sparsholt Agricultural College to create shallow scrapes and ditches, remove perching trees and install temporary electric fencing around breeding areas. The result has been a dramatic reversal in lapwing decline. Before the project began, lapwing on the Bisterne watermeadows averaged 0.49 chicks/pair. During the project they have exceeded the 0.7 threshold for a sustainable population, averaging 0.82 chicks per pair, which is a fantastic achievement.



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.

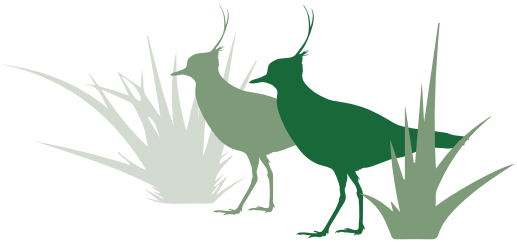
Illustrations by Chris Heward

WHAT WE ACHIEVED

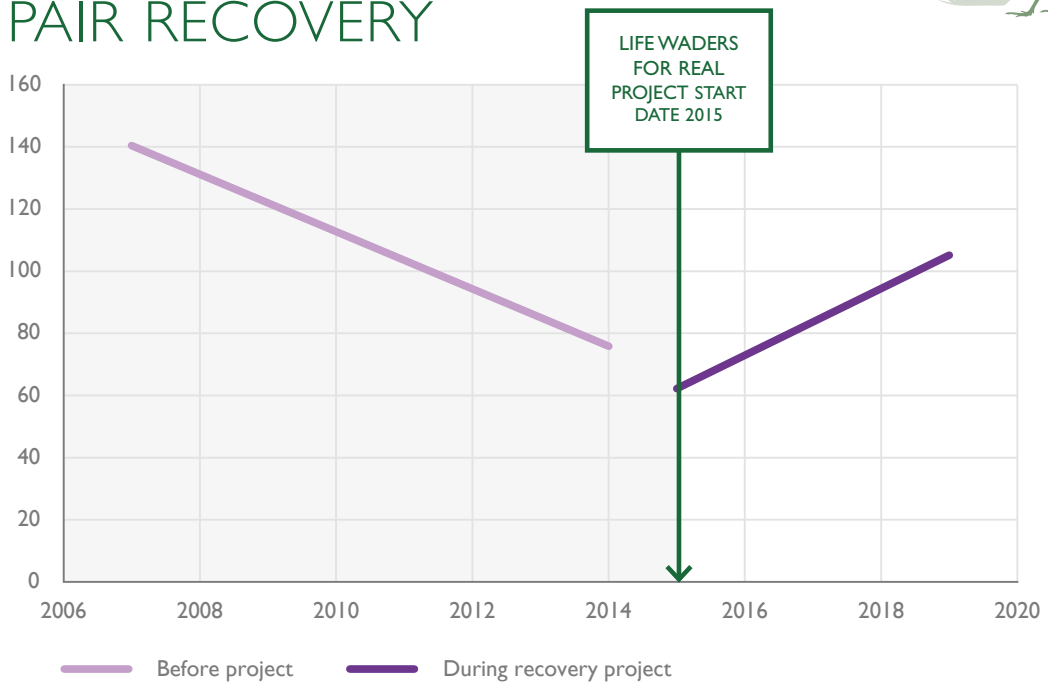
LAPWING

Numbers are rising. In 2015 there were 62 pairs on the study area, which rose to 105 in 2019. This is a 70% increase in breeding pairs.

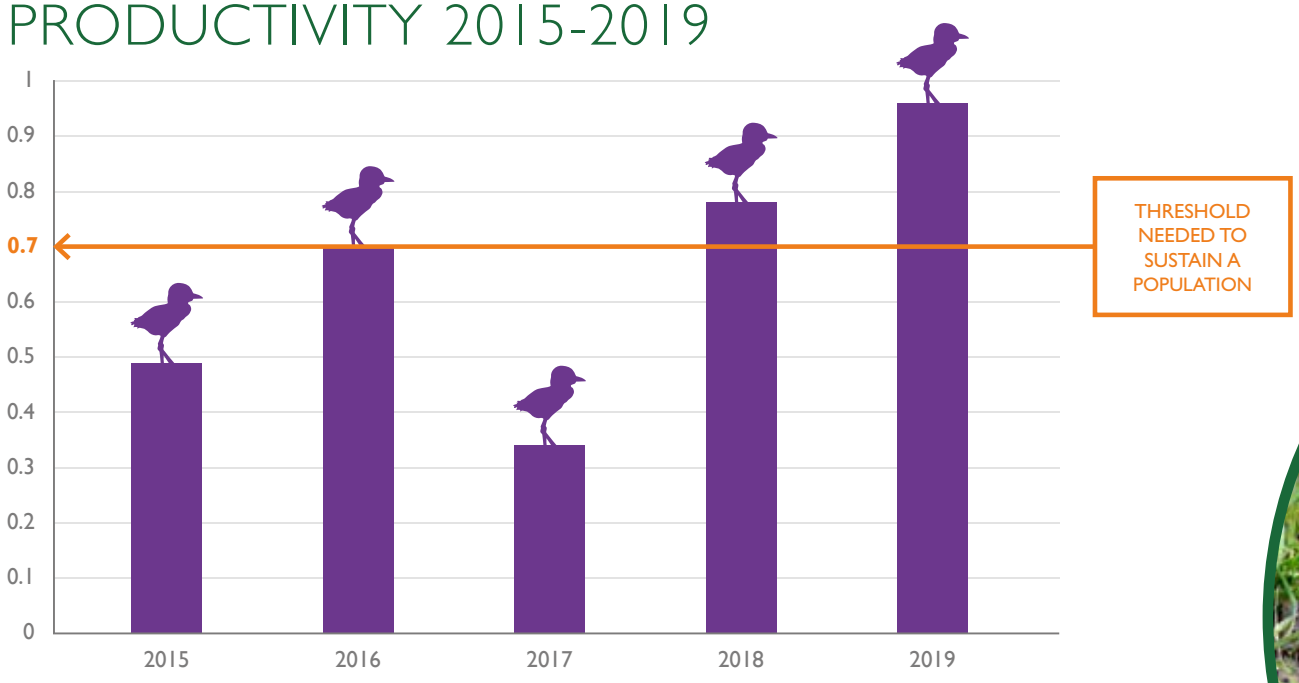
Lapwing breeding success, which averaged 0.51 chicks per pair per year on hotspot sites before the project, has been 0.75 across hotspots since 2016. This means that enough chicks are fledging for the population to be able to rise.



AVON VALLEY LAPWING PAIR RECOVERY



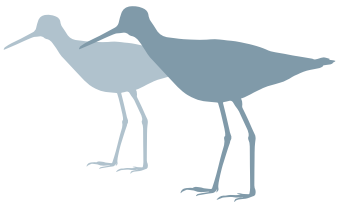
AVON VALLEY LAPWING PRODUCTIVITY 2015-2019

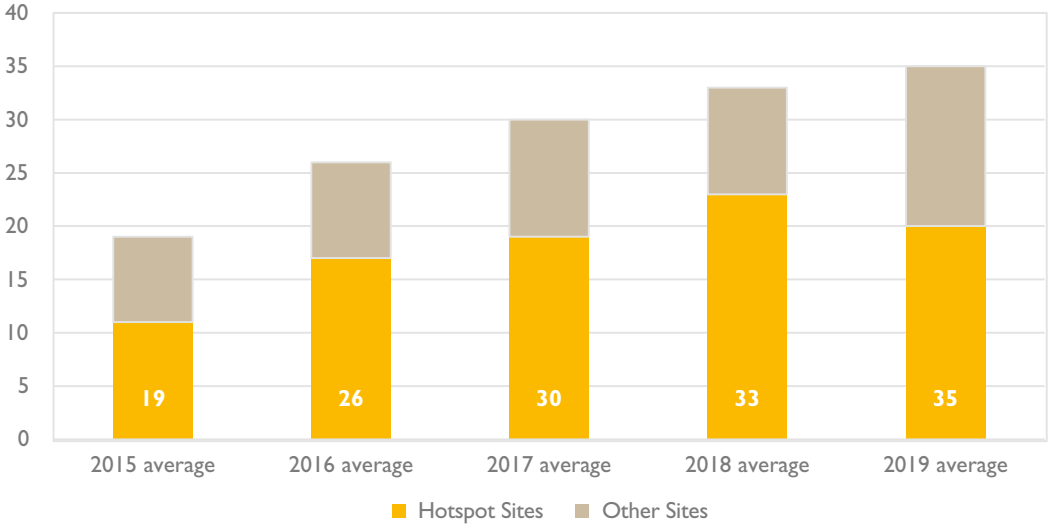


REDSHANK

Numbers have almost doubled, from 19 pairs in 2015 to 35 pairs in 2019. We did not have the capacity to monitor redshank productivity as part of the project, but they naturally remain faithful to their breeding sites. This means we can assume they are likely to have followed a similar pattern to lapwing in the valley.

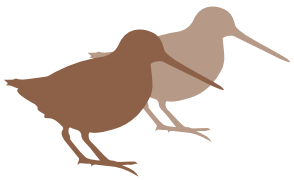
AVON VALLEY REDSHANK PAIRS





SNIPE

Snipe have not bred in the valley for many years, but in 2019, the mating call was heard which is encouraging.



Redshank © David Mason; Snipe © Laurie Campbell

WHAT WE HAVE LEARNED

OVERALL

Improving habitat and reducing predation allowed lapwing and redshank populations to rise on the Avon Valley water meadows.

COLLABORATION

Working together is key. Most can be achieved when different groups of people are engaged and working towards a common goal. In Waders for Real, a wide group of people were involved including scientists, farmers, landowners, gamekeepers, local communities and Natural England.

PREDATION

Our understanding of how foxes use the water meadows for feeding was very limited. The fox tracking work in Waders for Real has given an insight into this. We have learned that high numbers of foxes can live in small areas, that their diet is varied and tailored to the resources that are nearby, for example fish farms. Some foxes travel long distances to other areas to establish a territory, and others stay nearby.

NEST PROTECTION

Despite having been used successfully elsewhere, lapwing on the Avon Valley water meadows did not accept the presence of nest protection cages. These were not successful in this project.

TEMPORARY ELECTRIC FENCING

Electric fencing can help to protect wader nests and improve nest survival. However, when chicks hatch and become mobile they are vulnerable if they move outside the protected area in search of food. For maximum benefit from electric fencing, good habitat for chick-rearing with wet features that provide food can be included inside the fenced area. This allows nesting and chick rearing to occur inside the fence, and both eggs and chicks can be protected from predators.

GETTING THE WORD OUT

Throughout the project we have worked hard to involve the local community and communicate our work widely. Regular stakeholder meetings allow open discussion of anything of interest or concern to those involved in the project, and are attended by farmers, gamekeepers, landowners, scientists, members of Natural England and any other interested parties. School visits educate and enthuse young children about the project, lapwing and conservation more widely. We used the Planning for Real approach to achieve wide reaching and measurable community engagement.

Engagement:

- **429** students from **17** educational events and hands-on field visits
- **9** Undergraduate, **9** Masters and **1** PhD Student on long-term research placements
- **104** events attended ranging from stakeholder workshop days to national shows and international conferences
- Project webpage, regular blog posts, twitter and facebook page

THE FUTURE FOR AVON VALLEY WADERS

LIFE funding for Waders for Real came to an end in 2019, but the project will continue to benefit waders in the valley for many years to come. The project's investment in education, habitat work and equipment will allow conservation work to continue. The interest and passion of farmers and landowners who have been involved is long-lasting and is the foundation for continuing wader conservation. Enrolment in Agri-Environment schemes which began with Waders for Real will extend beyond LIFE funding and into the future, allowing habitat improvements to remain. The GWCT will continue to fund wader conservation, alongside other financial support, to use the platform of Waders for Real as the starting block for continued benefits for waders, along with many other species, in the Avon Valley.

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