

# Mind the gap

The hidden threats facing hedgerows, nature and climate

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Front cover image by Andy Ballard, page 2: robin; page 6: turtle dove, bullfinch, linnet, page 8: pipistrelle bat, page 11: tree sparrow, page 13: kestrel, page 13: grey partridge, page 15: ladies at gate, greenfinch, page 16: cut hedge, tractor trimming hedge, goldfinch, page 18: corn bunting, page 19: yellowhammer, page 20: whitethroat, page 23: butterfly, pages 24, 25 and 26: views of fields all by shutterstock.com. Page 4: hedgehog by istock.com. Blackbird by Ben Andrew, Page 5: fields and hedgerows by Andy Hay, Page 8: yellowhammer by Ben Andrew, hedgehog by Ben Hall, page 9: yellowhammers by hedge by Ben Andrew, hedgerow by Andy Hay. Page 13: hedge by Ian Francis. Page 14: reed bunting by Guy Rogers, field margin by Andy Hay, house sparrow by Ben Andrew, wildflower border by Nick Upton, dry stone wall by Michael Harvey, Page 18: farmland by Andy Hay. Page 21: yellowhammer by Ben Andrew. Page 22: arable farmland by Andy Hay. Page 23: redwing by Ben Andrew (all by rspb-images.com). Pages 10 - 11: farm images by James Robinson.

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Nearly  
**120,000km**  
hedgerows could be at  
risk, even with the roll-out  
of Environmental Land  
Management schemes (ELMs).

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Some of our best loved wildlife including hedgehogs, yellowhammers, bees, butterflies and bats face an uncertain future.



## Executive Summary

The 547,000 kilometres of hedgerows<sup>1</sup> throughout England do so much more than simply acting as boundaries; they help us mitigate against and adapt to climate change, provide a home for wildlife, help reduce flood risk and deliver several benefits to farm businesses. They contribute to the character of our landscape, our health and wellbeing.

But our relationship with these vital habitats has not always been a positive one. Since the 1950s, we've witnessed significant declines in the quantity and quality of our hedgerow network, with up to 50% being lost. Only recently have protections been put in place to halt these declines through The Hedgerows Regulations, which seek to deter removal, and 'cross compliance' rules, which safeguard against damaging practices on farmland. But risks lie on the horizon, which could yet again put our hedgerows and the wildlife that depends on them under threat.

In 2024, as part of the UK Government's 'Agricultural Transition' plans for England, cross compliance will be removed, severing the link between publicly funded farm payments and meeting minimum good practice requirements. Although this is a necessary step, it will result in the removal of requirements which help protect the environment, spanning water, soils and boundary features. With this, many of the current protections afforded to hedgerows will be lost, leaving

only The Hedgerows Regulations in place, which on their own fail to provide an adequate level of protection.

So far, the Department for the Environment, Food and Rural Affairs (Defra)'s proposed solution is to pay for hedgerow protection, with several of the requirements under cross compliance being transferred into the forthcoming Sustainable Farming Incentive (SFI) component of its new Environmental Land Management schemes. However, paying for activities that were previously a requirement represents poor value for money, costing tens of millions of taxpayer pounds without delivering additional benefit. This funding would be far better spent on more ambitious actions such as hedgerow restoration, enhancement and creation. Even if Defra's targets for SFI uptake are met, nearly 120,000km of hedgerows will still be at direct risk from mismanagement – a clear step backwards.

Unless these gaps are urgently filled, some of our best loved wildlife including hedgehogs, yellowhammers, bees, butterflies and bats will be exposed to an uncertain future, while millions of tonnes of carbon could be released into the atmosphere. Such a scenario will fail to protect and restore nature, provides little value for money, risks undermining climate ambition and will result in an uneven playing field for many farmers.

But this can be addressed by filling regulatory gaps before

they emerge: by developing a solid foundation of environmental protection, regulation, inspection and enforcement, and through ambitious Environmental Land Management schemes that reward actions that go well beyond what is currently part of regulatory compliance.

We must not take our eyes off the prize in securing a nature-rich countryside that helps to mitigate climate change and adapt to the worsening effects of a warming planet. The stakes couldn't be any higher; we need ambition, not backsliding or promises of jam tomorrow. Government must act with pace and purpose to ensure that agriculture plays its part in helping address the nature and climate emergency.

## Our key recommendations

- **Act with pace to fill the regulatory gaps**
- **Set out a transformational plan for the future of farm regulation and enforcement**
- **Secure greater ambition for environmental land management**

**Current regulations afford protection to hedges and the wildlife that lives in them, such as hedgehogs and blackbirds.**





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Many birds depend on hedges for shelter, food and nesting. Between 1970 and 2018, most farmland birds that use hedges declined in numbers, some by as much as 98%.



**-98%**  
Turtle dove

Several farmland bird species risk a life increasingly on the edge, unless existing rules are replaced by robust domestic regulation.

## Introduction

Hedgerows have been a characteristic feature of our countryside for thousands of years, providing a vital safe space for nature, an important carbon store and benefits to people and farm businesses. Despite their immense environmental, cultural and economic value, up to 50% of hedgerows<sup>2</sup> were lost between the 1950s and 1990s as a result of removal, mismanagement and neglect, driven by previously short-sighted agriculture policy. Only recently have legal protections been afforded to these vital habitats, through a combination of domestic regulation and cross compliance. But a new danger looms on the horizon, which risks reducing the protection hedgerows currently receive. From 2024, the link between the receipt of farm payments and meeting minimum levels of regulatory compliance will be severed, removing basic protections that apply to many environmental features, including hedgerows. Unless replaced by robust domestic regulation and enforcement, several farmland species risk a life increasingly on the edge. The following report outlines the risks associated with these changes and provides recommendations on how they can be avoided. It aims to help fill the gaps, focusing through the lens of England's hedgerows.



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## The benefits

England's hedgerow network covers 547,000km of the country, over 13 times the circumference of the Earth, with over 70% found on farmland<sup>3</sup>. They are an iconic feature of our landscape and can deliver numerous benefits.

## A home for nature

Healthy, well managed hedgerows provide a vital space for nature, supporting 130 priority species under England's Biodiversity Action Plan<sup>4</sup>, including birds, mammals, amphibians, reptiles and a host of invertebrates. Multiple bird species nest in hedgerows, including bullfinches (left), turtle doves, whitethroats, linnets, dunnocks and willow warblers. Grassy and flower-rich bases provide nesting material and insect food for chicks to feed on, at the same time as providing cover from predators. In winter, a good berry crop can provide a valuable food source for a range of birds and mammals, while the hedge is used for shelter and hibernation by invertebrates – including important groups of species such as pollinators and pest predators. They also play an important role in connecting existing habitats within a landscape, providing corridors for species to travel freely across the countryside.



**-56%**  
Linnnet

**547,000km** of hedgerows cover the country, over 13 times the circumference of the Earth, with over 70% of these found on farmland.



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**Wildlife, such as yellowhammers, pipistrelle bats and hedgehogs, depend on hedges for food, shelter and nesting.**

## Species spotlight

### Yellowhammer

With their bright yellow plumage and delightful 'little bit of bread and no cheese' song, yellowhammers are hard to miss. During the breeding season they nest close to the ground in thick vegetation at the base of short, thick hedgerows and scrub. Growing chicks depend largely on insects for food, with wide grass margins around fields providing an important food source, as well as valuable nesting habitat. Unfortunately, they have declined by 60%<sup>5</sup> across the UK since 1970 and are now red-listed as one of the birds of most conservation concern. A bright future for these beautiful birds is reliant on the future protection of England's hedgerows.

### Bats

Bats use hedgerows for a range of reasons; to feed, for navigation, and in some cases to roost in. Hedgerows are hosts to all sorts of insects, providing a valuable food source. Having a network of well-connected hedges throughout the countryside is crucial, especially for species such as pipistrelles, which actively use them to commute from their roosts to feeding areas.

### Hedgehogs

As the name suggests, these spiny mammals are synonymous with hedgerows, where they're often seen foraging along hedge margins searching for insects, worms, snails, mice and frogs. Hedgehogs have faced steep declines across the UK and are now listed as Vulnerable on the UK's red list of mammals, having declined by 50% in rural areas since the millennium<sup>6</sup>. There are several reasons for this, but loss of food and available habitat are contributing factors.

**It is estimated that existing hedgerows store as much as 9 million tonnes of carbon.**

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**Hedgerows support 130 priority species in England.**

## Crucial for climate mitigation and adaptation

Well managed hedgerows can act as an important nature-based solution, helping to lock up and store carbon at the same time as benefiting nature. Current models<sup>7</sup> estimate hedgerow carbon stocks to range from 5 to 45 tonnes per hectare in woody vegetation with soil organic carbon stocks ranging from 43 to 137 tonnes per hectare. It is estimated that existing hedgerows store as much as 9 million tonnes of CO<sub>2</sub>e (MtCO<sub>2</sub>e)<sup>8</sup>. Restoring and increasing hedgerows could deliver additional carbon savings, representing an important tool in mitigating the impacts of climate change. The Climate Change Committee's Sixth Carbon Budget calls for a 40% increase in the length of hedgerows across the UK, which if coupled with a 10% increase in farmland trees, and better woodland and hedge management, could increase annual carbon removals by over 1MtCO<sub>2</sub>e by 2035 and nearly 3MtCO<sub>2</sub>e in 2050<sup>9</sup>. Hedgerows can also make a significant contribution to adapting to specific climate risks such as flooding, by intercepting and soaking up rainwater, slowing surface flow and improving infiltration<sup>10</sup>.

## A long line of history, culture and heritage

Many of England's hedgerows are historically rich and culturally important, having been part of our countryside since the Bronze Age. For over a thousand years, two-thirds of the English countryside has had a continuously hedged landscape<sup>11</sup>, representing permanence and continuity. They give insight into a long enduring relationship with the land, farming and our landscapes.

## Good for business

Hedgerows can provide significant benefits to farm businesses. In arable systems, they can improve crop yield and stability due to the range of beneficial insects they harbour, which help with pollination and natural pest control. They also provide shelter and fodder for livestock and have been proven to reduce windspeed, increase efficiencies and help control surface run-off in periods of heavy rain<sup>12</sup>. These benefits extend beyond the farm gate, contributing to positive economic outcomes for all of society. Recent research<sup>13</sup> has highlighted that for every £1 invested in hedgerow planting, £3.92 would be delivered back in benefits to the wider economy when planted in the right place. It also found that a 40% increase in hedgerow coverage across the UK would help create over 25,000 jobs over a 30-year period through planting and associated maintenance.



**For every £1 invested in planting hedgerows in the right place, the wider economy would benefit from nearly four times the investment.**



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James Robinson, below, has planted and restored hedgerows on his Cumbrian farm, which has helped wildlife and livestock.



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## Case study: James Robinson, Strickley Farm, Cumbria

James manages an organic shorthorn dairy herd on 120ha (300 acres) of land, which includes pastures, meadows, woods and ponds. When the Robinsons first arrived at Strickley in 1875, much of the ancient hedgerow network was in a sorry state, as a previous tenant had cut and sold much of the wood found in the hedgerows to neighbouring farms. Since then, restoring the hedgerows throughout the farm has been a priority for generations of the Robinsons. In 1991, the introduction of agri-environment schemes boosted restoration efforts. The hedgerows now deliver countless benefits for the farm business, as well as the wildlife found there.

“Hedgerows are a really valuable part of our farm that we cherish not only for the livestock side but also for the benefits that they bring for wildlife,” says James. “But they are very much more than that - they’re part of our social history and farming landscape.”

Hedgerow restoration at Strickley has involved replanting, double fencing and the adoption of a 25-year rotation for hedgelaying. Every year, James aims to lay up to 500 metres of hedgerow, ensuring that it can offer a range of benefits for future generations. All interior hedges around the farm are left un-flailed, and roadside hedges are left unmanaged until February to allow a greater berry crop for the fieldfares, redwings and blackbirds to feast upon. For James, hedgerows represent much more than field boundaries, providing benefits to the business and farm wildlife. They provide protection to livestock from wet weather and strong prevailing winds, as well as providing protection to the field itself.



“We put cows into fields where there are great big hedges that they can get behind, because we know what the weather is like,” says James. “On wet mornings you will go for the cows and find them sheltering behind the hedge and it’s like it’s not been raining under there.”

The rich diversity of woody species found in James’s hedgerows also provides benefits for stock health, with cows often self-medicating by browsing on plants such as hazel, hawthorn and blackthorn, which provide minerals that are not readily available within grass. The restored network of hedgerows has also provided big wins for wildlife, with a healthy population of tree sparrows, a range of finches, bats and other mammals all being recorded on the farm. But James is worried that the loss of existing hedgerow protections could spell disaster for a range of species, as well as losing out on the countless business benefits that these habitats provide.

“What worries me is that if we lose existing protections for hedgerows things could get worse,” he says. “An existing well-managed hedge is a fully functioning ecosystem and once it’s gone, you’ll lose all that habitat which will take a long time to build back up again. If people don’t want to go into land management schemes, then there’s nothing to stop them pushing their land to the absolute limit; things could easily go backwards quite a long way before they go forward.”



Thanks to up to 500 metres of hedgerow being laid each year, birds such as tree sparrows (below) are doing well here, against a worrying 90% decline nationally.



**-90%**  
Tree sparrow



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**Kestrels, right, and grey partridges, bottom right, are farmland birds that have declined in numbers by 48% and 93% respectively.**



## Hedgerow protection: a complex history

Despite the countless benefits they provide, our recent relationship with hedgerows has not always been a positive one. Following the end of the Second World War and an overwhelming focus on increasing food production, the total area of hedgerows is estimated to have declined by as much as 50% across England<sup>14</sup>. In some cases, this was actively supported by Government policies that provided grants for hedgerow removal for the purposes of increasing on-farm efficiencies and production<sup>15</sup>. More recently, mismanagement has been a key issue<sup>16</sup>, often as a result of policies that have failed to recognise or reward the value of these features. Inevitably, the loss in quantity and quality of these vital habitats has had a profound impact on nature, contributing to the worrying situation that many of our best loved farmland species now find themselves in<sup>17</sup>.

Farmland bird index species associated with hedgerows and margins<sup>18</sup>, 1970-2018

Species	Status
Tree sparrow	-90%
Corn bunting	-89%
Turtle dove	-98%
Grey partridge	-93%
Linnet	-56%
Yellowhammer	-60%
Kestrel	-48%
Reed bunting	-28%
Whitethroat	-13%
Greenfinch	-64%
Goldfinch	+197%

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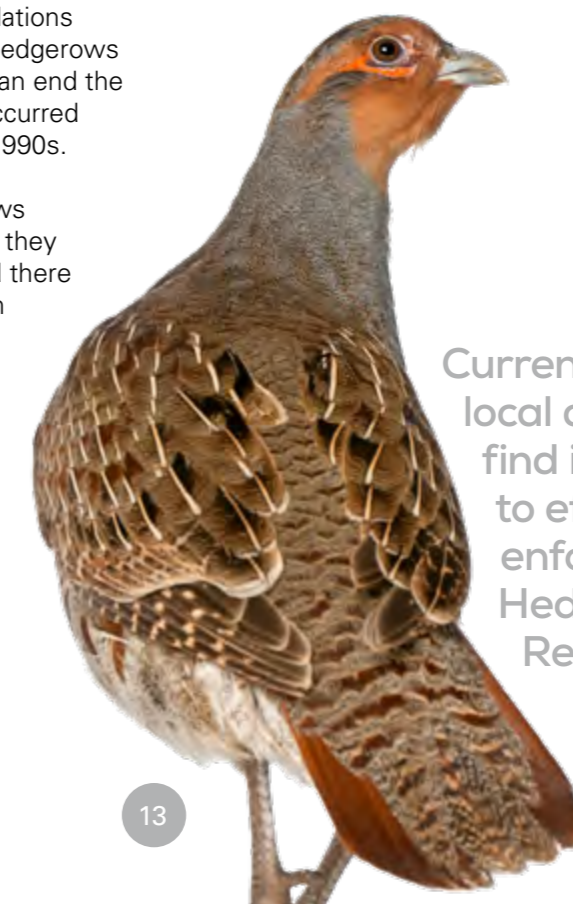


Some hedgerows do not meet the required threshold of woody species to stop them being removed.

## The Hedgerows Regulations: a new era for hedgerow protection?

Increasing awareness and recognition of the impacts associated with the loss of hedgerows led to the development of domestic regulations aimed at protecting them. In 1997, The Hedgerows Regulations were established to bring to an end the large-scale loss of hedgerows that had occurred across England between the 1950s and 1990s.

Despite the introduction of The Hedgerows Regulations, their complex nature means they do not protect all existing hedgerows and there are ongoing difficulties enforcing them. In many cases, existing hedgerows do not meet the required threshold of woody species to stop removal, despite the fact they still provide significant value from an environmental perspective<sup>19</sup>. Previous analysis<sup>20</sup> has demonstrated that many local authorities find it difficult to prosecute a landowner for illegally removing a hedgerow, with negotiation aimed at establishing replacement hedgerows representing the route most frequently undertaken.



**-93%**  
Grey partridge

Currently, many local authorities find it difficult to effectively enforce The Hedgerows Regulations.



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## The Common Agriculture Policy and the introduction of cross compliance

In 2003, cross compliance was introduced, with the purpose of ensuring that farmers in receipt of public payments were meeting a minimum set of environmental, health and animal welfare standards. These cover a range of different areas, including requirements to maintain minimum soil cover and limit erosion, to protect groundwater against pollution and to protect field boundaries. To meet these requirements for boundary features, farm businesses must abide by the following rules, or risk penalties through reductions in payments.

**These are the criteria farmers need to meet to achieve Good Agricultural and Environmental Condition for boundary features:**

An estimated 392,000km of agricultural hedges are covered by cross compliance rules, providing a vital form of protection.

**-28%**  
Reed bunting



- Maintain green cover on land within 2 metres of the centre of a hedge



- Do not cultivate or apply fertilisers or pesticides to land within 2 metres of the centre of a hedge



- Do not cut or trim a hedge between 1 March and 31 August



- Do not remove earth or stone from an existing stone wall, stone bank or earth bank

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It is essential that farmers and land owners are rewarded for careful management of hedges, for the benefit of people and wildlife.

**117,600km** of hedges could still be damaged or lost even if Defra's 70% uptake for ELMs is reached.

**-64%**  
Greenfinch



Compared to The Hedgerows Regulations, cross compliance provides greater protection to hedgerows, covering a more comprehensive suite of management practices that must or must not be undertaken to achieve compliance. These incur limited costs to the farm business, but can provide significant environmental benefits<sup>21</sup>. The fact that a proportion of farm businesses will be inspected on an annual basis can help act as a deterrent to malpractice, as does the threat of deductions to public payments for a breach<sup>22</sup>. Although cross compliance is not perfect, the link between regulatory compliance and payments provides an important enforcement mechanism, which serves to provide the foundations on which effective incentives can then build.



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**Overzealous cutting can significantly reduce the quality of a hedgerow for wildlife.**

## Agri-environment: hedgerow restoration and renewal

The introduction of agri-environment schemes has also played an important role in securing a better future for hedgerows and hedgerow species. Since 1991, they have offered incentives for hedgerow management, restoration and creation, providing vital support to ensure that existing hedgerows are restored, and new ones are created. As a result, they have led to the restoration and creation of nearly 60,000km of hedgerows in England<sup>23</sup>, demonstrating the appetite amongst farmers to restore these features to their farms. This significant public investment must be safeguarded by ensuring these hedgerows receive adequate protection in the future. It can then be built upon through ELMs to ensure ongoing positive management and actions aimed at further increasing the extent and quality of England's hedgerow network, which must increase by 61% to achieve Favourable Conservation Status<sup>24</sup>.

### Threats to hedgerows and wildlife

There are several threats that can impact upon the quality of hedgerows, reducing their value for nature and in some cases resulting in their loss entirely. These include:

#### Neglect

Hedgerows require management such as laying, coppicing and trimming to maintain their structure and value for wildlife over time. Without this, they will become gappy and lose their structure. Between 1998 and 2007, the number of hedgerows lost as a result of neglect rose by 9%. Once they have reached this state, they are difficult to restore. Land management schemes play a vital role in efforts to enable land managers to restore hedgerows at risk of being lost through neglect, by funding hedge laying, coppicing and gapping up.

Agri-environment schemes have led to nearly 60,000km of hedgerows being created and restored in England.

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#### Ploughing to the base

Ploughing right to the base of a hedge can damage the roots of hedgerow plants and trees, affecting the overall structure and resilience of the hedgerow. It also destroys the vegetation at the base and can lead to the loss of parts of the hedge as roots are no longer able to support them. Current cross compliance regulations aim to safeguard against this by prohibiting cultivation within 2 metres of the base of the hedge.

#### Over-management

Frequent cutting will also impact a hedge's ability to provide for nature and the climate. Cutting too often at the same height can threaten the future structure of a hedge, minimise its value for a range of different species and reduce its ability to store carbon. Overzealous cutting can also lead to gaps forming, acting as a barrier to species which use them as vital corridors. Land management schemes provide incentives to reduce pressures associated with frequent cutting, with payments to manage hedge trimming on a rotation.

#### Cutting at the wrong time of year

Cutting at the wrong time can cause devastation for a range of species that use hedgerows in the spring and summer for nesting. Cross compliance prohibits hedgerow management between March and September to protect birds during the breeding season and to help ensure that hedgerows can provide a safe space when it's needed most.

#### Spraying

Spraying pesticides and fertilisers close to the base of the hedge can kill off plant diversity, beneficial insects and in the case of fertilisers can lead to fast-growing plants outcompeting wildflowers. Herbicides can also impact on the resilience of the hedge, leading to weaker shrubs and gaps to form. Cross compliance regulations prohibit the application of pesticides and fertiliser within 2 metres of the base of a hedge, providing important protection against these pressures.

#### Removal

Hedge removal results in a loss for nature and impacts on climate. Although hedge removal has declined significantly, we can't forget the huge loss that occurred from the 1950s to 1990s when it's estimated that half of all hedgerows were lost. At present, The Hedgerows Regulations provide the only form of protection against hedgerow removal, but they are often insufficient in achieving this aim.



From the 1950s to the 1990s, it's estimated that up to 50% of hedgerows were lost.



+197%  
Goldfinch



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## Risks on the horizon

Unless regulatory gaps are filled, there is a real and inherent risk that hedgerows could increasingly be subject to damaging practices.

The adoption of the Agriculture Act signalled the beginning of a transition from outdated means of farm support where payments were based largely on the amount of land in a farmer's possession, towards a new era, where the focus will be based on the delivery of public goods. This provides immense opportunities for farming and land management to help restore nature, mitigate and adapt to climate change and deliver a range of benefits to society. But in moving towards this better vision for the future, effectively managing the transition will be key. In 2024, as part of this journey, the link between meeting the regulatory requirements of cross compliance and public payments will be broken. Although this process is a necessary step towards a farming system based on public money for public goods, it brings several risks which, if left unaddressed, put hedgerows under increased threat.

With the removal of cross compliance, several regulatory requirements related to hedgerows will cease to apply. Unless these gaps are filled by appropriate regulation before 2024, there is a real and inherent risk that hedgerows could increasingly be subject to damaging practices, such as ploughing, spraying and cutting at the wrong time of year. This could spell disaster for animals such as yellowhammers, hedgehogs, bees, bats and butterflies, as well as releasing large quantities of carbon back into the atmosphere.

Although a relative degree of legal protection will still apply under The Hedgerows Regulations, they do not prevent management practices that can cause damage, such as ploughing up, applying chemicals to the base, or timings in relation to hedge trimming and cutting.

Questions also arise over the capacity of local authorities to monitor and enforce The Hedgerows Regulations and whether they provide sufficient financial disincentive to safeguard against non-compliance (see Annex 1). When weighed up against the short-term economic gain of hedgerow removal, through reduced maintenance costs and greater economies of scale, this level of punishment is unlikely to deter non-compliance.

**-89%**  
Corn bunting



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## Paying for hedgerow protection; public money for public goods, or a pathway to deadweight?

One of the potential avenues to protect hedgerows is to incentivise their positive management under Environmental Land Management (ELM) schemes, which appears to be the approach favoured by Defra. But focusing on incentives alone is beset with problems, not least their voluntary and temporary nature. Hedgerow management is included as an option within the upcoming Sustainable Farming Incentive (SFI), but this will not achieve 100% uptake, leaving hundreds of thousands of kilometres of hedgerows at risk. Defra is aiming for around 70% uptake, and even then, applicants do not have to adopt the hedgerow standard.

Funding for simple or business-as-usual activities, or to prevent damage, represents poor value for money and could absorb a significant proportion of the available budget (tens of millions of pounds per year), but without delivering demonstrable additionality. Instead, it is vital that available funding rewards actions above what is expected as part of good practice, for example, funding the restoration, enhancement and creation of hedgerows.

Whereas Defra anticipates an uptake of over 70% of farmers participating in **SFI** by 2028, current protections in place under cross compliance will fall away in 2024. This would leave wildlife in limbo, with nearly 120,000km of hedgerow receiving little protection. If a less ambitious uptake of 50% is achieved by 2024, over 200,000km of hedgerow will be at risk (see Annex 2).

Defra needs a clear plan to ensure the successful management of the Agricultural Transition period with robust domestic regulation in place before 2024 to ensure that gaps between the current and future system do not emerge. However, a recent report by the National Audit Office<sup>25</sup> highlights serious issues with the planning and implementation of ELM and the Future Farming and Countryside Programme.

It is vital that available funding rewards actions above what is expected as part of good practice.

**-60%**  
Yellowhammer





## Undermining climate ambitions

The ongoing threats facing England's hedgerows risk undermining the UK's ambitions in a crucial year for both nature and climate. Our analysis (see Annex 3) shows that even a 10% loss of hedgerow coverage in England would result in the release of nearly 0.5 million tonnes of CO<sub>2</sub>e (MtCO<sub>2</sub>e) currently stored above and below ground. At the far end of the scale, in a scenario with minimal uptake of SFI standards and where all hedgerows without protection are lost, nearly 3.7 MtCO<sub>2</sub>e could be released back into the atmosphere. At a time when we must be doing everything to safeguard our vital carbon stores, the absence of basic protections for these iconic farm habitats would constitute failure and risks undermining ambitious climate action.

## What's the hold up? A new approach to regulation, inspection and enforcement

Regulation is essential in providing a level playing field for all farmers, ensuring that the majority trying to do the right thing are not undermined by those seeking to maximise short-term economic gains. Filling the regulatory gaps associated with the removal of cross compliance is an essential first step in ensuring that nature on farmland is effectively protected. However, there needs to be a transformational change in approach to agricultural regulation, inspection and enforcement. The current approach is not fit for purpose, suffering from several weaknesses and has been subject to much criticism<sup>26</sup>.

This has been recognised by Defra, which has made several commitments regarding the development of a new regulatory regime for agriculture<sup>27</sup>. To assist this process, the previous Secretary of State commissioned the Farm Inspection and Regulation Review (FIRR) to scope out opportunities for improving regulation and enforcement, which reported its findings in 2018. It made a set of wide-ranging recommendations, at the heart of which was a proposal to move towards a system in which regulators have a fuller understanding of the level of compliance with current standards in the farming system and a wider range of mechanisms to improve them.

Despite a commitment to consult on a future regulatory regime for agriculture<sup>28,29</sup>, following the findings of the FIRR there has been little movement in setting the overarching purpose of future agriculture regulation, its objectives or how it will be implemented and enforced. The delays in this process represent a missed opportunity to trial Environmental Land Management in the context of a reformed regulatory regime and could compromise the ambitions of future policy. This must be set out as a priority, to ensure that a future regulatory regime is fit for purpose in improving the state and quality of nature and the environment, at the same time as adopting a more fair and effective delivery model for farmers and land managers.

Even a 10% loss of hedgerow coverage in England would result in the release of nearly 0.5 million tonnes of carbon.

**-13%**  
Whitethroat



There needs to be a transformational change in approach to agriculture regulation, inspection and enforcement to help protect declining species such as yellowhammers.





## Conclusion

As England embarks on a new era for farming and land management, effectively managing the transition will be key. This means building on what we have by protecting what we value the most. To date, action has been lacking and we edge ever closer to a point where some of our most cherished habitats could be damaged or lost.

This report has focused on the threats facing England’s hedgerows, but the risks span much wider, encompassing protections for soil, water and more. Unless these regulatory gaps are filled, many of our vital carbon stores could be lost, while nature struggles to regain a foothold across the farmed landscape.

There is time to fix this, but it is quickly running out. We call on Government to act with purpose to ensure that the brave new world of public money for public goods is fit for purpose in addressing the nature and climate emergency. That robust regulation is put in place to protect nature and the environment, to provide a fair and level playing field for farmers and to ensure confidence and trust from the public. That incentives for environmental land management deliver ambitious action above what is expected as part of good practice and deliver value for money. To achieve this, we make the following recommendations.

**We call on Government to act with purpose to ensure that the brave new world of public money for public goods is fit for purpose.**

## Key recommendations

### ■ Act with pace to fill the regulatory gaps

Regulatory gaps arising as a result of the removal of cross compliance should be filled by 2024. These must, as a minimum, maintain the protections currently afforded to hedgerows, soils and other features currently covered under cross compliance.

### ■ Set out a transformational plan for the future of farm regulation and enforcement

Beyond maintaining existing environmental regulation, there is a clear and pressing need for a new more ambitious, effective regulatory framework for agriculture. Defra must uphold its commitments and launch a public consultation in this area as a matter of urgency.

### ■ Secure greater ambition for environmental land management

Ambitious Environmental Land Management schemes are essential if agriculture is to play its full part in addressing the nature and climate emergency. Schemes must incentivise ambitious action that goes well beyond what is required to achieve regulatory compliance.



**We need to build on what we have by protecting what we value the most.**



## Annex 1 The Hedgerows Regulations

The Hedgerows Regulations were introduced in 1997, providing the first statutory protection for hedgerows in England. Under The Hedgerows Regulations, a land manager wishing to remove a hedge must notify their local planning authority, who then assesses the value of the hedge. If the hedge is classified as “important”, based on a relatively limited set of nationally determined criteria, it can be protected through issuing a hedge retention notice which protects it from removal. If a landowner is found guilty of removing a hedge without prior permission, they can be fined up to £5,000 in a Magistrate’s Court, with an unlimited fine if tried in the Crown Court. If found in breach, they may also be required to plant a replacement hedgerow, which the local authority has legal authority to enforce. However, if a response to an application for hedgerow removal is not received within a small window of 42 days, the hedgerow can be legally removed.

A hedgerow is considered important if it meets the following criteria:

1. Marks a pre-1850 parish or township boundary
2. Incorporates an archaeological feature
3. Is part of, or associated with, an archaeological site
4. Marks the boundary of, or is associated with, a pre-1600 estate or manor
5. Forms an integral part of a pre parliamentary enclosure field system
6. Contains certain categories of species of birds listed in the Wildlife and Countryside Act or Joint Nature Committee Publications
7. Includes:
  - a) At least seven woody species, on average, in a 30-metre length;
  - b) At least six woody species, on average, in a 30-metre length and has at least three associated features;
  - c) At least six woody species, on average, in a 30-metre length, including a black poplar tree, or large-leaved lime, or small leaved lime, or wild service tree; or
  - d) At least five woody species, on average in a 30-metre length and has at least four associated features
8. Runs alongside a bridleway, footpath, road used as a public path, or a byway open to all traffic and includes at least four woody species, on average, in a 30-metre length and has at least two of the associated features listed below:
  - i) A bank or wall or supporting hedgerow
  - ii) Less than 10% gaps
  - iii) On average, at least one tree per 50 metres
  - iv) At least three species from a list of 57 woodland plants
  - v) A ditch
  - vi) A number of connections with other hedgerows, ponds or woodland; and
  - vii) A parallel hedge within 15 metres

## Annex 2 Methodology: hedgerows at risk

To determine the length of agricultural hedgerows currently covered by cross compliance regulations, we used data existing on the Rural Payments Agency website, which had commissioned ONS to map all existing agricultural hedgerows for the purposes of administering the Basic Payment Scheme. The data outlined on the website estimated that there were 373,919km of hedgerows, after mapping 95% of the total area. We calculated the remaining 5% to give an estimate of 392,000km of hedgerow which are currently covered by cross compliance.

To estimate the potential uptake of the Sustainable Farming Incentive, we used Defra’s stated ambition of 70% uptake as a baseline, followed by 90% to represent increased ambition, 50% uptake to represent mid ambition and a figure of 25% for the lower ambition scenario. Under each of these scenarios we then calculated the potential area of hedgerow at risk, eg 10% of the total for high ambition, 30% for Defra’s stated target etc.

To calculate estimates associated with public expenditure associated with the scheme, each scenario was split between the three proposed tiers for hedgerow management within the SFI to reflect the fact that these are likely to vary between individual farm businesses. As part of this exercise, 50% of hedges were assigned to the introductory standard, 30% into the intermediate and 20% into the advanced. We then multiplied the cost per 100 metres under each tier by 10 to give a cost per kilometre. This was then multiplied by the proportion of hedge covered under each of our uptake scenarios. These were then added together to give a total cost under each scenario.

**Table 1: Length of hedgerows at risk following the removal of cross compliance and associated costs for SFI for hedgerow management**

SFI uptake scenario	Total area of unprotected hedgerow	SFI hedgerow costs per annum
90% uptake	39,200km	£67.3 million
Defra target; 70% uptake	117,600km	£58 million
50% uptake	196,600km	£37.4 million
25% uptake	294,400km	£11.6 million



# Mind the gap

The hidden threats facing hedgerows, nature and climate

## Annex 3

### Methodology: carbon losses from hedgerow removal

To determine the potential above ground and below ground carbon emissions associated with losing hedgerows at risk under each of the uptake scenarios mentioned above, we used the lowest figures for Above Ground Biomass (AGB) and Below Ground Biomass (BGB) from a comprehensive literature review undertaken by Blair (2018)<sup>30</sup>. These figures were then added together to give a figure for living biomass per hectare of hedge. These were then divided by width using a median figure of 3.4 metres from a study undertaken by Drexler *et al* (2021)<sup>31</sup> to give a value per km of hedge. This provided a minimum figure of **12.5tCO<sub>2</sub>km<sup>-1</sup>** which was then multiplied by the length of hedgerows at risk under each of the different uptake scenarios to provide a minimum likely loss of biomass CO<sub>2</sub>e to the atmosphere as a result of changed policy. The exercise did not seek to determine the impact on Soil Organic Carbon stocks, as it is impossible to determine the impact of land use change as a result of removal (eg grassland to tillage), which would significantly impact results. It also did not attempt to calculate foregone future sequestration due to potential hedgerow loss, which is also impacted by other factors such as regular cutting. These figures represent a conservative estimate, which is likely to be higher if larger networks are lost and Soil Organic Carbon were accounted for accurately.

**Table 2: Estimates of above and below ground carbon losses as a result of hedgerow loss under a range of different scenarios**

SFI uptake scenario	Tonnes of CO <sub>2</sub> e above and below ground biomass combined if hedgerows at risk are removed (MtCO <sub>2</sub> e)
90% uptake	0.49
Defra target; 70% uptake	1.47
Mid ambition; 50% uptake	2.46
Low ambition; 25% uptake	3.68

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