

# Nature-Friendly Farming in Action



# Foreword



The nature and climate emergency continues to threaten farming's productivity. But through nature-friendly farming and the practices found in this booklet, we can all take action to restore and protect what makes our farm businesses viable: nature.

With biodiversity in staggering decline across our farmed landscapes, it has never been more urgent for farms to adopt practices that support multiple species to thrive. There are many practices that farms of all sizes and systems can adopt to help nature flourish.

The Nature Friendly Farming Network (NFFN) and Farm Wildlife have joined forces to spotlight farmers demonstrating success through practices that improve farm ecosystems, restore soil health, boost profit margins and increase resilience to extreme weather.

Farmers across the UK are finding that farming in harmony with nature is an essential prerequisite to long-term sustainable food production. While individual actions are helpful, a siloed approach to landscape management

will never achieve the scale of change needed to turn the tide on nature loss nor provide the required resilience against climate change.

Farms can work towards a whole farm approach by strategically combining the six key actions within this booklet to deliver coordinated habitat creation and management. Less productive areas could be optimised for nature's gain at the benefit of greater farm system health. Sensitive in-field management will help reduce fertiliser use and increase soil carbon storage, likely resulting in positive returns on the farm balance sheet.

There are many ways to transition to nature-friendly farming, and this booklet provides helpful insights into how you can begin to take those steps. For further guidance and resources, seek out the NFFN and Farm Wildlife websites.

[nffn.org.uk](http://nffn.org.uk)  
[farmwildlife.info](http://farmwildlife.info)

Martin Lines  
UK Chair, Nature Friendly Farming  
Network

# Nature-Friendly Farming in the UK



© Richard Wintpear

Existing habitats you already have on the farm, like unimproved grassland, heathland or moorland are typically the most valuable for wildlife and difficult to recreate, so maintaining or restoring them to be the best they can be is the priority for nature-friendly farming. This is the first of the Farm Wildlife six key actions ([www.farmwildlife.info](http://www.farmwildlife.info)).

Elsewhere on the farm, a nature-friendly approach would maximise the wildlife value of field boundaries and margins, and seek to create or restore wet features, flower-rich habitats and seed-rich habitats. A minimum of 10% of the farmland managed as wildlife habitats from these actions will provide the diversity of habitats and food sources required for a broad range of farmland wildlife to flourish. Getting to know the wildlife in need of specific conservation action in your local area is a key step.

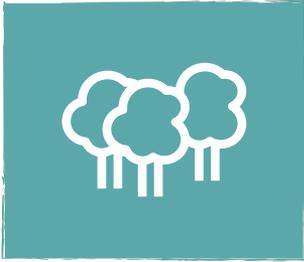
This will help you to adapt the habitat management to meet their needs. There are lots of sources of information available to help with this from the specialist conservation organisations, including those that make up the Farm Wildlife partnership.

Alongside the provision of specific wildlife habitats, the sixth key action is to seek ways to implement sympathetic management across the whole farm area. This would include measures to enhance life in the soil, as well as minimising the use of chemical pesticides (including those used to control livestock parasites), inorganic fertilisers and abstracted water.

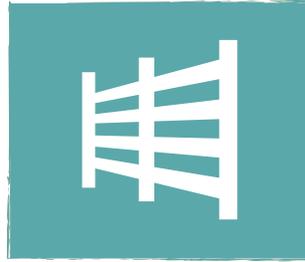
These nature-friendly farming principles apply equally to conventional, organic and agroecological farming systems.

# The Six Key Actions

This booklet focuses on the Farm Wildlife six key actions, with case studies of how they have been implemented on farms across the UK. The six key actions are:



**1** Enhance existing habitats **p5**



**2** Maximising the wildlife value of field boundaries and margins **p8**



**3** Maintain, restore and create wet features **p11**



**4** Maintain, restore and create flower-rich habitats **p14**



**5** Create seed-rich habitats **p17**



**6** Sympathetic In-field management to support wildlife **p20**

For more information, visit: [www.farmwildlife.info](http://www.farmwildlife.info)

# 1. Enhance existing habitats



© Richard Winspear

The best place to start is to enhance the wildlife habitats you already have. Farms that are made up of farmed semi-natural habitats, such as unimproved grasslands, heathland or moorland, may not need to do much more than making sure these habitats are restored to or maintained in a good condition for wildlife. The key steps for improving habitats are:

- 1 Better:** focus on the habitat quality. Are the diversity of plants and habitat features in the habitat as rich as they could be? Could the management be adjusted in any way to improve the habitat condition?
- 2 Bigger:** could any of the habitat patches be expanded? Larger blocks of habitat mean that populations of species are more resilient to challenges such as harsh weather conditions or diseases.
- 3 Connected:** can blocks of similar habitats be connected by corridors of similar habitat to allow species to move freely from one patch to another, reducing the risk of local extinctions.
- 4 More:** is there scope to create new areas of habitat to complement those already in the landscape?

# Case Study: Species-Rich Grassland



## Denise Walton, Peelham Farm

**Size:** 650 Acres

**System:** Livestock

**Location:** Berwickshire, Scotland



© Denise Walton

## Aim

Livestock management primarily aims for high animal welfare, soil health, reduced inputs and a closed nutrient cycle for a healthy farm ecosystem. They aim to raise species-richness within their grasslands to provide nutritious forage for their livestock while supporting pollinators, increasing biodiversity and using no sprays or inorganic fertilisers.

## Methods

The farm's species-rich grasslands are sensitively managed through a rotational grazing system with 100% Pasture for Life Aberdeen Angus. The cattle feed only on the grass, hay, and silage the farm grows. Cattle groups of 30 are moved to 10-acre paddocks every three days with 30 days rest to allow plant species to recover and flower. This movement reduces overgrazing, provides differing vegetation heights and ensures adequate recovery time to optimise plant abundance. They aftermath graze and include a deferred grazing system, where grass paddocks are left to grow tall and flower, providing tall herb grazing which supports cattle gut health and provides seed for birdlife, including the rare Corn Buntings they have on the farm.

Notably, the cattle's dung supports a rich diversity of invertebrates, including dung beetles, which are essential for feeding other wildlife and provide a parasite control service. Species-richness is maintained through grazing that controls competitive grasses and allows sunlight to reach the soil surface, which helps seed germination. Hay is cut for winter feedstocks in July to September depending on the wildflowers present, and strips are left untouched along field edges to provide late-season forage and shelter for wildlife. Livestock is excluded from March to August to allow wildflowers to bloom throughout spring and early summer.

## Outcomes

Denise's livestock management has resulted in better soil fertility and fewer pests and diseases. Natural insect predators are more evident. Earthworm counts are up in deferred grassland, showing 17 in 1kg of soil. As a result, Denise is saving nearly £100,000 a year on fuel, agrochemicals and imported feed. In 2021, she sequestered 9,327t carbon in her soils; the total soil organic carbon is 2000t. An indication of farm productivity is the increased beef productivity to 550kgs in 15-20 months with no inputs. The most recent whole-farm soil survey revealed an average soil organic matter content of 7% with up to 12% on long-term species-rich pasture.



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# Case Study: Tree Management



## Georgina Bray, Hope Farm

**Size:** 181 Hectares

**System:** Arable

**Location:** Cambridgeshire, England



© Georgina Bray

## Aim

Hope Farm has successfully restored good populations of ground-nesting birds including Skylarks, Lapwings, Grey Partridges and Corn Buntings. These species prefer open farmland landscapes away from woodland and trees. However, wooded habitats in the right place are good for biodiversity and increase carbon sequestration to mitigate Climate Change. The aim is to have more trees and more Skylarks.

## Methods

A four-point plan was used to enhance the wooded habitats on the farm through making them:

- 1 Better: auditing the condition of existing trees and woodlands, considering the needs of priority woodland species in the landscape, such as bats and woodland butterflies;
- 2 Bigger: reviewing opportunities to expand existing woodlands where this will not affect the quality of open habitats or status of species of open farmland;
- 3 Connected: planning how to connect woodlands around the farm with taller hedges and more hedgerow trees in areas away from important open habitats and vulnerable species;
- 4 More: looking for opportunities to plant more trees, such as the use of agroforestry.

## Outcomes

The plan includes expansion of the ancient Elm woodland SSSI bordering the farm, trialling agroforestry in a field which has historically had few ground-nesting birds and the creation of taller hedgerows and more trees to connect woodlands around the farm. There are also opportunities to convert two small dense plantations to tall scrub habitats with wet features to attract Turtle Doves back to the Farm, plant trees in the grazed paddocks and protect and increase the number of veteranised trees important for invertebrates. There is the potential to pollard trees within the open areas of the farm to maintain them without the risk of increasing numbers of nest predators.



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## 2. Maximising the wildlife value of field boundaries and margins



© R. Wainspear

Field boundaries and margins form the most obvious wildlife corridors on farmland, with the potential to connect habitats and allow wildlife to move around the farm. The priorities for their management are to protect them from agricultural inputs and to create a diverse structure. Well-managed hedges and ditches underpin a thriving wildlife community that aids crop protection and pollination.

Trimming hedges and managing ditches on a long rotation boosts flowering opportunities, fruit production and shelter. Avoid cutting all hedges or ditches in the same year and avoid the main bird nesting season between the start of March and end of August. The height of hedges and numbers of hedgerow trees are best determined by the landscape. Taller hedges and lots of trees are ideal in wooded areas

of the farm, helping to form wooded corridors, whereas shorter hedges and fewer trees may benefit ground-nesting birds in more open areas of the farm. It is also important to avoid shading of any habitats that would benefit from direct sunlight and warmth.

Tussocky grass buffer strips provide an important habitat for insects and spiders as well as buffering the field boundaries from agricultural inputs and runoff.

Tussocky grass margins and flower-rich margins serve different wildlife functions and a network of both are important for wildlife to thrive. They also require different management. Tussocky grass margins are best cut on long rotation to allow the tussocks to mature and be left undisturbed, whereas most flower-rich margins benefit from an annual cut and remove.

# Case Study: Hedge Management



## Fraser Hugill, Throstle Nest Farm

**Size:** 140 Hectares

**System:** Mixed

**Location:** North Yorkshire, England



© Fraser Hugill

## Aim

Cost effective management that benefits wildlife across two different farms where the heavy clay soils limit use of a conventional tractor-mounted flail to dry autumns. Throstle Nest has a species-rich network of hedges very similar to 1840s maps, so of high nature value, but were managed annually by the predecessor. Hedges at White House Farm had become leggy due to lack of management.

## Methods

Fraser uses a digger-mounted finger bar cutter for trimming. He stops every 4-5m to cut the side and then top of the hedge, then moves on to the next section. The key is not to be in a rush and to learn the machine's limitations. He cuts with one pass, creating large pieces of brash, which are easier to bulldoze the material together. He also has a tree shear to cut through bigger stems. Some of the brash is used to make deadwood habitat piles. Bigger logs from the tree shear are used as fuel. Some has been used to slow the flow of ditches on the farm. Any remaining brash is burnt. Schemes have been used to gap up and coppice the hedges using the tree shear or a chain saw to rejuvenate them. Trick is to not do too much in one year but spread the work out to ensure the wildlife always has a refuge.

## Outcomes

The results have been really good for the hedges and the wildlife. Unlike a tractor mounted flail, cutting is done in one single pass, reducing damage to the soil. The hedge trimmer bar is able to cut through 3-4 year-old growth to enable a longer rotation, thus more hedge flowering which is better for pollinators.



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# Case Study: Ditch Management



## Nicholas Watts, Vine House Farm

**Size:** 1,000 Hectares

**System:** Arable

**Location:** Lincolnshire, England



© Nicholas Watts

### Aim

Open ditches are a typical field boundary in the Fens. With the advent of under-field drainage, many have become redundant and filled in, but where they remain, they can form important wildlife habitats whilst retaining their important drainage function.

### Methods

At Vine House Farm, open ditches that do not serve a drainage function have been retained for their wildlife value. The vegetation is allowed to thrive, particularly the Phragmites reeds, which are great for nesting birds in the Fens. When clearance is necessary to maintain the drainage function, the ditch profile has been widened so that vegetation only needs to be cleared on one side on a long-term rotation. Ditches that no longer serve a drainage function require clearing out every 10 to 15 years to maintain open water. Tussocky grass margins have been established on 6m either side of the ditch banks using Cocksfoot and Tufted Hair Grass. These are only cut every 3-5 years to develop mature tussocks and complement the ditch vegetation in supporting nesting birds and aquatic wildlife.

### Outcomes

By only clearing the vegetation from one side, the farm saves money as well as supporting the wildlife. Mature vegetation in the ditches supports nesting Reed Warblers, Sedge Warblers, Whitethroats, Reed Buntings and Wrens. The mature vegetation on the adjacent field margins also supports these species and other aquatic wildlife, as well as buffering the ditch from inputs and run-off.



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### 3. Maintain, restore and create wet features



© Ben Andrew (rsph-images.com)

Water is a crucial element for wildlife. With the right management wet habitats can provide some of the most wildlife-rich areas on farmland. These may be farm ponds, ephemeral ponds, scrapes or open ditches. So many farm ponds have been lost over the last 150 years, and restoring them is a great opportunity to improve the landscape for wildlife. There are great stories of filled in ponds being re-excavated back to their original bed layer and restoring populations of aquatic plants that were thought lost from the landscape.

The best wet habitats have clear water that is low in nutrients and free of

pollution, allowing typical wetland aquatic plants to thrive. It is vital to minimise the amount of soil matter, fertilisers and pesticides reaching water bodies as they have a severe impact on water quality.

Valuable pollinators like hoverflies need aquatic habitats to complete their lifecycle, as do beneficial insect predators. The vast numbers of insects produced by wet habitats are also a crucial food source for bats and birds on farmland.

# Case Study: Pond Creation and Management



## Richard Symes, Earlsway Farm

**Size:** 400 Acres

**System:** Arable

**Location:** Sussex, England



© Richard Symes

## Aim

Richard sought advice from Natural England and Sussex Wildlife Trust before restoring 17 ponds and creating three. He aimed to reinstate a diversity of ponds and provide rich, varied habitats for wildlife, including food sources, shelter and an essential water supply. Most of Richard's ponds are in field corners, taking up little land while delivering vast returns for biodiversity.

## Methods

Before restoring his existing ponds, Richard established the factors negatively impacting their health. Major restoration work included the excavation of silt by a digger and removing fish. He removed trees to allow more sunlight to reach pond surfaces, helping to promote plant growth and maintain the ideal temperature for the habitat.

Permanent margins of a minimum of 6m provide appropriate buffering and protect the ponds from run-off and pollutants. Occasional patch scooping removes encroaching bankside vegetation and reduces the progressive build-up of nutrients, which Richard does periodically to minimise disturbance. Natural vegetation surrounding the ponds, including rough grass, hedge and scrub, provide key habitat for species, such as amphibians, to move between habitats and other water bodies.

## Outcomes

The farm's clay soils retain water in the pond as a year-round source for wildlife. Richard's approaches have resulted in clean ponds with healthy plant life that support multiple species, including a red-listed ater beetle, Stoneworts and Great Crested Newts, now common to the area. Surveys have shown a proliferation of insect life, including dragonflies and butterflies. With help from organisations like Sussex Wildlife Trust, Richard has secured 100% funding for his pond management.



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# Case Study: Scrape Creation

## Ian Bell, Hallbankgate Farm

**Size:** 2,320 Hectares

**System:** Livestock

**Location:** Cumbria, England



© Ian Bell

### Aim

To increase the open water areas on the farm, bringing many farming and wildlife benefits, such as providing stock access to water for drinking during dry weather and slowing the flow during wet weather which prevents flooding lower down the catchment. Farmed land in the North Pennines holds the highest density of breeding waders in mainland UK.

### Methods

Ian uses a 9ton or 13ton tracked digger/excavator with a 4ft bucket to create scrapes. When starting the scrape, Ian takes off the turfs first and saves them to instantly revegetate areas such as any small bunds which are needed to hold water back at the lowest point and prevent erosion. To avoid the cost and effort of removing spoil from the site, Ian uses the shape of the land as much as possible, to minimise the amount of spoil and to create shallow edges that both wildlife and stock can safely access as water levels rise and fall throughout the year. Creating scrapes when it is wet is best, so you can see how they are going to fill with water. Ian's digger has wide tracks on resulting in low ground pressure. As he uses the excavated material to shape the scrape rather than taking off site, he will be minimising travelling backwards and forwards over the same areas several times too which would limit any compaction issues. Rain fed scrapes can dry out too quickly, so he uses features such as springs and small ditches (although if it is shown on the OS map, it is important to check whether ordinary water consent is required).

### Outcomes

Existing scrapes generally look after themselves, but can be modified if not. Costs are minimal and lots of species benefit, especially in the summer when there is damp mud but everywhere else is dry. Redshank, Lapwing, Snipe, Curlew and Oystercatcher all use them and breed close by. They have also attracted Woodcocks, Water Rails, Little Grebes, Swallows, Sand Martins and Pied Wagtails. Ian has seen many dragonfly species on the scrapes including some rare species for Cumbria. In the winter months, wildfowl are also regular visitors.



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## 4. Maintain, restore and create or restore flower-rich habitats



© Cath Shellsell (Plantlife)

Flower-rich habitats provide valuable wildlife habitat and help to improve populations of beneficial insects that can make farms more productive. Farms can be great environments for native flowering plants. Indeed, many depend on farming practices for survival, including rare arable plants and wildflower-rich grasslands.

Aim to work with native wildflowers preferably from the local seed bank. Where this is not possible, agricultural varieties and native wildflower mixes can still have a real positive impact on farm wildlife. The diversity of flowering plants is key to supporting the diversity of pollinating insects. Many insects require sources of pollen and nectar from March to October and it is often during the early and latter periods that insects can struggle to find food. Current evidence states that we need at least 2% of farmed land (maybe more) to be flower-rich throughout the flowering season to support pollinators.

Naturally regenerated 'weedy' areas around the farm can support some of

the best plants for pollinators. Spring-flowering White Dead-nettle, Ground-ivy, Cow Parsley, violets and Dandelions can be vital for newly emerged bumblebee queens, solitary bees and hoverflies. Areas of tall weeds such as Cow Parsley, Hogweed, Teasels, thistle, Ragwort and willow herb are often some of the best habitats for pollinators around the farm.

On low-nutrient ground with few competitive weeds, natural regeneration of plants from the seedbank may give the best results for wildlife. Field margins with a long history of arable farming may have rare arable plants which would benefit from annual cultivation. Flower-rich grasslands, whether through natural regeneration or sowing wildflower seed, can be maintained by an annual cut and removal. Where nutrient or competitive weed levels are too challenging to establish permanent wildflower habitats, short-term legume-based flower mixes can be used, but need to be re-established every 3-4 years. In pastoral areas, the equivalent habitat is herb-rich swards.

# Case Study: Pollinator Margins



## Stewart McIntyre, Hainey Farm

**Size:** 5,000 Hectares

**System:** Horticulture

**Location:** Cambridgeshire, England



© Stewart McIntyre

## Aim

The aim of this exercise was to use less productive areas of the farm to boost pollination. This is a conventional and organic salad farm, using regenerative farming principles as well as a range of stewardship options to create a balanced ecosystem.

## Methods

Create a stale seed bed during the summer months, drill in autumn and mow for the first year to minimise weed competition and allow the grasses to establish. Dry autumns can make establishment harder, in which case the seed rate is raised slightly. Ensure clean ground and a fine seedbed where possible. Drill to a shallow depth and harrow/roll. Establishment suffers if drilled too deep.

Weeds and thistle can creep in over time, so Springtime spot treatment is vital. The margins are cut and baled, and then the bales are composted. Grazing is a struggle, as by the time the seeds have dropped it's mostly dead matter with little nutritional value.

## Outcomes

This method, if well managed, can last up to ten years. It is a very cost effective option with seed purchased in Year One only. The flower margins are located around the farm to help with Integrated Pest Management strategy.

A variety of mammals use the grass understorey. Kestrels, Barn Owls and now Marsh Harriers use these areas to hunt. A variety of pollinators also use the areas of flowers all through the summer with different species flowering at different times.



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# Case Study: Cultivated Margins



## John Secker, Glebe Farm

**Size:** 250 Hectares

**System:** Arable

**Location:** Norfolk, England



## Aim

The aim was to select agri-environment scheme options that would benefit the species already on the farm. Cultivated margins, that help to reverse the decline of arable plants and support Turtle Doves, were the largest area of any options. Other options included Stone Curlew plots, Skylark plots, floristically enhanced grass margins, nectar and pollen plots, wild bird seed plots, hedgerow maintenance, and scrub creation.

## Methods

John's cultivated margins are 6m strips managed to encourage arable plants by disturbing the soil to create a seedbed suitable for germination. The best preparation is to plough, and then harrow down to a fine, firm seedbed. There are two 'windows of opportunity' to establish the margins. Experience soon taught John that preparing the margins earlier in spring, or later in autumn, when the weather was cooler, and the soil temperature lower, overcame 'problem' weeds.

## Outcomes

The margins now have a wide range of annual plants, (about 100 species have been recorded) that benefit many species including pollinating insects. The species that has benefitted the most is the Turtle Dove. The farm scatters supplementary feed along a track running beside a large area of scrub on the edge of the farm, at about the time that Turtle Doves arrived back from their long migration.

As the season progresses, seed becomes available in the cultivated margins, and birds are seen feeding in them almost every day. Turtle Doves feed exclusively on small seeds, and one of their favourites is Fumitory, which is very common in margins right across the farm.

Over the years, Turtle Dove numbers have increased and they now have more than 10 pairs benefitting from supplementary feed and cultivated margins here and on neighbouring farms. However, just providing food alone is not sufficient to encourage Turtle Doves. They also require areas of scrub, or tall, wide hedgerows for nesting, and preferably a source of drinking water nearby.



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## 5. Create seed-rich habitats



© Hywel Maggs

For millennia, agriculture has provided seed-rich habitats that wildlife has evolved to exploit. As a result, many birds have become farmland specialists, relying on these seed-rich habitats for food, especially through the winter.

Historically, weedier crops and diverse rotations created lots of seed-feeding opportunities on cultivated land through the seasons. Abundant winter stubbles, fallows and weedy root crops were especially important to wintering birds. Cropping was more often closely connected with livestock and the feeding of grain and seed-rich hay would have supplemented the availability of winter seed food.

Farming has gradually become more specialised and efficient, and the incidental provision of seed-rich habitats is much less likely than in the past. However, through targeted effort, it is still possible for modern farming to support wildlife dependent on seed-rich habitats, particularly declining seed-eating birds such as Tree Sparrows, Yellowhammers, Grey Partridges and Corn Buntings.

Seed-rich habitat can be provided in a variety of forms on farmland. Sowing specific wild bird seed mixes, leaving areas unharvested or retaining winter stubbles can provide vital feeding opportunities to help seed-eating birds survive the winter.

# Case Study: Bird Seed Crop



## Ben Chaplin, Boughton Farms

**Size:** 1,471 Hectares

**System:** Mixed

**Location:** Northamptonshire, England



© Ben Chaplin

## Aim

Originally used to replace the maize game covers, but now retained for their wildlife value.

## Methods

This option is ideally suited for the smaller fields and awkward field corners to maximise efficiency on the cropped land. The farmer uses the agronomic advice of Oakbank, who supply the seed, and manages them very much like a spring crop. On heavy land, the seedbed is ploughed and power-harrowed in March. On lighter land, tilth is created using discs and sometimes a Cambridge roller. It is sprayed off before drilling in June. The smaller seeds need a warm soil temperature. The seed rate is raised by 20% on the heavy land because the ground stays cold for longer. Two-year mixes with Kale are used to provide cover and seed in the second year. Ben now uses a 6m grass harrow with a seed box to spread seed that is then harrowed in. He doesn't use any sprays on the mixes but monitors for slugs and applies nitrogen at the 3-leaf stage and monitors P and K levels. If mixes have struggled, he patches them up with a mix of Kale and Buckwheat, which is fast-growing. The mixes are mulched with a flail in February or March of the 2nd year. The winter bird mixes are rotated with nectar flower mixes to help with weed control and maintain fertility.

## Outcomes

The scheme option is financially viable if you pick the right mixes with the help of the seed merchant and are sensible with inputs. Large flocks of Linnets, Chaffinches and Yellowhammers feed on them throughout the cold weather.



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# Case Study: Winter Stubbles

## David Sandford, Portloughan Farm

**Size:** 60 Hectares

**System:** Arable

**Location:** Down, Northern Ireland



© David Sandford

### Aim

David sought to provide a seed source for priority farmland birds during the winter time, such as Yellowhammer, Skylark, Linnet and Reed Bunting, with the adoption of an overwintered stubble following a spring sown crop.

### Methods

David's farm is made up predominantly of spring barley making it easy to fit weedy stubbles into his farm planning. Following harvest, cereal fields are left uncultivated over the winter through to the following spring allowing birds and other wildlife to access spilt grain from the crop and weed seeds.

David entered into an Environmental Farming Scheme agreement, which provides payments of £80 per hectare and provides basic management advice, detailing the earliest point in which the stubble can be ploughed before a new crop is established. The agreement prohibits the application of pre- or post-harvest glyphosate in order to allow for the establishment of a good weedy cover. If necessary, the weedy stubbles can be rotated around the farm to reduce weed burden.

### Outcomes

Keeping the ground covered over the winter has reduced soil erosion, particularly in the crop tramlines, and spraying costs have reduced. Although spring crops yield less, they require fewer inputs meaning production costs are significantly lower. Combining lower cost management alongside a payment for the stubble as an agri-environment option, David has achieved similar margins to that of a winter crop. Weedy stubbles also require little management, saving valuable time.

Through providing a rich winter seed source, bird life has increased significantly. Surveys by RSPB NI recorded a three-fold increase in Yellowhammer numbers, while flocks of Skylarks in their hundreds have been counted feeding in the fields over winter. Barn Owls have returned to the land and regularly hunt over the stubble fields.



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## 6. Sympathetic In-field Management to Support Wildlife



© G. Bray

The Farm Wildlife plan is largely focused on managing at least 10% of the farm as wildlife habitat. However, the management of the farmed land will still have a major bearing on its value to wildlife and supporting nature on farmland can have benefits for production and profitability, too.

Farming practices that look after the soil structure and increase the soil organic matter are good for life in the soil. This underpins much of the wildlife above the soil, as well as making soils more resilient to droughts and waterlogging.

Integrated management practices, that minimise the use of pesticides and parasite control chemicals, reduce

the impact that these can have on non-target species and make farms more resilient to resistance issues and changes in regulatory requirements.

Any measures that can reduce a farm's use of inorganic fertilisers will create healthier soils and watercourses, as well as reducing costs. Minimising the use of abstracted water is also good for wildlife.

There are a few habitat features that can be created in fields to boost wildlife, such as beetle banks to boost predatory insects in crops, Skylark plots to boost Skylark productivity in winter cereals and fallow plots for ground-nesting birds such as Lapwings.

# Case Study: Integrated Pest Management (IPM)



## Martin Lines, Papley Grove Farm

**Size:** 160 Hectares

**System:** Arable

**Location:** Cambridgeshire, England



© Wild Image Photography

## Aim

After weather prevented Martin from spraying for Black Bean Aphid in 2013, he noticed numbers had dropped and ladybirds were eating them. He set about controlling pests without insecticides.

## Methods

The key to success is having the margin habitats in which beneficial insects can thrive. Latterly, Martin has started creating in-field flower strips to enhance natural pest control. He has broadened the range of crops, uses pest-resistant varieties, times drilling to reduce pest risks, avoids large single applications of N (that make crops prone to pests and diseases) and adheres to recommended cropping intervals. He believes steps to increase soil organic matter also provides a healthier soil ecosystem for pest predators to thrive.

Martin stopped adding precautionary insecticides to the tank and started measuring against thresholds. He found no reason to spray. There were nervous moments when Barley Yellow Dwarf Virus (BYDV) became visible but showed no net economic loss. He now has confidence his beneficial insect populations have built up and suspects he will never use an insecticide again.

More recently, Martin has tried using mixed varieties of wheat and growing Oil Seed Rape (OSR) with a trap crop and companion crops.

## Outcomes

Martin has not used an insecticide since 2013 and has cut down use of herbicides, fungicides and molluscicides. He is less reliant on pesticides that are prone to pest resistance.

Crop yields are a little lower, probably because of the switch to direct drilling, and Martin now grows smaller areas of the most valuable crops, but these are more than compensated for by the reduced cost of production and profit margins have risen. He also thinks it is a healthier environment for him to work in and he values the noticeable abundance of wildlife.



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# Case Study: Soil Management

## David Lord, Earls Hall Farm

**Size:** 700 Hectares

**System:** Arable

**Location:** Essex, England



## Aim

David is on a mission to improve his soil health, tackle weed burden and reduce inputs costs through a regenerative system that maximises carbon storage, crop resilience and farm profitability. Heavy clay soils and low rainfall in the spring meant ploughing was not an optimum choice for ensuring good crop establishment and continuous cultivation caused soil health to deteriorate across the farm.

## Methods

In 2014, Earls Hall Farm moved from a minimal tillage winter crop rotation to a no-till direct drilling system with a more diverse rotation including spring cropping. David seeks to build all key elements of soil health, including the biological, the chemical and the physical and cover crops are central to this. He improves the natural functionality of his soils through 6-8 way cover crop mixes with diverse rooting depths. His cover crops help build fertility with crops, such as Buckwheat, helping to make phosphate more readily available, while vetch and clover help to fix nitrogen. He plants Phacelia for microbial decomposition and Radish for fungal decomposition benefitting soil biology. David tries to keep growing plants in the soil year-round because they help improve carbon sequestration and storage while benefitting soil structure and water infiltration and storage.

## Outcomes

David's soil management techniques have improved resilience to extreme weather and overall crop health. This has reduced input requirements with the use of nitrogen fertiliser, herbicides and fungicides down by 30%. In one year, David halved his tractor fleet from four to two tractors, in turn reducing his fuel use by 30%-50%. He's halved his labour requirement on their family farm. The farm has maintained the same yields with a net profit which is 32% higher.



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# Case Study: Nutrient Management



## Tim Parton, Brewood Park Farm

**Size:** 300 Hectares

**System:** Arable

**Location:** Staffordshire, England



### Aim

Tim has used progressive integrated pest and nutrient management to build resilience into his soils and improve profitability with a particular focus on developing a healthy environment in his soil for mycorrhizal fungi to feed his crops.

### Methods

Tim's philosophy is that restoring mycorrhizal fungi in the soil provides his crops with the necessary micronutrients through their symbiotic relationship with plants. He sap tests his crops and adds any missing nutrients. To support the fungi, he has stopped ploughing and using insecticides, minimised use of inorganic nitrogen and fungicides, and improved organic matter through grass leys and cover crops.

Tim recommends researching the approach, talking to farmers who have tried it and taking a stepwise approach at your own pace whilst monitoring your costs and yields to be confident that you are going in the right direction. There is some added risk, particularly in the early years before soil function is restored.

### Outcomes

Tim has improved his crop health by halving his use of inorganic N and thus avoiding the surge in weak growth that leads to pest and disease attack. As such, he has been able to drastically cut his reliance on pesticides. He has cut costs of production by £200/ha/year and increased average wheat yields from 9.5 to 10.5t/ha. In 2021 he sequestered 9,327t of carbon in his soils. Worm numbers are up to 20-25 per square foot. His Rothamsted trap and the local bird ringing group have also shown moth and bird numbers and bird productivity are all up.

See the full case study at [Agricology.co.uk - Tim Parton Pesticide Free Farming Case Study No2](https://www.agricology.co.uk/case-study/tim-parton-pesticide-free-farming-case-study-no2).



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## FarmWildlife

The Farm Wildlife Partnership is a collection of wildlife and farming organisations developing and demonstrating best-practice nature-friendly farming on [www.farmwildlife.info](http://www.farmwildlife.info). We aim to support farmers such that farmland across the UK is managed in a way that enables wildlife to thrive.



The Nature Friendly Farming Network is a farmer-led UK-wide organisation with a growing farmer membership. We raise awareness and share knowledge of nature-friendly farming, advocating the necessary policies and support for this way of farming to be mainstream. Join today as a free farmer member and access regular updates, events and opportunities, meet like-minded farmers and give your voice to the movement.



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- We enable farmers and growers to make informed choices.
- We champion sustainable farming based on agroecological principles.



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